Oak Park Heights

Comprehensive Plan 2018

The development of the Oak Park Heights Comprehensive Plan would not have been possible without the hard work and dedication of the Comprehensive Plan Update Committee. Their courtesy, cooperation, and contribution are greatly valued and appreciated. The list represents City Council and Advisory Commission members that participated in the process in 2018 and 2019.

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TABLE OF CONTENTS

	Page
Introduction and Community Background ……..	1
Social Inventory ……..	5
Issues Identification ……...	13
Mission Statement, Values and Community Goals ……..	21
Land Use …….	25
Physical Profile …….	26
Goals and Policies ……...	45
Land Use Plan ……..	56
Transportation ……	83
Physical Profile …….	84
Goals and Policies ……...	98
Transportation Plan …….	101
Community Facilities …….	110
Physical Profile …….	111
Goals and Policies ……...	116
Community Facilities Plan ……..	118
Administration ……	120
Goals and Policies ……..	121
Administration Plan ……	125
Parks and Trails …….	128
Physical Profile …….	129
Issues …….	134
Goals and Policies ……...	138
Parks and Trails Plan ……..	141
Implementation ……..	162

Appendix A – Capital Improvement Program

Appendix B – Adjacent and Affected Jurisdiction Comments

Page

List of Maps:

Oak Park Heights Base Map and Community Designations…… 3
Natural Environmental Features Map ……. 29
Existing Land Use Map ……. 32
Zoning Map ……. 43
Gross Solar Potential Map ……... 61
Future Annexation Map …… 63
Owner-Occupied Single-Family Housing Values Map ……. 71
Proposed Land Use Map …….. 81
Roadway Jurisdiction Map …… 85
Functional Classification Map …….. 87
Historic and Projected Traffic Volumes Map ……. 90
Street Reconstruction Management Plan Map ……. 93
Transit Map ……. 96
Transportation Plan Map …….. 102
Traffic Analysis Zones Map …….. 106
Community Facilities Map ……. 112
Existing Parks and Trails Map ……. 132
Proposed Plan Valley View Park Map …… 146
Proposed Plan Brekke Park Map …… 148
Proposed Plan Swager Park Map…… 150
Proposed Plan Cover Park Map …….. 152
Proposed Plan Autumn Hills Park Map …….. 154
Proposed Plan Oak Park Crossing Park Map…… 156
Regional Connections Map …….. 158
Proposed Parks and Trails Map …….. 160

Introduction and Community Background

INTRODUCTION AND COMMUNITY BACKGROUND

The City of Oak Park Heights is in Washington County, Minnesota, on the banks of the lower St. Croix Scenic Riverway, which is the state border between Minnesota and Wisconsin. Situated between the Cities of Stillwater and Bayport and 20 miles east of the Minneapolis-St. Paul Metropolitan Area, the City's population has increased in the last 10 years to almost 5,000 persons. The City is bordered by the City of Stillwater to the north, the City of Bayport to the southeast, Baytown Township to the south and Lake Elmo/Stillwater Township to the west. The area was first platted in the late 1800s. Oak Park Heights was incorporated as a village in 1938 and became a City by State Statute in 1972. The City has been designated as Suburban by the Metropolitan Council, the regional planning agency in the area.

As a component of the St. Croix Valley, Oak Park Heights offers an attractive quality of life with excellent educational, health care, and cultural facilities. Oak Park Heights is a very diversified community, being home to a large commercial/retail area with many national businesses and local enterprises, including the Highway 36 and County Highway 15 commercial areas, Xcel Energy power generation plant, the Sunnyside Marina, and the State of Minnesota Correctional Facility.

Housing in Oak Park Heights is both attractive and diverse and features starter homes, bluff line river view homes, riverfront condominiums, and the Boutwells Landing senior community. The City currently has over 100 acres of designated park space comprised of five municipal park facilities. The parks consist of skating/hockey rinks and warming houses, softball/baseball fields, picnic shelters, tennis courts, and general playground equipment. The City has been awarded the "Tree City USA" award for the past 36 years.

The City operates under a "Plan A, Council-Administrator" form of government, consisting of a Mayor and a four-member Council. The Mayor and Council are elected at large on a non-partisan basis, the Mayor for a four-year term and the Council for four-year staggered terms. The Council is responsible for adopting policies affecting City affairs, approving the annual budget, enacting ordinances and resolutions, and providing policy direction for City departments and activities. The City Council currently serves as the Economic Development Authority. The City has a Planning Commission and a Parks Commission.

The Comprehensive Plan was last updated in 2008. The Metropolitan Land Planning Act requires communities to review and update their Comprehensive Plans every 10 years, with the next update for Oak Park Heights due in December 2018. As part of this update, the City will also be reviewing its utility plans, Comprehensive Park and Trail System Plan, and amend its Zoning Ordinance and map, as necessary.

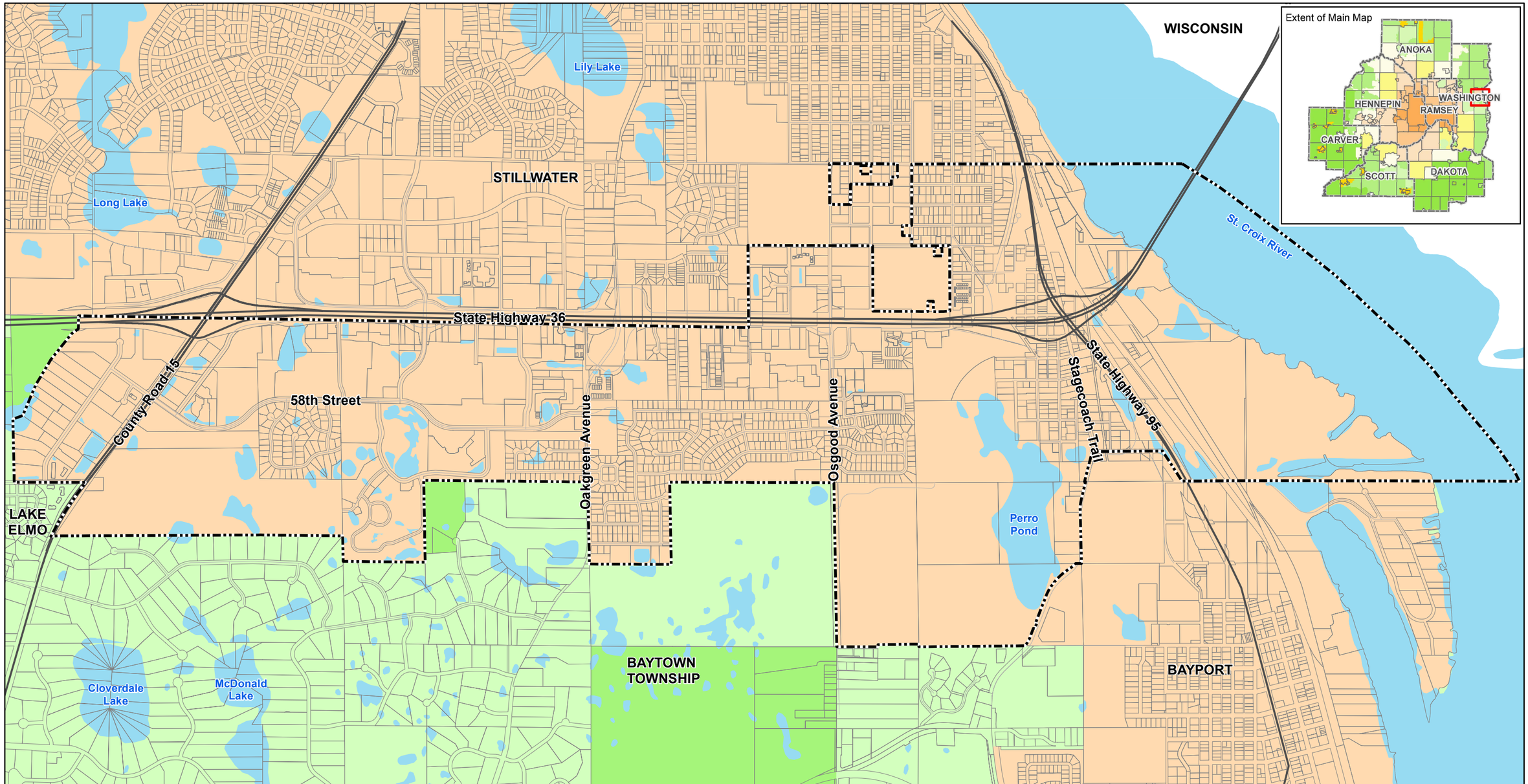
INTRODUCTION AND COMMUNITY BACKGROUND

The City of Oak Park Heights is designated as a “Suburban” in the Thrive MSP 2040 regional planning document adopted by the Metropolitan Council in 2014. Under that classification, the overall density expectation is five units per acre. Previously, the City had been designated as a “Developing Community” as part of the 2008 Comprehensive Plan Update. The Base Map and Community Designations, which shows Oak Park Heights as Suburban, is found on the following page. The map illustrates the corporate boundaries of the City at the beginning of 2017. This will be used throughout the plan as the basis for mapping the City of Oak Park Heights.

The City of Oak Park Heights Mayor, City Council, Planning Commission, and staff have recognized the need for the update of the Comprehensive Plan as it is outdated with the current growth and change over the past 10 years. The Planning Commission and Parks Commission have been tasked with developing the draft Comprehensive Plan and the Parks and Trails Plan.

The Comprehensive Plan document will be divided into specific sections, as found in the Table of Contents, located in the beginning of this document. The process by which the plan has been developed can be divided into five sections including issues identification, inventory, policy planning, plan development, and implementation. Each portion of the process will involve citizen participation and involvement of City officials. Issues identification involves a Community Survey, and opinion gathering process to determine a specific set of issues that must be addressed by the Comprehensive Plan. The inventory consists of documenting the City’s existing conditions at a point in time. The results of gathering inventory information will provide a basis of text, charts, and maps illustrating the most relevant collected information.

The next stage, policy planning, will determine future directives for Oak Park Heights through the identification of goals and policies. The City will also develop its vision statement. The policies that are created will promote direction for the subsequent planning sections of the document. The stage that follows consists of development of the physical plans and programs which will lay out the City’s proposed land use, transportation, and community facilities plans. The final stage, implementation, will involve a discussion on how the plan will be used and brought into action. It will also provide the opportunity for the City to prioritize the plans and projects that result from the planning efforts of the Comprehensive Plan.



City of Oak Park Heights

TPC The Planning Company

Stantec

City Limits

Community Designations:

- Diversified Rural
- Rural Residential
- Suburban

N

0 0.3 0.6 Miles

City of Oak Park Heights
Comprehensive Plan

Basemap and Community Designations

Source: The Metropolitan Council, The Planning Company, & Stantec

August 2019

Social Inventory

INTRODUCTION

The City of Oak Park Heights has recognized the need to develop a Comprehensive Plan as a means of addressing and accommodating the community's future growth and development. The purpose of the Social Inventory is to identify past trends, to document the current conditions and to help identify issues for establishing 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 and policy base, decision makers can evaluate and prioritize proposals for the community while fulfilling the City's long-term goals and objectives.

Additional inventory information will be included in each of the individual sections of this plan. Population trends and projections will be included within the Land Use section. Oak Park Heights as well as Washington County population projections will be evaluated to show the overall growth, as well as detailing change by age groups.

POPULATION GROWTH

The statistics in the following table illustrate the trends in population within Oak Park Heights, surrounding cities, and Washington County. Between 2000 and 2016, the City grew at a rate of 19 percent, and Washington County grew at a 27 percent rate. The populations of the surrounding communities of Stillwater and Lake Elmo have been growing at a similar pace since 2000, while the City of Bayport has seen a slower rate of population growth at 15 percent.

The population increases in the City have been attributed to job growth, and a continued increase in senior residential development in Oak Park Heights. The 2016 estimate and the projections of population reflected in the chart below is from the Metropolitan Council. The Metropolitan Council numbers are generally regarded as being accurate population estimates during non-census years.

2000, 2010, 2016 AND PROJECTED POPULATION GROWTH

	2000	2010	2016	2020 Projection	2030 Projection	2040 Projection	2000-2016 % Change
Oak Park Heights	3,957	4,445	4,712	4,880	5,300	5,700	19%
Bayport	3,162	3,471	3,622	3,970	4,340	4,640	15%
Stillwater	15,323	18,277	19,693	20,600	21,800	22,800	29%
Lake Elmo	6,863	8,061	8,748	10,500	14,100	18,200	26%
Washington Co.	201,130	238,136	253,128	268,410	299,130	330,200	27%

Source: U.S. Census, Estimates from Metropolitan Council

HOUSEHOLD GROWTH AND TYPES

In looking at the data for Oak Park Heights since 2000, 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 national trend of people having fewer children and the dynamics of the modern family. The 2016 estimate of population and households reflected below is from the Metropolitan Council.

2000-2016 OAK PARK HEIGHTS HOUSEHOLD INFORMATION			
Year	**Population**	**Households**	**Persons Per Household**
2000	3,957	1,528	2.26
2010	4,445	1,911	2.05
2016	4,712	2,199	1.93
Source: U.S. Census, Metropolitan Council			

The 2000, 2010, and 2016 data provides a demographic profile of the households in Oak Park Heights as illustrated in the following table. As the table indicates, the households of married families with children decreased significantly from 21.7 percent in 2000 to 12.1 percent in 2016. The number of unmarried families with children also decreased. The percentage of households where people lived alone or were in non-family households increased.

2000, 2010, 2016 OAK PARK HEIGHTS HOUSEHOLD TYPE			
Household Type	**Household Percentage**		
	2000	**2010**	**2016**
Lived Alone	34.6%	43.4%	46.8%
Families Without Children	28.7%	30.3%	28.3%
Married Families with Children	21.7%	14.4%	12.1%
Unmarried Families with Children	9.9%	4.04%	5.4%
Non-Family Households	4.3%	8.08%	3.6%
Source: U.S. Census, Metropolitan Council			

AGE CHARACTERISTICS

The following table illustrates Oak Park Heights' population by age group. The table utilizes information from the 2000 and 2010 Census as well as a projection for 2016 from the Metropolitan Council. In 2000, the labor force (ages 20-64) represented the largest age group, at 62.9 percent. In 2010, this age group was again the City's largest, accounting for 57.3 percent of the total population. By 2016, that age group had fallen to 55.2 percent of the population. At 24.2 percent in 2000, the next largest age group for that Census year was school age children under the age of 19. By 2010, this population group had fallen to 19.6 percent and 14.2 percent in 2016. Population growth over these 15 years has been in the retired persons category with the persons over 80 years old increasing from 4.0 percent in 2000, 12.3 percent in 2010, and 16.3 percent in 2016. Changes in the demographics of the City and surrounding area will have significant planning implications for the future.

2000, 2010, 2016 OAK PARK HEIGHTS POPULATION GROWTH BY AGE GROUP						
Age Group	**2000**	**2000%**	**2010**	**2010%**	**2016**	**2016%**
School Age						
Under 19	960	24.2	852	19.6	679	14.2
Labor Force						
20-39	1,277	32.2	1,008	23.2	1,203	25.1
40-59	1,076	27.1	1,255	28.9	1,270	26.5
60-64	136	3.4	225	5.2	171	3.6
Sub-Total	2,489	62.9	2,488	57.3	2,644	55.2
Retired						
65-69	122	3.1	158	3.6	204	4.3
70-79	225	5.6	304	7.0	482	10.0
80+	161	4.0	537	12.3	781	16.3
Sub-Total	508	12.8	999	23.0	1,467	30.4
TOTAL	3,957	100%	4,339*	100%	4,790	100%
Source: U.S. Census, Metropolitan Council *Population by age group not adjusted for corrected total population						

OCCUPATION

Information from 2010 and 2015 regarding employment demographics for Oak Park Heights and Washington County are depicted in the table below. The majority of those employed in the City both in 2000 and 2015 were in retail. The second largest category was health care. Employment demographics for Washington County follow a similar pattern with retail being the largest and health care second. The numbers indicate the recovery of certain industries following the economic downturn.

2010 AND 2015 OCCUPATIONS								
	Oak Park Heights				Washington County			
	2010	%	2015	%	2010	%	2015	%
Accommodation and Food Services	285	7	399	9	6,365	10	8,498	11
Administrative	32	-	11	-	3,183	5	3,263	4
Agricultural, Forestry, Fishing and Hunting	1	-	0	-	500	1	626	1
Arts and Entertainment	41	1	33	1	1,257	2	1,430	2
Construction	184	5	325	7	2,700	4	3,773	5
Educational Services	278	7	260	6	7,647	12	7,903	10
Finance and Insurance	11	-	39	1	2,267	4	3,420	4
Health Care	775	19	754	17	9,363	15	11,467	14
Information	8	-	9	-	548	1	759	1
Management companies and Enterprises	500	12	534	12	1,011	2	1,602	2
Manufacturing and Mining	65	2	67	1	6,938	10	7,942	10
Other services	219	5	155	4	2,409	4	2,887	5
Professional and Technical	65	2	112	3	2,642	4	3,392	4
Public Administration	352	9	368	8	3,384	5	3,748	5
Real Estate	47	1	74	2	678	1	784	1
Retail Trade	899	22	1095	25	8,533	13	12,254	16
Transportation and Warehousing	243	6	169	4	2,366	4	1,788	2
Utilities	0	-	10	-	29	-	26	-
Wholesale Trade	58	2	15	-	1,814	3	2,680	3
TOTAL	**4,063**	**100**	**4,429**	**100**	**63,634**	**100**	**78,242**	**100**
Source: U.S. Census, Metropolitan Council								

EMPLOYMENT

The following table represents the overall employment numbers for Oak Park Heights, 2020, 2030 and 2040 projections, and the percent of change from one year to the next.

1990-2040 OAK PARK HEIGHTS EMPLOYMENT		
	Number	**Percent Change**
1990	2,200	
2000	2,713	23.3
2010	4,358	60.6
2016	4,494	3.0
2020	4,600	2.3
2030	5,100	10.8
2040	5,500	7.8
Source: U.S. Census, Estimates from Metropolitan Council		

EDUCATION

The following table illustrates education levels for residents ages 25 and over in 2010 and 2016. As indicated for 2010, 93.1 percent of the population has attained a high school diploma or higher degree, while 31.1 percent of the population has attained a bachelor's degree or higher. For 2016, 94.8 percent of the population has obtained a high school degree or higher and 34.6 percent have been awarded a bachelor's degree or higher.

2010, 2016 OAK PARK HEIGHTS EDUCATIONAL ATTAINMENT (Ages 25 and over)				
Level Attained	**2010**	**2010 %**	**2016**	**2016 %**
Did Not Graduate High School	224	6.9	198	5.2
High School Graduate	966	29.7	1,061	27.7
Some College (no degree)	720	22.2	873	22.8
Associate and Vocational Degree	328	10.1	376	9.8
Bachelor's Degree	742	22.8	879	22.9
Graduate/Professional Degree	269	8.3	447	11.6
TOTAL	3,249	100%	3,834	100%
% of High School Grad +	93.1%		94.8%	
% of Bachelor's Degree +	31.1%		34.6%	
Source: U.S. Census, Metropolitan Council				

INCOME

The 1990, 2000, 2010, and 2016 data regarding income for Oak Park Heights and Washington County is illustrated in the following tables. The first column indicates per capita income; the second, median household income; third, percent below poverty level and forth, individuals below poverty level. The per capita income and median family income levels for the City are below that of Washington County. A higher percentage of people are below the poverty level in Oak Park Heights than Washington County. Oak Park Heights has experienced a slight increase in median household income from 2010 to 2016.

1990, 2000, 2010, 2016 INCOME				
	Per Capita Income	**Median Household Income**	**Percent Below Poverty Level**	**Individuals Below Poverty Level**
1990				
Oak Park Heights	$15,200	$33,200	7.9%	275
Washington County	$17,400	$44,100	4.4%	6,419
2000				
Oak Park Heights	$23,300	$48,400	3.4%	128
Washington County	$28,100	$66,300	2.9%	5,833
2010				
Oak Park Heights	$28,600	$50,400	11.0%	489
Washington County	$36,200	$79,100	5.2%	12,383
2016				
Oak Park Heights	$32,919	$51,726	7.5%	304
Washington County	$39,873	$86,689	5.1%	12,496
Source: U.S. Census, Metropolitan Council				

Issues Identification

INTRODUCTION

The Planning Commission and City Council have each discussed community issues as part of the planning process. The representation of these City leaders and officials has provided the insight and initial direction for the process. The community involvement will continue throughout the comprehensive planning process with public meetings at the end of each stage. Additionally, as an initial means of shaping the Comprehensive Plan, a Community Survey was developed to gain insight from residents of the community.

This report provides a summary of the issues and directions which community officials and residents have identified. As such, it will be utilized in conjunction with the technical data compiled in the data collection process to formulate the policies as well as physical layout of the community. Throughout the issue's identification process, it was realized that there is agreement on most of the issues but also differences in the philosophy and details of the approaches to be taken. An additional purpose of this report is therefore to highlight these matters so that they can be addressed as part of the planning process.

PLANNING PROCESS

The community-based information and directives summarized in this section serve to set the stage for completion of the Comprehensive Plan. Complementing the issues identification stage of the process will be the technical inventory of the community that is found in each of the subsections of the plan. This information will provide decision-makers with a basis from which problems and issues can be identified, objectives discussed and required changes made. The results of this effort will be goals and policies, as well as plans that are developed on a City-wide basis and for specific neighborhoods.

It should be noted that the issues identification study is only an initial forum for community input into the planning process. As draft material is prepared, meetings will be held with the Planning Commission, which will be the primary group to hold public hearings and discussions on the plan. The Mayor, City Council, staff, general citizenry and business interests will also be provided ample opportunity for review and discussion through meetings and public hearings. While such involvement will be demanding, it is essential for completion of a Comprehensive Plan which is truly reflective of Oak Park Height's goals and objectives.

A graphic at the end of this section illustrates the Comprehensive Plan Process.

COMMUNITY SURVEY

As an initial means of shaping the Comprehensive Plan, a Community Survey was developed to gain insight from residents of the community. The Community Survey was made available on the City website and distributed at the Party in the Park event on June 8, 2017. There were 96 respondents to the survey, 83 were residents of the community.

While the survey is recognized as not being statistically significant, the results provided the basis for the discussion of issues for this section. The respondents to the survey identified themselves into these general categories:

Resident of the City	86.5%
Business Owner	3.1%
Visitor	5.2%
Other	5.2%
TOTAL	100%

Most of the resident respondents (48.3 percent) have lived in Oak Park Heights more than 10 years. Another 32.2 percent have lived in the City less than five years. The respondents to the survey generally reflect the demographic makeup of the City, although a majority (31.0 percent) were 55 years and over. Many of the respondents (43.7 percent) did not have children currently living in the household. A summary of the key findings of the survey are as follows:

Is Oak Park Heights a better place to live and work today than when they first moved here or began to work here:

1. Yes – 55.9 percent
2. Unsure – 35.7 percent
3. No – 8.3 percent

The favorite things about Oak Park Heights included:

1. The City parks and trails
2. The St. Croix River
3. The location
4. The small-town atmosphere
5. Schools
6. Retail businesses

The most important challenges facing the City:

1. Protecting the St. Croix River and other bodies of water
2. Tax rates
3. Maintaining and enhancing municipal services
4. Reducing crime and enhancing public safety
5. Capital investments in community facilities, parks
6. Improving pedestrian and bicycle access and safety

Respondents had the following opinion regarding City streets:

1. Excellent – 9.5 percent
2. Above Average – 42.8 percent
3. Average – 39.3 percent

Respondents had the following opinion regarding the condition of City parks and trails:

1. Excellent – 23.2 percent
2. Above Average – 56.9 percent
3. Average – 16.2 percent

Respondents utilization of a City Park or trail is as follows:

1. Every day – 17.0 percent
2. A few times per week – 37.8 percent
3. On occasion – 26.8 percent

A copy of the complete results of this survey, including written opinions raised by the survey respondents, is found in the Appendix of this plan. The Community Attitude section, as follows was partially shaped by the results of the survey.

COMMUNITY ATTITUDE

The overriding attitude that was expressed by the residents of Oak Park Heights during the issue gathering process was the positive attitude about the community and the long-term prospects for continued growth and improvement. Residents cited the quality of life in the area, the amenities of the nearby rivers, lakes, and wetlands, the City parks and trails, the small-town feel, and the school systems and the retail businesses that contribute to making Oak Park Heights an attractive place to live. Those persons who took the survey and were involved in the opportunities and issues discussions as part of

the Comprehensive Plan process listed the following as the positive aspects of the community:

1. The City is situated in such a way that it is close to the St. Croix River Valley, rural areas and open space.

2. Excellent access to the freeway system which provides connections to the entire Minneapolis St. Paul area.

3. Positive small town/City atmosphere.

4. Excellent City park and trail system.

5. The community provides an adequate land use density with residential, commercial, and industrial/business warehouse uses.

6. The community has several shopping, recreational and entertainment options for its residents.

7. There are excellent housing options with two premier senior living complexes in the City.

8. The school system is excellent, and the high school is located within the City.

9. The City has a good government structure with a high level of long term participation on City boards and commissions.

10. The taxes are relatively low in comparison to other area cities.

There were few negative comments made by residents and most dealt with issues related to the Highway 36 transportation corridor and the intersections that access the Oak Park Heights frontage roads and street network. Residents question what impact the St. Croix River Crossing will have on the community related to traffic and development.

LAND USE ISSUES

The following land use issues are recognized:

- Preservation of the high quality of life in the City neighborhoods.
- A balance of housing types for all age groups.
- Buildings and property in the City kept in a good state of repair and maintenance.

- Preservation of affordable housing, improvement of low income housing and affordability of living.
- Diverse and high quality commercial development and redevelopment.
- Impact of the St. Crossing River Crossing on the community and future development.
- Creation of living wage jobs and job growth.
- Maximization of the amount of green space in development/redevelopment.
- Protecting the St. Croix River, wetlands, streams and other water bodies in the area.
- Community support for application of sustainable development practices in all public and private sector redevelopment.

TRANSPORTATION ISSUES

The following transportation issues are recognized:

- Continued roadway and sidewalk maintenance and repair.
- Traffic congestion throughout the City, but in particular at the Highway 36 frontage roads and Norell/Osgood Avenues.
- Commuter bus service improvements.
- Sidewalk and trail linkages and connections.
- Traffic speed.
- Pedestrian/bicycle crossings throughout the community.
- Appearance of private/public parking lots.

COMMUNITY FACILITIES ISSUES

The following land community facilities issues are recognized:

- Continued maintenance and updates to the City Hall and public works facility.
- Support for the Bayport Fire Department, their personnel, equipment and facilities.
- Park and trail facility maintenance and upgrades.

PARKS AND TRAILS ISSUES – GENERAL

The following parks and trail issues are recognized:

- Preservation of and maintenance of existing parks and park facilities.
- Repair and maintenance of trails.
- Trail connections within Oak Park Heights and to adjoining cities.
- Safety of the parks and pedestrian/bicycle paths.
- Landscaping and streetscaping of City streets and property.
- Connection of the distinct areas of Oak Park separated by Highways 36, and County Road 15.
- Pedestrian/bicycle crosswalk improvements.
- Disability access for sidewalks and trails.
- Park and trail signage improvements.
- Continued and expanded park programming.
- Possible splash pad.

ADMINISTRATIVE ISSUES

Administrative issues include those matters under government control, regulations, or initiatives. The following administrative issues are recognized:

- Preservation of existing community character and quality.
- Protection of water resources and stormwater education for the general public.
- Drinking water safety and purity.
- Budgeting for street, water and sewer repairs.
- Enhancing the City with landscaping/plantings and welcoming entrances.
- Tree planting programs to increase diversity and tree cover.
- Tree management programs to prevent tree diseases.
- Preservation of the small-town atmosphere.
- Improved traffic flow through City.
- Incorporating low impact development principles and practices into public and private projects.
- Continuation of good relations and cooperative efforts with Washington County, Stillwater Area Schools, and surrounding communities.
- As a follow up to the Comprehensive Plan, the need to review the City's Zoning Ordinance and Design Guidelines.

HEALTHY LIFESTYLE ISSUES

Active and healthy lifestyles issues identified from the community include the following:

Connectivity/Access:

- Promotion of safe and barrier-free access to healthy food supplies, pharmacies, medical services, employment opportunities and schools.
- Increasing access to public transportation.
- Safety of walking and biking paths and crosswalks.

Environment and Housing:

- Housing quality and safety.
- Affordable housing options in the City.
- Promotion of sustainable development in the community.
- Reduce, reuse and recycle.

Children:

- Organized activity and recreational programs.
- Safe routes to schools as an alternative to busing.
- Promoting and access to healthy food choices such as fruits and vegetables.
- Encouraging less screen time and more active time.

Mental Health:

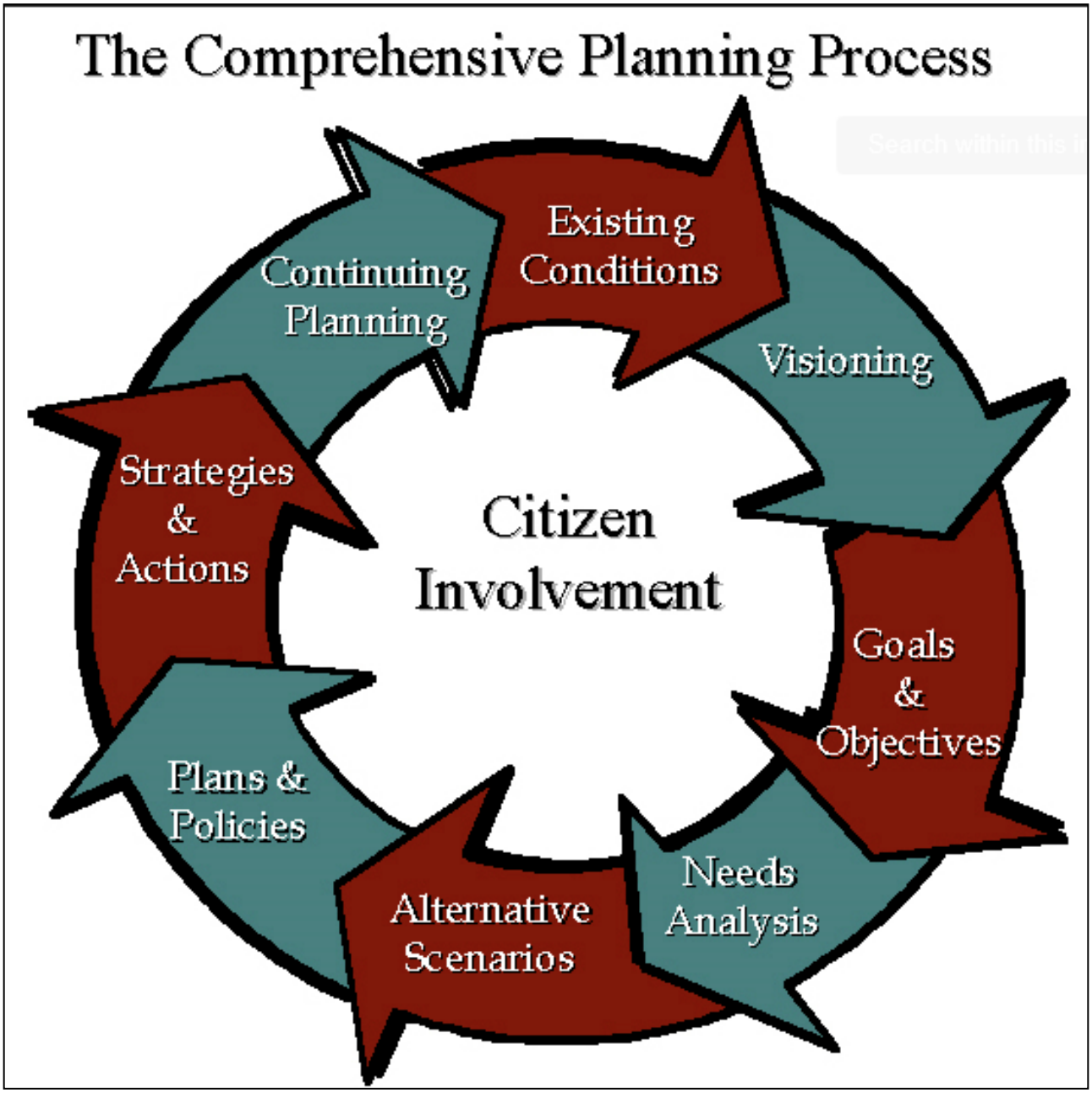
- More trees, green space, landscaping and plants.
- Stress reduction, less traffic and transportation conflict.

Social Capital:

- Preserving small town atmosphere.
- Encouraging community events.
- Walking clubs, biking clubs, block parties.

Water Quality:

- Treatment of stormwater prior to release into lakes rivers and streams.
- Use of rain gardens, green roofs, and other natural filtering systems.
- Use of natural landscapes to reduce runoff from yards and hard surfaces.
- Promotion of low impact development (LID) to promote environmental quality.


The Comprehensive Planning Process
Existing Conditions
Visioning
Goals & Objectives
Needs Analysis
Alternative Scenarios
Plans & Policies
Strategies & Actions
Continuing Planning
Citizen Involvement

Mission Statement, Values and Community Goals

The City of Oak Park Heights has developed a mission statement and values. The mission statement and values will guide the preparation of the Comprehensive Plan and influence how the City will implement the policies and plans that result from this effort.

MISSION STATEMENT

The City shall strive to provide and promote a living environment with quality public services and facilities while protecting the community's cultural, historical and natural resources.

VALUES

- Vibrant and Diverse Culture: Our community thrives from being a welcoming and creative place that values and respects the opinions and contributions of all people.

- Sustainability: We embrace public and private actions to preserve and enhance our natural and built environments for all generations.

- Excellence and Quality in the Delivery of Services: We strive for excellence in providing quality community service while maintaining fiscal responsibility with public resources.

- Economic Vitality: Our community experiences economic prosperity through diversity, interdependence and adaptability.

- Community Character: We strive to preserve the higher quality of life, smallness and friendliness that this place offers.

- Healthy Community: We flourish as a community by caring about our residents needs and supporting efforts to reach everyone's full potential.

COMMUNITY GOALS

The goals are designed to address and influence the quality of life through the physical environment. The goal statements have guided the preparation of the Comprehensive Plan and influence how the City will position itself in its actions and practices. The goals are not listed in a priority ranking; all are regarded as equally important statements for the City's direction.

- **Actively involve and serve all our residents.** Celebrate the diversity and the well-being of all residents. Respect individual rights, yet be guided by our concern for the common good.

- **Maintain and improve community health and vitality.** The residents of the community must provide and maintain those resources, community facilities, accessibility and services essential for the protection of the health, safety and welfare of individuals.

- **Encourage continued but orderly and diverse growth and redevelopment in Oak Park Heights.** To maintain a strong economic and social base for Oak Park Heights, development and redevelopment is viewed as positive. In that the amount of vacant, developable land is limited to primarily commercial properties, the focus of the City will be on infill development of the remaining developable land and continued redevelopment and improvements to commercial and industrial properties.

- **Preserve Small Town Character.** The features and amenities of this small town are regarded as the greatest community asset. Preserve small town character while accommodating redevelopment, renewal and revitalization.

- **Establish and maintain a desirable community image within the Twin Cities Metropolitan Area.** Oak Park Heights' reputation within the region is that of an established community with a range of housing options and an expanding commercial sector. The City will need to maintain its quality neighborhoods and commercial areas through continued redevelopment and investment. The City will need to ensure that development regulations are kept current, code enforcement is continued, and public improvements are of the highest quality.

- **Protect Oak Park Heights' Natural Resources.** The St. Croix River, as well as the wetlands, ground water, surface water resources, and trees provide natural amenities and add significant aesthetic recreational and economic value to the community. Preserve and protect these resources by incorporating sustainable development principles into public and private projects.

- **Maintain and improve a safe, viable, orderly, productive and enhanced environment for all residents of the community.** The community should provide for planned and orderly land use and a functional transportation system to serve and connect, but not disrupt, residential areas of the community. Moreover, the community should provide and properly maintain those resources, community facilities, and services essential for the protection of the health, safety and general

welfare of individuals (schools, parks and trails) and necessary for the community (water, sewer, streets, city administration, police, and fire protection).

- **Plan for coordinated, orderly growth and limited extra-territorial expansion.** Growth patterns in Oak Park Heights will include infill development, redevelopment, and potential outward growth beyond its current boundaries. Extra-territorial growth will only occur at the request of the property owner and agreement by the adjoining jurisdiction. A planned and orderly land use with a functional transportation system that accommodates all residents is desired to provide continuity and connections throughout the community.

- **Promote a responsible fiscal balance (revenue versus service costs) on an ongoing basis.** The policies of the Comprehensive Plan are intended to outline the community's desires and set forth guidelines for how these desires are to be achieved. These issues must be continually assessed in terms of value compared to costs incurred by the City for implementation. Indicators of value include, but are not limited to, potential revenue, facility enhancement, and the common good of the Oak Park Heights community.

Land Use

The basic intent of the comprehensive planning process is to provide a well-founded and coordinated decision-making framework to guide both public and private development and community improvements. In this regard, this represents the development framework to guide land use decisions for the City of Oak Park Heights. The Land Use section is based upon the physical profile information, as well as the community issues which have been identified in determining community goals and policies.

The Land Use section assists policy makers in daily decision-making. Since the maps and plans in the Comprehensive Plan may be quickly outdated, reliance on a land use map for guidance on a specific issue may be difficult for decision-makers. However, the relative consistency of community goals and policies ties the land use activities together over the long term.

The Land Use Plan is the basic plan for growth and development in the community. It establishes the general parameters, issues, and goals which are to be achieved. It further defines and establishes direction for the basic elements of the development regulations that will be updated after the planning process is completed.

The arrangement of this section includes the Physical Profile of the City to include the Existing Land Use Map, Goals and Policies related to land use, and finally, the Land Use Plan. In sum, the Land Use Plan provides the foundation for guiding and managing land use expansion and redevelopment within Oak Park Heights. It determines directives and means for specific assignments and accomplishments. Additionally, it establishes the ground work and parameters for facilities planning.

NATURAL ENVIRONMENT FEATURES

Topography

The terrain in Oak Park Heights can be characterized as gently rolling in the west and increasing in slopes until a ridge of severe slope at the edge of the St. Croix River Valley. The least significant topographic changes occur in the western portions of the City. The most severe topography changes extend from the eastern portion of the State of Minnesota Correctional Facility grounds north to the Highway 36. This topography change is best described as a ridge separating the City's higher elevations from the lower elevations of the river valley.

Soils

The soils found in an area often determine the type and extent of urban development that can occur in the area. Factors such as soil strength, drainage and frost characteristics may serve to limit the amount and type of urban development that can be accommodated on the land.

The United States Department of Agriculture completed a detailed survey of soils within Washington County, including the area of Oak Park Heights, in 1977. While it should be recognized that any large-scale mapping of soils results in an extremely generalized graphic statement, the information does serve to illustrate the relationship between soils and the areas available for development.

Generally, the soils within Oak Park Heights belong to one of three soil associations. These categories are as follows:

Santiago-Kingsley. This soil association is characterized by undulating to steep slopes, are well drained with a moderately coarse texture. Soils within this association are characterized as being good to fair for supporting urban development.

Antigo-Chetek-Mahtomedi. Soils in this association are generally formed in outward areas with slopes ranging from nearly level to steep. These soils are typically well to excessively drained with a medium to coarse texture. These soils are generally well suited for supporting urban development.

Antigo-Comstock. These soils are generally level to moderately sloping and are formed predominantly in underlying sandy outwash plains and glacial lake plains. The main limitation of this series for urban development is susceptibility to frost heaving and a high-water table in low lying areas.

A more detailed description of the soils found within Oak Park Heights, in terms of suitability for urban development, is provided on maps available at City Hall. Generally, the soils along the river bluffs and on the State of Minnesota Correctional Facility grounds on the southern area of the City are poor for urban development purposes. Of greater importance, the Department of Agriculture has classified most of the soils in the western portion of the City as moderate for urban development purposes. The limitations of these soils are related mostly to the slopes of the soil types found in this area.

Aggregate Resources

The Minnesota Geological Survey Information Circular 46 indicates that there are several small isolated sand and gravel deposits in Oak Park Heights, but no aggregate resource deposits are if a size that can be economically mined in this City which is nearly completely developed. The Land Use Plan is not impacted by these aggregate resource deposits.

WETLANDS

The City of Oak Park Heights contains wetlands which are generally widespread throughout the community as shown on the following Natural Environmental Features Map. Many of these wetlands are large and represent potential physical barriers to development and street connections. Most of these wetlands are in the western areas of the City. The largest of the wetlands in Oak Park Heights, Perro Pond, is in the southeastern portion of the City. This wetland is located almost entirely within the boundaries of the State of Minnesota Correctional Facility and Valley View Park.

These wetlands serve an important function as ponding areas for excess storm water runoff. In addition, these areas are also valuable for flood water retention, ground water recharge, nutrient assimilation, wildlife habitat and aesthetics. In 1991, the Wetlands Conservation Act was passed requiring the preservation of all wetland areas unless federal and state approvals are granted. The filling of designated wetlands requires that the wetland be mitigated at a 2:1 ratio, that is, for every acre of wetland removed, two acres would need to be replaced.

VEGETATION

Existing natural vegetation masses are found throughout Oak Park Heights. The largest areas of vegetative cover are in the western areas of the City and around the large wetland area which extends from the State of Minnesota Correctional Facility grounds through Valley View Park.

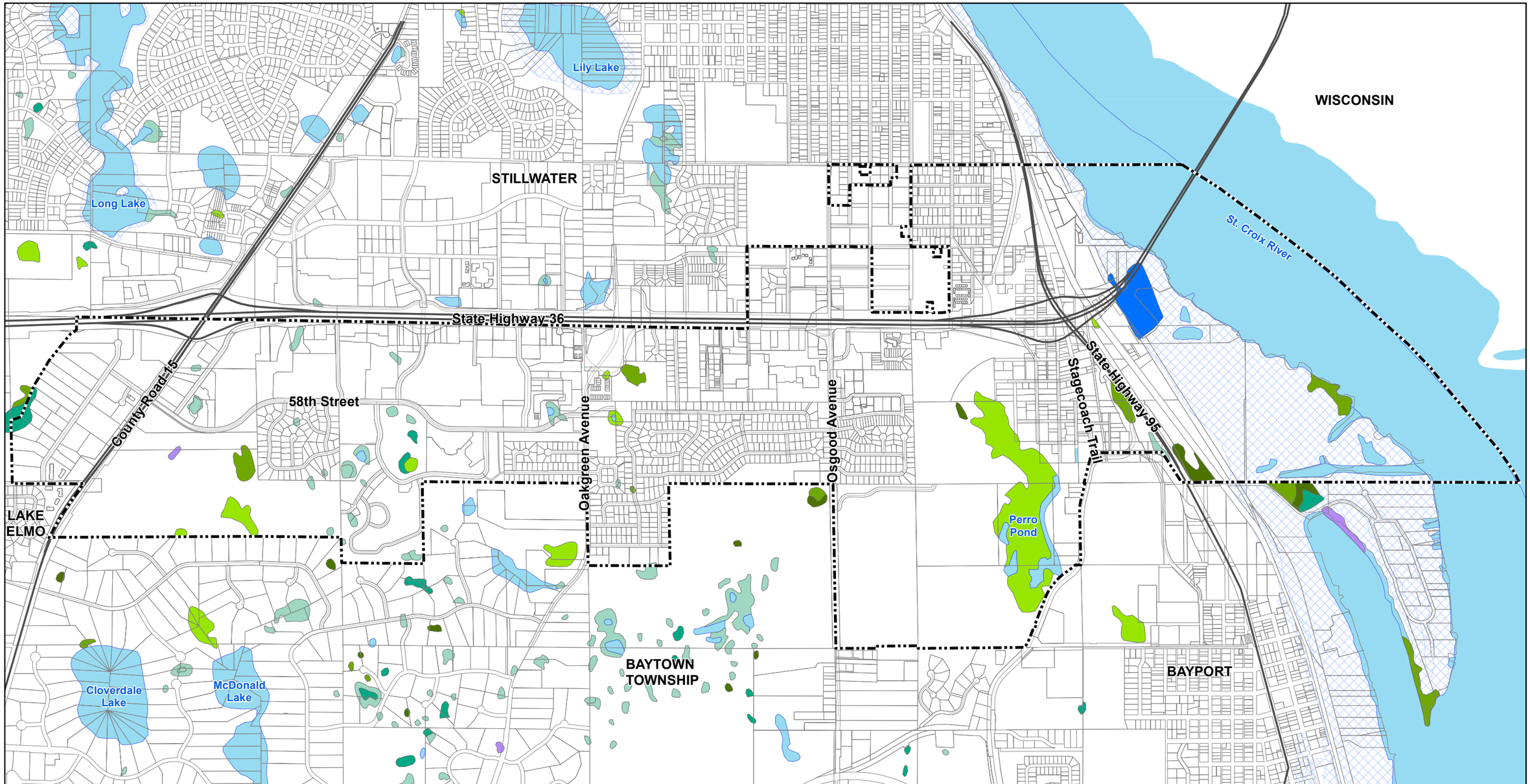
FLOODPLAIN

A small area on the extreme eastern portion of the City adjacent to the St. Croix River Valley has been designated by the Federal Emergency Management Agency as being within the 100-year floodway. Due to the bluffs leading up from the St. Croix River Valley, the remainder of the City is not affected by flooding during high water periods of the St. Croix River. Those areas within the 100-year floodway are identified on the Natural Environment Features Map.

POLLUTION

Pollution has generally not been an issue in Oak Park Heights. The Minnesota Pollution Control Agency provides information on past pollution problems which have been reported. In addition to minor chemical leaks or spills, typically gasoline or oil associated with businesses, one significant site was identified. The Xcel Energy fly ash disposal site, which is south of Highway 36 and east of Osgood Avenue, was used to dispense of an ash by-product created at the Allen S. King power generating facility located adjacent to the St. Croix River. The site has been capped and is now Oak Park Crossing Park. The fly ash monitoring will continue under the management of Xcel Energy, but the park is under the management of the City.

Another potential pollution issue is the Baytown Township groundwater contamination site which is the result of the disposal or spillage of trichloroethylene (TCE) in the area south of Highway 15 and west of Manning Avenue, and the use or spillage of carbon tetrachloride at a nearby grain storage facility. The site consists of an area of groundwater contamination that is more than six square miles and affects four major groundwater aquifers. Although there has been no issue for the City of Oak Park Heights' municipal water system, the City continues to monitor the spread of the contamination and will consider the pollution impact with any new well or well reconditioning. The area west of Osgood Avenue in the City is included in a Drinking Water Supply Management area as identified by the Minnesota Pollution Control Agency.



City of Oak Park Heights

TPC The Planning Company

Stantec

- City Limits
- Open Water
- Seasonally Flooded Basin or Flat
- Shallow Marsh
- Deep Marsh
- Wet Meadow
- Shrub Swamp
- Wooded Swamps
- Bogs
- Industrial/Municipal Water Regime
- FEMA Floodplain

N

0 0.3 0.6 Miles

City of Oak Park Heights
Comprehensive Plan

Natural Environment Features Map

Source: The City of Oak Park Heights, The Planning Company, & Stantec

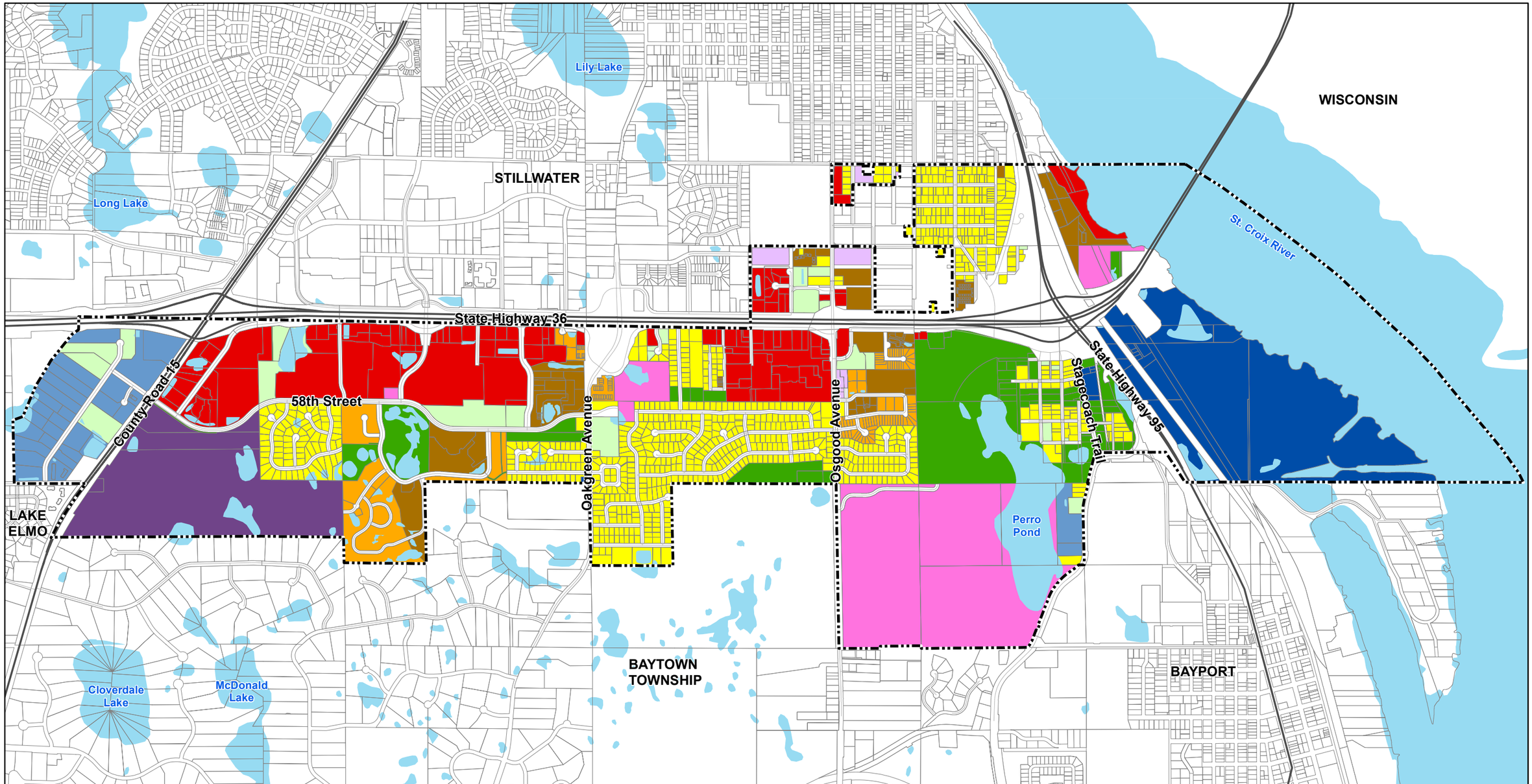
August 2019

DEVELOPMENT PATTERNS

The development patterns of land use in the City of Oak Park Heights are clearly established by the influence of both man-made and natural environmental features. The most significant influences have been Highway 36 and the power line easement/lines from the Allen S. King power generating facility. Development patterns in Oak Park Heights and other jurisdictions have also influenced the east-west orientation of the community along Highway 36. The highways, in particular Highways 36, 15, and 95 function as physical barriers, but also the primary connections for Oak Park Heights to the region. The highways have also significantly influenced the location of commercial development in the community.

The easterly portion of the community is almost completely developed. In coming years, there will not be significant changes other than specific redevelopment in the commercial areas. To the west of Oakgreen Avenue, there are undeveloped commercial areas both for retail/office and business/warehouse uses. It is expected that these areas will be completely developed in the next five to ten years. Other than what is currently in development, there are no significant parcels of residential land available for development in the City. There is one potential area for limited annexation, south of Highway 36 to Manning Avenue. The City will not actively pursue annexation, but work with property owners and adjoining jurisdictions when an owner requests annexation to City services.

The Existing Land Use Map, as found on a following page, graphically illustrates the distribution and variety of land use types in Oak Park Heights. The map was developed in July 2017. An analysis of the breakdown by acreage of land use types follows the Existing Land Use Map.



City of Oak Park Heights

TPC The Planning Company

Stantec

- City Limits
- Low Density Residential
- Medium Density Residential
- High Density Residential
- Quasi-Public Facilities
- School Facilities
- Government Facilities
- Commercial
- Industrial
- Highway Business/Warehouse
- Park Facilities/Open Space
- Vacant
- Right-of-Way
- Open Water

N

0 0.3 0.6 Miles

City of Oak Park Heights Comprehensive Plan

Existing Land Use Map

Source: The City of Oak Park Heights, The Planning Company, & Stantec

August 2019

EXISTING LAND USE ANALYSIS

The City of Oak Park Heights is 2,152 acres in size. The predominant land uses in the City include low density residential (12 percent), commercial (10 percent), and government (9 percent). The next largest land use category is industrial at 8 percent. A relatively small percentage (3 percent) is vacant property, only some of which is developable land. A detailed explanation of each land use category follows the existing land use table.

2017 OAK PARK HEIGHTS EXISTING LAND USE			
Category	Acres	Percent of Total	Percent by Category
Residential Land Uses			
Low Density	265	12%	19%
Medium Density	62	3%	
High Density	80	4%	
Commercial and Industrial			
Commercial	210	10%	21%
Highway Business/Warehouse	74	3%	
Industrial	170	8%	
Other Land Uses			
School Facilities	128	6%	6%
Quasi-Public/Utility	11	0%	
Government	192	9%	9%
Park Facilities/Open Space	142	7%	7%
Water	390	18%	18%
Vacant	56	3%	3%
Right-of-Way	372	17%	17%
TOTAL	2,152	100%	100%
Source: City of Oak Park Heights, Stantec			

RESIDENTIAL

As shown in the previous table, residential land use occupies 19 percent of the total land area in the City. Low density family dwellings are scattered throughout the City. The City's original single-family homes are in the eastern portion of the City. More recent low-density development, however, has occurred in the western and central portions of the City.

Medium density residential development is located primarily in four locations. First, the development east of Osgood Avenue on Upper 56th 57th, and 58th Streets; second, on Oxboro Avenue; third, south of Highway 36, west of Oakgreen Avenue; and within the Boutwells Landing development.

High density residential development is primarily located in six locations. First, in the northeast corner of the City on the St. Croix River, there is a large area of high density residential apartments. Second, there are two high density developments south of Highway 36 and east of Osgood Avenue, and finally, there are two locations north of Highway 36 on both sides of Osgood Avenue and east of Osgood Avenue on Paris Street North. Lastly, the Boutwells Landing development and the Oak Park Senior Living development contain high density buildings.

COMMERCIAL

Existing commercial development presently accounts for 10 percent of the City's total land use. Virtually all of the existing retail and service facilities are clustered along Highway 36. While there is a small scattering of vacant commercial property, the majority of available land for commercial development is located just south of Highway 36 and Krueger Lane.

INDUSTRIAL/BUSINESS WAREHOUSE

Industrial/business warehouse land uses in Oak Park Heights total 244 acres or 11 percent of the total land area in the City. Virtually all of this acreage is attributed to the Xcel Power Plant located on the St. Croix River. Two smaller industrial areas or business warehousing/highway business areas are located on County Road 21 near the southern border of the City, and the Kern Center west of County Highway 15. There are no parcels available for future industrial development. The only area available for additional business warehouse development is in the Kern Center at 58th Street and County Highway 15.

GOVERNMENTAL FACILITIES

A significant amount of land within Oak Park Heights is devoted to governmental facilities which encompass 192 acres or 9 percent of the City's total land area. Governmental facilities include the St. Croix Valley Sewage Treatment Plant, the State of Minnesota Correctional Facility, City Hall, and the water tower site at Norell Avenue and 58th Street North.

SCHOOL FACILITIES

Oak Park Heights is the home to the Stillwater Area High School. The campus is 128 acres or 7 percent of the total land area.

PARKS/OPEN SPACE

The City parks are separately classified in the Land Use Table. These areas encompass 142 acres or 7 percent of the City's total land area.

VACANT/UNDEVELOPED

The vacant/undeveloped land identified on the Existing Land Use Map and the Land Use Table includes that which has not been developed, permanent open space, or that which has been subdivided for development, but remains vacant. It totals 56 acres or 3 percent of the total land area in Oak Park Heights. The immediacy of the prospects for development on these parcels varies considerably and are closely tied to the current climate in the housing market, commercial development interest, and other variables.

PHYSICAL BARRIERS

Natural features such as lakes, streams, and wetlands, as well as constructed features such as highways, utility lines, or existing development, often act to contain land use and restrict access. From another perspective, many of the natural features such as lakes, wetlands, trees, or topography can be used to positively enhance a community and its housing and business areas. Physical barriers within Oak Park Heights include the river, wetland areas, Highways 36 and 95, County Highway 15, and the utility line connections.

The impact of physical barriers may be seen as having both positive and negative aspects. On the positive side, barriers serve to define cohesive areas and to lend structure to the arrangement of land uses, often separating uses which would otherwise generate conflict. On the negative side, barriers may artificially constrain development, and in separating developed areas, produce problems of access and circulation between related land uses. The physical barriers within Oak Park Heights are seen primarily as restricting access from north to south or east to west within the City. These physical barriers can be overcome with improvements to the transportation system, both by car, pedestrian and bicycle.

LAND USE CONTROLS

Land uses within Oak Park Heights are presently governed by the City Zoning and Subdivision Ordinances. Applications for development and associated plans are reviewed by City staff and submitted to the Planning Commission and City Council for review and approval.

The table below indicates the breakdown of existing zoning districts and the acreages currently devoted to each within the City. Acreages for water and right-of-way have not been included. On a following page, the Zoning Map illustrates the arrangement of each zoning district in Oak Park Heights, showing only those districts currently within the City.

2017 OAK PARK HEIGHTS TOTAL ZONING BREAKDOWN			
Category	Acres	Percent of Total	Percent by Category
R-1, Single Family Residential	238	16%	25%
R-1A, Single Family Residential	0	0%	
R-1B, Single Family Residential	0	0%	
R-1C, Single Family Residential	0	0%	
R-2, Low and Medium Density Residential	71	5%	
R-3, Multiple Family Residential	50	3%	
R-B, Residential Business Transitional	29	2%	
B-1, Neighborhood Business	0	0%	22%
B-2, General Business	161	10%	
B-3, Highway Business and Warehouse	88	6%	
B-4, Limited Business	71	5%	
B-W, Business/Warehousing	4	0%	
I-1, Industrial	250	16%	16%
O, Open Space Conservation	392	26%	26%
P-I, Public/Institutional	0	0%	0%
PUD – Commercial	23	1%	4%
PUD - Residential	45	3%	
Parks	104	7%	7%
TOTAL	1,525	100%	100%
Source: City of Oak Park Heights, Stantec			

The following paragraphs summarize the districts of the Zoning Ordinance and how they are applied in the City. The Zoning Map is found following these descriptions.

O, Open Space Conservation District

The O, Open Space Conservation District is intended to provide a district which will allow suitable areas of the City to be retained and utilized for open space, agricultural uses and provide a "holding" zone for newly annexed lands to ensure that development will be staged to maintain reasonable economy in public expenditures for public utilities and service. The district allows farming, nurseries, tree farms, green houses, and very low density single family dwellings as a permitted use.

R-1, Single Family Residential District

The purpose of the R-1, Single Family District is to provide for low density single family detached residential dwelling units and directly related, complementary uses. The district is the primary single-family district in the community. The district allows single family residential uses and recreational uses as permitted and schools, places of worship, and bed and breakfast facilities as conditional.

R-1A, R-1B, R-1C, Single Family Residential District

These districts allow for the same permitted and conditional uses as the R-1 District, but at different densities. There are no areas in the community currently zoned R-1A, R-1B, or R-1C.

R-2, Low and Medium Density Residential District

The purpose of the R-2, Low and Medium Density Residential District is to provide for low to moderate density residential dwellings and directly related, complementary uses. Single and two-family units are allowed as permitted uses, townhomes, condominiums, and multiple family dwelling structures with not more than four units are allowed as conditional.

R-3, Multiple Family Residential District

The purpose of the R-3, Multiple Family Residential District is to provide for medium to high density housing in multiple family structures and directly related, complementary uses. Multiple family structures are a permitted use and private marina and boat storage facilities, as well as other uses specified in previous districts, are conditional.

R-B, Residential Business Transitional District

The purpose of the R-B, Residential Business Transitional District is to provide for high density residential use and for the transition in land use from residential to low intensity business allowing for the intermixing of such uses. In the R-B District, multiple family dwellings are listed as permitted uses and limited office use, nursing homes, elderly and group housing, limited retail uses, and limited warehousing activities are conditional.

B-1, Neighborhood Business District

The purpose of the B-1, Neighborhood Business District is to provide for the establishment of local centers for convenient, limited office, retail or service outlets which deal directly with the customer for whom the goods or services are furnished. These centers are to provide services and goods only for the surrounding neighborhoods and are not intended to draw customers from the entire community. Barber shops, beauty parlors, convenience grocery stores, and laundromats are limited permitted uses. Conditional uses include governmental and public utility buildings, as well as professional and commercial offices.

B-2, General Business District

The purpose of the B-2, General Business District is to provide for high intensity, retail or service outlets which deal directly with the customer for whom the goods or services are furnished. The uses allowed in this district are to provide goods and services on a community market scale and located in areas which are well served by collector or arterial street facilities. A significant portion of the commercial uses in Oak Park Heights are zoned B-2 District. The district allows a full range of retail and commercial services as permitted. Open and outdoor sales and service, drive throughs, automotive related uses such as car washes, motor fuel stations and auto repair as listed conditional uses.

B-3, Highway Business and Warehousing District

The purpose of the B-3, Highway Business and Warehousing District is to provide for the establishment of retail and wholesale sales, storage, warehousing and limited manufacturing and production. The overall character of the B-3 District is intended to be transitional in nature, thus uses allowed within this district shall be limited to those which can compatibly exist adjacent to commercial and lower intensity activities. The B-3 District allows a wide variety of commercial uses. Restaurants, auto service centers, vehicle dealerships, mini storage, animal clinics, landscape sales and certain educational facilities are allowed as conditional.

B-4, Limited Business District

The purpose of the B-4, Limited Business District is to provide a district accommodating retail sales, service and office functions in a highly planned and coordinated area. The uses allowed in this district are similar to but not as extensive, especially as it relates to automotive vehicle sales and service, as the B-2, General Business District. Retail and commercial uses are permitted while drive-in restaurants, minor auto repair, open and outdoor storage, sales and service, and two family, townhomes and multiple family dwellings are conditional.

B-W, Business/Warehousing District

The purpose of the B-W, Business/Warehousing District is to provide for the establishment of wholesale and retail trade of large volume or bulk commercial items, storage and warehousing. The overall character of the B-4 District is intended to be transitional in nature, thus industrial uses allowed within this district shall be limited to those which can compatibly exist adjacent to commercial and lower intensity activities. Commercial and professional offices, printing establishments, conference centers, indoor commercial recreation and wholesale showrooms are permitted, while open and outdoor storage, services, sales and rental, and manufacturing are listed conditional uses.

I, Industrial District

The purpose of the I, Industrial District is to provide for the establishment of warehousing and industrial development. General industrial uses such as storage and warehousing, manufacturing power generation plants, and wholesale business and office establishments are listed permitted uses. Conditional uses include open and outdoor storage as an accessory use.

P-I, Public-Institutional District

The P-I District is intended to provide a specific zoning district for facilities directed to serving the public and specialized government and semi-public uses. It is unique in that the primary objective of uses within this district is the provision of services, frequently on a non-profit basis, rather than the sale of goods or services. It is intended that uses within such a district will be compatible with adjoining development and they will be located on or in proximity to a collector street or arterial street. The district permitted uses include government buildings, parks and recreational facilities while schools, places of worship, hospitals, correctional facilities, nursing homes, cemeteries, and limited retail are conditional. The City has established the P-I District in the Zoning Ordinance but has not zoned property to this district.

PUD, Planned Unit Development District

The purpose of the PUD, Planned Unit Development District is to provide for the integration and coordination of land parcels as well as the combination of varying types of residential, commercial and industrial uses. The City has a limited number of areas zoned PUD. Most development is zoned residential or commercial and is applied with a PUD to allow for mixed use and multiple structures on one parcel.

River Impact District

The River Impact District is established to provide necessary protection to lands which fall within the designated regional floodplain and Lower St. Croix National Scenic Riverway area as defined by Minnesota Department of Natural Resources regulations. This district shall include all lands lying riverward from the Chicago, Milwaukee, St. Paul and Pacific Railroad right-of-way. Application of district regulations shall be imposed as an overlay upon currently applied zoning use districts.

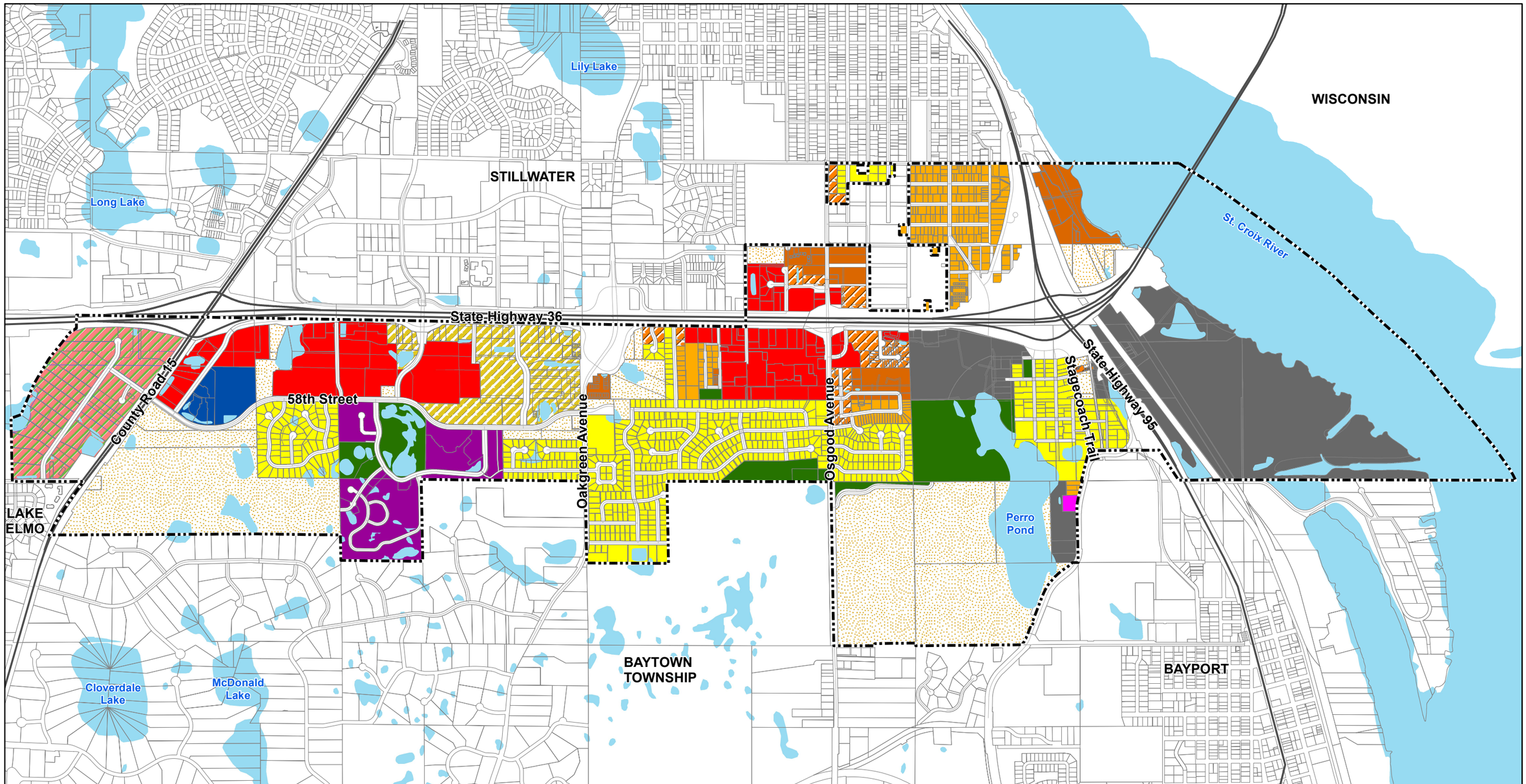
ZONING DISTRICT AREA WIDTH SETBACK AND BUILDING REGULATIONS

The specific requirements for each of the zoning districts is found on the following page. The complete lot area and width, setbacks, building height and other zoning regulations are found in the General Provisions section of the Zoning Ordinance. A copy of the Zoning Ordinance is on file at City Hall.

The table, as follows, summarizes all of the established zoning districts along with their minimum lot area, width, setbacks, lot coverage and other standards. It is intended as a general reference source.

OAK PARK HEIGHTS SUMMARY OF ZONING DISTRICT CLASSIFICATIONS AND REQUIREMENTS								
Zoning District	District Classification	Minimum Lot Size	Minimum Lot Width (interior)	Setbacks				Principal Building Height
				F	S-I	S-C	R	
O	Open Space Conservation	5 acres	200 feet	50	30	30	50	35 feet
R-1	Single Family Residential	10,300 sf	80 feet	30	10	30	30	35 feet
R-1A	Single Family Residential	12,500 sf	85 feet	30	10	30	30	35 feet
R-1B	Single Family Residential	15,000 sf	90 feet	30	10	30	30	35 feet
R-1C	Single Family Residential	20,000 sf	100 feet	30	10	30	30	35 feet
R-2	Low and Medium Density Residential	10,400 sf	90 feet	30	10	30	30	35 feet
R-3	Multiple Family Residential	15,000 sf	100 feet	30	20	20	30	35 feet
R-B	Residential Business Transitional	15,000 sf	100 feet	30	10	10	30	35 feet
B-1	Neighborhood Business	15,000 sf	100 feet	30	20	20	30	35 feet
B-2	General Business	15,000 sf	100 feet	40	10	20	20	35 feet
B-3	Highway Business and Warehousing	15,000 sf	100 feet	40	10	20	20	35 feet
B-4	Limited Business	15,000 sf	100 feet	40	10	20	20	35 feet
B-W	Business/Warehousing	30,000 sf	100 feet	50	20	50	20	35 feet
I	Industrial	1 acre	100 feet	50	30	30	40	45 feet
P-I	Public/Institutional	varies	---	varies				45 feet
PUD	Planned Unit Development	---	---	---	---	---	---	---
------	River Impact District	---	---	---	---	---	---	---
Source: City of Oak Park Heights								

F = Front yard setback as measured from the property line
S-I = Side yard setback on interior lots
S-C = Side yard setback on corner lots
R = Rear yard setback



City of Oak Park Heights

TPC The Planning Company

Stantec

- City Limits
- R-1, Single Family Residential
- R-2, Low & Medium Density Residential
- R-3, Multiple Family Residential
- R-B, Residential/Business Transitional
- B-2, General Business
- B-3, Highway Business and Warehouse
- B-4, Limited Business District
- B-W, Business/Warehouse
- I, Industrial
- Open Space Conservation
- Open Space Conservation (Existing Parks)
- PUD, Commercial Planned Unit Development
- PUD, Residential Planned Unit Development

N

0 0.3 0.6 Miles

City of Oak Park Heights Comprehensive Plan

Zoning Map

Source: The City of Oak Park Heights, The Planning Company, & Stantec

August 2019

INTRODUCTION

The value of a Comprehensive Plan for Oak Park Heights is only partially found in the plans, maps, and data. Although such information is a critical element of any plan, the changing nature of that information can give a community only a snapshot of its needs or direction. A more comprehensive review of the community and its direction can be found through its adopted goals and policies.

The goals and policies do not provide information on the timelines and priorities needed for development or community improvements. Instead, it provides a series of criteria which can be used to direct general actions. Furthermore, the policies are not absolute directions for City staff, Planning Commission, or City Council members. Instead, they are guides to assist in decision-making and goal achievement. 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 adoptability of the goals and policies is particularly useful when unanticipated development decisions emerge. It complements the maps, ordinances and City Code which are more static documents. In some instances, policies may not address a new situation in the community. In this case, the goals and policies should be updated or modified. This would give the Comprehensive Plan an up-to-date quality which will withstand the test of time.

For purposes of definition, goals may be described as the ways in which we think about the community – descriptive statements of the ultimate direction we would want to see the City proceed. Policies may be described generally as positions the City will take on a specific issue.

NATURAL ENVIRONMENT

Natural resources are of prime importance to the community. In addition to serving as aesthetic amenities which enhance the quality of life in the area, natural areas often perform important ecological roles.

These natural features can serve as buffers or barriers in determining the extent and direction of development and growth. Therefore, it is necessary that special consideration be given to natural features and systems in formulating Oak Park Heights' Comprehensive Plan. Environmentally sensitive areas include those characterized by waterbodies, floodplain, steep slopes, vegetation, soil limitations, and wetlands. The City

has expressed an interest in the preservation and enhancement of these features within the City limits.

WETLANDS, LAKES AND STREAMS AND GROUND WATER

Goal: Preserving the water resources of the St. Croix River and existing wetlands and streams is recognized as a high priority in Oak Park Heights.

Policies:

A. Restrict or prohibit development/redevelopment within Oak Park Heights' drainageways, floodplains, wetlands, and other natural features which perform important environmental functions in their natural state.

B. Require all development/redevelopment to manage its on-site storm water generation to ensure no negative impact to downstream flooding or water quality. Assure that the systems are maintained as required in development agreements.

C. Require grading and drainage plans as part of any new residential or commercial development/redevelopment. These plans must illustrate proposed drainage patterns, plans for on-site storm water retention and erosion control.

D. Maintain and update as necessary floodplain, shoreland and wetland regulations to regulate development within these sensitive areas.

E. Incorporate low impact development (LID) principles and practices into design, construction and operation of public projects as feasible.

F. Work with residential and commercial developers to incorporate low impact development practices that protect native vegetation and soils and reduce impervious surface.

TREES, LANDSCAPING AND STREETSCAPING

Goal: Provide continuing and enhanced streetscapes, landscaping as part of development/redevelopment, and protection and preservation of the community's vegetative resources.

Policies:

A. Continue to implement and expand the City's comprehensive streetscaping and landscaping efforts through participation in Tree City USA and development review.

B. As a high priority in the City, preserve and protect existing stands of mature trees.

C. Promote programs designed to protect trees from disease.

D. Require all development/redevelopment proposals to indicate the location, type, and condition of existing vegetation, and preserve existing trees wherever feasible.

E. Require that development/redevelopment projects within the City plant new trees, particularly in areas where existing vegetation is removed.
F. Provide City financial support to the ongoing tree protection, streetscape and landscaping programs.

NATURAL FEATURES

Goal: Ensure preservation and enhancement of slopes and soils in Oak Park Heights through careful development review and approvals.

Policies:
A. In areas of soils that have limitations for development/redevelopment, perform soil testing to identify the soil correction measures necessary to insure safe and quality construction.
B. Require erosion control plans for all site grading to prevent erosion, dust, and soil sedimentation.
C. Restrict or prohibit development/redevelopment on steep slopes. In instances where development on steep slopes is permitted, plans must be provided for grading and erosion control which prevent erosion, dust, and soil sedimentation.

AIR QUALITY AND POLLUTION

Goal: Protection of air quality and ground water and soils, as well as efforts to control noise and light pollution, are important to the community.

Policies:
A. Incorporate State and Federal pollution regulations into local policy as required.
B. Require a ground water monitoring plan or ground water protection plan as part of a permit application for businesses that store, use or transport hazardous materials and for properties formerly used as a waste disposal site or waste transit facility. Where available, use well head protection plans to assist with this process.
C. Assure coordination with other adjoining jurisdictions for ground water sensitive areas, well head protection areas, water use contingency and allocation plans, and other ground water issues where plans may affect other jurisdictions.

RECYCLING AND SOLID WASTE REDUCTION

Goal: Encourage recycling programs and solid waste reduction initiatives.

Policies:

A. Recycling programs which conserve natural resources shall be continued and promoted.

B. Oak Park Heights shall encourage enhanced waste reduction/separation practices to improve solid waste management.

C. Residential and commercial generators of solid waste shall be encouraged to act voluntarily to evaluate their use of energy and raw materials and to reduce consumption where technically and economically feasible.

SUSTAINABLE DEVELOPMENT

Goal 1: Create a sustainable community that provides balance between a growing economy, protection for the environment and social responsibility to enhance the quality of life while preserving the same for future generations.

Policies:

A. Promote the use of sustainable design practices during all phases of development including design, deconstruction, construction, and building operation and maintenance.

B. Promote national, regional and state sustainable building design programs including utility-sponsored renewable energy and conservation programs.

Goal 2: Create a livable community where development incorporates sustainable design elements such as resource and energy conservation and use of renewable energy.

Policies:

A. Encourage energy and resource conservation strategies to limit the effects of climate change, including decreased use of fossil fuels and shift to renewable energy resources.

B. Promote the use of renewable energy, including solar energy, in new residential and commercial developments.

C. Review the potential for use of renewable energy, including solar energy, in all new public buildings.

D. Consider varying setback requirements within PUD's in all residential and commercial zoning districts as a means of protecting solar access.

E. Implement alternative energy regulations including solar, wind energy, geothermal and biomass requirements in the Zoning Ordinance.

Goal 3: Protect and enhance air quality and reduce the emission of greenhouse gases and control of climate change locally and globally.

Policies:

A. Encourage alternative transportation by providing trails and encouraging transit opportunities. Continue expanding the trail system by implementing the Park and Trail System Plan.

B. Educate and inform businesses and residents about opportunities and incentives to increase the utilization of renewable energy sources such as solar, wind, geothermal, and biomass.

C. Improve the City's environmental performance by setting targets, using innovative approaches, encouraging employees to conserve resources and improving on the existing recycling program as an example to residents and business owners.

D. Support and encourage community efforts in environmental awareness and education through the use of the City web site, programs, newsletters and the media.

Goal 4: Reduce waste stream toxicity and amount; minimize generation of hazardous waste and increase reuse, recycling, composting and purchasing of environmentally preferred products with minimal or no packaging.

Policies:

A. Support and encourage community efforts in environmental awareness and education.

B. Support waste reduction activities including recycling, reuse, and composting through policies and educational outreach opportunities for citizens and businesses.

C. Emphasize the importance of directing waste that cannot be reused, recycled, or composted to facilities that recover some of the energy value in garbage with use of landfills as the last alternative.

D. Continue to provide and encourage curbside recycling of reusable waste materials through educational events, promotional materials and volunteer efforts.

LAND USE

Land use goals create a vehicle by which the community can determine, organize and define the character and intensity of development and redevelopment in Oak Park Heights. The policies will guide proposed land use through the stages of growth and change planned for the community. Related to land use, the protection of the natural environment is of major importance to Oak Park Heights and the surrounding area. The focus for land use in the City will be the continual development infill of residential, commercial and industrial areas. Redevelopment, especially in commercial areas along the Highway 36 corridor, will also be a priority in the next 20 years.

GENERAL LAND USE

Goal 1: Provide for responsible and orderly expansion of the City's land area as requested by property owners and agreed to by the affected jurisdiction.

Policies:

A. The City, in planning for future land use, transportation/community facilities or utility extensions, may include areas not within its municipal boundaries. This planning is done in anticipation of demand for services to accommodate future urban growth.

B. The City shall extend utility service to only those areas that are within the City, annexed to the City or part of an orderly annexation agreement.

C. The City should consider annexation only if requested by the property owner and agreed to by the affected jurisdiction.

D. The City shall plan its utility, service and street extensions to accommodate long term growth and expansion in the community.

E. The City will work to achieve cooperation in annexation requests by discussing annexation issues with adjacent townships and municipalities.

F. Orderly annexation will be considered in order to identify boundaries and target years for areas eligible for orderly annexation.

Goal 2: A cohesive land use pattern which ensures compatibility and strong functional relationships among activities is to be implemented.

Policies:

A. 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.).

B. Examine requested land use changes in relation to adjoining land uses, site accessibility, utility availability, and consistency with the Oak Park Heights Comprehensive Plan and policies.
C. Attempt to make 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.
D. Infill development of compatible land uses shall be strongly encouraged.
E. Where practical, conflicting and non-complementary uses shall be eliminated through removal and relocation.
F. Encourage the development and redevelopment of under-utilized and substandard property throughout the City.

Goal 3: The preservation, protection and continued use of areas, buildings, and structures that have historic, aesthetic or community values is of benefit to Oak Park Heights.

Policies:
A. Where practical, safeguard the heritage of the City by preserving sites and structures that reflect elements of the City's cultural, political, economic, visual or architectural history.
B. Foster community identity and civic pride by promoting the preservation and continued use of historic sites and structures for the education and general welfare of the people of Oak Park Heights.

HISTORIC PRESERVATION

Goal: The preservation, protection and continued use of areas, buildings, structures and other objects that have historic, aesthetic or community values is a benefit to the welfare and education of the City of Oak Park Heights.

Policies:
A. Safeguard the heritage of the City by preserving sites and structures that reflect elements of the City's cultural, political, economic, visual or architectural history; evaluate and establish historic districts.
B. Promote the preservation and continued use of historic sites and structures for the education and general welfare of the people of Oak Park Heights.
C. Foster community identity and civic pride by protecting historical area, structures or accomplishments of the past.

RESIDENTIAL LAND USE

Goal 1: Provide a variety of housing types, styles and values to meet the needs of the community and the changing demographics of the City and region through new development and redevelopment.

Policies:

A. Encourage design and planning innovations in housing units and land development.

B. Recognize the development of townhouses, condominiums and non-traditional home types to supplement existing conventional single-family homes, and apartments, giving due consideration to local market demands.

C. Attempt to provide housing opportunities which attract persons of all ages and income levels and which allow them the ability to maintain residence within Oak Park Heights throughout the various stages of their lives.

D. Allow the development of additional owner and renter occupied affordable housing units on a case-by-case basis to achieve established housing goals.

E. Encourage development of housing options to meet the needs of all segments of the population, including the disabled, and senior living options through life cycle housing.

F. Housing units identified as substandard for safe occupancy shall be rehabilitated, replaced, or developed with an appropriate guided land use, wherever possible.

Goal 2: Maintain and enhance the strong character of Oak Park Heights' single family residential neighborhoods.

Policies:

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

B. Pursue the redevelopment of substandard single-family homes when it is judged not economically feasible to correct the deficiencies.

C. Encourage single family home rehabilitation programs through the City.

Goal 3: Promote multiple family housing alternatives as an alternative life cycle housing option.

Policies:

A. Consider the redevelopment of substandard multiple family properties that display deteriorated building conditions, no site amenities, poor site design, or incompatible land use patterns.

B. Encourage developers of medium and high-density developments to provide adequate accessory amenities such as garages, parking, open space, landscaping, and recreational facilities to ensure a safe, functional, and desirable living environment.
C. Consider mixed land uses as an alternative land use option in planning and redevelopment of obsolete commercial, industrial, or residential areas.
D. Avoid concentrations of multiple family dwellings and apartments in the City. Locate such housing within appropriately designated zoning districts and in proximity to areas which offer a wide range of existing supportive services, commercial and recreational facilities.

COMMERCIAL LAND USE

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

Policies:
A. Encourage communication with local business people to gain an understanding of the changing needs of the business environment.
B. Promote a full and broad range of office, service, retail, and entertainment uses within the commercial areas of Oak Park Heights.
C. Attract new businesses to Oak Park Heights that will contribute to the customer attraction and business interchange of the local commercial areas.
D. Promote the redevelopment and expansion of existing businesses within the City to obtain a higher level of sales and business attraction.

Goal 2: Promote continued development, investment and enhancements in the commercial areas.

Policies:
A. Promote a mixed-use environment within the commercial areas consisting of retail, office, and service land uses.
B. Encourage a combination of public and private investment in the commercial areas for public improvements and building redevelopment.
C. Address parking issues and review supply and demand, signage and education programs for better parking-utilization.
D. Update architectural design guidelines as necessary to guide the commercial areas' development and redevelopment.

E. Substandard residential and commercial properties shall be rehabilitated, replaced or redeveloped in conformance with the land use plan.

Goal 3: Encourage continued development and redevelopment activities along the City's highway corridors.

Policies:
A. Encourage private and continued City investment in the Highway 36 corridor.
B. Encourage investment in rehabilitation and redevelopment of substandard properties along the highway corridors.
C. Ensure that all service and commercial uses are adequately screened or buffered from any adjacent residential development.
D. Commercial and service areas should provide safe and convenient pedestrian movement, including access for persons with disabilities.

BUSINESS/WAREHOUSE/INDUSTRIAL LAND USE

Goal 1: Retain Oak Park Heights' existing business/warehouse and industrial land uses to ensure a diverse tax base and local employment opportunities.

Policies:
A. The City will continue its efforts in retaining and attracting new businesses for new development and redevelopment.
B. The City will work with Xcel Energy on issues related to the Allan S. King Power Plant and its potential closing, as well as transmission lines and substations within Oak Park Heights.

Goal 2: Maintain a high standard of business/warehouse and industrial development including appearance of sites, buildings and outside storage areas.

Policies:
A. Encourage site upkeep and maintenance to promote a positive business/ warehouse and industrial and commercial image for Oak Park Heights.
B. Promote high quality business/warehouse and industrial construction to ensure building durability and an aesthetically attractive appearance.
C. Existing and new business/warehouse and industrial development shall not cause pollutants or contaminants to be emitted into the surrounding environment

(including air, soils, ground water, drainageways, sanitary sewer and storm sewer) in excess of state and federal regulations.

INSTITUTIONAL LAND USE

Goal 1: Cooperate with existing and expanding institutional facilities to ensure compatibility and a high level of design.

Policies:

A. Transitions between differing types of land uses must be done in an orderly fashion while minimizing impacts on adjoining development.

B. All institutional development proposals must be analyzed to determine the most appropriate land uses within a neighborhood and the community as a whole.

C. Adequately screen, landscape and buffer institutional facilities to minimize the impact on surrounding uses and enhance the neighborhood and community in which they are located.

INTRODUCTION

Based upon the foundation established by the Physical Profile and the Goals and Policies, this section provides the framework to guide community growth and improvements. The Land Use Plan is a narrative and graphic description that provides the background and rationale for land use designations as represented on the Proposed 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 of Oak Park Heights should take place. Although the emphasis of this section is on land development, other areas such as transportation, community service and facility needs are also addressed.

The Land Use Plan is divided into two main categories. The first section describes the basis for Oak Park Heights' community plan, including population projections as well as how the natural features of the area will be protected. The second section describes general land use plan elements, including a discussion of the Proposed Land Use Map and review of residential, commercial, industrial, and institutional development.

BASIS OF THE COMMUNITY PLAN

The major planning objective of Oak Park Heights is to establish and maintain attractive, high quality living and working environments for community residents. In providing for these environments, the City recognizes the necessity of providing utilities and services that are demanded with urban development. Through the comprehensive planning process, the City has the ability to direct and focus development in a pattern that maximizes the utilization of existing utilities and services. This type of land use management assists the community in regulating and budgeting for investment in future public utilities, streets, and service needs.

With limited vacant land, it is likely that the City will be almost completely developed by 2025. Small parcels of residential property scattered throughout the community will be infilled with single family and townhome development. Commercial areas along Highways 36 and 15, west of Oakgreen Avenue, will also be completely filled in. Redevelopment activities will likely focus on commercial areas east of Oakgreen along the Highway 36 corridor. Based upon this premise, the focus of the land use, transportation, community facilities/administrative sections of this Comprehensive Plan will be on redevelopment, infill and maintenance of the community.

PROJECTED GROWTH

Population and Households

The City of Oak Park Heights has had steady population growth. The expanding residential and commercial sectors as well as the attractiveness of the community in its location in the St. Croix River Valley has resulted in a steady population growth. Household and population growth of the community from 1980 to 2016 is found in the following table.

OAK PARK HEIGHTS HOUSEHOLD AND POPULATION GROWTH					
	1980	**1990**	**2,000**	**2010**	**2016**
Population	2,591	3,486	3,957	4,445	4,712
Households	955	1,322	1,528	1,911	2,199
Household Size	2.71	2.63	2.26	2.05	1.93
Source: U.S. Census, Metropolitan Council					

The numbers above reflect the national and state trends of smaller household size. With limited residential available, the expected population will continue to grow but at a much slower rate.

Population, Household and Employment Projections

The Metropolitan Council, in its Thrive MSP 2040 Plan, has projected population, household and employment forecasts. These forecasts are accepted by the City as the basis for growth through 2040.

OAK PARK HEIGHTS POPULATION, HOUSEHOLDS AND EMPLOYMENT PROJECTIONS					
	2010 Census	**2017**	**2020**	**2030**	**2040**
Population	4,445	4,742	4,880	5,300	5,700
Households	1,911	2,257	2,200	2,420	2,600
Employment	4,358	4,494	4,600	5,100	5,500
Source: U.S. Census, Metropolitan Council					

As indicated above, the Metropolitan Council projects that the population of the City will exceed 5,000 persons between 2020 and 2030. With recent senior housing developments, Oak Park Heights projects that the City will reach 5,000 persons before 2020. Once the City nears 5,500 to 5,700 people, the population will likely level off. With no additional residential land available, it is expected the City's population will likely stabilize between 5,500 and 5,700 people. The household projections show a steady

increase to 2,600 by the year 2040. The increase in households versus the stable population levels is due to the ongoing trend of lower household size. The City will experience limited infill development which will increase the number of households but likely not to the extent projected by the Metropolitan Council.

Employment numbers are also projected to increase to a total of 4,600 in 2020, 5,100 in 2030, and 5,500 in 2040.

ENVIRONMENTAL PROTECTION AND SUSTAINABILITY

Environment

A variety of benefits are associated with environmental protection in Oak Park Heights. Environmentally sensitive development will create a more aesthetic living and working environment and prevent future public investment needed for clean up or reclamation.

The purpose of the City's environmental regulations and the Zoning Ordinance is to protect the public health, safety, and welfare of the community. The City has adopted floodplain and wetland and stormwater regulations to provide the levels of protection to preserve natural resources.

Environmental awareness and protection should generally address the following in Oak Park Heights:

1. Implement and update, as necessary, environmental regulations such as floodplain, wetland, stormwater, tree preservation regulations for the protection of rivers, natural features, lakes, wetlands, and trees.

2. Direct development throughout the City that is compatible with environmentally sensitive areas.

3. Address stormwater issues in all areas of the City through development and appropriate facilities to hold and treat runoff. Utilize existing wetlands and low areas to the extent possible for stormwater retention.

4. Work with Washington County and the Watershed Districts with ongoing stormwater projects and recycling programs.

5. Utilize Best Management Practices for addressing stormwater runoff and retention.

6. Encourage alternative energy sources such as solar and wind energy in appropriate areas of the City.

7. Extend utilities, as necessary, with annexation to address environmental issues associated with development outside of the City boundaries.

Sustainability

The City of Oak Park Heights has recognized the importance of the conservation and preservation of water, air, energy and other natural resources in order to achieve a more sustainable community. It is recognized that there are four areas in which the City can preserve natural resources and ensure that development recognizes the value of environmental protection. An effective implementation program includes the work of commissions, ordinance updates, permitting and other regulatory mechanisms; design guidelines and performance standards; public education and involvement; and intergovernmental cooperation.

The following implementation items are to be pursed:

1. Implement sustainable development practices into the design, construction and operation of City facilities as feasible.

2. Work with developers to apply sustainable building practices in private sector development and redevelopment. Utilize utility-sponsored renewable energy and conservation programs where possible in development projects.

3. Continue to expand and promote the City sidewalk and trail system to encourage an alternate form of transportation not dependent upon motorized vehicle use.

4. Work with the Metropolitan Council on expanding the transit service to Oak Park Heights and the St Croix Valley area.

5. Work on the development of an environmental awareness program that is designed to educate and inform residents and developers on energy efficiency and utilization of renewable energy sources.
6. Develop a City policy on conservation of energy, to be used at all City facilities and by all employees that can be used as a model for the rest of the community.

7. Continue developing programs for recycling, reuse and composting as well as the education of citizens and businesses on waste reduction.

8. Work with the contracted waste hauler on alternatives to reducing the amount of material that will be land filled.

Solar Access Protection and Alternative Energy Systems

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. Solar access protection is provided for by the uniform implementation of lot and building performance standards adopted as part of the Zoning Ordinance. Requirements such as maximum building height and yard setback standards have been implemented for creating separation between structures and allowing equal sunlight access between structures. Additionally, the City adopted alternative energy system regulations in 2010 to promote and encourage ground source heat pump, wind and solar energy systems.

The map on the following page indicates the gross solar potential for Oak Park Heights. The gross solar potential and gross solar rooftop potential for the City are expressed in megawatt hours per year (Mwh/yr) and are estimates of how much electricity could be generated using existing technology and assumptions on the efficiency of conversion. The solar potential for Oak Park Heights is as follows:

Oak Park Heights Gross Solar Potential and Gross Solar Rooftop Potential			
Gross Potential (Mwh/yr)	**Rooftop Potential (Mwh/yr)**	**Gross Generation Potential (Mwh/yr)**	**Rooftop Generation Potential (Mwh/yr)**
4,484,353	425,301	448,435	42,530
Source: Metropolitan Council			

ANNEXATION

The City's policy toward annexation is consistent with the 2008 Comprehensive Plan. It is recognized, just as it was in 2008, that the City will not aggressively pursue areas of annexation from the Townships or detachment/annexation from one of the adjoining cities.

As part of the planning process, the City has identified one area that potentially could become part of the City in the next 20 years. The property is identified in the Future Annexation Plan, found on a following page. The City would consider this area for annexation if petitioned by the property owners and if the affected jurisdiction was willing to detach the property. The area is at the intersection of Highway 36 and Manning Avenue. The property is recognized as having value for commercial development if utility and street infrastructure are extended by Oak Park Heights but paid for by the developers.

City of Oak Park Heights

TPC The Planning Company

Stantec

City Limits

Gross Solar Potential (Watt-hours per Year)

High : 1286543

Low : 900001

Solar Potential under 900,000 watt-hours per year

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

N

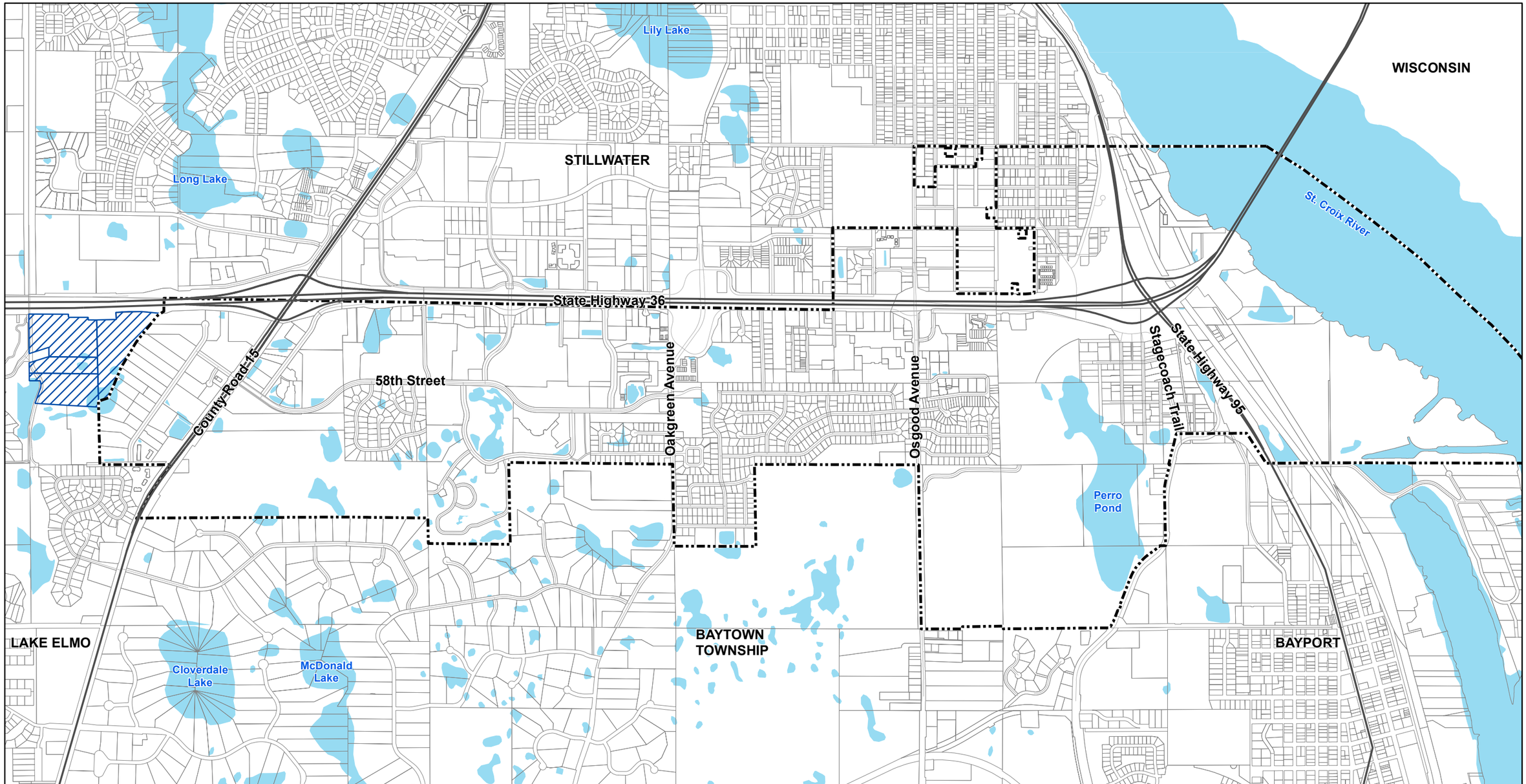
0 0.3 0.6 Miles

City of Oak Park Heights
Comprehensive Plan

Gross Solar Potential

Source: Metropolitan Council, The Planning Company, & Stantec

August 2019



City of Oak Park Heights

TPC The Planning Company

Stantec

City Limits

Possible Annexation Areas

Open Water

N

0 0.3 0.6 Miles

City of Oak Park Heights
Comprehensive Plan

Future Annexation Plan

Source: The City of Oak Park Heights, The Planning Company, & Stantec

August 2019

ALLEN S. KING PLANT

The Xcel Energy - Allen S. King Plant is a 511 mega-watt coal-fired facility that was constructed in 1968 along the St. Croix River on approximately 60 acres. The King Plant underwent a major retrofit in 2004 to reduce emissions. However, like many power plant facilities, the repair and maintenance become expensive for Xcel Energy compared to alternative investment in new technology and facilities to generate the same power at a lesser cost.

Therefore, Xcel Energy plans to close the King Plant by 2028, a decade sooner than originally planned. As part of its clean energy initiative, Xcel Energy also plans to expand wind and solar energy. The company aims to add 1,850 megawatts of wind power by 2022, 3,000 megawatts of solar power by 2030 and a conversion of coal facilities to natural gas such as the Xcel's Sherco facility in Becker, Minnesota.

Why is this important to the City?

Beyond the environmental discussions or base-load capacity elements, it is important to understand that when this power plant was originally constructed in Oak Park Heights, there was a commitment to the local community from Xcel Energy that there would be a significant tax benefit to its residents in exchange for having this facility in the community. While there have been annual fluctuations, this tax benefit remains. Currently, the City receives 33 percent of its annual property tax revenue from the King Plant or approximately 1.7 million dollars.

When the King Plant closes and no longer remains a viable source of tax revenue, the City will have a significant gap in its ability to fund municipal services. Accordingly, the City, like many other communities that host power plants (being coal, nuclear or natural gas) must begin to contemplate about how it would respond when such closure happens.

More specifically, what would happen to the Allen S. King Plant site? How or could the budget gap be addressed without a passage of such costs to others? Will the site have ongoing environmental issues?

1. At this time there are no clear answers to these questions, no plans or reuse contemplated for the current site along the St. Croix River, or how such a closure would unfold.

2. There are significant questions that the City and greater community must begin to consider as this closure will likely have a broad impact in the St. Croix River Valley.

3. The City plans to engage with Xcel Energy, community members, and State and local government partners to begin to explore the issues and opportunities that a potential closure of the King Plant will present.

LAND USE COMPATIBILITY

Land use compatibility concerns exist, primarily in the older sections of the community, and where commercial development is adjacent to residential homes and neighborhoods. High density residential or commercial development adjacent to single family neighborhoods can intensify unwanted activity in the area and impose impacts on parking, traffic and noise that may be uncharacteristic of single-family neighborhoods.

To respond to these land use compatibility concerns, the Comprehensive Plan establishes a policy of screening, landscaping and buffering commercial establishments near or within residential areas to minimize the impact on surrounding uses and enhance the neighborhood and community. The City, through its Comprehensive Plan, may determine that certain businesses should be relocated out of a neighborhood, or a collection of homes no longer functions as a neighborhood and the area would be better suited for higher intensity uses. Such redevelopment efforts are costly and, in most cases, may need to be accomplished with the assistance of the City or its Economic Development Authority. Additionally, the Comprehensive Plan calls for the proper transition between high and low density residential development. The City, through its plan and Zoning Ordinance, shall transition residential development so as not to create negative living environments. Concentration of one type of housing style or density can also create issues for the proper development of neighborhoods.

HISTORIC PRESERVATION

The City has identified two sites deemed historic within the physical profile section of the Land Use Plan. These sites, Phil's Tara Hideaway and the Stillwater Overlook have been recognized as historic in the community. The City will continue to work with the Minnesota Department of Transportation (Mn/DOT) on preservation and maintenance of the overlook on Lookout Trail North. Phil's Tara Hideaway is in use today as a restaurant and bar. The City will work with the property owners to ensure that the original log cabin look is preserved.

Due to the limited number of historic structures and sites, the City does not anticipate the need for a preservation ordinance or establishment of a historic preservation commission.

HOUSING

Residential

The Policy Plan promotes the development of a diversified housing stock which is affordable to a wide range of incomes. The plan also establishes guidelines to protect residential neighborhoods from encroachment or intrusion of incompatible, higher intensity uses through the use of buffers and appropriate land use transitions.

For the most part, Oak Park Heights has followed a traditional residential growth pattern with growth emanating outward from the St. Croix River and Highway 36. As previously indicated, the community is almost completely built out in terms of residential development. The addition of housing units will be through small infill projects.

The table on the following page indicates the total housing units from 1990 to 2016. The number of single-family homes has increased from 1990 and 2016, but as a percentage of the total numbers of units, it has decreased from 47.3 percent to 34.4 percent in 2016. The number of multiple family units has increased significantly, and as a percentage of the total housing units has gone from 38.2 percent to 48.3 percent. This rise in multiple family units has resulted from the development of Boutwells Landing and Oak Park Senior Living that has provided needed housing in the area at all price ranges.

OAK PARK HEIGHTS TOTAL HOUSING UNITS								
	1990	Percent of Total	2000	Percent of Total	2010	Percent of Total	2016	Percent of Total
Single Family Detached	663	47.3	790	49.8	805	38.1	802	34.4
Townhomes Single Family Detached	64	4.5	134	8.5	264	12.5	268	11.5
Duplex, Triplex, Quad	126	9.0	138	8.7	134	6.3	134	5.8
Multiple Family (5 units or more)	535	38.2	525	33.0	912	43.1	1,124	48.3
Other	10	1.0	-	-	-	-	-	
Total	1,398	100%	1,587	100%	2,115	100%	2,328	100%
Source: U.S. Census, Metropolitan Council								

The table as follows indicates the owner occupied, renter occupied and vacant housing. In 1990, the percent of owner-occupied housing was 59.2 percent versus 35.3 percent rental occupied. With the significant increase in senior rental housing, the owner-occupied housing declined to 44.6 percent and the renter occupied housing increased to

46.0 percent of the total. The amount of vacant housing has remained relatively consistent over the past 25 years.

OAK PARK HEIGHTS OWNER OCCUPIED, RENTER OCCUPIED AND VACANT HOUSING								
	1990	Percent of Total	2000	Percent of Total	2010	Percent of Total	2015	Percent of Total
Owner Occupied	828	59.2	1,054	66.7	1,070	52.5	1,031	44.6
Renter Occupied	494	35.3	474	29.9	772	37.9	1,063	46.0
Vacant	76	5.5	53	3.4	197	9.6	218	9.4
Total	1,398	100%	1,581	100%	2,039	100%	2,312	100%
Source: U.S. Census, Metropolitan Council								

The table below indicates the change in median housing value and median gross rent from 1990 to 2015.

OAK PARK HEIGHTS MEDIAN HOUSING VALUE AND MEDIAN GROSS RENT				
	1990	2000	2010	2015
Median Housing Value	$85,300	$148,400	$226,900	$201,700
Median Gross Rent	$482	$614	$950	$1,398
Source: U.S. Census, Metropolitan Council				

The map on the following page indicates the owner-occupied single-family residential housing values. Note that most of the housing is within the $151,500 to $236,000 housing value. The map also indicates the 2018 affordable housing levels based upon Average Medium Income (AMI).

As follows, please find a 2017 inventory of multiple family, condominium, townhouse and duplex units in Oak Park Heights.

2017 OAK PARK HEIGHTS INVENTORY OF MULITPLE FAMILY, CONDOMINIUM, TOWNHOUSE, AND DUPLEX UNITS			
	Name	**Address**	**Number of Units**
Multiple Family (10 units or more)			
	Oakgreen Commons	13936 Lower 59th Street	120
	Presbyterian Homes Care Center	13575 58th Street	108
	Presbyterian Homes	5590 Norwich Parkway	101
	Presbyterian Homes	5610 Norwich Parkway	101
	Ramie Johnson Estates	14830 58th Street	96
	TIC Properties	6060 Oxboro Avenue	86
	Oak Park Associates	6120 Oxboro Avenue	72
	Oakgreen Senior Villas	13945 Upper 58th Street	62
	Oak Park Senior Living	13865 58th Street	62
	Sunnyside Apartments	6120 Oxboro Avenue	59
	Heartland Stillwater	14850 62nd Street	51
	Presbyterian Homes	5450 Nolan Parkway	46
	St. Croix Crossing Apartments	14843-14847 60th Street	45
	Oak Park Senior Apartments	13924 Lower 59th Street	30
	Presbyterian Homes	5350 Nolan Parkway	20
	Presbyterian Homes	5260 Nolan Parkway	12
	Other (Less than 10 units)		60
Condominium (10 units or more)			
	Sunnyside II Homeowners	6351 St. Croix Trail	33
	Fox Hollow East	14937 60th Street	29
	Sunnyside II Homeowners	6375 St. Croix Trail	26
	Other (Less than 10 units		174
Townhouses			
	Total Townhouse Units		225
Duplexes			
	Total Duplex Units		54
Source: City of Oak Park Heights			

Housing Affordability and Needs

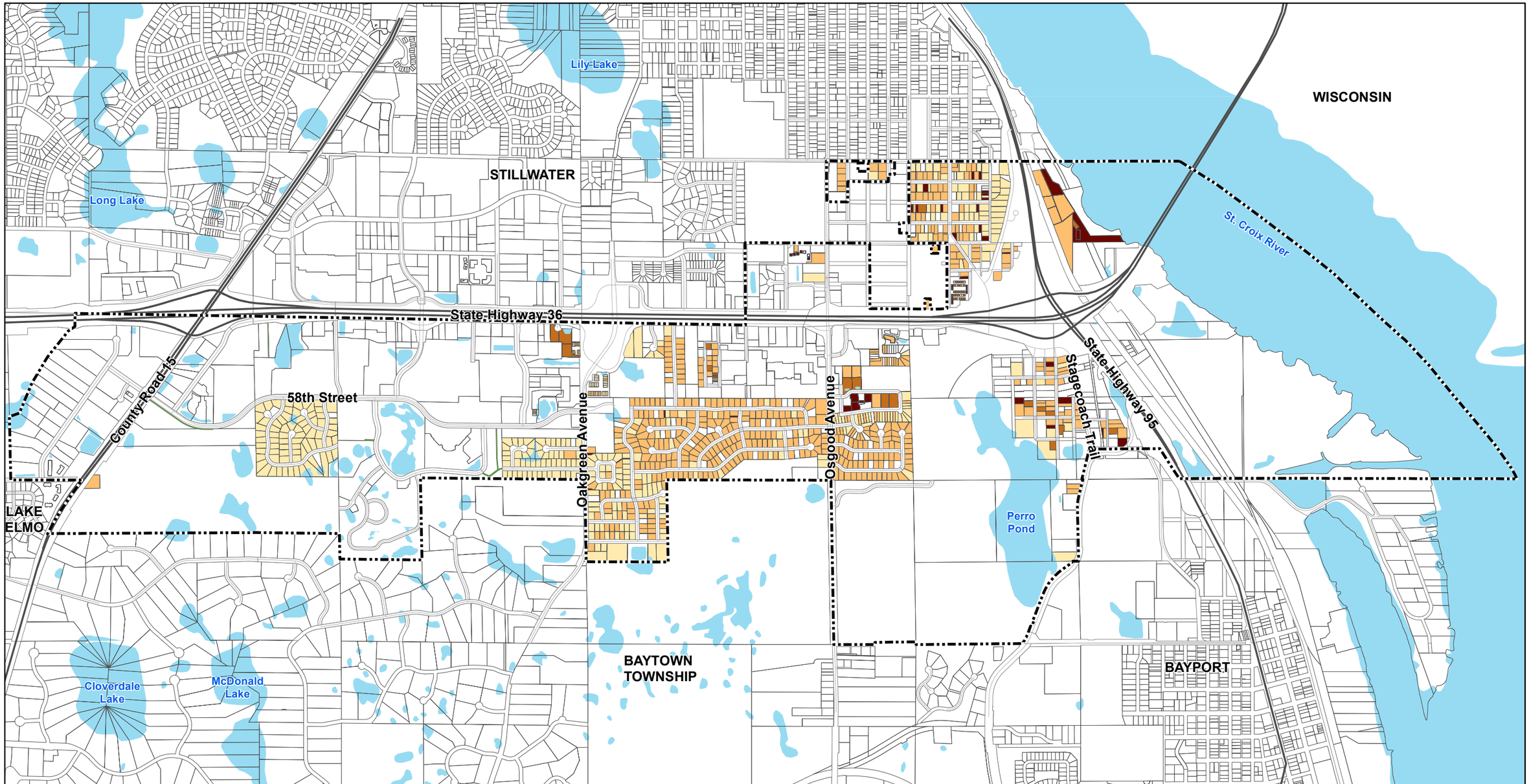
In 1996, the City adopted a Livable Communities Action Plan in conformance with the Metropolitan Livable Communities Act to address housing issues. The housing plan encourages the development and maintenance of affordable and life cycle housing in the City of Oak Park Heights. Additionally, the plan establishes housing goals and policies that are to be implemented by specific programs, initiatives, and actions. Those initiatives are directed specifically to provisions of additional affordable units, housing demand and housing maintenance/rehabilitation. The issues of housing demand and maintenance are addressed below.

The Average Median Income (AMI) is the midpoint of a region's income. Half of households in a region earn more than the median and half earn less than the median. The Metropolitan Council uses these income levels as a way to assess affordability. For example, a housing unit is affordable if a household income is at or below 80 percent of AMI, and the persons of the household can live there without spending more than 30 percent of their income on housing costs. The table below indicates the current affordability levels.

OAK PARK HEIGHTS HOUSING UNITS AFFORDABLE TO HOUSEHOLDS WITH INCOME AT OR BELOW AREA MEDIAN INCOME (AMI) 2016			
	30 percent or below	31 percent to 50 percent	51 percent to 80 percent
Oak Park Heights	245	413	911
Source: Metropolitan Council			

Housing cost burden as reflected by numbers of households spending more than 30 percent of income on housing, is reflected below for homeowners and renters. The City will continue to address this in cooperation with the Washington County CDA to ensure the affordability of housing in the community. A listing of programs related to housing is found in the Implementation Plan.

OAK PARK HEIGHTS HOUSING COST-BURDENED HOUSEHOLDS 2016			
	30 percent or below AMI	31 percent to 50 percent AMI	51 percent to 80 percent AMI
Oak Park Heights	204	262	170
Source: Metropolitan Council			



City of Oak Park Heights

TPC The Planning Company

Stantec

City Limits

Estimated Total Market Value:

- Up to $83,500
- $83,500 to $149,000
- $149,000 to $234,500
- Above $234,500

* Metropolitan Council Affordable Housing Guideline:
2018 Home Ownership

Household Income	Affordable Home Price
30% AMI	$83,500
50% AMI	$149,000
80% AMI	$234,500

N

0 0.3 0.6 Miles

City of Oak Park Heights
Comprehensive Plan

Owner Occupied Single Family Residential Housing Values

Source: Washington County, The Planning Company, & Stantec

August 2019

The numbers of publicly subsidized units in 2016 within Oak Park Heights are as follows:

OAK PARK HEIGHTS PUBLICLY SUBSIDIZED UNITS 2016				
	All Publicly Subsidized Units	Publicly Subsidized Senior Units	Publicly Subsidized Units for People with Disabilities	Publicly Subsidized Units: All Others
Oak Park Heights	70	62	0	8
Source: Metropolitan Council				

The Metropolitan Council has forecasted affordable housing needs for all cities and townships within the Twin Cities Metropolitan Area for the period from 2021 to 2030. The housing plan element of the local comprehensive plan is required to reflect the allocated portion of the forecasted demand for affordable housing. Oak Park Heights' share of this allocation is 74 affordable housing units and will work in the coming decades to achieve this goal. The table below indicates the affordable housing need allocation at or below 30 percent Area Median Income (AMI), from 31 percent to 50 percent AMI, and from 51 percent to 80 percent AMI.

OAK PARK HEIGHTS AFFORDABLE HOUSING NEED ALLOCATION	
At or Below 30 Percent AMI	33
From 31 Percent to 50 Percent AMI	11
From 51 Percent to 80 Percent AMI	30
Total Units	74
Note: AMI = Area Median Income	
Source: Metropolitan Council	

The City of Oak Park Heights remains committed to reaching this initiative. With the continued development of affordable senior housing and other high-density development, it is expected that this goal will be reached. The last phase of the Oak Park Senior Living project at Oakgreen Avenue and 58th Street, will be completed in 2019 and include 72 affordable units. These units are set aside at the 60 percent of Washington County medium income.

The City recognizes that its greatest housing needs are as follows:

1. Continue to work with Senior Housing providers in the area to provide affordable senior housing at all levels.
2. Work to assist homeowners with housing maintenance and rehabilitation to provide a wide range of affordable rental and ownership options
3. Providing the necessary assistance and working with Washington County Community Development Agency (CDA) to provide 74 units of affordable housing from 2021 to 2030 including 33 units affordable at 30 percent AMI or less, 11 units affordable at 31-50 percent AMI and 30 units affordable at 51-80 percent AMI.

Housing Demand/Maintenance/Rehabilitation

With ongoing commercial development and job growth in the St. Croix Valley, the demand for housing will remain strong. This demand will promote the infill development and possible redevelopment expected in the community. Much of the existing housing stock in Oak Park Heights is assessed at less than the market value of new housing in the area. As a result, the community provides a wide range of rental and ownership options for affordable housing.

The City of Oak Park Heights has a role in development of a housing program for the community to address the ongoing need for safe, secure and affordable housing. The City's basic roles of providing adequate/appropriately zoned land and services is critical. The City must also be supportive of the Washington County CDA and its housing programs and funding sources to bring about new construction, redevelopment, and rehabilitation where it will do the most good to improve existing neighborhoods.

Generally, Oak Park Height's housing stock appears to be in good condition, but there are areas in the community where some homes show signs of deterioration and lots have an unsightly appearance and outdoor storage issues. To ensure quality neighborhoods and to maintain property values, the City continues to take steps to improve residential areas exhibiting signs of neglect. The City should consider the formulation and enforcement of housing and ground maintenance regulations with specific attention to building conditions, outdoor storage, and accessory uses.

The community has been and continues to be supportive of rehabilitation programs for existing dwelling units. Rehabilitation programs have been available through the Washington County CDA. The City should continue to promote these programs, consider establishing a local revolving fund for rehabilitation loans emphasizing low interest loans to qualifying households, and to continue enforcement of existing codes and regulations related to home and site maintenance and upkeep. The Implementation section of the Comprehensive Plan discusses in more detail the housing programs that are available.

PROPOSED LAND USE MAP

As indicated, Oak Park Heights is designated as a "Suburban" in the Thrive MSP 2040 regional planning document adopted by the Metropolitan Council in 2014. Under that classification, the overall density expectation is five units per acre. The Proposed Land Use Map on a following page illustrates the 2040 land use for areas within the current boundaries of the City. The map does not vary significantly from the Existing Land Use Map in that the City is almost completely developed. The categories of land use are as follows:

Residential

Low Density Residential

Uses: Allowed uses are limited to single family residential dwellings. This land use category consists of approximately 16 percent of the land area in the City, the largest of the residential categories.

Potential Development: With the current redevelopment at Oak Park Boulevard and Oak Green Avenue North, the single-family Palmer Station development will consist of 13 homes. This one of the last pieces of property in the City that will accommodate Low Density Residential development. Other areas of infill development include a property at Oakgreen Avenue and 58th Street that could accommodate six single family homes, a property at Peller and 57th Street that could accommodate two additional single-family homes and property on 53rd Street that could accommodate two additional single-family homes. These areas are designated as Low Density Residential on the Proposed Land Use Map and identified as development areas.

Density: 1 to 3 units per acre

Medium Density Residential

Uses: Within this land use category, two family dwellings, detached townhouse or row attached townhouse dwelling units are allowed.

Potential Development: There are no new areas planned for medium density development other than what is included as part of the Residential/Business Transitional Areas.

Density: 4-8 units per acre

High Density Residential

Uses: Allowed uses primarily include multiple family dwelling units.

Potential Development: In 2019, the last phase of the Oak Park Senior Living project at Oakgreen Avenue and 58th Street, will be completed and will include 72 units. This is the last area of high-density development other than what is included as part of the Residential/Business Transitional Areas.

Density: 8-14 units per acre

Residential/Business Transitional

Uses: The purpose of this land use designation is to provide for an orderly transition to residential uses adjacent to commercial development nodes that allows for an intermixing of townhouse, medium and high density residential, senior housing and commercial uses. The commercial office uses include retail goods and services as well as office uses.

Potential Development: Residential/Business Transitional development is projected in an area along 58th Street between Norell Avenue and Nova Scotia Avenue. This area designated as Residential/Business on the Proposed Land Use Plan. Development anticipated by the City would include stacked retail/office on one or two floors with senior living or market rate apartments above. This area is owned by Presbyterian Homes and will likely have a senior living component in that it is adjacent to their Boutwell's Landing development. This area consists of 12.33 acres.

Another small area of Residential/Business is along 60th Street, west of Oakgreen Avenue. This area has a potential for a limited stacked high-density redevelopment and consists of 4.02 acres. A third area is on Stagecoach Trail at the south east boundary of the City. It is 12.94 acres and currently a mix of residential and commercial uses. There is a potential for a stacked residential and business component to a redevelopment in this area. These areas are designated as Residential/Business Transitional on the Proposed Land Use Map and identified as development areas.

Density: Mixed use stacked: 8-14 units per acre for multiple family, if senior housing up to 32 units per acre.

Commercial and Industrial

Commercial

Uses: The land use category includes general retail, service or office business with community or regional market areas. The commercial areas are found along the County Road 15 and the State Highway 36 corridors.

Potential Development: Commercial development is limited to smaller areas that are currently vacant including property between 58th Street and 60th Street west of Menards, a former car dealership at Highway 36 and Osgood Avenue, and a property at Osgood Avenue and 59th Street. These areas are designated as Commercial on the Proposed Land Use Map and identified as development areas.

Highway Business/Warehouse

Uses: This land use category includes wholesale and retail trade of large volume or bulk commercial items, storage and warehousing.

Potential Development: Highway Business/Warehouse property is available along Memorial Avenue North, at 58th Street. These properties are identified as development areas and designated as Highway Business on the Proposed Land Use Map. No other new land areas are planned for Highway Business.

Industrial

Uses: The industrial and use includes light/heavy industrial, warehouse and manufacturing facilities. The industrial land uses are found east of State Highway 95 which includes primarily the Xcel Power Plant located on the St. Croix River. One other smaller industrial area is located on County Road 21 near the southern border of the City.

Potential Development: No changes are anticipated in the amount of land used for industrial.

Other Land Uses

School Facilities

Uses: The Stillwater Area High School is the only property in this land use category.

Potential Development: There are no other school facilities planned for the community.

Quasi-Public Facilities

Uses: The Salem Lutheran Cemetery and the First Presbyterian Church on Osgood Avenue are the two land uses in this category.

Potential Development: There are no changes to this land use category planned on the Proposed Land Use Plan.

Government Facilities

Uses: The Oak Park Heights City Hall, the Minnesota Correctional Facility, the Metropolitan Council's St Croix Valley Wastewater Treatment Plant, and the water tower site at Norell Avenue and 58th Street North are the four properties in this land use category.

Potential Development: There are no changes to this land use category planned on the Proposed Land Use Plan.

Park Facilities/Open Space

Uses: This land use category includes the City parks and open space in the community.

Potential Development: No significant changes to the amount of park land is proposed.

PROJECTED LAND USE ACREAGE AND RESIDENTIAL DENSITY

Based upon the Proposed Land Use Map, the City has calculated the projected acreage of land use from 2017 to 2040 in five-year increments. The existing vacant, undeveloped land area in the City as of 2017 is 56 acres although the City has identified an additional 21 acres of land that is underdeveloped with the potential for new construction in the coming decades. Most of the projected development is expected for mid to high density, commercial, and highway business land uses.

As of 2017, there were 254 acres of low density residential, 62 acres of medium density residential, and 80 acres of high-density residential land use. These acreages include only the land area devoted strictly to that use. All of the areas of waterbodies, wetlands, parks and open space, right-of-way, and other undeveloped land has been removed from these totals.

The resulting density in 2017 for each of these land uses is as follows: the low-density residential density is 1-3 units per acre; the medium density residential density is 4-8 units

per acre; and the high-density residential density is 8-14 units per acre. In areas within the Residential/Business Transitional areas, the land use would be mixed use stacked: 8-14 units per acre for multiple family, if senior housing, up to 32 units per acre.

The table on the following page provides the projected land use by category.

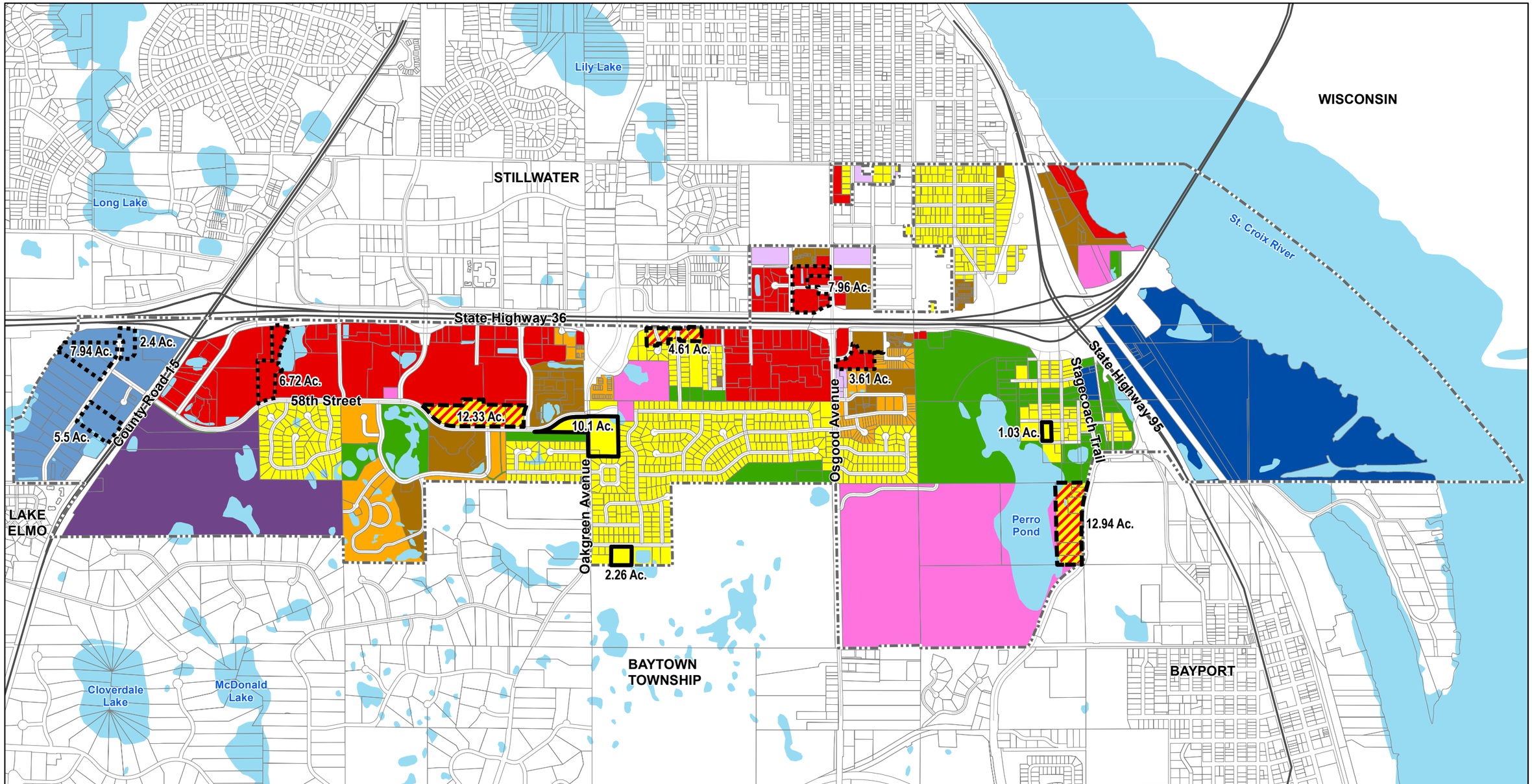
LAND USE TABLE IN FIVE YEAR STAGES							
	Existing Acreage	Proposed Acreage					Change
Category	2017	2020	2025	2030	2035	2040	2017-2040
Residential:							
Low Density (1-3 units/acre)	254	260	266	266	266	266	12
Medium Density (4-8 units/acre)	62	62	62	62	62	62	0
High Density (8-14 units/acre)	80	80	80	80	80	80	0
Residential/Business Transitional (8-32 units/acre)	0	0	13	25	29	29	29
Commercial and Industrial:							
Commercial	205	205	214	222	224	224	19
Highway Business/Warehouse	69	71	76	84	84	84	15
Industrial	170	170	170	170	170	170	0
Other Land Uses:							
School Facilities	128	128	128	128	128	128	0
Quasi-Public Facilities	11	11	11	11	11	11	0
Government	192	192	192	192	192	192	0
Park Facilities/Open Space	142	142	142	142	142	142	0
Water	390	390	390	390	390	390	0
Vacant/Underdeveloped	77	69	36	8	2	2	75
Right of Way	372	372	372	372	372	372	0
TOTAL LAND / WATER AREA	**2,152**	**2,152**	**2,152**	**2,152**	**2,152**	**2,152**	**0**
Note: All residential, commercial and industrial acreage indicated is developable. All waterbodies, wetlands, parks and open space and right if way is shown as other.							
Source: The Planning Company, Inc.							

As indicated in the table above, there are 12 acres of land available for new low-density development and 29 acres of Residential Business Transitional land that will likely accommodate high density residential development or senior housing mixed with commercial projects. The low-density development would have a density of 3 units per acre, and the residential business land would likely be at the higher end of the density range, especially the 12 acres owned by Presbyterian Homes, which could be up to 32 units per acre with a senior development.

There are 12 acres of available land for low density development, but it is not expected that any of this property will be developed to address affordable housing needs. Within the Residential/Business Transitional areas, there are 29 acres of available land for what is expected to be high density residential or senior housing development. A calculation of the housing units in this area is as follows:

OAK PARK HEIGHTS DEVELOPABLE LAND PROJECTION				
Land Use	2021-2040 Estimate Acres for Development of New Units	Projected Dwelling Units/Acre (Midpoint of Density Range)	Percent Anticipated to Develop as Residential	Units
Business/Residential Transitional:				
High Density	17	12	100%	204
Senior Housing	12	20	100%	240
Source: The Planning Company, Inc.				

Within the commercial and highway business/warehouse categories, redevelopment properties and the existing vacant land will be completely developed by 2035. Other small sites will continue to be redeveloped, especially those along the Highway 36 corridor that were originally built when the area was in Baytown Township.



City of Oak Park Heights

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- City Limits
- Low Density Residential Development Areas, 1-3 Units/Acre
- Mid/High Density Residential Development Areas, 8-32 Units/Acre
- Commercial/Highway Business Development Areas
- Low Density Residential
- Medium Density Residential
- High Density Residential
- Residential/Business Transitional (Residential Required)
- Quasi-Public Facilities
- School Facilities
- Government Facilities
- Commercial
- Industrial
- Highway Business/Warehouse
- Park Facilities/Open Space
- Right-of-Way
- Open Water

N

0 0.3 0.6 Miles

City of Oak Park Heights
Comprehensive Plan

Proposed Land Use Map

Source: The City of Oak Park Heights, The Planning Company, & Stantec

August 2019

Transportation

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 users such as automobiles, pedestrians, bicycles, mass transit and trucks.

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 the extension of the community transportation system and undeveloped areas of the City and surrounding areas.

The effect of growth and expansion of the community on the existing roadway systems, especially those limited by existing rail, highway, or river crossings, is also part of the Transportation Plan. Development of all alternative or additional routes in existing and developing areas will also serve to lessen the impacts on the existing systems.

An integral part of the Transportation Plan will be the Comprehensive Park and Trail System Plan. The plan was last updated in 2008. The Comprehensive Plan includes a section entitled Park and Trail Plan that will update the 2008 plan.

ROADWAY AND HIGHWAY NETWORK

The City of Oak Park Heights is connected to and contains a number of transportation modes, all of which contribute to the movement of goods and people throughout the City and region. The significance of these existing and developing networks in terms of economic, social and recreational considerations makes them a central concern for comprehensive planning. The map on the following page indicates the existing network of Township, County, and State highways as they relate to the City of Oak Park Heights.

FUNCTIONAL CLASSIFICATION

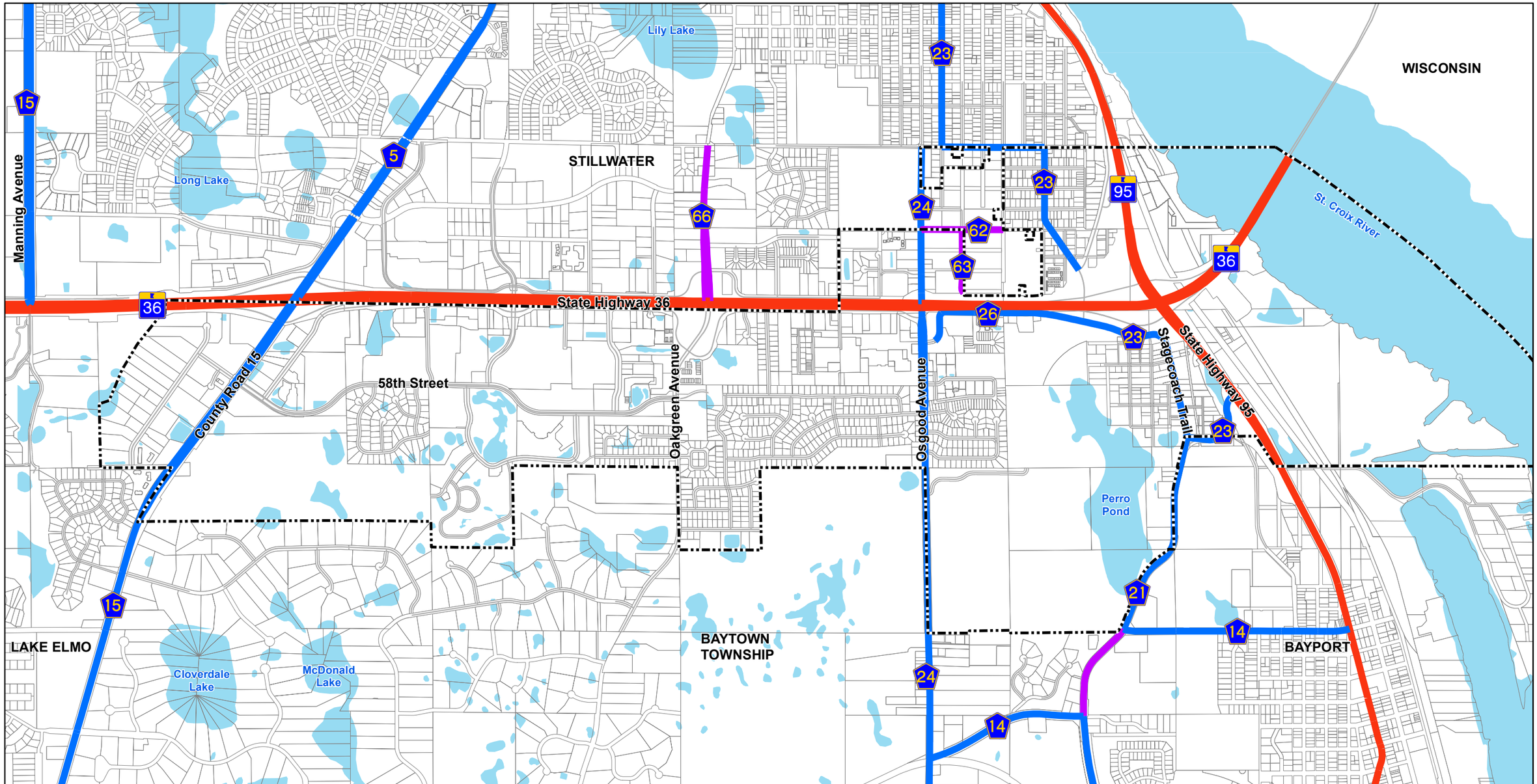
The functional classification system for the City's streets and highways is based on the usage of the roadways. The map on a following page indicates the existing functional classification of the various roadways within the City. A description of the functional classification system and identification of the roadways under each of the categories is as follows. The Transportation Plan Map, found in a later section of this chapter, identifies the future functional classification of roadways.

Principal Arterials

Principal arterials include all interstate freeways and other roadways which connect the region with other areas in the state and other states. The emphasis of a principal arterial is on mobility as opposed to local access. Spacing of principal arterials will vary from two to three miles in a fully developed area. The principal arterial in the City is Highway 36, which currently has two lanes for traffic flow in each direction with signalized left-hand turn lanes at all intersections through the community. Highway 36 is connected to State Highway 64 in Wisconsin via the St. Croix River Crossing that opened in August of 2017. Highway 95 is also a principal arterial north of Highway 36 and has two lanes of traffic in each direction. There are no planned changes in the number of lanes for Highway 36 or Highway 95.

Minor Arterials

Minor arterials connect the urban service area to cities and towns inside and outside the region. They also provide supplementary connections between metro cities and regional business concentrations. The emphasis of minor arterials is on mobility as opposed to access in the urban areas. Minor arterials should connect to principal arterials, other minor arterials, and collectors. The spacing of minor arterials in the metro centers and regional business concentrations will vary from one-fourth to three-fourths mile. All of the A-Minor arterials are one lane of traffic flow in each direction. There are no planned changes in the number of lanes for the minor arterials. The Functional Classification map on a following page shows the minor arterials in the City.



City of Oak Park Heights

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- State Highways
- County State Aid Highways
- County Roads
- Local Street
- City Limits
- Open Water

N

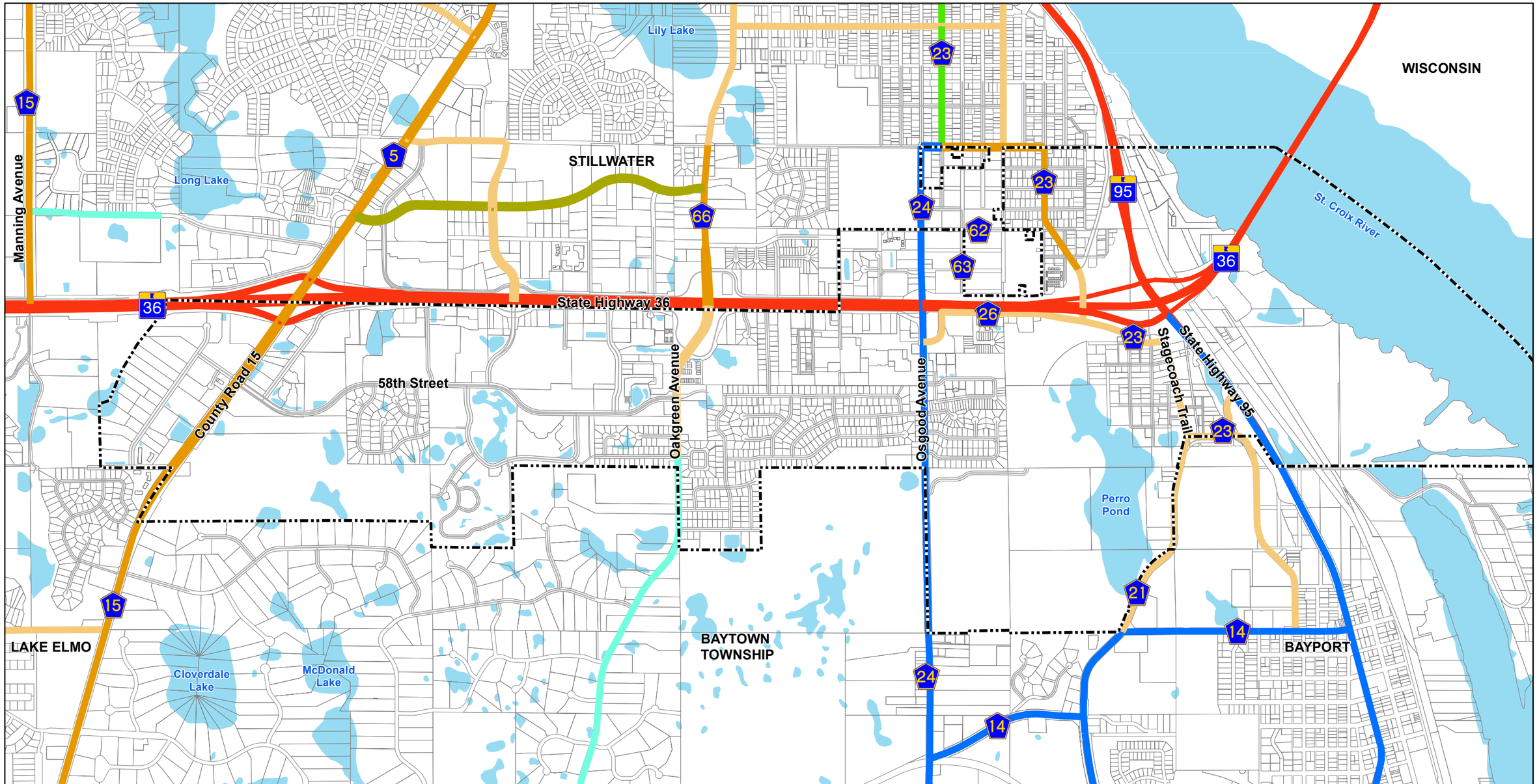
0 0.3 0.6 Miles

City of Oak Park Heights
Comprehensive Plan

Roadway Jurisdictions

Source: The City of Oak Park Heights, The Planning Company, & Stantec

August 2019



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Principal Arterial
A Minor Reliever
A Minor Expander
A Minor Connector
Other Arterials
Major Collector
Minor Collector
Local Street
City Limits

N

0 0.3 0.6 Miles

City of Oak Park Heights
Comprehensive Plan

Functional Classification

Source: The City of Oak Park Heights, The Planning Company, & Stantec

August 2019

Collectors

The collector system provides connection between neighborhoods and from neighborhoods to business concentrations. Mobility and land access are equally important but direct land use should predominantly be to development concentrations. Collectors typically serve short trips of one to four miles. Spacing in the metro centers and regional business concentrations may vary between one-eighth to one-half mile. Collectors are divided into two categories: major and minor. The Functional Classification map shows the major and minor collectors in the City.

Local Streets

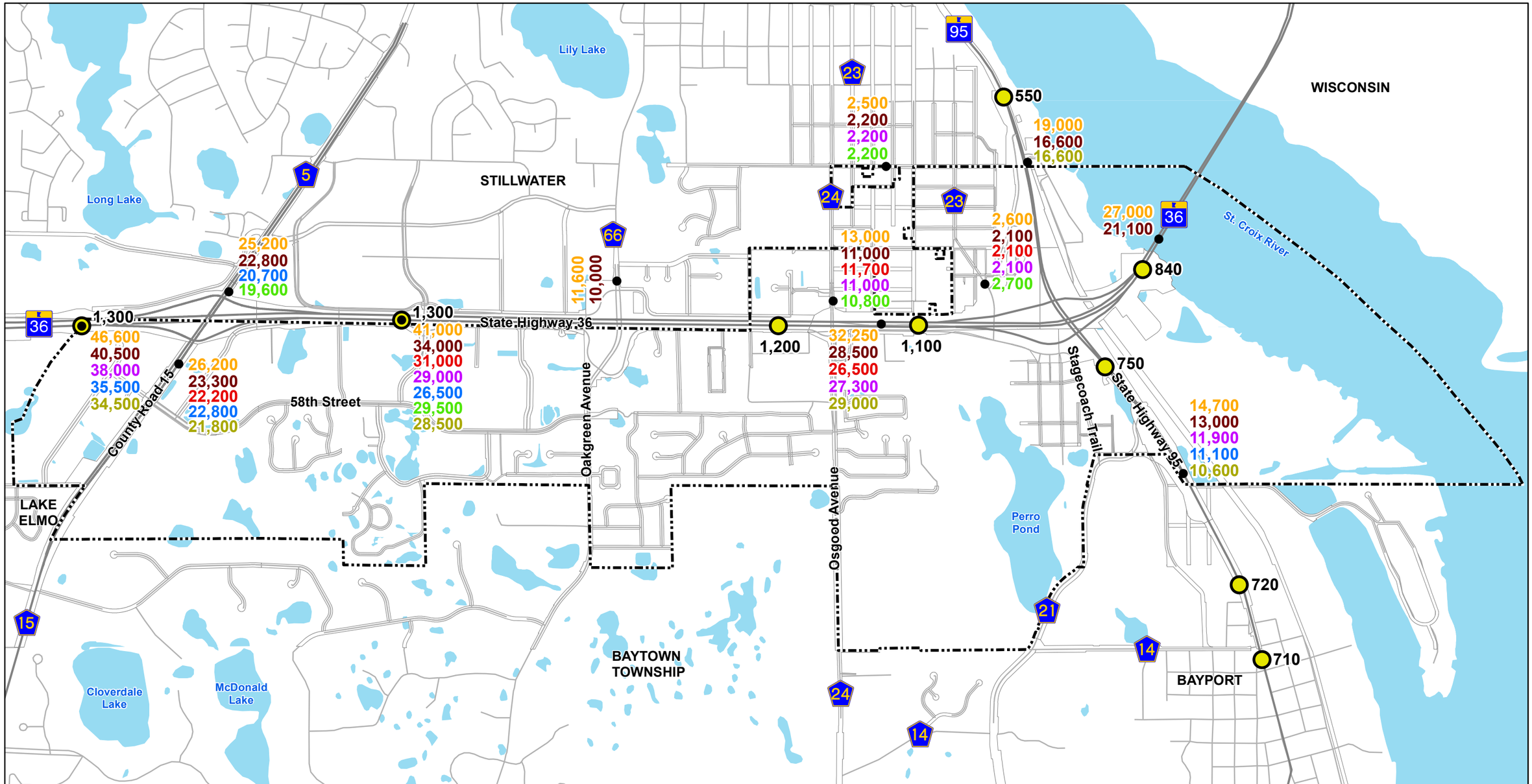
All other roadways that do not fall into the functional classifications discussed above are designated as local roadways. These streets are primarily designed to provide property access.

TRAFFIC VOLUMES

The growth of the population within the St. Croix Valley and the opening of the St. Croix River crossing in Oak Park Heights is indicated in the traffic volumes map on the following page. Average daily traffic (ADT) volumes for the years 2012, 2013, 2014, 2015 and 2016 are shown. On the major roadways, the ADT volumes have been increasing. With the opening of the St. Croix River Crossing traffic volumes are expected to increase along the Highway 36 corridor. The map also indicates 2017 ADT as well as projections for 2040 on Highway 36, Highway 15 and Highway 95. The projected 2040 traffic volume on Highway 36 is expected to reach 46,600 ADT west of Highway 15, 41,000 ADT in that area between Oakgreen and Osgood Avenues, and 32,500 ADT east of Osgood Avenue. The Heavy Commercial Average Annual Daily Traffic (HCAADT) for Highways 36 and 95 is also found on the traffic volumes map.

IMPROVEMENT PLANS – COUNTY

The Washington County Highway Department has developed a Five-Year Transportation Capital Improvement Plan for the years 2017 and 2021. One Washington County roadway, CSAH 24 (Osgood Avenue) is programmed for intersection, safety, capacity, and pedestrian/bicycle improvements in 2018. Although not in Oak Park Heights, Washington County has programed in 2021 the Highway 36 and CSAH 15 (Manning Avenue) study to provide an interchange at this location.



City of Oak Park Heights

TPC The Planning Company

Stantec

12,340	2017 AADT	12,340	Projected 2040 AADT
12,340	2016 AADT	12,340	2017 HCAADT
12,340	2015 AADT	●	Traffic Count Location
12,340	2014 AADT	◯	Heavy Commercial Traffic Count Location
12,340	2013 AADT	▭	City Limits
12,340	2012 AADT		

N

0 0.3 0.6 Miles

City of Oak Park Heights
Comprehensive Plan

Historic and Projected Traffic Volumes

Source: The City of Oak Park Heights, MnDOT, Metropolitan Council, The Planning Company, & Stantec

August 2019

IMPROVEMENT PLANS – STATE

With the completion of the St. Croix River Crossing and the Highway 36 improvements in 2017, there are no other planned State projects in or near Oak Park Heights included within the Long-Range Highway Capital Projects 2015-2024 of the 2040 Transportation Policy Plan.

The Highway 36 intersections at Norell Avenue and the south west frontage road access at Osgood Avenues will need to be improved and made safer in the very near future. With increasing traffic levels, the intersections will become even more substandard and dangerous. The City sees this as a transportation priority for the community.

STREET RECONSTRUCTION/MAINTENANCE PROGRAM

Since 1983, the City has planned and accomplished many sections of street reconstruction. In 2014, the City developed a street reconstruction plan through 2036 as represented in the map on the following page. Additionally, the City has done budget planning to ensure adequate funds are reserved to accomplish the plan.

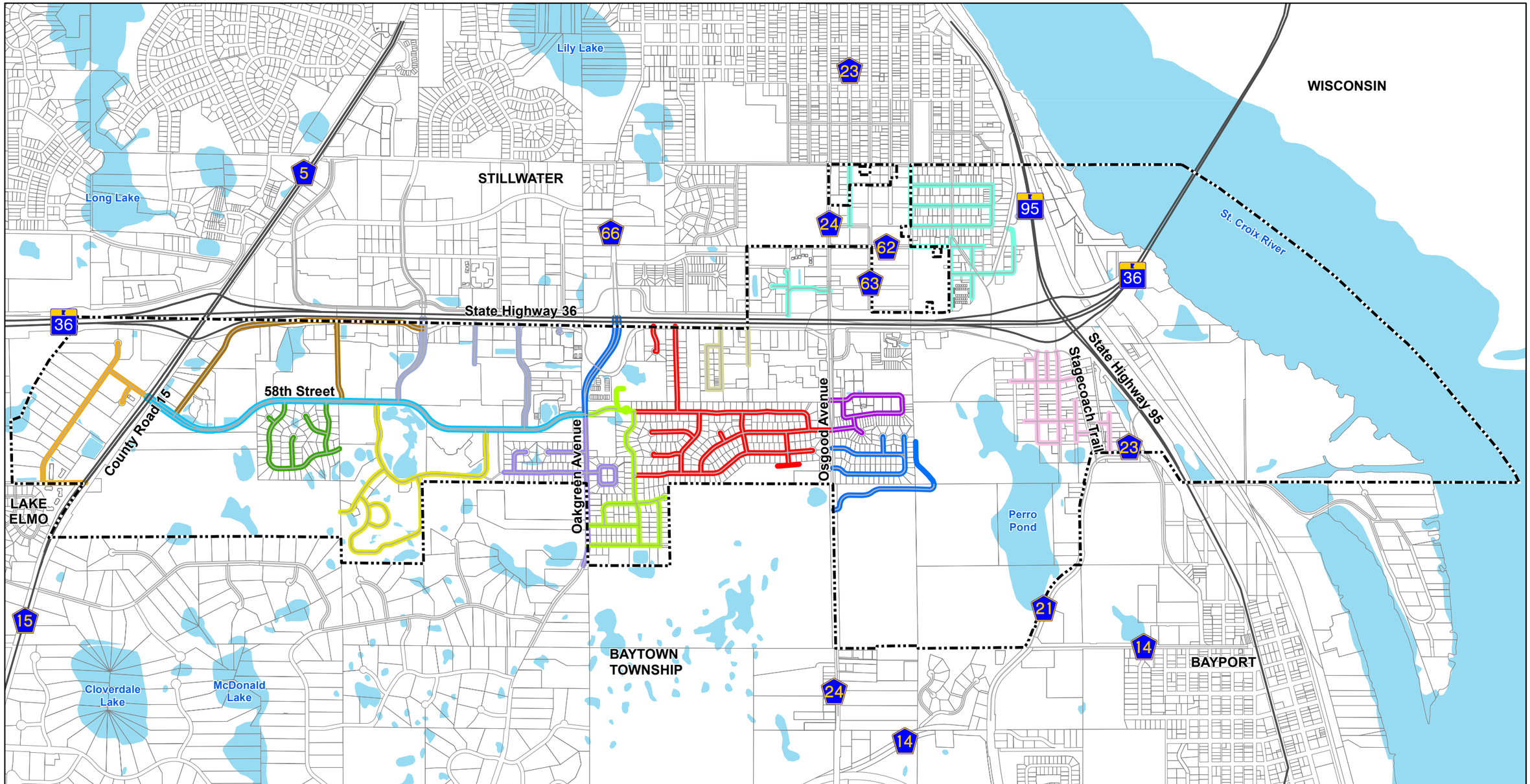
The City has also developed a maintenance plan for the ongoing mill and overlay of streets. As with the reconstruction project, budget planning has been done to provide funding for the maintenance program.

RAIL FACILITIES/FREIGHT

Oak Park Heights contains one railroad line, which is utilized by Union Pacific. This line serves the Allen S. King Power Plant. North of Oak Park Heights, this line turns into the Minnesota Transportation Museum Line, which previously was utilized by the Minnesota Zephyr and offered short trip dining rides along the St. Croix River.

There was a rail-water intermodal facility at the Allen S. King Plant. Intermodal facilities function as a transfer point between road to ports or rail terminals. This facility was used for coal deliveries to the power plant but was removed as part of the St Croix River Crossing project. There are no other rail, barge and truck or intermodal freight terminals in the City.

There are no light rail corridors identified in the 2040 Transportation Policy Plan that would access Oak Park Heights and the immediate area.



City Limits

	Mill & Overlay	Full Reconstruct		Mill & Overlay	Full Reconstruct		Mill & Overlay	Full Reconstruct
Area 1	2024	2031	Area 6	2021	2035	Area 11	2028	2042
Area 2	2017	2031	Area 7	2023	2037	Area 12	2029	2043
Area 3	2019	2033	Area 8	2022	2036	Area 13	2009	2023
Area 4	2018	2032	Area 9	2028	2042	Area 14	2018	2032
Area 5	2020	2034	Area 10	2028	2042			

N

0 0.3 0.6 Miles

City of Oak Park Heights

TPC The Planning Company

Stantec

City of Oak Park Heights
Comprehensive Plan

Street Reconstruction Management Plan

Source: The City of Oak Park Heights, The Planning Company, & Stantec

August 2019

AIRPORTS / AIR SPACE

Oak Park Heights lies proximate to a number of airport facilities. Minneapolis/St. Paul International Airport serves as the region's major airport by providing residents with access to national and international markets. Three smaller airports and runways are located throughout the region. The St. Paul Downtown Airport (Holman Field) is a major corporate flight facility in the east metro area. The Lake Elmo Airport is owned and operated by the Metropolitan Airports Commission (MAC), and the Forest Lake Airport is a municipal airport. These three facilities relieve the major airport by accommodating corporate and small aircraft as well as the recreational air transportation needs of area residents. The City is not within the airport influence area of any of these airports.

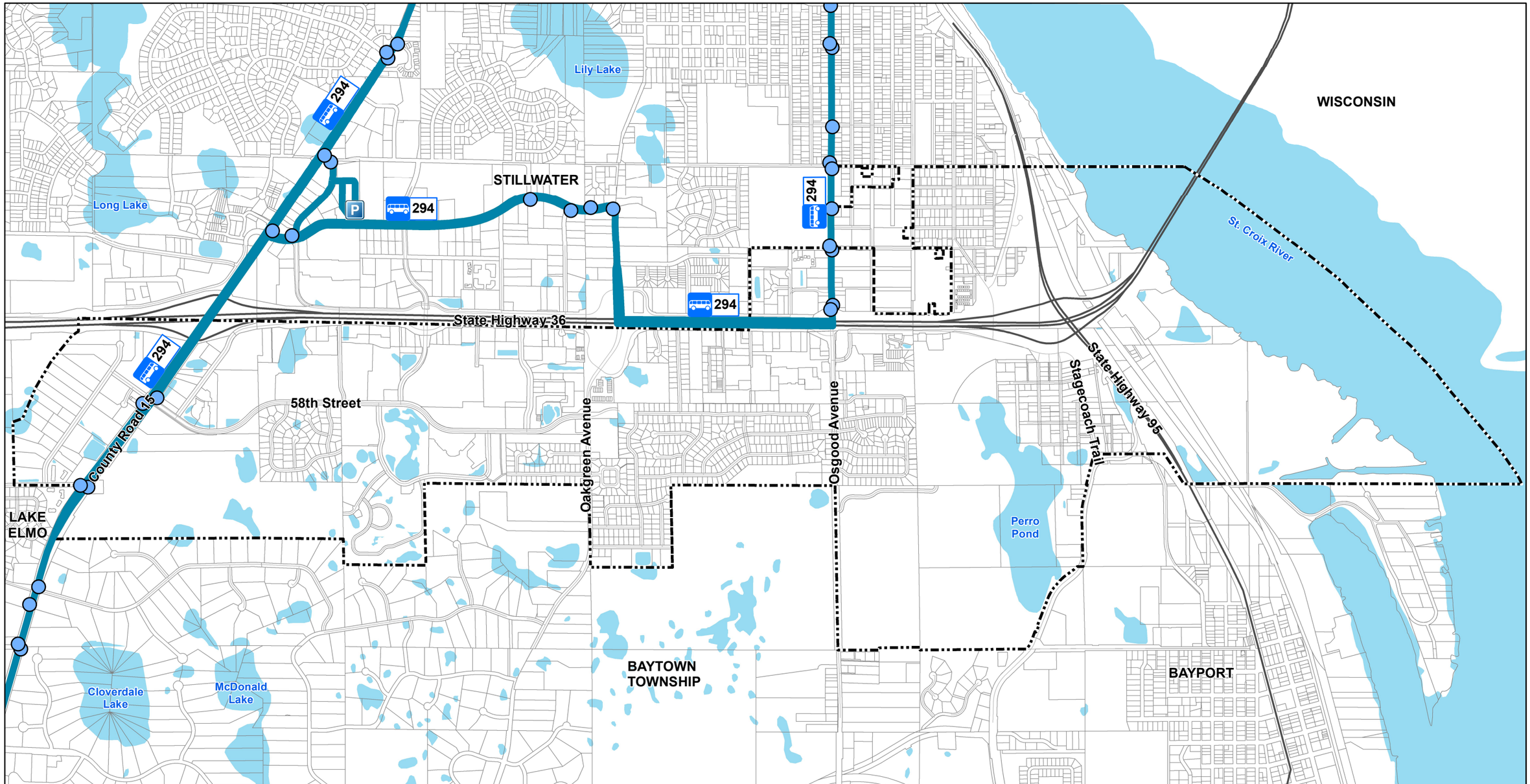
The City of Oak Park Heights has taken the necessary steps to protect navigable air space from potential electric interference and obstacles to air navigation. The Zoning Ordinance limits heights of structures within the City to less than 45 feet.

TRANSIT SERVICE

Oak Park Heights is served by Metro Transit. As shown on the following map, Metro Transit provides an express route (294) that serves Downtown St. Paul, Maplewood, 3M, Oakdale, Imation, Lake Elmo, Stillwater, and Oak Park Heights. The bus runs at rush hours during the weekdays from 5:30 AM to 9:00 AM and 4:00 PM to 7:00 PM with a frequency of less than 30 minutes between trips. The route has stops in Oak Park Heights on Osgood Avenue and County Road 15. There is one park and ride location in the area at the St. Croix Valley Recreation Center which is located in Stillwater on Market Drive, between Orleans Street and Curve Crest Boulevard.

Washington County Transit Link Service is a dial up service which is available within Oak Park Heights. The service is provided by the Metropolitan Council and is available Monday through Friday between 6:00 AM and 7:00 PM. The City is also served by Metro Mobility/ADA service which provides rides for those persons needing additional assistance. Riders must be certified in advance to qualify for ADA service. The service is available from 5:15 AM to 6:45 PM Monday through Friday and 8:00 AM to 4:00 PM Saturday and Sunday.

Oak Park Heights is included in Transit Market Areas III and V. Transit Market Area III is characterized by moderate density and is primarily served by commuter express bus service. Transit Market Area V has very low population and employment densities. General public dial-a-ride service is appropriate here, but the area is not well suited to fixed route transit service.



City of Oak Park Heights

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- Bus Stop
- Park & Ride
- #294 Bus Route
- City Limits
- Open Water

N

0 0.3 0.6 Miles

City of Oak Park Heights
Comprehensive Plan

Transit Map

Source: The City of Oak Park Heights, The Planning Company, & Stantec

August 2019

INTRODUCTION

Transportation systems are comprised of various modes which respond to the access needs of the community. All of the transportation modes must be considered in the planning process to ensure a balanced operation as well as a system that responds to all of its users. Factors affecting transportation are the placement of land uses and activities which generate demand on the system. The following goals and policies are provided for transportation planning and development.

GENERAL GOALS AND POLICIES

Goal 1: Approach transportation in a comprehensive manner, giving attention to all modes while providing safe and convenient movement of all persons and vehicles.

Policies:

A. Consider all modes of transportation and related facilities as a system to be coordinated and related on a comprehensive basis.

B. Plan transportation facilities to function in a manner compatible with adjacent land use.

C. Consider the mobility needs of all persons in the planning and development of the transportation system.

Goal 2: Coordinate transportation planning and implementation with state, county, and other local jurisdictions.

Policies:

A. Work with Washington County and the Minnesota Department of Transportation (Mn/DOT) and the Metropolitan Council to discuss the ways and means by which their long-term transportation planning goals can be met to satisfy both regional and local needs.

B. Work with Mn/DOT on issues related to Highway 36 and Highway 95 and Washington County related to the county roadway system on continuing roadway improvements and maintenance; intersections and frontage roads; bicycle and pedestrian access; lighting; signage; landscaping; and other issues concerning the City.

C. Monitor the projected increase in traffic volumes on the Highway 36 corridor and work with Mn/Dot on traffic flow and intersection improvements.

D. Plan for a highway and local road system that compliments and facilitates local movement provided by local streets, as well as bicycle and pedestrian facilities.

Goal 3: Develop a system of priorities for improving the various elements of the transportation network emphasizing the highest possible standards of safety and efficiency.

Policies:

A. Continue to update the Capital Improvement Plan for transportation facilities.
B. Maintain a functional classification system for the street system in Oak Park Heights using the classification system developed by Mn/DOT as found in the table below.
C. Eliminate and prevent any on-street parking which conflicts with moving traffic or creates hazards.
D. Relate street improvements to area land development in order to minimize interrupted or inadequate access.
E. Require design and control of all intersections to promote proper visibility and safety for drivers, pedestrians, and bicyclists.
F. Develop a uniform system and policy regarding public signage which eliminates unnecessary signs and replaces outdated, inappropriate and confusing public signs.
G. Correct traffic safety hazards within the community as these are identified.
H. Reserve required rights-of-way as part of the City's platting process.
I. Where feasible and practical, consider establishing pedestrian and bicycle trails in conjunction with development subdivision and street and highway improvements.
J. Continue the street reconstruction programs to update and improve the City's utility and transportation systems.

FUNCTIONAL CLASSIFICATION OF STREETS		
Class	**Function**	**Provide Access To**
Principal Arterial	Service to major centers of activity, provides continuity to rural arterial system	Principal arterials Minor arterials
Minor Arterial	Service of an intra-community nature, urban concentrations to rural collector roads	Principal arterials Collector streets Land
Collector Street	Local collection and distribution between collector streets and arterials, land access to minor generators	Land Minor arterials Local streets
Local Streets	Service to abutting land	Land Higher order systems
Source: Minnesota Department of Transportation		

TRANSIT

Goal 1: Provide enhanced mass transit options for the residents of Oak Park Heights and the St. Croix Valley area.

Policies:

A. Work with the Metropolitan Council and State representatives on development of enhanced transit systems for Oak Park Heights and the St. Croix Valley area.

B. Encourage options for increased ride share programs and expand park and ride facilities in Oak Park Heights.

C. Continue participation in ongoing feasibility studies for mass transit and rail options for Highway 36 and 95.

INTRODUCTION

Based upon the information established by the Physical Profile and the foundation provided by the Goals and Policies, this section provides the framework for a Transportation Plan. A functional classification system is established for roadways, guidelines for access management outline are provided, and the capital improvement program is highlighted. The other transportation routes are also discussed, but trails and sidewalks are addressed in a separate heading with parks as found in a following chapter of the plan.

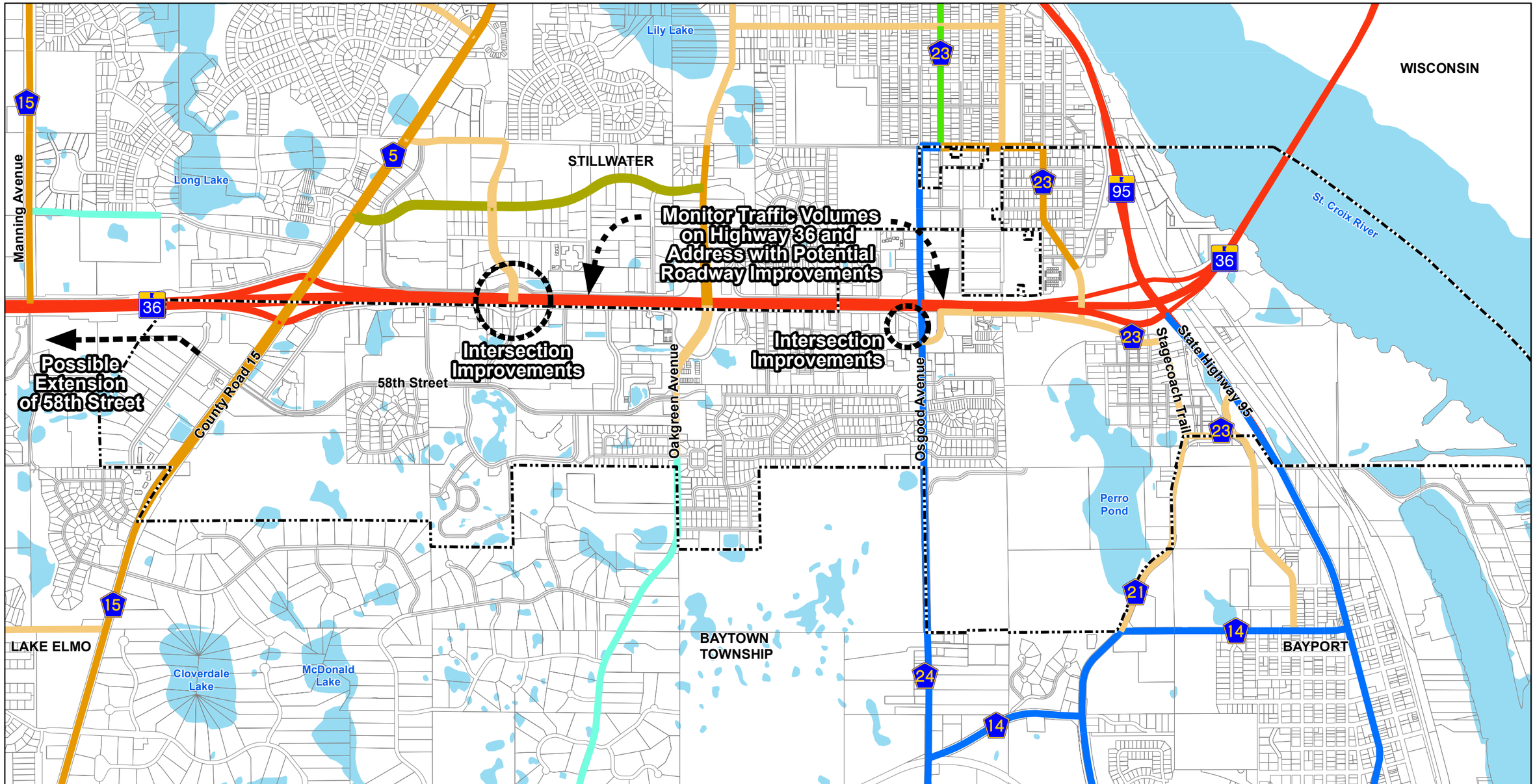
FUNCTIONAL CLASSIFICATION SYSTEM / TRANSPORTATION PLAN

The functional classification system for the City's streets and highways is illustrated by the criteria developed by the Minnesota Department of Transportation (Mn/DOT). The Transportation Plan Map, found on the following page, illustrates the functional classes for those roadways within Oak Park Heights. The functional classification system is based on anticipated usage for five to ten years in the future. This classification of roadways for Oak Park Heights will be used to determine access points on major roadways and the design relationship of local roads to other township, community, and state highways. There are no changes planned in the number of lanes for Principal Arterials and A-Minor Arterials that would impact the Transportation Plan for Oak Park Heights.

The Transportation Plan incorporates the information from the Existing Functional Classification Map and identifies roadway improvements and extensions discussed as part of the planning process. The transit facilities and plans are also featured on the map. The functional classification system for roadways, as identified within the Physical Profile section for Oak Park Heights, is further defined through the access management systems table on a following page.

ACCESS MANAGEMENT

In an effort to maintain effective traffic flow and safety, while accommodating the access needs of land development, access management techniques are utilized. For Oak Park Heights, access to adjacent roadways is overseen by three primary jurisdictions: Mn/DOT along the State highways, Washington County along County roads, and Oak Park Heights along local streets.



City of Oak Park Heights

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Principal Arterial
A Minor Reliever
A Minor Expander
A Minor Connector
Other Arterials
Major Collector
Minor Collector
Local Street
City Limits

N

0 0.3 0.6 Miles

City of Oak Park Heights
Comprehensive Plan

Transportation Plan

Source: The City of Oak Park Heights, The Planning Company, & Stantec

August 2019

The table as follows provides guidelines for access control based upon Washington County guidelines. The land use categories apply to existing and future development in Oak Park Heights. The term rural should be applied to those roadway segments not planned for immediate urbanization, including agricultural or sparsely developed areas. Urban refers to those areas that are commonly urbanized or planned for development in the short term, including most suburban-type development. The urban use should be applied to the area of the City that is fully developed.

The access guidelines should be 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. Washington County and Mn/DOT will give approvals for access to all the roadways under their respective jurisdictions.

WASHINGTON COUNTY ACCESS SPACING GUIDELINES				
Functional Classification	**Full- Movement Intersection**	**Partial Movement Intersection**	**Private Driveways**	**Signal or Roundabout Spacing**
Principal Arterial	1/2 mile	1/4 mile	Variable	1/2 mile
Minor Arterial	1/4 mile	1/4mile	Variable	1/4 mile
Collector	1/8 mile	N/A	Variable	1/8 mile
Source: Washington County				

TRAFFIC ANALYSIS ZONES

The Transportation Plan must include the allocation of the Metropolitan Council's population, household and employment forecasts separated into Traffic Analysis Zones (TAZ). The Metropolitan Council has provided the City a TAZ map with the zones indicated. The boundaries of these zones extend beyond the City limits and into adjacent jurisdictions. A map of the zones is found on the following page.

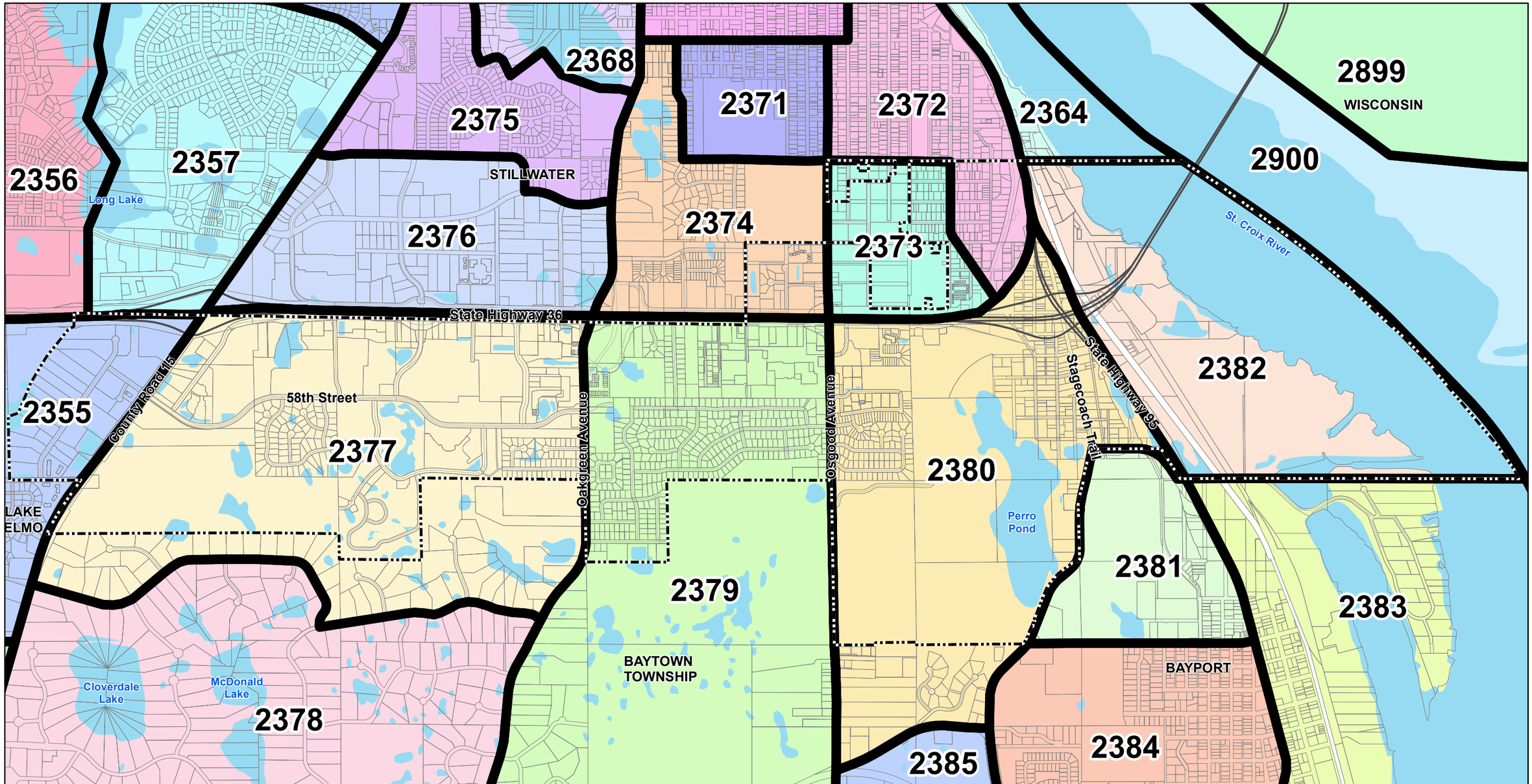
The allocation of population, household and employment numbers and forecasts for the years 2010, 2020, 2030, and 2040 is found on a following page.

ALLOCATION OF FORECASTS TO TRAFFIC ANALYSIS ZONES (TAZ)												
	2010			2020			2030			2040		
TAZ	Pop	HH	Emp	Pop	HH	Emp	Pop	HH	Emp	Pop	HH	Emp
2372	345	150	0	350	150	0	375	160	0	400	175	0
2373	400	175	450	450	200	475	475	215	525	500	225	600
2374	200	80	200	200	80	225	225	90	250	250	100	250
2377	1,500	600	1,558	1,730	825	1,675	1,850	955	1,750	2,000	1,000	1,800
2379	1,000	450	1,100	1,050	475	1,125	1,200	520	1,325	1,300	580	1,500
2380	700	326	300	800	330	300	875	340	350	950	380	400
2382	300	130	500	300	140	500	300	140	500	300	140	500
2355	0	0	250	0	0	300	0	0	400	0	0	450
Total	**4,445**	**1,911**	**4,358**	**4,880**	**2,200**	**4,600**	**5,300**	**2,420**	**5,100**	**5,700**	**2,600**	**5,500**

Source: Metropolitan Council
Pop = Population Forecasts HH = Households Forecasts Emp = Employment Forecasts

TRAFFIC VOLUMES/PROJECTIONS

As indicated in the Physical Profile section, the traffic volumes on Highway 36 are projected to increase substantially by 2040. It is anticipated that the St. Croix River Crossing and Highway 36 will have a dramatic impact on the residents of Oak Park Heights in that the community is separated by this roadway. While the bridge has been open for a few months, it has been observed, but not verified, that the traffic at Norell Avenue, Oakgreen Avenue and Osgood Avenue has increased. Currently, the only projection for the increase in traffic was found in the Environmental Impact Statement for the bridge project. The City will continue to work with Mn/DOT and with Washington County on issues related to frontage roads and critical Highway 36 intersections within the City. The at-grade crossings at Norell Avenue, and the south frontage road of Osgood Avenue will need to be monitored and improved to ensure adequate traffic flow levels and to assure the safety of drivers and pedestrians at these locations.



City of Oak Park Heights

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TAZ Boundaries

City Limits

Open Water

N

0 0.3 0.6 Miles

City of Oak Park Heights Comprehensive Plan

Traffic Analysis Zones (TAZs)

Source: The City of Oak Park Heights, The Planning Company, & Stantec

August 2019

SYSTEM IMPROVEMENTS / EXTENSIONS

The Land Use Plan indicates possible annexation of the area south of Highway 36 at Manning Avenue. If the annexation occurs, the City would consider the extension of 58th Street to Manning to complete this east/west corridor. The extension would also include bicycle and pedestrian trails to Manning. Acquisition of right-of-way as part of development within the existing City limits at will be necessary for future completion of this corridor.

STREET RECONSTRUCTION/MAINTENANCE PROGRAM

One of the transportation policies indicates a continuation of the street reconstruction and mill and overlay programs to maintain the local utility and street network. The City Council and City staff will need to continue to monitor the condition of the City streets. The City has created a timeline to complete the necessary sections of the network and has a program to set aside funds to implement this expensive rehabilitation program.

RAIL FACILITIES

The City of Oak Park Heights will work with representatives of Union Pacific on any rail transportation issues that arise. It is expected that the Allen S. King Plant will continue to receive all the coal shipments via this rail line.

The 2040 Transportation Plan does not indicate any light rail corridors that would access Oak Park Heights or neighboring communities in the St. Croix Valley.

AIRPORTS

There is no impact to Oak Park Heights resulting from the Lake Elmo Airport and the City is not within the airport influence area. The City regulates building and structure height as it relates to navigable air space.

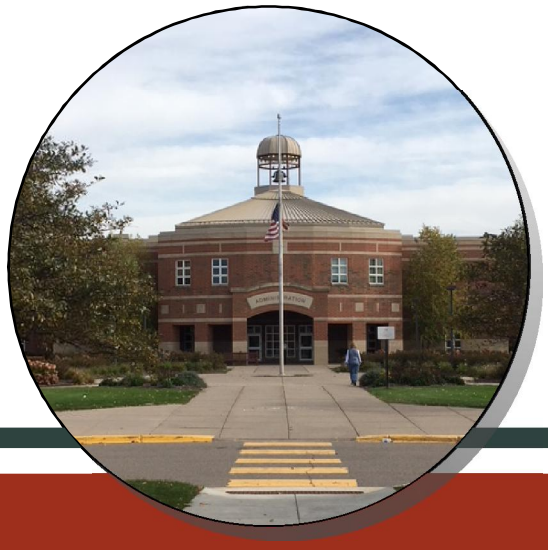
BUS / TRANSIT SERVICE

One of the issues often raised by officials and residents is the lack of mass transit options for people in Oak Park Heights and the St. Croix Valley. The commuter service is only available on weekends but Metro Mobility/ADA provides weekend service. The 2040 Transportation Policy Plan does not call for any significant changes to the level of service to Oak Park Heights although Highway 36 remains as an express bus corridor.

The City will continue to work with Metro Transit officials on continuing and expanding the fixed route transit service for Oak Park Heights to both St. Paul and Minneapolis. Additionally, the City continues to support the local transit service provided by Washington County Transit Link Service and Metro Mobility/ADA. This service is especially important for elderly residents and those that are less independently mobile. Expansion of this service may be necessary as the population of the St. Croix Valley grows older and less mobile. The Transportation Plan on a previous page includes the transit plans included in the 2040 Transportation Policy Plan.

PEDESTRIAN / BICYCLE FACILITIES

The pedestrian and bicycle plan for the City is found in a separate section of this Comprehensive Plan document. In the last 25 years, the City has invested significantly in the pedestrian and bicycle network throughout the community. It is possible to travel west to east and north and south through the entire City on trails with limited need to travel on streets. The City sees this investment as important to recreation as well as the transportation needs of the community.



Community Facilities

INTRODUCTION

Community facilities include those lands, buildings, or services and systems which are provided on a public or semi-public basis in the interest of or the benefit to the residents of the community. Their importance should not be under-estimated in that they are offered as a necessity for sustaining life within the community and are therefore, a major contributor to the quality and safety of living in the City.

To enhance the quality of life within Oak Park Heights, it is fundamental that adequate community facilities include parks, open space, administrative offices, essential community buildings and public utilities.

Public utilities are an important factor in regulating development of particular areas of the City and areas planned for future annexation. Fair and equitable assessment policies for landowners and developers are also a necessary element of utility extension.

Government buildings and facilities, such as parks and trails, play a major role in providing necessary community amenities and in projecting a positive image for the City. These facilities reflect Oak Park Heights' commitment and dedication to provide its residents with a quality living environment.

FACILITIES AND SERVICES

The City of Oak Park Heights offers a wide range of City services and facilities for its residents and people who visit the community. In addition to the usual public works, recreation and governing features of the City, there are excellent education, social service providers and facilities in the community. A map of the community facilities is found on the following page. A review of the services and facilities is as follows.

ADMINISTRATION

The operation of the City is governed by a five-member City Council, which includes the Mayor, elected to staggered four-year terms. Day-to-day operations of the City are the responsibility of a full-time City Administrator.

PUBLIC BUILDINGS AND FACILITIES

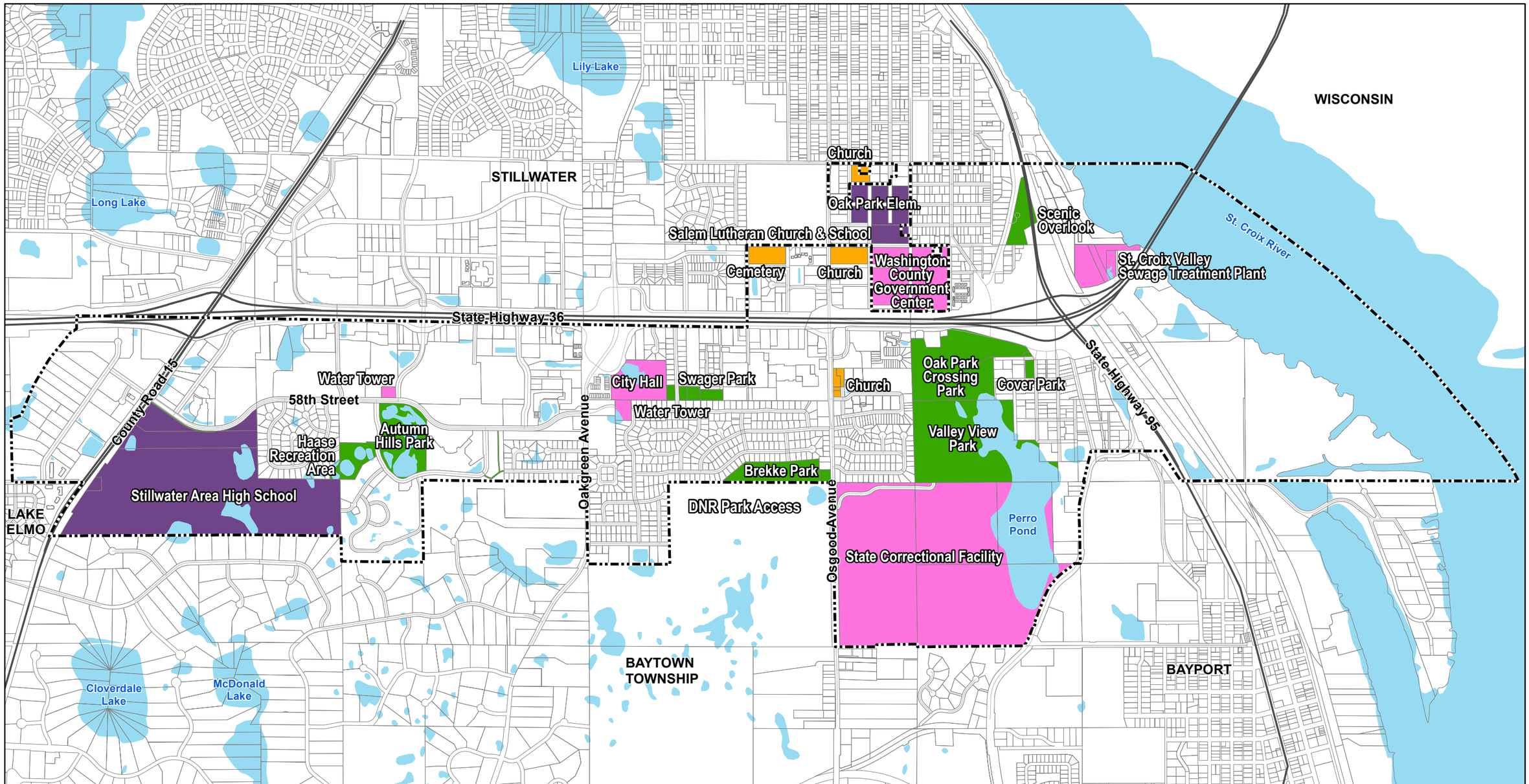
The City of Oak Park Heights City Hall facility is located in the central area of the City, south of Highway 36 and east of Oakgreen Avenue at 14168 Oak Park Boulevard North, as identified on the Community Facilities Map. This building, constructed in 2009, houses the City Council Chambers, City Administration, Police Department and Public Works office. Adjacent to the City Hall is a Public Works garage.

POLICE PROTECTION

The City of Oak Park Heights provides police protection to the community through its own Police Department. The Police Department is headquartered in the City Hall building. The Police Department provides for public safety protection 24 hours a day, seven days a week to Oak Park Heights in compliance with all City Ordinances and State and Federal laws.

FIRE PROTECTION

Oak Park Heights is provided fire protection through contract with the City of Bayport Fire Department. The Bayport Fire Department is a volunteer department that is located at 1012 5th Avenue North, Bayport in a new facility completed in 2016. The department also serves the cities of Bayport, Baytown Township and West Lakeland Township.



City of Oak Park Heights

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- City Limits
- Religious Institution and Cemetery
- Government Facilities
- Schools
- Existing Parks
- Open Water

N

0 0.3 0.6 Miles

City of Oak Park Heights Comprehensive Plan

Community Facilities

Source: The City of Oak Park Heights, The Planning Company, & Stantec

August 2019

HOSPITAL/AMBULANCE SERVICE

The nearest hospital for the Oak Park Heights community is provided through Lakeview Hospital at 927 Churchill Street in Stillwater. The hospital also provides full emergency medical service and an all paramedic ambulance squad. The hospital is in the planning stages of a possible hospital development on the northeast side of the Manning Avenue and Highway 36.

PUBLIC WORKS

The City of Oak Park Heights has its own Public Works Department, employing four full-time individuals. The responsibilities of the Public Works Department are primarily maintenance and repair of the City's streets and facilities. In addition, street maintenance and snow removal from City streets is handled partly by a private contractor. Public Works offices and equipment is located at the City Hall site.

SCHOOLS

The City of Oak Park Heights is entirely within Independent School District 834. The current and projected enrollments for the Stillwater Area School District are illustrated in the table below:

SCHOOL DISTRICT 834 ENROLLMENT			
	Oak Park Elementary	Stillwater Area High School	District Total
2017	48	2,839	8,468
2018 (Estimate)	50	2,801	8,324
2019 (Estimate)	50	2,744	8,185
2020 (Estimate)	50	2,712	8,072
Source: Stillwater Area School District 834			

The 2017 enrollment numbers are based upon an actual count taken in that year. The 2018-2020 estimates indicate a decline in the numbers of students for the Stillwater Area High School and the District. Oak Park Elementary, which is in Stillwater, but adjacent to Oak Park Heights was closed for elementary enrollment at the end of the 2016/2017 school year. The facility is now used for special education staffing and instruction for transition disabled students.

The Stillwater Area High School is located within the City of Oak Park Heights at 5701 Stillwater Boulevard North. The high school facility includes outdoor athletic fields and a significant amount of open space on its site in west Oak Park Heights. Oak Park Elementary, which is located in Stillwater at 6355 Osman Avenue North, also has a recreation area on its site located in northeast Oak Park Heights. This area includes sand areas and playground equipment for use by younger children.

PARKS AND TRAILS

The Oak Park Heights parks and trail system is highlighted in detail in the Parks and Trails chapter of the Comprehensive Plan. A separate Parks and Trails Plan will also be completed as a separate document to the Comprehensive Plan.

WATER SERVICE

Property within Oak Park Heights is served by a municipal water system. The existing system draws water from two wells, which have a peak production capacity of 2.4 million gallons per day (MGD). The water is treated and fluoride added. The water distribution system consists of two elevated storage facilities which provide total storage of 750,000 gallons.

The City's Engineer, Stantec, has completed a Water System Plan that provides for background information and water system planning. A copy of the Water System Plan is found in the Appendix section of this plan.

SANITARY SEWER SERVICE

Public sanitary sewer service is provided to almost every residence, business and property in the community. The City's Engineer, Stantec, has completed a Sanitary Sewer System Plan that provides the background information and sewer plans. A copy of the Sanitary Sewer System Plan is found in the Appendix section of this plan.

LOCAL WATER PLAN

The City's Engineer, Stantec, has completed a Local Water Plan for the City that provides the background and plan for storm sewer planning. A copy of the Local Water Plan is found in the Appendix section of this plan.

INTRODUCTION

Community facilities include those lands, buildings, services and systems that are provided to the public in the interest of, or benefit to, the residents of the community. Their importance should not be under-estimated in that they are a necessity for sustaining an urban environment and are a major determinant of the quality and safety of urban living. The following goals and policies are to serve as guides for the planning, implementation and maintenance of community facilities.

GENERAL GOALS AND POLICIES

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

Policies:

A. Continue to implement a Capital Improvement Program that addresses the repair 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.

C. Update street, water, storm sewer and sanitary sewer plans by the City Engineer on an as needed basis or as required by other jurisdictions.

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

Goal 2: Plan and provide public facilities and services in a coordinated and economic manner on a basis that is consistent with the nature of existing and proposed development within the community.

Policies:

A. Prohibit extension of service to properties outside the corporate limits without an agreement as to the annexation of that property.

B. Discourage the expansion of public sewer and water services into areas:
   1. Not contiguous to existing development or service areas.
   2. Areas not within the current limits of the service boundary.
   3. When a burden is placed upon the City to expand the urban service area prematurely.

C. Minimize the impact of required utility facilities and services upon surrounding land uses.

D. Encourage and promote underground installation of all new utility services and require, when feasible, the conversion of existing overhead systems to underground.
E. Encourage the protection of ground water recharge areas.
F. Preserve natural drainage to the extent possible.

Goal 3: Utilize public improvements as a means for continuing civic beautification and an impetus for stimulating investment in private property.

Policies:
A. Work to enhance residential and commercial areas through public improvements to contribute to the areas' identity.
B. Keep all public buildings and grounds well maintained.
C. Adequately screen, landscape and buffer public facilities in order to minimize their impact on surrounding uses and enhance the community and area in which they are located.

Goal 4: Maintain, update, and improve public buildings and support regional facilities that benefit the community.

Policies:
A. Continue to maintain, update and improve public buildings as needed.

INTRODUCTION

The Physical Profile and the Goals and Policies provide the background and foundation for the Community Facilities Plan. This section will address the public facilities and services that the City of Oak Park Heights now maintains and will provide as the City completes its infill and redevelopment.

PUBLIC BUILDINGS AND FACILITIES

With the completion of the City Hall building in 2009 and the remodel and expansion of the public works building, the City/Police facilities and the maintenance garage will serve the community well for years to come. There are no other major facility replacement or improvements planned now other than upkeep and maintenance of existing facilities.

POLICE AND FIRE

The City's police and fire services adequately serve the emergency protection needs of the community at this time. The contract with the Bayport Fire Department has served the community well and will be continued into the future. The City will need to continue to monitor its needs for fire and ambulance service, especially as the elderly population of the community grows. The new Bayport Fire Department facility, completed in 2016, will also serve the member communities well for years to come.

Additional study will be necessary to determine if the Bayport Fire Department could serve the development of the annexation area to the west of the City. If an annexation proposal is presented to the City, a study would be necessary.

PARKS AND TRAILS

The Parks and Trails chapter of the Comprehensive Plan provides a summary of the background, policies and plans. A separate Parks and Trails Plan will be completed as a separate document to the Comprehensive Plan.

WATER SERVICE

The Water System Plan, prepared by the City Engineer, Stantec, is found as attached in the Appendix of this document.

SANITARY SEWER SERVICE

The Sanitary Sewer Service Plan, prepared by the City Engineer, Stantec, is found as attached in the Appendix of this document.

The City has a limited number of properties on individual sewage disposal systems. The City has adopted the Washington County model for regulating the specifications, installation and maintenance of on-site individual sewage treatment systems in Oak Park Heights.

LOCAL WATER PLAN

The Local Water Plan, prepared by the City Engineer, Stantec, is found as attached in the Appendix of this document.

The City has adopted a stormwater drainage ordinance to establish standards for regulating development procedures as it affects erosion and sediment control. Additionally, the City has adopted an ordinance to regulate the development on restorative soils.

CAPITAL IMPROVEMENT PROGRAM

On a yearly basis, the City Council develops a Five-Year Capital Improvement Plan. The program for the years 2018-2022 is found in the Appendix of this document.

Administration

INTRODUCTION

Administration and implementation of the Comprehensive Plan are an important aspect of the development of the plan. In essence, unless the plan and related development tools are constantly referenced and utilized in combination with long range community decision-making, the efforts spent on their development become waste.

The administrative function of the City is to provide an efficient level of public service, assure that there is an adequate tax base and funding sources, and provide current and effective plans, programs, codes and ordinances. The City must provide a high level and quality of services while not placing an undue tax burden on property owners. Additionally, elected and appointed officials must be able to communicate with citizens and facilitate the level of public participation and input to provide an effective system of government.

Staffing, community identity, public relations, zoning and subdivision regulations, capital improvement planning, and economic development are issues that must be addressed as a result of the comprehensive planning process. The issues listed below are seen as the most critical element of an administrative planning program and should receive priority in implementation. Annexation and jurisdictional issues must also be discussed as it relates to cooperation with the Cities of Lake Elmo and Bayport, and with Baytown and Stillwater Townships.

INTRODUCTION

Implementation of the Comprehensive Plan will require the City to take specific administrative and operations actions. Goals and policies to guide these actions are established here for general administration, codes and ordinances, public safety, finance and public participation. The following text provides statements of the administrative goals and policies.

Goal 1: Maintain and enhance Oak Park Heights' positive identity.

Policies:

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

B. Build on community strengths such as strong residential neighborhoods, quality local government, quality municipal infrastructure, and excellent school and park amenities in defining the City's identity.

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

Goal 2: Encourage planning on a regional level and promote cooperation among neighboring jurisdictions.

Policies:

A. The City will continue to work with neighboring Cities of Stillwater, Lake Elmo and Bayport, Baytown Township, Stillwater Township, and Washington County on issues of regional importance.

B. The City will continue to work with neighboring cities and the township for sharing of necessary services and City boundary issues.

Goal 3: Respond to the concerns and issues of Oak Park Heights residents.

Policies:

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

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

C. Continue support for police and fire programs and activities that maintain peace, order, and safety.
D. Maintain communication between the City, County and the School District to address ongoing community, regional and school issues.

Goal 4: 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. Utilize special assessments and/or special taxing districts in assigned costs for public improvements to benefiting parties.
D. Utilize cooperative agreements to share facilities and take advantage of inter-governmental shared services to avoid duplication and expense.
E. Annually review and analyze the City's financial position and debt service to ensure proper fiscal programming and management.

Goal 5: Protect property values and maintain a strong and diverse tax base.

Policies:
A. Promote private reinvestment in Oak Park Heights properties through building renovation, expansion, maintenance, and redevelopment.
B. Provide assistance and information with regard to available programs that may assist local property owners in building renovation and expansion.
C. Enhance local tax base within the City by encouraging new, high quality commercial buildings and expansions.

Goal 6: Address issues related to the changing demographics of the community including specific demands on housing, transportation services, education and recreational needs.

Policies:
A. The City will continue to monitor population changes or influx of age groups within the community.
B. The City will cooperate with other governmental agencies, social service providers, and educational leaders to provide the transportation, education, service and recreational needs of the community.

C. The City will continue to implement housing programs addressing community housing needs as a whole, but also working to provide adequate levels of housing for those growing population groups including students, working individuals and families, and the elderly.

Goal 7: Improve substandard and/or distressed properties.

Policies:

A. Inform local property owners of the regulations, programs or incentives that may assist them in the maintenance or renovation of their properties.
B. Encourage the private redevelopment of substandard or obsolete properties. Public assistance may be applicable where the redevelopment is consistent with the goals of the Oak Park Heights Comprehensive Plan and within the financial capabilities of the City.
C. Redevelop select, commercial/industrial properties which display deteriorated building conditions, obsolete site design, incompatible land use arrangements and high vacancy levels.

Goal 8: Review, update, and establish new plans, codes and ordinances, as needed, to respond to the changing needs of the City and for community improvement.

Policies:

A. Periodically review the provisions of the Zoning and Subdivision Ordinance, and Design Guidelines to respond to the changing needs of development and redevelopment areas.
B. Periodically review the Comprehensive Plan on a formal basis to ensure that it is current and reflective of the community's interest and changing needs.

Goal 9: Maintain the current programs and strategies to provide incentives to new development in the community, as well as the retention and growth of existing area businesses.

Policies:

A. Development incentives will be applied to projects that either enhance the tax base, land use, or provide job opportunities.
B. Within economic capabilities, provide those public services and facilities to existing businesses to help ensure their satisfaction with locating in the community.
C. Utilize tax increment financing, tax abatement, and other financing programs for projects which meet the objectives of the City.

D. On projects of a magnitude which warrant it, involve state and regional incentive programs to leverage local economic development resources.
E. Work with businesses presently existing in the City on plans and programs for expansion and enhancement.
F. Identify and promote economic development which takes advantage of market opportunities afforded by the major transportation corridors such as Highways 36, 15, and 95.
G. Identify and promote economic development which makes use of recreational market opportunities which result from the area's natural amenities.
H. Work with the Greater Stillwater Chamber of Commerce on issues related to the promotion of tourism and local business.

Goal 10: Continue investment in programs to maintain and enhance the public safety of residents and visitors to Oak Park Heights.

Policies:
A. Continue support for police and fire programs and activities that maintain peace, order and safety.

INTRODUCTION

The administrative and governing function of the City is to provide an efficient level of public service, assure that there is an adequate tax base and funding sources, and provide current and effective plans, programs, codes and ordinances. The City must provide a high level and quality of services while not placing an undue tax burden on property owners. Additionally, elected and appointed officials and staff must be able to communicate with citizens and facilitate the level of public participation and input to provide an effective system of government.

The Mayor and four Council members comprise the governing body for the City. They are elected on an at-large basis and serve a four year term. The City Council meetings are held in the Council Chambers of City Hall the second and fourth Tuesdays of each month.

Day-to-day operations of the City are the responsibility of the City Administrator and staff.

STAFFING

As the City continues to grow, staffing levels will need to be evaluated. The City will need to monitor staffing levels carefully and make adjustments as necessary.

COMMUNITY IDENTITY

Community identity has been identified as a significant issue for the City of Oak Park Heights. Stillwater, being the larger community with its historic downtown, is seen as the only city in the area. City of Oak Park Heights continues with its efforts to promote recognition and identification. Use of the City name and logos on water towers and other public structures has helped the City to be recognized as another jurisdiction.

Construction of welcome signs at the primary entrances to the community is one way of further promoting recognition. Continued use of the area newspapers, cable TV, the City website, and the City newsletter are all ways to assist in promoting and identifying Oak Park Heights in the St. Croix Valley. Promotion of the City parks, and its lineal trail system that will provide access to other adjacent cities' trail systems and the regional trail system, is seen as a significant way of introducing people to Oak Park Heights. The City will continue to work on ways to promote the community, its residential neighborhoods, and its business and industrial sites through the use of the media and internet.

PUBLIC RELATIONS

Oak Park Heights has an ongoing policy of providing effective public education regarding City activities. Such programs have numerous benefits, including greater public accountability and an increased awareness of City functions. Additionally, good communication with the other municipalities, area townships, the County and regional levels of government will be vital in this growing, diverse metropolitan area.

To continue and improve the lines of communication between the City government and its citizens, Oak Park Heights should continue to use announcements, newspapers, and other forms of public media such as the internet and cable access. Public support on projects or expansion will only be possible if the public is informed of various area plans and an open forum of opinions and comments is coordinated. The City will also continue to develop and enhance its relationship with other jurisdictions in the area and region. The City will work with the Cities of Bayport, Stillwater, Lake Elmo and other jurisdictions to continue promoting joint provision of services and coordination of activities. The quality of life of the overall area can only be enhanced if all the governments and public/private organizations work together to promote and develop the metropolitan area.

ZONING AND SUBDIVISION REGULATIONS

Obviously, a community's plans, programs, codes and ordinances are of value only if they are implemented and kept current. When such plans and ordinances become outdated, the City's ability to respond to community goals is hampered. To ensure that such plans are kept up to date, the City should regularly update its plans and codes as necessary.

The City has consistently kept its zoning and subdivision regulations current with the changing face of the community. In 1995, the City completed a major update of its Zoning Ordinance. There are a number of areas within the ordinance that could be reviewed and updated after the completion of the Comprehensive Plan. Additionally, the City will re-examine the Design Guidelines and update the standards to encourage more variety in building styles and architecture.

CAPITAL IMPROVEMENT PLANNING

The City of Oak Park Heights has an effective system of capital improvement planning that is scheduled or updated on a yearly basis. The Capital Improvement Plan is essentially a long-range spending plan used to guide the community's expenditures

according to need and the community's ability to pay. The program forces the City to look toward the future to anticipate its needs before it becomes evident. In order to fund such items as physical improvement or extensions of roadway and utilities to the City, the Capital Improvements Plan can be used as a planning tool. The City will update the Five-Year Capital Improvement Program in 2018 that will be attached as an appendix to this Comprehensive Plan.

Parks and Trails

INTRODUCTION

The Parks and Trails section of the Oak Park Heights Comprehensive Plan is built on the foundation created with the first Comprehensive Bicycle and Pedestrian Trail System Plan of 1995, the 1999 Comprehensive Park and Trail System Plan and the 2008 Comprehensive Park and Trail System Plan. The 2018 Comprehensive Plan acknowledges that the community is almost completely developed and anticipates that there will be little, if any, expansion of the City limits in coming years. The population growth and number of households is expected to grow slightly, to over 5,000 persons, and remain stable. It is expected that the City's population will continue to age, especially with the large numbers of elderly housing units. In 2000, 12.8 percent of the city's population was 65 years and over, by 2010 that climbed to 23.0 percent and in 2015 it was 30.7 percent. In recognition of the demographics of the community, especially the aging of the population, this plan seeks to provide opportunities for recreation for all ages.

The 2017 Community Survey asked residents about the current park and trail system and they stated that it was one of their favorite aspects of living in Oak Park Heights. Respondents had the following opinion regarding the condition of City parks and trails:

1. Excellent – 23.2 percent
2. Above Average – 56.9 percent
3. Average – 16.2 percent

Respondents utilization of a City Park or trail is as follows:

1. Every day – 17.0 percent
2. A few times per week – 37.8 percent
3. On occasion – 26.8 percent

The City recognizes that the community is almost completely built out and new park land will not be created as a result of land subdivision. The continuing emphasis in coming years will be on improvements within the existing parks, trail connections within the community, and addressing the park and recreation needs of an aging population.

EXISTING PARKS AND TRAILS

The Oak Park Heights park system offers numerous City parks distributed throughout the City and a trail system that nearly connects all parts of the community. The park facilities offer a full range of recreational activities. A list of the existing parks is as follows. A map of the existing park and trail locations is found on a following page.

The City of Oak Park Heights contains six established parks. The parks vary in size, location, and service. Parks play an important role, not only in their overall recreational benefit to the residents of Oak Park Heights but as a crucial destination point directly related to the establishment of trails. All are interrelated and each portion from the park land itself, all the way down to a single picnic table or foot of trail, plays an important role in completing a recreational link, therefore adding to the comprehensive system.

Valley View Park is the largest park within the City and is intended as a City-wide passive park for hikers, picnics and nature. It is viewed by the City as a very unique and positive amenity in the community given its dense vegetation, variation in topography, wetlands, and array of existing and potential uses. The park is an important link between the east portion of the City and Osgood Avenue (via its entrance drive, and/or through Brekke Heights or Valley View Estates residential subdivisions). Adjacent to the Valley View Park is Oak Park Crossings Park.

Brekke Park is a high quality, intensively utilized City park intended as an active area for field games and a playground area for toddler age and older. It is located adjacent to State of Minnesota land controlled by the Department of Natural Resources (DNR) and serves as a community playfield for residents in the south-central portion of the City, primarily between Osgood and Oakgreen Avenues. The City will continue to work with the DNR to allow utilization of the property for open space, limited recreation and trails. In 2007, the City purchased the property at 5502 Osgood Avenue, adjacent to Brekke Park and created a disc golf course.

Swager Park serves as a neighborhood playground along the linear park system. The park is fairly centralized within the community and is located within an Xcel Energy easement. The park is at a central location to the trail system that provides an east to west connection through the City.

Cover Park is the oldest and smallest park in the City and provides an active area for residents in the Village of Oak Park Heights neighborhoods who are otherwise somewhat segregated from the north and western portions of the City. A year-round park building, and parking lot was added in 2017.

Autumn Hills Park and Haase Recreational Area serves as a neighborhood park and is surrounded by the Boutwells Landing senior community. The park serves as a focal point for residents from all areas of the City with the large play equipment area and a park shelter with restrooms. The recreational area features trails, utilities and natural areas adjacent to the Autumn Hills neighborhood and the Environment Living Center of the Stillwater Area High School.

Oak Park Crossing Park is the City's newest park. It has a playground, park shelter, walking trails, and prairie grass plantings. It was developed on the former Allan S King ash disposal facility and is adjacent to Valley View Park.

On the following page is a list of the existing park components for each of the six City parks.

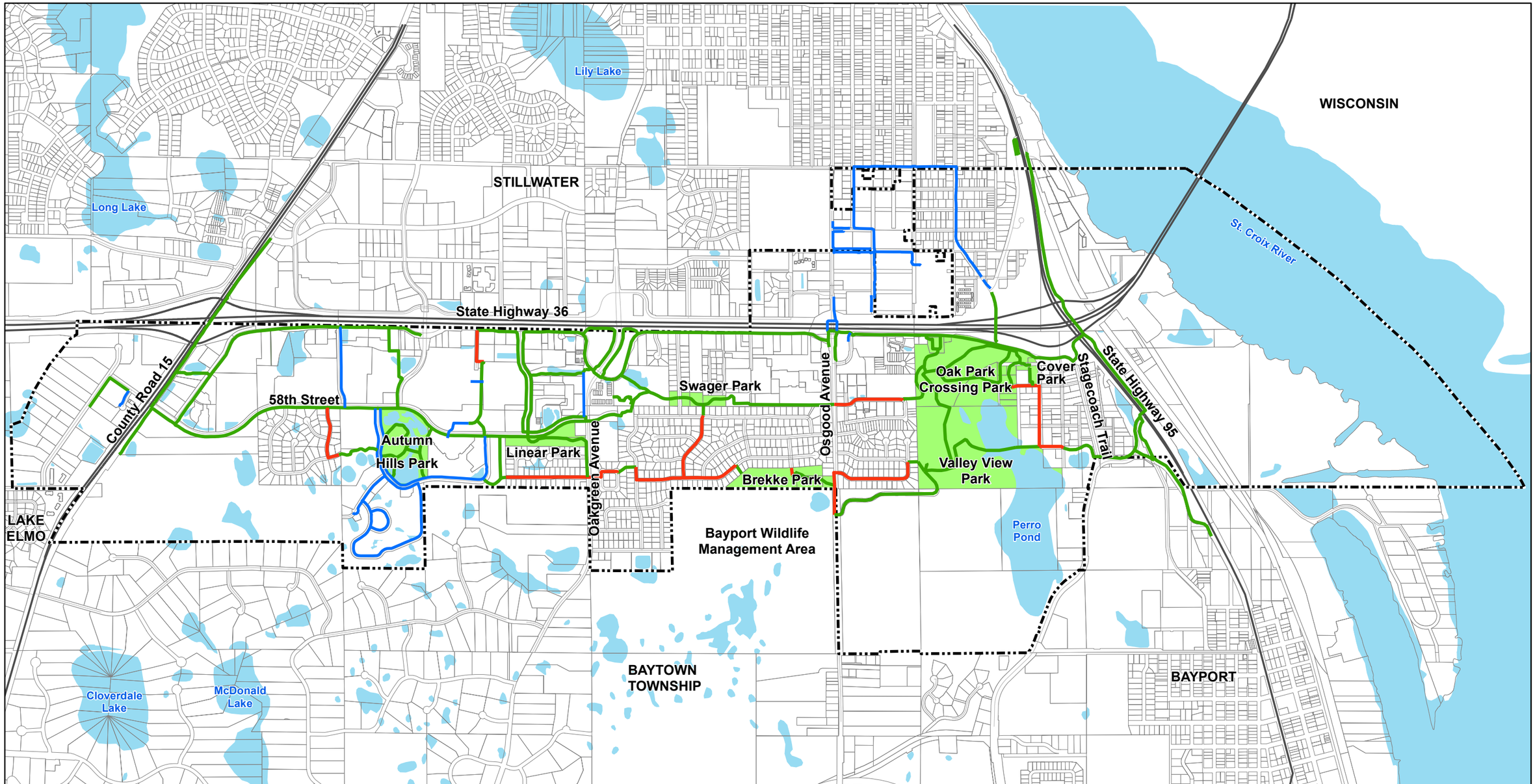
Trail connections have been constructed over the past two decades to provide important linkages between neighborhoods, commercial areas, and parks. In 1995, when the Comprehensive Bicycle and Pedestrian Trail System Plan was completed, the only trail routes available were a few sidewalks located in the area adjacent to the City of Stillwater and limited trail connections to existing parks. In the last 23 years, the City has developed an off-and on-street trail system that enables the pedestrian or bicyclist to move safely throughout the City. There are many linkages and crossings that must still be addressed.

Currently, the trail system in Oak Park Heights includes 10.5 miles of municipal separated, off-street trails; 4.0 miles of municipal on-street trail routes; 5.8 miles of State trails; and .3 miles of private trails.

The City will continue to focus on making linkages, especially with development and redevelopment projects. North/south connections, especially along Oakgreen and Osgood Avenues, as well as crosswalks on or under these roadways, will continue to be a priority.

The Existing Parks and Trails Map on a following page indicates the system current as of 2018.

EXISTING PARK COMPONENTS						
	Valley View Park	**Brekke Park**	**Swager Park**	**Cover Park**	**Autumn Hills Park**	**Oak Park Crossing Park**
Size	57 acres	13 acres	1.4 acres	1 acre	24 acres	35 acres
Picnic Shelter	✓ with bath	✓ with bath ADA access	✓	✓	✓ with bath ADA access	✓
Baseball/Softball		✓				
Warming House		✓ with shelter ADA access		✓ with bath	✓ with shelter	
Basketball Court		✓	✓	✓		
Tennis Courts			✓			
Soccer/Open Field		✓ youth only, Fall				
Play Set	✓	✓	✓	✓	✓	✓
Swing Set	✓	✓	✓	✓	✓	
Spring Animal	✓					
Horseshoe Pit	✓					
Grills	✓	✓	✓	✓	✓	✓
Picnic Tables	✓	✓	✓	✓	✓	✓
Bench/Seat	✓	✓		✓	✓	✓
Bike Rack/Stand	✓	✓		✓	✓	
Trail/Path Connection	✓	✓	✓	✓	✓	✓
Disc Golf Course		✓				
Signage	✓	✓	✓	✓	✓	✓
Source: City of Oak Park Heights						



City of Oak Park Heights

TPC The Planning Company

Stantec

- City Limits
- Off Street Trail
- On Street Trail
- Sidewalk
- Parks
- Open Water

N

0 0.3 0.6 Miles

City of Oak Park Heights Comprehensive Plan

Existing Parks and Trails

Source: The City of Oak Park Heights, The Planning Company, & Stantec

August 2019

PARK ISSUES - INTRODUCTION

The Parks Commission discussed issues relating to existing parks and trails in meetings on January 29, 2018 and February 21, 2018. The following is a summary of issues raised by the Parks Commission and staff.

GENERAL PARK ISSUES

- Provide opportunities for all ages to participate in lifetime fitness through the use of trails, park facilities, and other activities.
- With an aging population, assure that facilities and programs are designed to accommodate people in this sector of the population.
- Develop recreational and environmental education programs to familiarize people with the parks.
- Decide if and how coordination with the recreational needs of the County, athletic associations, civic groups, etc. can be accomplished.
- Create Oak Park Heights monument signs with plantings welcoming visitors to the City.
- Determine whether existing and proposed park areas are desired for year-round or seasonal usage and what effect this will have on park facilities and design.
- Define the means by which park development can minimize impacts on adjacent properties, i.e., off-street parking, screening, landscaping, setbacks, etc.
- Continue to work with Stillwater Area Schools to assure continued play area use at Oak Park Elementary.
- Link all parks within the City through a system of trails.

VALLEY VIEW PARK

- Replace easement trail from Ozark Avenue.
- Make building improvements to park shelter such as providing a deck on the east side, extension to north side, installing gutters, and adding electrical outlets.
- Provide trail connections to the east of the park shelter.
- Provide trail connections to the north of the park shelter, across the ravine.
- Replace fencing
- Remove buckthorn from the easterly wooded area.
- Add picnic tables.

OAK PARK CROSSING PARK

- Include exercise equipment along trail system.
- Determine if water fountains can be added.
- Provide a trail connection along the eastern border of Perro Pond.
- Add a swing set near the playground area.
- Add picnic tables within picnic shelters.

BREKKE PARK

- Continued maintenance and improvements to the existing Brekke Park picnic shelter.
- Replace hockey boards.
- Work with Washington County on construction of a tunnel under Osgood Avenue to provide safe access from Brekke Park to the trail and park system to the east.
- Improve and update play equipment as needed.
- Provide a connecting trail behind the baseball fields through the wildlife management area.
- Replace easement trail and fence off 55th Street.
- Consider a trail with an east/west orientation along the existing parking lot and edge of the park to provide a connection to the upper playground.
- Consider purchase, if available for sale, of the DNR managed property to the south of Brekke Park.

SWAGER PARK

- Consider the park as a linear park segment within the trail system, rather than a destination.
- Include exercise equipment along trail system
- Provide benches, picnic tables within the park as needed.
- Work with Xcel on planting prairie grass in that area north of City Hall.
- Install a community garden area.
- Replacement of fence as needed along the south boundary of park with neighborhood involvement.
- Add water service with water fountain and hydrant.
- The City shall take park land dedication for potential redevelopment area north of Swager Park.

COVER PARK

- Monitor maintenance and improvements to new park shelter including installing gutters.
- Maintain/improve perennial planting slope.

AUTUMN HILLS PARK AND HAASE RECREATIONAL AREA

- Monitor condition of playground equipment and replace as necessary.
- Monitor condition of picnic tables and benches and replace as necessary.
- Provide additional tree plantings within the park and replace ash trees.
- Provide no smoking signs by playground.
- Add bike racks near the park shelter.
- Provide connections to the Boutwells Historic Village area to the south of the park and explore programs and cross-utilization of both facilities.

GENERAL TRAIL ISSUES

- On street trails are to be used by both pedestrians and bicyclists.
- Construct educational environmental kiosks and signs at Valley View Park, by City Hall, at Oak Park Crossing Park, at Autumn Hills Park, and in other appropriate locations along the east/west trail corridor.
- Provide benches, resting areas, picnic tables, water fountains, and exercise courses along trails. Restore prairie areas where possible along the trail system.
- Complete the striping of the southern edge of the Andersen Office Building parking lot with a trail lane and stripe a crosswalk over Osgood with signage between Osgood and Valley View Park.
- Improve trail signage where necessary to (1) denote the type of trail; (2) to give direction as to where they lead; and (3) to warn vehicles of trail crossings, on-street routes, etc. for safety purposes.
- Look at options and locations for lighting of trail corridors.
- Assure that all new trail construction is accessible for people with disabilities.
- The size of trails involves two factors: width and length. The minimum recommended width for multi-use trails is eight feet, although it is beneficial in many situations to provide increased width depending upon the use and location. The length of trails should be varied to provide choices for users.
- Explore options for signage and street marking for on street trails.
- The location of trails within the community may be constructed in one of three general ways: 1) on street, separated by a painted line, 2) off-street, but parallel to the road surface like a sidewalk, or 3) completely separated from the road and not necessarily parallel to it.

- Work with the City Engineer to define the right-of-way widths that are necessary to establish trails along designated roadways; for instances: an eight-foot trail necessitates, at a minimum, a 20-foot easement and 10-foot level bench (construction) area. Many times, additional temporary easement areas are needed to grade surrounding areas.
- Consider developing cross-country trails throughout the City.

NORTHERN OAK PARK HEIGHTS TRAIL ISSUES

- Provide interconnections with the Stillwater trail system whenever possible.
- Link Sunnyside to Mn/DOT's trail.
- Link Sunnyside to the bluff area by way of Lookout Trail.
- Find a way to link Lookout Trail to the west.
- Provide a trail connection to the Scenic Overlook.

EASTERN OAK PARK HEIGHTS TRAIL ISSUES

- Work with Washington County to providing trails along Osgood Avenue.
- Provide access for those residents east of Osgood Avenue to safely cross Osgood Avenue and access the parks and trails to the west.
- Provide interconnection with the Bayport trail system whenever possible.

WESTERN OAK PARK HEIGHTS TRAIL ISSUES

- Connect the Highway 36 frontage road to 58th Street on the west side of Menard's.
- Complete interconnections between the commercial and residential areas to the 58th Street trail and the Xcel easements trail system.
- Link Baytown Township and Stillwater Township with the Oak Park Heights trail system.
- Provide interconnection with the Lake Elmo trail system wherever possible.
- Provide trails on both sides of Oakgreen Avenue.
- Connect the Pondview Condominiums at the southwest corner of Highway 36 and Oakgreen Avenue to the rest of the trail system.
- Provide safe crossings on Oakgreen Avenue.

GOALS AND POLICIES INTRODUCTION

Goals and policies reflect the community's direction as it relates to its recreation system and provides more detailed guidance on park and trail development. Park and trail goals and policies were developed through an analysis of the issues identified by the Parks Commission.

As with any policy plan, it is important to read the statements together rather than as disjointed declarations. Although conceptual development may leave the map out of date, it is expected that policies are more enduring.

SYSTEM GOALS

- Protect, preserve and improve environmentally sensitive areas and natural resources in all parks and trail corridor areas.

- Establish and maintain recreation facilities that maximize participation and overcome physical or economic limitations which may prevent equal opportunity, regardless of age, race, sex, religion, or place of residence.

- Plan and maintain an attractive and diverse system of parks that address the park needs of all segments of the community.

- Provide linkages within Oak Park Heights as well as to neighboring communities and regional systems by a safe and convenient multi-use trail/sidewalk system.

SYSTEM POLICIES

- Develop an ongoing planning process for the establishment of parks and trails which responds to the Comprehensive Land Use Plan Policies as well as those identified herein.
- Identify present and future park/trail needs with surveys of residents for evaluation by the Park Commission and City Council.
- Review the established park/trail plans as needed to ensure that needs and priorities are up to date.
- Prepare a master plan for each component of the park/trail system to be used as the basis for development.
- Promote public participation in the planning process via the Park Commission hosting forums for open discussion of issues, by newsletter, and the City's website.

PROGRAMMING/DEVELOPMENT POLICIES

- Create and maintain an attractive, diverse, and interesting system of urban parks/trails.
- Create a City-wide park and trail system designed to minimize conflicts between pedestrians and motor vehicles.
- Minimize park and trail construction costs by constructing trails in conjunction with State, County, and City street improvements.
- Parks and trails are constructed on a priority basis, according to capital improvement plan/available funds.
- Encourage the private sector to provide recreational opportunities/facilities.
- Provide support facilities in conjunction with trail development.
- Determine where the establishment of user fees is appropriate to lower recreation costs for the City.
- Determine under what circumstances unsolicited gifts and donations will be accepted if they are free of obligations or potential future impacts.
- Determine under what circumstances volunteer efforts will be utilized to expand the City's recreational elements.
- Active use recreation areas should be designed for year-round use.
- Park and trail development should minimize impacts on adjacent properties through provisions for, but not limited to:
    - Adequate off-street parking.
    - Appropriate orientation and location of buildings and activity areas.
    - Screening, buffering, and landscaping.
    - Adequate setbacks and physical separation.
- Preserve existing physical site amenities (natural or man-made) and encourage the establishment of new site amenities when planning and developing park areas.

FACILITY PURPOSE AND DESIGN POLICIES

- Establish park and trail facilities which provide recreational as well as functional uses.
- Provide varying types of trails to be used as the basis of planning and development for the multiple use trail system, defined as a comprehensive trail system for the integration of a variety of compatible non-motorized trail uses (pedestrian, bicycles, roller skating, cross country skiing, etc.).
- Grades of trails should not exceed five percent to ensure accessibility for people with disabilities or eight to ten percent for all others.
- Design and construct trails according to the standards established by the National Park and Recreation Association, the State Department of Transportation, and Rails-to-Trails Conservancy (see Trail Design Standards attached herein).

- The inclusion of environmentally sensitive areas (river frontage, native prairie, bluffs, unique vegetative associations, etc.) into park or trail facilities should be considered to contribute to the overall recreation system.
- Park facilities and buildings should be compatible with surrounding urban or rural activities with regard to scale, design, color, setbacks, and materials.
- Potentially develop dual-use corridors incorporating bicycle and pedestrian corridors with ski touring or sledding routes during the snow season.
- Maintain all trails in good repair and ensure that designated trail segments are kept open and clear of snow throughout the year unless designated for winter use.
- Consideration shall be given to safety, visibility, and emergency access into parks when acquiring land or planning for their development.
- Bicycles shall only be allowed upon paved surfaces within the City as designated by ordinance. Mountain biking is allowed on trails designated for this purpose.
- Develop, and update as needed, policies for mountain bike and in-line skate usage.

MAINTENANCE AND OPERATION POLICIES

- Provide for the efficient maintenance and operation of clean, orderly, controlled, safe, and attractive parks and trailways. Park maintenance and operation shall safeguard the physical condition of trailways from deterioration or damage due to weather, vandalism, or other natural or human causes.
- Develop a clear and concise system of park and trail graphics and signage that direct people along trails and into parks to specific points of interest.
- Define specific park and trail safety rules.

PUBLIC RELATIONS AND COMMUNITY ISSUES POLICIES

- Develop ways in which to promote citizen interest and involvement in the City's park and trail system.
- Continue to update and distribute the pamphlet that shows the trail routes, parks, service and public facilities.
- Monitor characteristics of use, safety, and other factors periodically throughout the park and trail system.
- Develop ways to organize community recreation programs and facilities to maximize participation and overcome physical or economic limitations which may prevent equal opportunity, regardless of age, race, sex, religion, or place of residence.

PARK AND TRAILS PLAN INTRODUCTION

The Oak Park Heights Parks and Trails Plan is intended to provide guidance to the City for continued development and improvements of the City's park, trail and walkway system. The park facilities plan provides lists of improvements for the existing parks and identifies recreational facilities that could be added throughout the community.

The trail portion of the plan indicates components that can be made to increase connections with neighboring cities and provides an overall plan for off-street and on-street trails that will connect all parts of the City. The trail system should not only ensure public access to community amenities but will also provide recreational opportunities for all age groups and safer access throughout the City. The trail system, in connection with regional and local trail systems that are in place or planned, could be used as a marketing tool for the community as well as to bring visitors to Oak Park Heights.

The Parks and Trails Plan is based upon information gathered and analyzed in the Inventory, Issues Identification, and Goals and Policies sections of the plan. The following paragraphs detail the park, trail and walkway plans for the community to pursue in the next 10 years.

PARK FACILITIES

Valley View

Valley View Park is valued for its dense vegetation, variation in topography, and wetlands. The plan proposes to maintain and enhance the natural aesthetics of the park. Improvements to the park focus on making the park more visible in the community and St. Croix Valley, more accessible, and as a continued resource for environmental education.

The proposed improvements to the park will maintain and update the facilities that are already present. Currently, many people are unaware of the lower portion of the park due to lack of signage and the physical separation from the upper portion of the park.

A list of potential improvements to Valley View Park is as follows. A map of the improvements is found on a following page.

1. Replace the easement trail from Ozark Avenue.
2. Make building improvements to park shelter such as providing a deck on the east side, extension to north side, installing gutters, and adding electrical outlets.
3. Provide trail connections to the east of the park shelter.
4. Provide trail connections to the north of the park shelter, across the ravine.

5. Remove buckthorn from the easterly wooded area.
6. Work with Washington County on providing a pedestrian tunnel under Osgood Avenue to provide access from Brekke Park to the entrance of Valley View Park.
7. Provide signage to create a better understanding of the amenities of the park, especially the environmental features, and how to access them.

Brekke Park

Brekke Park is used extensively for field games and as a playground for toddler age and older children. The proposed plan proposes maintenance and minor improvements to the existing park. Previous park plans included proposals for expansion of passive and active recreational uses on the DNR managed land south of the park. If the land becomes available for purchase, the City would consider acquiring it for recreational open space uses.

The map on a following page indicates the planned improvements. A summary of the improvements is as follows:

1. Study potential improvements to the existing picnic shelter.
2. Replace hockey boards
3. Work with Washington County on construction of a pedestrian tunnel under Osgood Avenue to provide safe access from Brekke Park to Valley View Park and the neighborhoods to the east.
4. Improve and update play equipment as needed.
5. Provide a connecting trail behind the baseball fields through the wildlife management area.
6. Replace easement trail and fence off 55th Street
7. Consider a trail with an east/west orientation along the existing parking lot and edge of the park to provide a connection to the upper playground.
8. Consider purchase, if available for sale, of the DNR managed property to the south of Brekke Park.

Swager Park

Swager Park serves as a linear neighborhood playground along a trail that is within an Xcel power line easement. The trail is now completed from Oldfield Avenue to the Anderson office building parking lot.

Overall the main objective for this park is to keep it well maintained and serve the surrounding neighborhood. The City has considered a permanent restroom structure in the park but will continue with placement of portable toilets for the foreseeable future. Adding more trees, prairie grass plantings, and improved fencing/screening for the adjacent neighborhoods is also a priority.

The map on a following page indicates the proposed improvements. A summary of those improvements is found as follows:

1. Consider the park as a linear park segment within the trail system, rather than a destination.
2. Provide more benches and picnic tables in the park.
3. Develop a landscape plan that provides additional trees and shrubs in the developed park area.
4. Work with Xcel on planting prairie grass in that area north of City Hall.
5. Provide exercise stations along the trail.
6. Provide fence/landscaping as a screen along the northern boundary of the park.
7. Consider eventual removal and possible replacement of the fence as needed along the south boundary of the park. The neighborhood shall be involved.
8. Provide lighting along the trail at the crosswalk at Oldfield Avenue.
9. Add water service with water fountain and hydrant.
10. The City would require park land dedication for the potential redevelopment area north of Swager Park.

Cover Park

Cover Park is the smallest park in the City and provides an active area for residents in the surrounding neighborhood. Improvements to the park were competed in 2017 that included a year-round park shelter/warming house for the hockey rink and covered picnic area. The parking was moved to the north side of the park adjacent to the new park shelter. Due to the proximity of Oak Park Crossing Park, trail connections were also provided to provide access between the two parks.

The map on a following page indicates the limited planned improvements considering the recent upgrade of facilities. A listing of these improvements is as follows:

1. Monitor maintenance and improvements to new park shelter including installing gutters.
2. Maintain/improve perennial planting slope.

Autumn Hills Park and Haase Recreational Area

Autumn Hills Park and Haase Recreational Area serve as a neighborhood park and open space that is surrounded by the Boutwells Landing senior community. With completion of the new park shelter and restrooms in 2007, much of the major improvements are completed at this park. The City has identified additional projects to complete the park and to provide recreational programs and cross utilization of the facilities at Boutwells Landing.

The map on a following page indicates the planned improvements. A listing of these improvements is as follows:

1. Monitor condition of playground equipment and replace as necessary.
2. Monitor condition of picnic tables and benches and replace as necessary.
3. Provide additional tree plantings within the park and replace ash trees.
4. Provide no smoking signs by playground.
5. Add bike racks near the park shelter.
6. Provide connections to the Boutwells Historic Village area to the south of the park and explore programs and cross-utilization of both facilities.

Oak Park Crossing Park

The area directly to the north of Valley View Park and south of Highway 36 contains Oak Park Crossings Park. This park area was developed on the former Allan S. King ash disposal facility. A parking lot has been constructed to provide access and the park has been provided with a playground, park shelters, walking trails and prairie grass plantings. The system of trails connects the open area with the neighborhoods to the west, Valley View Park to the south, and to Cover Park and the neighborhoods to the east. A major goal within this park is to provide a trail connection along the eastern border of Perro Pond.

The map on a following page indicates the planned improvements. A listing of these improvements is as follows

1. Include exercise equipment along trail system.
2. Determine if water fountains can be added.
3. Provide a trail connection along the eastern border of Perro Pond.
4. Add a swing set near the playground area.
5. Add picnic tables within picnic shelters.

REGIONAL PARKS AND TRAILS

The map on a following page indicates the regional park and trail systems in the St. Croix Valley near Oak Park Heights. The City will work with Washington County, adjoining cities and townships in providing an interconnected system. The map also reflects the Regional Bicycle Transportation Network corridors planned through the City.

The Loop Trail is a 4.7-mile bicycle and pedestrian trail that is part of the St. Croix River Crossing project. With the completion of the St. Croix Crossing Bridge in August 2017, vehicle traffic was re-routed onto the new bridge and the existing Stillwater Lift Bridge will be converted to a bicycle and pedestrian facility. The Loop Trail will cross the St. Croix

River at the Stillwater Lift Bridge and on the new St. Croix Crossing bridge. Trails in Minnesota and Wisconsin will complete the loop and will connect to regional and local trail systems. The Lift Bridge will still accommodate boat navigation with lifts.

The Loop Trail consists of a number of segments that will be completed by 2019. The main portion of the Minnesota and Wisconsin Loop Trail was constructed in 2015 and 2016. Construction of the remaining portions of the Loop Trail will occur in 2018 and 2019, with only the Lift Bridge portion remaining incomplete until 2019. By summer of 2019, the Loop Trail is expected to be fully operational.

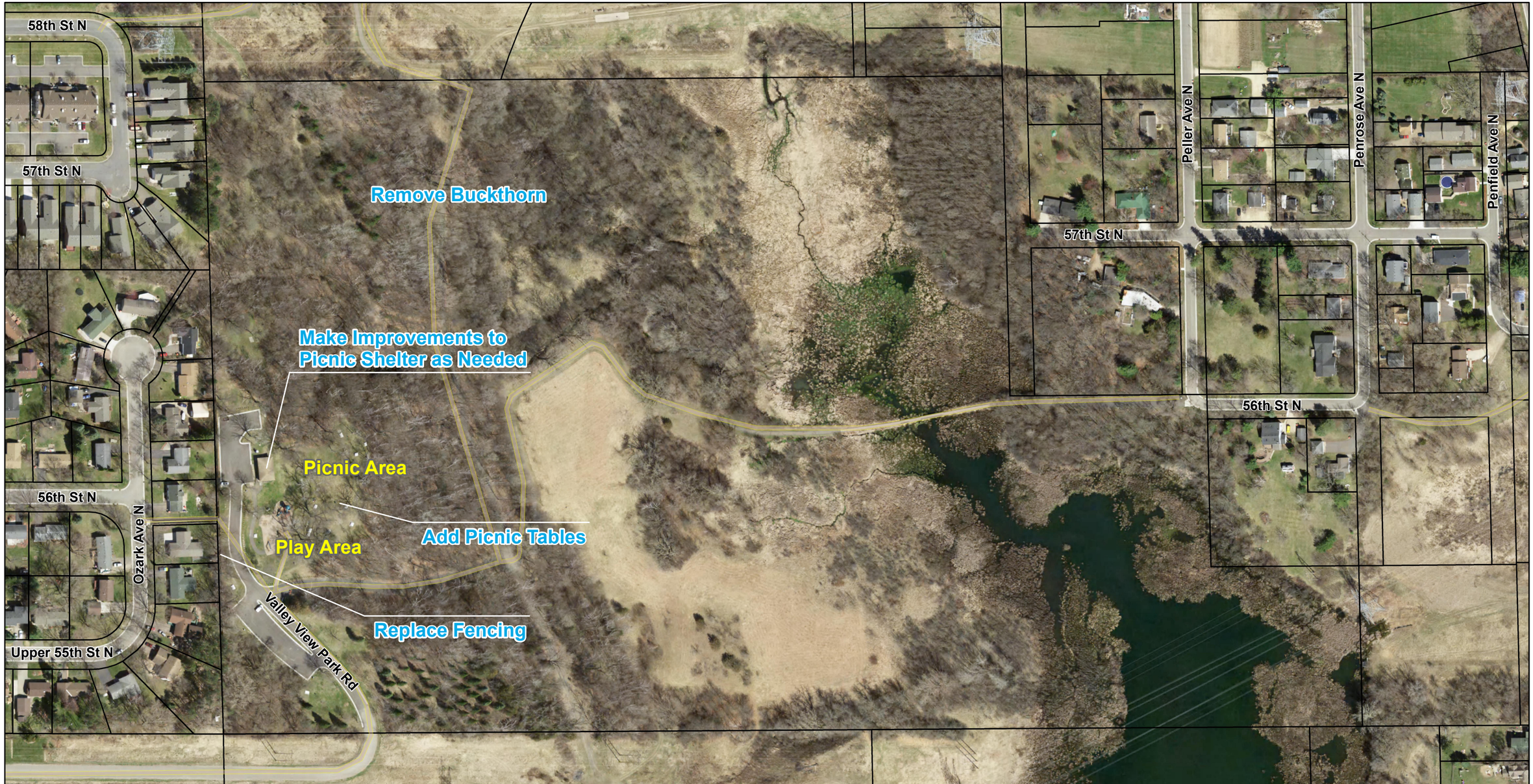
TRAILS

The Proposed Parks and Trails Map has been created as part of the update to the Comprehensive Park and Trail System Plan and is found on a following page. The Issues Identification process indicated that there is a strong desire to continue the interconnection of neighborhoods, schools, commercial areas, public facilities, and parks. City staff has indicated that trails will be added as part of any City street projects, where possible, and as part of new and redeveloped commercial projects. The City will also work with Washington County on roadway upgrade projects, especially as it relates to providing trail connections.

The trail plan will provide for the interconnection of neighborhoods, parks, schools and commercial areas. Emphasis shall be placed on a trail system that connects all areas of the community and interconnects to regional trail systems. The map on a following page indicates the existing and proposed trail system that includes both on-street and separated segments.

Development of a comprehensive bicycle and pedestrian trail system plan as part of a park and trail system plan for the community should incorporate the following:

1. Include trail routes within and interconnections to the areas planned for annexation.
2. Connections to and linking neighborhoods with the commercial and industrial/ business park areas of the City.
3. Trail routes along major streets that have the most direct access to primary pedestrian destinations.
4. Where trails will connect neighborhoods to schools.
5. Where trails will serve commuter destinations.
6. Where trails lead to parks, playfields and other recreational facilities.
7. Where trails will link together separate portions of the sidewalks and trail systems with each other.
8. Where trails provide access to future regional trails consistent with the planned Regional Bicycle Transportation Network.



City of Oak Park Heights

TPC The Planning Company

Stantec

N

0 200 400 Feet

City of Oak Park Heights
Comprehensive Plan

Proposed Plan
Valley View Park

Source: The City of Oak Park Heights,
The Planning Company, & Stantec

August 2019

City of Oak Park Heights

TPC The Planning Company

Stantec

City Limits

N

0 120 240 Feet

City of Oak Park Heights
Comprehensive Plan

Proposed Plan
Brekke Park

Source: The City of Oak Park Heights,
The Planning Company, & Stantec

August 2019

City of Oak Park Heights

TPC The Planning Company

Stantec

Legend

N

0 60 120 Feet

City of Oak Park Heights
Comprehensive Plan

Proposed Plan
Swager Park

Source: The City of Oak Park Heights,
The Planning Company, & Stantec

August 2019

City of Oak Park Heights

TPC The Planning Company

Stantec

Note: Park reconstructed as outlined in yellow in 2017. Aerial photo that shows the new layout is not yet available.

N

0 30 60 Feet

City of Oak Park Heights
Comprehensive Plan

Proposed Plan
Cover Park

Source: The City of Oak Park Heights, Washington County, The Planning Company, & Stantec

August 2019

City of Oak Park Heights

TPC The Planning Company

Stantec

N

0 100 200 Feet

City of Oak Park Heights
Comprehensive Plan

Proposed Plan
Autumn Hills Park

Source: The City of Oak Park Heights, Washington County, The Planning Company, & Stantec

August 2019

City of Oak Park Heights

TPC The Planning Company

Stantec

N

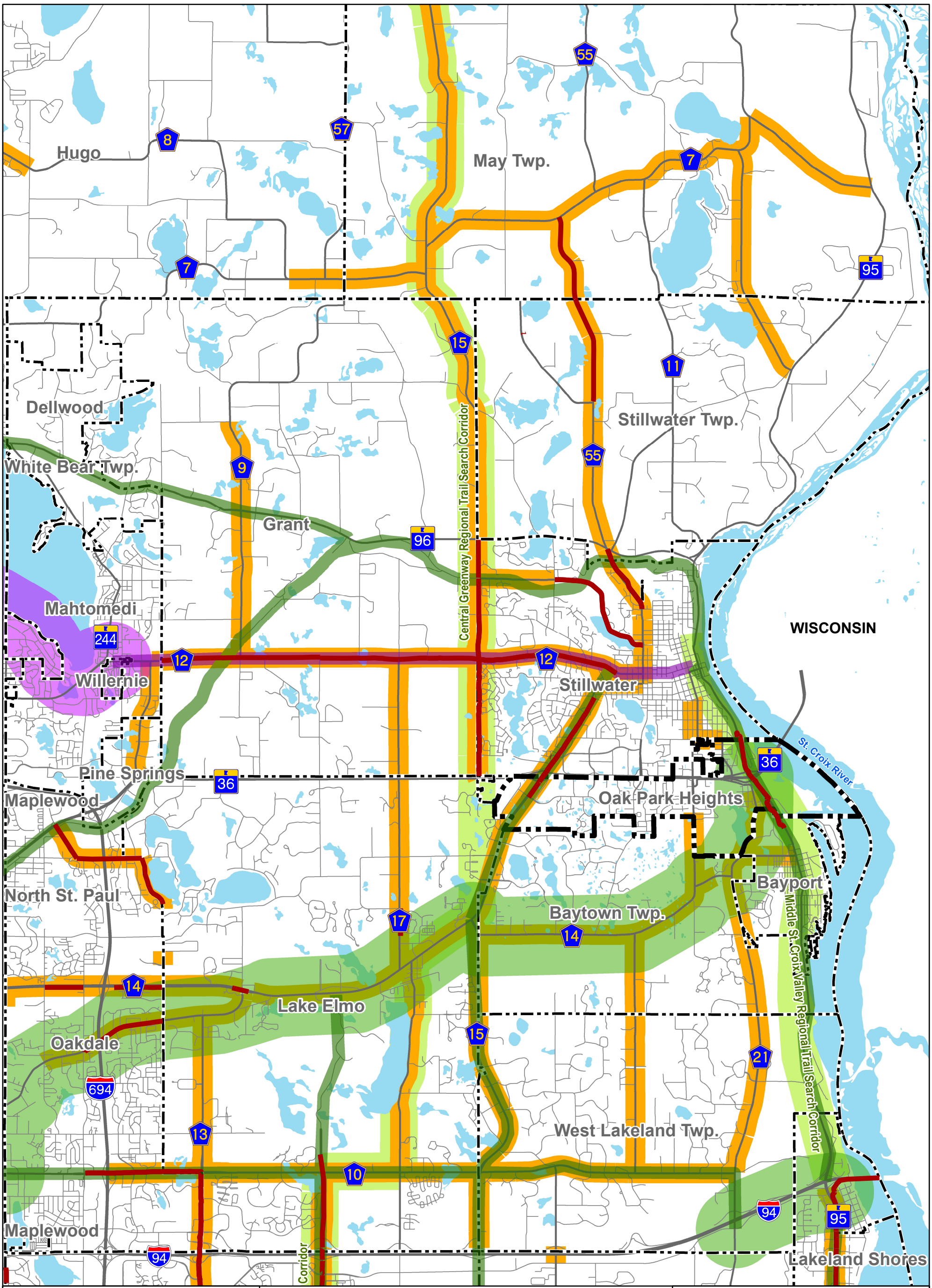
0 160 320 Feet

City of Oak Park Heights
Comprehensive Plan

Proposed Plan
Oak Park Crossing Park

Source: The City of Oak Park Heights, The Planning Company, & Stantec

August 2019



City of Oak Park Heights

TPC The Planning Company

Stantec

Road Separated Paved Trail

Tier 1 RBTN Alignment

Tier 2 RBTN Alignment

Tier 1 Priority RBTN Corridor

Tier 2 RBTN Corridor

Shoulder Width Greater Than 6'

Regional Trail Search Corridor

Oak Park Heights City Limits

Other Muncipal Boundaries

N

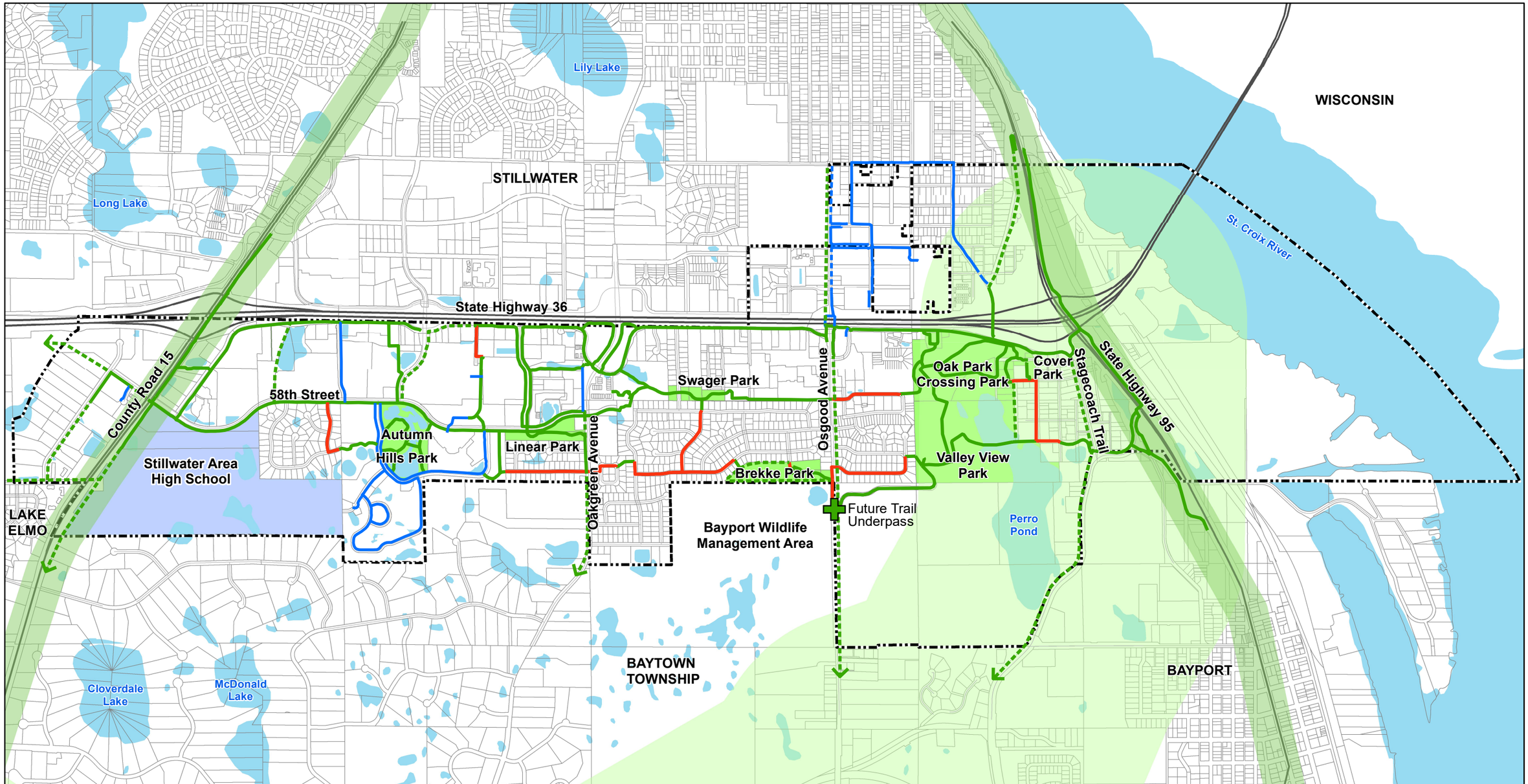
0 6,000 12,000 Feet

City of Oak Park Heights
Comprehensive Plan

Regional Connections

Source: The City of Oak Park Heights, Washington County, The Planning Company, & Stantec

August 2019



City of Oak Park Heights

TPC The Planning Company

Stantec

Existing Off Street Trail
Existing Sidewalk
Existing On Street Trail
Proposed Off Street Trail
Proposed Sidewalk
City Limits
Planned Tier 2 Regional Bicycle Transportation Network Alignment
Tier 2 Regional Bicycle Transportation Corridor
Parks
Regional Bicycle Destination
Future Trail Underpass

N

0 0.3 0.6 Miles

City of Oak Park Heights
Comprehensive Plan

Proposed Parks and Trails

Source: The City of Oak Park Heights, The Planning Company, & Stantec

August 2019

Implementation

INTRODUCTION

A final, continuing and ongoing phase of the current comprehensive planning process is the programming of implementation measures intended to bring about improvements to the City as defined by the Comprehensive Plan.

Implementation consists of both planning and budgeting. Programs and projects are initially identified and defined. This is followed by prioritizing the various efforts on a yearly basis and then in the year the project will be implemented, determining work responsibility, costs and possible funding sources of projects.

The Implementation chapter lists possible improvement projects identified during Oak Park Height's comprehensive planning program. It is again emphasized that implementation of the plan is an ongoing, annual effort which Oak Park Heights should incorporate as part of its management and budgeting process. This Implementation Plan, once established, should be reviewed and updated by the City each year at the beginning of its yearly financial planning. Through such constant attention, the City will be able to progressively address and resolve problems and bring about desired community improvements to the extent that fiscal resources are available.

NATURAL ENVIRONMENT

Xcel Energy Fly Ash Disposal Site/Oak Park Crossing Park

The Xcel Energy fly ash disposal site, which is south of Highway 36 and east of Osgood Avenue, was used to dispense of an ash by-product created at the Allen S. King power generating facility located adjacent to the St. Croix River. The site has been capped and is now Oak Park Crossing Park. The fly ash monitoring will continue under the management of Xcel Energy, but the park is under the management of the City.

Wetlands / Perro Creek

Wetlands in the City serve important features as ponding areas for ground water recharge, nutrient assimilation, wildlife habitat and as open space. Perro Creek is a significant natural feature within Valley View Park that serves important stormwater and aesthetic functions. The City will continue to protect wetland areas and enforce the existing setbacks and buffer regulations. In addition, the City will incorporate these natural areas into trail planning to take advantage of views and access to these natural areas.

Ground Water

A ground water pollution area south of Oak Park Heights will be an ongoing issue for the City. The Baytown Township ground water contamination site is the result of the disposal or spillage of trichloroethylene in the area south of Highway 5 and west of Manning Avenue, and the use or spillage of carbon tetrachloride at a nearby grain storage facility. The City will need to continue to monitor the spread of the contamination and consider the pollution impact with any new well or well reconditioning.

LAND USE

Annexation Areas

The Comprehensive Plan indicates one area, west of the City in Stillwater Township, that potentially could become a part of the City in the next 10 years. The City will not aggressively pursue areas of annexation from the Township or detachment/annexation from one of the adjoining cities. The City will continue an ongoing dialogue with the property owners and with the affected governing jurisdictions. The use of annexation or orderly annexation agreements would be utilized to make the transition to the City of Oak Park Heights.

Residential

Single Family. The City will not actively pursue additional land outside of the current City limits for single family development. There are currently no significant tracks of land available in the City for low density subdivision but there will be ongoing, minor single-family infill projects. Preservation and ongoing investment and maintenance within the existing neighborhoods will be the focus for the City in coming years. Street/utility reconstruction projects will also be a focus in neighborhoods as these maintenance projects are required.

Medium/High Density Residential. There are no current mid and high-density residential projects under construction within the City, but development in these land use categories are anticipated between 2020 and 2025. As with single family, there are no tracks of land that could accommodate significant mid density projects. Redevelopment along the Highway 36 corridor could include mixed use developments that incorporate mid and high-density residential units.

There are also two areas identified for additional high-density development, that area north of 58th Street included as part of Boutwells Landing, and property along Stage Coach Trail.

Housing

The City will work with the Washington County CDA (CDA) to promote the development of affordable housing units in the community, the maintenance and rehabilitation of existing homes, and with homeowner counseling and education programs. The identified housing needs are as follows.

Existing Housing Needs:

1. Work with the CDA and senior housing providers in the area to provide affordable senior housing at all levels.

2. Work with the CDA to assist homeowners with housing purchase, maintenance, and repairs to provide a wide range of affordable rental and ownership options.

3. Support the CDA and its programs related to homebuyer education and counseling.

Projected Housing Needs:

1. Providing the necessary assistance and working with Washington County Community Development Agency (CDA) as well as housing developers to provide 74 units of affordable housing from 2021 to 2030 including:

    - 33 units affordable at 30 percent AMI or less
    - 11 units affordable at 31-50 percent AMI
    - 30 units affordable at 51-80 percent AMI.

In order to address the identified and projected housing needs, the City will utilize the following tools:

OAK PARK HEIGHTS IDENTIFIED AND PROJECTED HOUSING NEEDS AND TOOLS		
Identified Need	**Available Tools**	**Circumstance of Use**
EXISITING HOUSING NEEDS		
Creation of Affordable Senior Housing	CDA and Metropolitan Council	Work with CDA in sponsoring an application to the Metropolitan Council's Livable Communities Account program for affordable senior housing development.
	TIF	The City is willing, as it has in the past, used TIF financing for affordable senior housing.
	Tax Abatement	It is unlikely the City would use tax abatement.
	CBDG	The City would encourage the CDA to use CBDG funds for senior housing.
	Housing Bonds	The City would support the CDA in issuing Housing Bonds to support senior housing.
	Site Assembly	Work with CDA on an environmental clean-up grant application for an appropriate site.
	Grow Fund	Work with the CDA on an application to the GROW Fund financing program to construct affordable senior housing.
Housing purchase, maintenance, and repairs to provide a wide range of affordable rental and ownership options.	Technical Assistance Referrals	The City can refer developers to the CDA that provides guidance with acquisition, relocation, site assembly, financing, grant writing, brownfield remediation, and other services.
	Home Improvement Loan Program	The City would work with the CDA on use of their Home Improvement Assistance program for rehabilitation and preservation of existing affordable housing.
	Minnesota Housing's Fix-Up Fund	The City can refer homeowners to the Minnesota Housing's Fix-Up Fund lenders.
	Affordable Mortgages	The City can refer potential homeowners to the Start Up Loan Program through the CDA.
	Rental License and Inspections.	The City may consider implementing a rental license and inspection program.

Identified Need	Available Tools	Circumstance and Sequence of Use
Homebuyer/Homeowner Education and Counseling	CDA	The City can refer homebuyers and homeowners to the CDA for educational workshops and counseling to promote affordable housing.
Projected Housing Needs		
Allocation of Affordable Housing Need below 30 percent AMI (33 Units) Allocation of Affordable Housing Need between 31 percent and 50 percent AMI (11 Units) Allocation of Affordable Housing Need between 51 percent and 80 percent AMI (30 Units)	Guiding Land at Densities That Support Affordable Housing	The Proposed Land Use Plan provides areas, especially on 58th Street between Norell Avenue and Nova Scotia that is appropriate for affordable housing.
	Zoning and Subdivision	The City currently has adequate zoning and subdivision regulations to support affordable housing.
	TIF	The City has in the past and would consider TIF proposals to promote affordable housing.
	Tax Abatement	It is unlikely the City would use tax abatement.
	CDA	The City will work with the CDA on available programs that provide additional affordable housing such as the GROW fund, Low Income Housing Tax credits and CBDG funding.
	Livable Communities	Work with CDA in sponsoring an application to the Metropolitan Council's Livable Communities Account program for affordable housing development.
	Super RFP	The City would support an application to Super RFP programs for affordable housing.
	Housing Bonds	The City would support the CDA in issuing Housing Bonds to support senior housing.
	Site Assembly	The City would support environmental clean-up grant applications for affordable housing applications.
	Site Assembly	The City would consider using any awarded funds to assemble a site in the locations identified on the Proposed Plan Use Map for affordable housing.
	Housing Organizations, Partnerships and Initiatives	Where appropriate the City will participate in organizations and partnerships that will promote affordable housing.

Projected Housing Needs, Continued	Available Tools	Circumstance and Sequence of Use
	4d Tax Incentives	The City would consider utilizing the 4d tax incentives to promote affordable housing through a lower property tax rate.
	Housing Improvement Areas	The City would consider a Home Improvement Area to assist in maintenance of older townhouse developments in the City.

A more detailed description of the tools that will be utilized by the City or will provide support to the CDA are as follows:

Development Financing Tools

- Tax Increment Financing (TIF): The City has used TIF in the past to assist in the development of the Oak Park Senior Living project that has created 92 affordable senior units since 2012 and an additional 72 that will be completed in 2019. This tool could be utilized in providing additional affordable units in a high-density development project on 58th Street between Norell Avenue and Nova Scotia Avenue.

- GROW Fund: The GROW Fund is a levy-supported loan gap financing tool for rental and homeownership housing affordable to households at 60% AMI or below. The funds are intended to leverage public and private sector funds for the development of new affordable housing units or the preservation of existing ones through redevelopment. The City would work with the CDC in utilizing this financing tool, especially for high density development.

- Low Income Housing Tax Credits: The CDA is a sub-allocator of housing tax credits which are the primary way to raise private equity for affordable housing projects. The CDA awards 9% credits on a competitive annual basis while 4% credits are paired with tax exempt bonds and allocated on a pipeline basis with the bond issuance. The housing must be affordable to households with incomes at 60% AMI or below. The City would work with the CDC in utilizing this financing tool, especially for high density development.

- Tax Exempt Bonds: The CDA is authorized to issue tax-exempt and taxable revenue bonds for multi-family and facilities projects. Tax exempt bonds offer lower debt service to borrowers than taxable ones. Eligible projects include affordable rental housing, assisted living and long-term care facilities, public infrastructure projects, municipal projects and 501(c) 3 nonprofit real estate and equipment.

- Community Development Block Grant (CDBG): CDBG funds can be used to meet a variety of community development needs including investments in public infrastructure, single family or multi-family housing rehabilitation, homelessness assistance, business loans, or capital improvements for publicly owned buildings. The activities must benefit households with incomes at 80% AMI or below. Funding is granted on an annual basis through a competitive process. The CDA administers the CDBG program on behalf of Washington County as pass-through funds from the U.S. Department of Housing and Urban Development.

- HOME Investment Partnerships Program (HOME): Often HOME funds are used for the construction of new affordable housing or rehabilitation and preservation of existing affordable housing. They may also be used for activities related to homebuyer assistance or tenant-based rental assistance. The activities must benefit households with incomes at 80% AMI or below. Funding is granted on an annual basis through a competitive process. The CDA administers the HOME program on behalf of Washington County as pass-through funds from the U.S. Department of Housing and Urban Development.

-Livable Communities Account: This program is available through the Metropolitan Council and would be used with assistance of the CDA for development of affordable housing. If necessary, the City will develop a Fair Housing Policy in order to draw upon Livable Communities funds.

Technical Assistance

- Community development technical assistance is available from CDA staff. The CDA can provide guidance with acquisition, relocation, site assembly, financing, grant writing, brownfield remediation, and other services to with local development projects.

Home Improvement Assistance

-Deferred no interest loans up to $18,000 are available to households with incomes at or below 80% AMI. Loans can finance projects that make homes safer and more livable including energy efficiency, accessibility, exterior painting, siding, windows, electrical, plumbing, or lead stabilization projects. The City will work with the CDC in promoting this tool in the City, especially for those older areas of the community that are east of Osgood Avenue.

Affordable Mortgage Products

-Affordable mortgages are available to Washington County residents through participating lenders in the Start Up Loan program. First time homebuyers must meet median income limits and interest rates are kept low by funding mortgages through a

bonding allocation. CDA staff can help connect residents to this program through its Homebuyer Services program. The City can assist the CDC in notifying residents of the availability of this program.

Homebuyer Education/Counseling

The CDA offers the Home Stretch educational workshops for prospective homeowners. It also provides one on one professional homebuyer counseling by appointment. The CDA is a HUD-approved housing counseling agency and provides services at no cost to participants. Services address a variety of homebuying topics from budgeting and credit scores to home maintenance and mortgages to create savvy, smart homeowners in the process. The City can assist the CDC in notifying residents of the availability of this program.

Homeowner Counseling

The CDA provides post-purchase counseling to homeowners looking at options to refinance their mortgage as well as homeowners struggling with their mortgage payments. The award-winning CDA counseling team has established a track record of successful outcomes in nearly 80% of resolved foreclosure prevention counseling cases. The CDA is a HUD-approved housing counseling agency that works with homeowners to discuss options and create a plan over the phone or through in person sessions. The City can assist the CDC in notifying residents of the availability of this program.

Other Tools

The City, through the CDA will consider drawing upon the Two Rivers Community Land Trust, or tools that preserve private unsubsidized housing such as the NOAH Impact Fund.

Commercial

Highway commercial development and redevelopment will continue along Highways 36 and County Road 15. Infill development is expected to claim the remaining developable areas in the next five to ten years. Under-utilized properties will become increasingly attractive for redevelopment as the demand for prime frontage on these corridors continues. The City will need to work with the development community in facilitating upgrades and redevelopment opportunities. Involvement with Mn/DOT and Washington County is also necessary to address access issues, frontage road maintenance, and ongoing funding and improvement issues.

Business Warehousing / Industrial

The City has very limited area available for business/warehousing land use and no land for additional industrial. The business warehouse area contained within the Kern Center off County Road 15 and 58th Street, will be completely developed in the next five to ten years. The City will support continued investment in the existing business and warehousing areas through expansion, upgrades, and improved infrastructure to insure the economic and job base of the City.

A.S. King Plant

The Xcel Energy - Allen S. King Plant is a 511 mega-watt coal-fired facility that was constructed in 1968 along the St. Croix River on approximately 60 acres. The King Plant underwent a major retrofit in 2004 to reduce emissions. However, like many power plant facilities, the repair and maintenance become expensive for Xcel Energy compared to alternative investment in new technology and facilities to generate the same power at a lesser cost.

Therefore, Xcel Energy plans to close the King Plant by 2028, a decade sooner than originally planned. As part of its clean energy initiative, Xcel Energy also plans to expand wind and solar energy. The company aims to add 1,850 megawatts of wind power by 2022, and 3,000 megawatts of solar power by 2030. Beyond the environmental discussions or base-load capacity elements, it is important to understand that when this power plant was originally constructed in Oak Park Heights, there was a commitment to the local community from Xcel Energy that there would be a significant tax benefit to its residents in exchange for having this facility in the community. While there have been annual fluctuations, this tax benefit remains. Currently, the City receives 33 percent of its annual property tax revenue from the King Plant or approximately 1.7 million dollars.

When the King Plant closes and no longer remains a viable source of tax revenue, the City will have a significant gap in its ability to fund municipal services. Accordingly, the City, like many other communities that host power plants (being coal, nuclear or natural gas) must begin to contemplate about how it would respond when such closure happens. More specifically, what would happen to the Allen S. King Plant site? How or could the budget gap be addressed without a passage of such costs to others? Will the site have ongoing environmental issues?

The City plans to engage with Xcel Energy, community members, and State and local government partners to begin to explore the issues and opportunities that closure of the King Plant will present.

Park Land / Open Space

As part of this Comprehensive Plan process, the Parks and Trails Plan has been updated. The plan indicates that there are no new areas planned for park development in the City. Identified in the plan are a number of park and trail improvements, most related to maintenance, that will be addressed in the next ten years.

Public and Institutional

There are no significant expansions for any of the public or institutional facilities that would necessitate change in land uses.

HISTORIC PRESERVATION

The Land Use Plan has identified two sites deemed historic. Due to the limited number of historic structures and sites, the City does not anticipate the need for a preservation ordinance or establishment of a commission to oversee historic resources. The City will work to maintain these properties, within financial and practical reason, in that they contribute to the cultural resources of the community.

SOLAR ACCESS PROTECTION

Solar access protection is provided for the uniform application of lot and building performance standards that are in place within the Oak Park Heights Zoning Ordinance. The City will continue to maintain these standards and promote the establishment of energy saving and capture methods that are in conformance with the building design and lot requirements. There are three solar related cost-free programs that the City will consider enrolling in. They are designed to provide planning, technical, and policy assistance:

U.S. Department of Energy's SolSmart Program: Solar Permitting, Zoning and Development

Minnesota GreenStep Cities Program: Sustainability Best Practices

Xcel Energy's Partners in Energy Program: Energy Action Plan Development.

TRANSPORTATION

Functional Classification System / Access Management

The Transportation Plan indicates a functional classification system map as well as regulations for access management. On an ongoing basis, the City will follow the plan in terms of the access management recommendations as it relates to new and redevelopment projects.

Highway 36

The City recognizes the increased 2030 traffic volumes projected on Highway 36 which is expected to reach 55,000 ADT in that area between Oakgreen and Osgood Avenues. With the increased traffic, the City will continue to work with Mn/DOT and Washington County on issues related to frontage roads and critical Highway 36 intersections within the City. The at-grade crossings at Norell Avenue and Osgood Avenue will need to be monitored and improved to ensure adequate traffic flow levels and to assure the safety of drivers and pedestrians at these locations.

Street Reconstruction Program

One of the transportation policies indicates a continuation of the street reconstruction programs to maintain the local utility and street network. The City Council and City staff will need to continue to maintain the condition of the City streets and determine a timeline to complete the necessary sections of the network. As part of the budgeting process, the City Council will also need to continue to set aside funds to eventually complete this expensive rehabilitation program.

Rail Facilities

The City of Oak Park Heights will work with representatives of Union Pacific on any rail transportation issues that arise. It is expected that the Allen S. King Plant will continue to receive all of the coal shipments via this rail line. The 2040 Transportation Plan does not indicate any light rail corridors that would access Oak Park Heights or neighboring communities in the St. Croix Valley.

Bus / Transit Service

The City will continue to work with Metro Transit officials on continuing and expanding bus service for Oak Park Heights. Additionally, the City continues to support the local transit service provided by the Washington County Transit Link Service and Metro Mobility/ADA. This service is especially important for elderly residents and those that

are less independently mobile. Expansion of this service may be necessary as the population of the St. Croix Valley grows older and less mobile.

COMMUNITY FACILITIES

Police and Fire

The City's police and fire services adequately serve the emergency protection needs of the community at this time. The contract with the Bayport Fire Department has served the community well and will be continued into the future. The City will need to continue to monitor its needs for fire and ambulance service, especially as the elderly population of the community grows. The new Bayport Fire Department facility, completed in 2016, will also serve the member communities well for years to come.

Additional study will be necessary to determine if the Bayport Fire Department could serve the development of the potential annexation area to the west of the City. If an annexation proposal is presented to the City, a study would be necessary.

Water, Sanitary Sewer and Storm Sewer Services

The City Engineer, Stantec, has developed Water, Sanitary Sewer and Storm Sewer Plans as part of this Comprehensive Plan Update. These plans are attached in the Appendix of this document.

City Hall/Public Works

With the completion of the City Hall building in 2009 and the remodel and expansion of the public works building, the City/Police facilities and the maintenance garage will serve the community well for years to come. There are no other major facility replacement or improvements planned now other than upkeep and maintenance of existing.

ADMINISTRATION

Staffing

The City will need to monitor staffing levels as the City grows and redevelopment occurs. It is not anticipated that staffing/positions will need to be changed from the current levels.

Community Identity

The City will need to continue efforts in promoting recognition and identification. Construction of welcome signs at the primary entrances to the community and use of newspapers, cable TV, the City website and the City newsletter are all seen as important vehicles in City promotion. Continued promotion of the City's extensive trail system is also seen as a significant way of introducing people to Oak Park Heights.

Public Relations

Oak Park Heights has an ongoing policy of providing effective public education regarding City activities. The City will continue to work on ways to promote the community, its residential neighborhoods, and its business and commercial sites using effective communication tools. To continue and improve the lines of communication between City government and its citizens, Oak Park Heights should continue to use the City website, newsletters, mailings, cable access, newspapers, and other forms of public media.

Zoning / Subdivision Regulations Updates / Design Guidelines

As a follow up to Comprehensive Plan approval, the City will review and update its zoning and subdivision regulations as necessary within nine months of adopting the Comprehensive Plan 2040. The Comprehensive Plan text does not suggest any significant changes to the Zoning Ordinance district allowances and performance standards. The Zoning Ordinance has been amended but has not been completely updated since 1998. The City may consider a total update to improve format and modernize standards and provide a more user-friendly document.

Capital Improvement Planning

The City of Oak Park Heights has an effective system of capital improvements planning that is scheduled or updated on a yearly basis. The capital improvement planning can be used as a planning tool that will be especially important as the City continues to grow, and redevelopment projects occur. A copy of the Capital Improvement Plan is found as Appendix A.

Comprehensive Plan Approval Process.

The Comprehensive Plan 2018 was forwarded to adjacent and affected jurisdictions on June 29, 2018 and sent to the Metropolitan Council on March 6, 2019 for review. The Metropolitan Council provided a letter on March 27, 2019, indicating that the plan was

incomplete and provided a list of the items that needed to be amended or added to the plan. The City provided the Metropolitan Council a revised plan on August 20, 2019.

A list of the adjacent and affected jurisdictions is found in the following table with a brief summary of the comments and the City's response. The comment letters and the City's response are found in Appendix B.

OAK PARK HEIGHTS ADJACENT AND AFFECTED JURISDICATION COMMENTS AND CITY RESPONSE		
Jurisdiction	**Comment**	**Response**
City of Bayport	No comments received in the six-month review period	No action required
Baytown Township	Comments received on July 3, 2018	City reviewed and amended language in plan
City of Lake Elmo	No comments received in the six-month review period	No action required
City of Stillwater	No comments received in the six-month review period	No action required
Stillwater Township	Comments received on July 16, 2018	City reviewed and acknowledged comments
Washington County	Comments received on September 11, 2018	City reviewed and amended language in plan
School District 834	No comments received in the six-month review period	No action required
Browns Creek Watershed District	Comments received on September 13, 2018	City reviewed/responses prepared January 15, 2019
Middle St. Croix Watershed Management Organization	Comments received on November 8, 2018	City reviewed/responses prepared January 15, 2019
Valley Branch Watershed District	Comments received on August 24, 2018	City reviewed/responses prepared January 15, 2019
Washington County Regional Park Implementing Agency	No comments received in the six-month review period	No action required
Minnesota Department of Transportation	Responded on July 19, 2018 indicating no comments	No action required
Minnesota Department of Natural Resources	No comments received in the six-month review period	No action required
National Park Service	Comments received on August 29, 2018	City reviewed and amended language in plan

Appendix A: Capital Improvement Program

City of Oak Park Heights

Anticipated Capital Improvements 2019-2023

Adopted 5/28/19

TABLE OF CONTENTS

SUMMMARY

PROJECTS BY DEPARTMENT

GENERAL GOVERNMENT

GG09-COMPUER REPLACEMENTS 1
GG12-REPLACE HIGH CAPACITY COPIER 2
GG13-REPLACE DELTA ORCA WEB SOFTWARE-HVAC CONTROLS 3

PARKS

PRK001-INSTALL TRAIL – 58TH ST TO UPPER VALLEY VIEW PARK 4
PRK002-ACQUIRE DNR PROPERTY- OSGOOD AVE 5
PRK003-TRAIL SEGMENTS TO ST CROIX RIVER 6
PRK004-UPDATE SWAER PARK PLAYGROUND 7
PRK008-TRAIL MAINTENANCE 8
PRK015-REPLACE PARK FENCING-VALLEY VIEW & SWAGER 9
PRK016-VALLEY VIEW SHELTER – REPLACE 10
PRK017-WOOD BRIDGE PERRO CREEK 11
PRK019-REPLACE AUTUMN HILLS PLAYGROUND EQUIPMENT 12
PRK020-REPLACE "EASEMENT" WALKING TRAILS 13
PRK023-BREKKE PARK HOCKEY BOARDS 14
PRK024-SWAGER PARK TENNIS COURT-RESURFACE 15
PRK025-PARK SHELTER OAK PARK CROSSING 16
PRK027-REPLACE BREKKE PARK LOWER BALL FIELD BACKSTOP 17
PRK028-PARK ENTRANCE SIGNS 18
PRK029-BREKKE PARK CLIMBING STRUCTURE 19
PRK030-TRAIL CONNECTION TO UPPER PLAYGROUND-BREKKE 20
PRK031-TRAIL CONNECTION TO BALLFIELDS AT BREKKE PARK 21
PRK032-ADD TRAIL CONNECTIONS OP CROSSING TO VV PARK 22
PRK033-ADD DRINKING FOUNTAIN TO OAK PARK CROSSING 23
PRK034-ADD SWINGS TO OAK PARK CROSSING PARK 24
PRK035-INSTALL EXERCISE EQUIPMENT ALONG TRAIL/IN PARKS 25
PRK036-DECK ADDITION TO EAST SIDE OF VALLEY VIEW SHELTER 26
PRK037-EXTEND NORTH SIDE OF VALLEY VIEW SHELTER 27
PRK038-TRAIL CONNECTION FROM VV SHELTER THRU SOODS 28
PRK039-TRAIL CONNECTION VV SHELTER TO NORHT THRU RAVINE 29

POLICE

POL01-REPLACE SD#4705 FORD EXPEDITION 30
POL02-REPLACE SD#4706 FORD EXPEDITION 31
POL08-REPLACE SD#4704 CROWN VIC 32
POL10-REPLACE SD#4703 CROWN VIC 33
POL11-REPLACE SD#4701 FORD PPV SUV 34
POL12-REPLACE POLICE COMPUTERS-IN SQUAD 35

TABLE OF CONTENTS

POLICE-CONTINUED

POL13-REPLACE POLICE RADIO EQUIPMENT 36
POL14-EMERGENCY SIREN UPDATE 37
POL15-REPLACE SD#4702 FORD UTILITY VEHICLE 38
POL16-VIDEO SYSTMES-VEHICLES 39
POL17-BOCY CAMERA SYSTEM AND SOFTWARE 40

PUBLIC WORKS

PW008-REPLACE 2010 FORD 350 PICKUP 41
PW010-REPLACE KUBOTA TRACTOR AND EQUIP 42
PW011-WOOD CHIPPER 43
PW012-REPLACE FORD F550 DUMP TRUCK 44

SEWER

SEWER006-SANITARY SEWER LINING-CONTINUOUS 45
SEWER007-REPLACE 9TH ADDITION LIFT STATION 46

STORM

STORM003-STOMR SEWER CATCH BASIN REHAB 47
STORM004-MS4 PLAN AND IMPLEMENTATION 48

STREET

STREET002-MILL AND OVERLAY AREA 5 49
STREET007-MILL AND OVERLAY AREA 8 50
STREET007-MILL AND OVERLAY AREA 8 51
STREET009-MILL AND OVERLAY AREA 6 52
STREET013-SEAL COAT AREA 9,10,11 (2015 STREET RECON AREA) 53
STREET014-58TH STREET WEST OF STILLWATER BLVD 54
STREET015-SEAL COAT AREA 12 (2015 STREET RECONSTRUCTION) 55
STREET016-STREET RECONSTRUCTION AREA 14 56
STREET017-REPLACE 62ND STREET N (WEST OF OSGOOD) 57
STREET018-REPLACE OAKGREEN AVE N 58

WATER

WU002-KERN CENTER TO HIGH SCHOOL LOOP MAIN 59
WU003-OAKGREEN TO OSGOOD LOOP MAIN 60
WU004-OSGOOD TO STAGECOACH LOOP MAIN 61
WU006-WELL#3 62
WU010-WATER STORAGE TANK- NEW 63
WU012-WATER METER REPLACEMENT PROGRAM 64
WU017-WELL #2 REHAB 65
WU020-CHLORINE/CHEMICAL BOOSTER OR FEED STATION 66

TABLE OF CONTENTS

FUNDING SOURCES

FUNDING SOURCE SUMMARY 68

SOURCES AND USES OF FUNDS 69

MILL AND OVERLAY MAP

- Summary

City of Oak Park Heights, MN

Capital Improvement Plan

FY '19 thru FY '23

PROJECTS BY DEPARTMENT

Department	Project #	Priority	FY '19	FY '20	FY '21	FY '22	FY '23	Total
General Government								
Computer: Replacements - Continuous Cycle	*GG 009*	2	6,000	80,000	8,000	53,000	6,000	*153,000*
Replace High Capacity Copier/Scanner	*GG 012*	3			15,000			*15,000*
Replace Delta ORCAweb Software-HVAC Controls	*GG 013*	2		15,000				*15,000*
General Government Total			**6,000**	**95,000**	**23,000**	**53,000**	**6,000**	***183,000***
Parks								
Install Trail -58th Str. to Upper Valley View Park	*PRK 001*	5					200,000	*200,000*
Acquire DNR Property - Osgood Ave.	*PRK 002*	5					500,000	*500,000*
Trail Segments to St Croix River	*PRK 003*	5					250,000	*250,000*
Update Swager Park Playground	*PRK 004*	5					75,000	*75,000*
Trail Maintenance	*PRK 008*	1	20,000	20,000	20,000	20,000	20,000	*100,000*
Replace Park Fencing-Valley View & Swager	*PRK 015*	2		150,000				*150,000*
Valley View Shelter - Replace	*PRK 016*	5					450,000	*450,000*
Wood Bridge -Perro Creek	*PRK 017*	5					100,000	*100,000*
Replace Autumn Hills Playground Equipment	*PRK 019*	5					100,000	*100,000*
Replace "Easement" Walking Trails (Brekke, Swag...	*PRK 020*	4					70,000	*70,000*
Brekke Park Hockey Boards	*PRK 023*	4		75,000				*75,000*
Swager Park Tennis Court -Resurface	*PRK 024*	3	20,000					*20,000*
Park Shelter Oak Park Crossing	*PRK 025*	2					375,000	*375,000*
Replace Brekke Park Lower Ball Field Backstop	*PRK 027*	3					20,000	*20,000*
Park Entrance Signs	*PRK 028*	3					25,000	*25,000*
Brekke Park Climbing Structure	*PRK 029*	3					40,000	*40,000*
Trail Connection to Upper Playground - Brekke	*PRK 030*	2					100,000	*100,000*
Trail Connections to Ballfields at Brekke Park	*PRK 031*	3					100,000	*100,000*
Add Trail Connections OP Crossings to VV Park	*PRK 032*	3					100,000	*100,000*
Add Drinking Fountain to Oak Park Crossing	*PRK 033*	2	55,000					*55,000*
Add Swings to Oak Park Crossing Park	*PRK 034*	2					30,000	*30,000*
Install Exercise Equipment Along Trail/In Parks	*PRK 035*	3		30,000				*30,000*
Deck Addition to East Side of Valley View Shelter	*PRK 036*	3					30,000	*30,000*
Extend North Side of Valley View Shelter	*PRK 037*	3					100,000	*100,000*
Trail Connection from VV Shelter thru Woods	*PRK 038*	3					300,000	*300,000*
Trail Connection VV Shelter to North thru Ravine	*PRK 039*	3					100,000	*100,000*
Parks Total			**95,000**	**275,000**	**20,000**	**20,000**	**3,085,000**	***3,495,000***
Police								
Replace SD#4705 2008 Fd. Expedition - VIN A33178	*POL 01*	1			35,000			*35,000*
Replace SD#4706 Fd Expedition- VIN A33177	*POL 02*	1			35,000			*35,000*
Replace SD#4704 Crown Vic -VIN# 99X13170	*POL 08*	1			45,000			*45,000*
Replace SD#4703 2016Ford PPV SUV	*POL 10*	1		44,500				*44,500*
Replace SD#4701 2016 Ford PPV SUV	*POL 11*	1		44,500				*44,500*
Replacment of Police Computers - IN Squad	*POL 12*	1			20,000			*20,000*
Police Radio Equipment - Replace Radios	*POL 13*	1		47,000				*47,000*
Emergency Siren Update -Replacement fund	*POL 14*	1				20,000		*20,000*
Replace SD#4702 2017 Police Utiltiy Vehicle	*POL 15*	1			45,000			*45,000*

Department	Project #	Priority	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Video Systems- Vehicles	*POL 16*	2		24,000	14,000			*38,000*
Body Camera System and Software	*POL 17*	3		5,000				*5,000*
Police Total				**165,000**	**194,000**	**20,000**		***379,000***
Public Works								
Replace 2010 Ford 350 Pickup - General Use	*PW 008*	3			50,000			*50,000*
Replace Kubota Tractor $60,000 and Equip $30,000	*PW 010*	2		90,000				*90,000*
Wood Chipper	*PW 011*	3	30,000					*30,000*
Replace Ford F550 Dump box truck	*PW 012*	2		60,000				*60,000*
Public Works Total			**30,000**	**150,000**	**50,000**			***230,000***
Sewer Utility								
Sanitary Sewer Lining - Continuous	*Sewer - 006*	2		25,000		25,000	25,000	*75,000*
Replace 9th Addition Lift Station	*Sewer - 007*	1					500,000	*500,000*
Sewer Utility Total				**25,000**		**25,000**	**525,000**	***575,000***
Storm Sewer Utility								
Storm Sewer Catch Basin Rehabilitation	*STORM - 003*	4	40,000					*40,000*
MS4 Plan and Implementation	*STORM - 004*	1	23,000					*23,000*
Storm Sewer Utility Total			**63,000**					***63,000***
Streets								
Mill and Overlay Area 5	*STREET - 002*	2		254,774				*254,774*
Mill and Overlay Area 8	*STREET - 007*	2		237,761				*237,761*
Mill and Overlay Area 7	*STREET - 008*	2					918,172	*918,172*
Mill and Overlay Area 6	*STREET - 009*	2		416,574				*416,574*
Seal Coat Area 9,10,11 (2014 St Recon Area)	*STREET - 013*	2			59,609			*59,609*
58th West of Stillwater Blvd	*STREET - 014*	1	309,600					*309,600*
Seal Coat Area 12 (2015 St Recon Area)	*STREET- 015*	2				56,500		*56,500*
Street Reconstruction - Area 14	*STREET - 016*	2					874,000	*874,000*
Replace 62nd Street N (west of Osgood)	*STREET - 017*	2			85,000			*85,000*
Replace Oakgreen Ave N	*STREET - 018*	2		308,000				*308,000*
Streets Total			**309,600**	**1,217,109**	**144,609**	**56,500**	**1,792,172**	***3,519,990***
Water Utility								
Kern Center to High School Loop Main	*WU 002*	5					360,000	*360,000*
OakGreen to Osgood Loop Main	*WU 003*	4					600,000	*600,000*
Osgood to Stagecoach Loop Main	*WU 004*	4					600,000	*600,000*
Well #3 - NEW	*WU 006*	4					900,000	*900,000*
Water Storage Tank - NEW (Tank #3)	*WU 010*	4					1,900,000	*1,900,000*
Water Meter Replacement Program	*WU 012*	2			738,000			*738,000*
Well #2 Rehab	*WU 017*	2				50,000		*50,000*
Chlorine/Chemical Booster or Feed Station	*WU 020*	5					200,000	*200,000*
Water Utility Total					**738,000**	**50,000**	**4,560,000**	***5,348,000***
GRAND TOTAL			**503,600**	**1,927,109**	**1,169,609**	**224,500**	**9,968,172**	***13,792,990***

- Projects by Department
    - General Government

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department General Government
Contact Finance Director

Project # GG 009
Project Name Computer: Replacements - Continuous Cycle

Type Unassigned
Useful Life 5 years
Category Equipment: Computers
Priority 2 High

Year Completed

Total Project Cost: $252,000

Description

The City maintains approximately 20 personal computers in all of the departments. They are replaced on a 5 year rotation.

There are 4 servers that are replaced on a 5 year schedule. In 2020 two servers will be combined to utilize the machines and reduce the costs.

These computers allow all departments to communicate, email, type documents, analyze data, etc.

Accordingly, these computers must be typically maintained and updated to work with the latest programming and software elements that are created.

Justification

In order to keep up with the changes in technology and to work with efficient equipment a 5 year continuous rotation has been implemented. Rotation also helps to keep our equipment and data secure as we keep current with operating systems.

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Computers	6,000	80,000	8,000	53,000	6,000	153,000
Total	**6,000**	**80,000**	**8,000**	**53,000**	**6,000**	**153,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Bud Proj - Computers - General Fund	4,000	53,700	6,000	39,750	6,000	109,450
Bud Proj - Computers - Utility Funds	2,000	26,300	0	13,250		41,550
Total	**6,000**	**80,000**	**6,000**	**53,000**	**6,000**	**151,000**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department General Government
Contact City Administrator

Project # GG 012
Project Name Replace High Capacity Copier/Scanner

Type Equipment
Useful Life 5 years
Category Equipment: Communications
Priority 3 Moderate

Year Completed

Total Project Cost: $15,000

Description

High Capacity Copier, Printer, and Scanner
Used for Major City Business, includes color copies, large copies, scanner to Laser Fiche and emails. Features include sorting, finishing , zoom, with large capacity paper feeds.

Justification

Current copy machine was purchased in 2013. The machine has high use and should be replaced every 5 to 8 years in order to have efficient and quality copying capabilities and to take advantage of new technology Past history indicates after 5 to 10 years, the machines have more down time for repairs.

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Equip/Vehicles/Furnishings			15,000			15,000
Total			**15,000**			**15,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Bud Proj - Docu Imaging			15,000			15,000
Total			**15,000**			**15,000**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department General Government
Contact

Project # GG 013
Project Name Replace Delta ORCAweb Software-HVAC Controls

Type Unassigned
Useful Life 7 years
Category Unassigned
Priority 2 High

Year Completed

Total Project Cost: $15,000

Description

Replace HVAC control software that will no longer be supported by Delta.

Justification

The City uses Delta ORCAweb to control and operate the HVAC system at City Hall. Delta Controls appears to be phasing out systems that run flash in favor for systems that use HTML 5. The change will not immediately impact our system.
Firmware and software upgrades were performed in winter of 2017 when the host computer was replaced with the City's server; however the software will eventually need to be replaced as is the nature of software.

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Computer Software		15,000				15,000
Total		**15,000**				**15,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Bud Proj - Municipal Building Fund		15,000				15,000
Total		**15,000**				**15,000**

Budget Impact/Other

- Projects by Department
    - Parks

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Parks
Contact Public Works Director

Project # **PRK 001**
Project Name **Install Trail -58th Str. to Upper Valley View Park**

Year Completed

Type Improvement
Useful Life 30 years
Category Trails
Priority 5 Very Low

Total Project Cost: **$200,000**

Description

Provide a safe accessible trail connection from 58th Street (the Valley View Estates neighborhood)

Justification

A trail exists from this neighborhood to the Valley View Trail, which is connected to Valley View Park. This item is not a high priority and costs would be extensive to cross the large ravine between the two areas.

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Construction/Maintenance					200,000	200,000
Total					**200,000**	**200,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Bud Proj - Park&Trl Improvements					200,000	200,000
Total					**200,000**	**200,000**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Parks
Contact City Administrator
Type Improvement
Useful Life
Category Park Improvements
Priority 5 Very Low

Project # **PRK 002**
Project Name **Acquire DNR Property - Osgood Ave.**

Year Completed

Total Project Cost: **$500,000**

Description

Acquire the DNR property (200+ acres) lying west of Osgood, south of Brekke Park.

Justification

Brekke Park is a heavily used and a centrally located park. The DNR land is a viable property to add to the City Park areas. This will aid in long term assurance that the property will not be inappropriately developed. The City would also then be able to install an east-west water main loop.

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Land Acquisition					500,000	500,000
Total					**500,000**	**500,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Park & Rec Dedication Fund					500,000	500,000
Total					**500,000**	**500,000**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Parks
Contact

Project # **PRK 003**
Project Name **Trail Segments to St Croix River**

Type Improvement
Useful Life 30 years
Category Trails
Priority 5 Very Low

Year Completed

Total Project Cost: **$250,000**

Description

New trail connections:
Xcel Energy trail to the St. Croix River
Valley view to the new highway 36 regional trails (Partially completed)
New connections within Oak Park Crossing Park (Some Completed in 2016)

Justification

This is the final segment of the trail system that will eventually connect the west end of the city to the St. Croix River Loop. This may also connect to a recently considered middle St. Croix Trail proposed to be located near state highway 95 traveling north and south.

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Construction/Maintenance					250,000	250,000
Total					**250,000**	**250,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
State or DOT Funding- St Croix River Trail					250,000	250,000
Total					**250,000**	**250,000**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Parks
Contact City Administrator

Project # **PRK 004**
Project Name **Update Swager Park Playground**

Year Completed

Type Equipment
Useful Life 10 years
Category Park Equipment
Priority 5 Very Low

Description

Total Project Cost: **$75,000**

Replace exiting playground equipment with up to date play structure. This play structure must be made of a material that does not conduct electrictiy.

Justification

In 2014 play equipment was added to Swager Park to the east of the existing shelter structure and playground. The existing Swager playground is worn and dated and conducts electrical energy from the overhead power lines. Install new playground equipment that does not conduct electricity at some of the current playground equipment may deliver static shock due to overhead transmission wires owned by XCEL energy.

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Equip/Vehicles/Furnishings					75,000	75,000
Total					**75,000**	**75,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Bud Proj - Park&Trl Improvements					75,000	75,000
Total					**75,000**	**75,000**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Parks
Contact Public Works Director

Project # **PRK 008**
Project Name **Trail Maintenance**

Type Maintenance
Useful Life 10 years
Category Trails
Priority 1 Very High

Year Completed

Total Project Cost: **$200,000**

Description

The City should endeavor to update, replace, repair a given section of its extensive trail systems. This can include crack-filling, segment replacements, widening, GSB88 seal (Slurry) etc.

Justification

City trails are used extensively by residents of OPH. Maintenance such as crack sealing and spot patching is necessary to prolong the life of asphalt trails.

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Construction/Maintenance	20,000	20,000	20,000	20,000	20,000	100,000
Total	**20,000**	**20,000**	**20,000**	**20,000**	**20,000**	**100,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Bud Proj - Trail Maintenance	20,000	20,000	20,000	20,000	20,000	100,000
Total	**20,000**	**20,000**	**20,000**	**20,000**	**20,000**	**100,000**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Parks
Contact City Administrator

Project # **PRK 015**
Project Name **Replace Park Fencing-Valley View & Swager**

Type Maintenance
Useful Life 30 years
Category Park Improvements
Priority 2 High

Year Completed

Description

Total Project Cost: **$150,000**

The fencing separating Valley View Park and Swager Park from private residential property has reached its useful life and needs to be replaced.

Approximately 1,200 linear feet total.

Justification

Most of the park fencing is made of treated lumber and due to its age and weathering over many years, it is beginning to fail (Listing and leaning).

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Construction/Maintenance		150,000				150,000
Total		**150,000**				**150,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Bud Proj - Park&Trl Improvements		150,000				150,000
Total		**150,000**				**150,000**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Parks
Contact Public Works Director

Project # **PRK 016**
Project Name **Valley View Shelter - Replace**

Year Completed

Type Improvement
Useful Life 30 years
Category Park Improvements
Priority 5 Very Low

Total Project Cost: **$450,000**

Description

Replace the Valley View shelter.

Justification

The shelter at Valley View is aging. Not too distant future replacement and funding should be considered.

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Construction/Maintenance					450,000	450,000
Total					**450,000**	**450,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Bud Proj - Park Building Maintenance					450,000	450,000
Total					**450,000**	**450,000**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Parks
Contact Public Works Director

Project # **PRK 017**
Project Name **Wood Bridge -Perro Creek**

Type Improvement
Useful Life 20 years
Category Park Improvements
Priority 5 Very Low

Year Completed

Total Project Cost: **$100,000**

Description

Replace the wood bridge over Perro Creek.

Justification

City trails are used extensively by residents of Oak Park Heights. The wood bridge is a heavily used link from west of Perro Creek to the East side of the City trail system. The bridge is construted out of stress treated Douglas Fir and should be replaced upon deterioration for safey reasons

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Construction/Maintenance					100,000	100,000
Total					**100,000**	**100,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Bud Proj - Park&Trl Improvements					100,000	100,000
Total					**100,000**	**100,000**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Parks
Contact Public Works Director

Project # **PRK 019**
Project Name **Replace Autumn Hills Playground Equipment**

Type Equipment
Useful Life 20 years
Category Park Improvements
Priority 5 Very Low

Year Completed

Total Project Cost: **$100,000**

Description

Replace Autumn Hills Playground Equipment with updated Equipment

Justification

Autumn Hills is a heavily used park. Equimpment needs to be replaced over time due to wear and tear, which causes defects and therefore safety hazards. The Autumn Hills Park equipment is the only park equipment that has not been updated since the original install in the late 1990's.

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Equip/Vehicles/Furnishings					100,000	100,000
Total					**100,000**	**100,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Bud Proj - Park&Trl Improvements					100,000	100,000
Total					**100,000**	**100,000**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Parks
Contact

Project # **PRK 020**
Project Name **Replace "Easement" Walking Trails (Brekke, Swag...**

Type Improvement
Useful Life 20 years
Category Trails
Priority 4 Low

Year Completed

Total Project Cost: **$70,000**

Description

The City owns and maintains four "easement" walking trails that will require replacement.
Between Oakgreen Place and O'Brien Ave
Between 55th Street and Brekke Park
Between 57th Street and Swager Park
Between Ozark Ave and Valley View Park

Justification

The trail system is heavily used by the residents of Oak Park Heights. Three of the four easement trails are in rough shape and should be replaced along with fence replacement.

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Construction/Maintenance					70,000	70,000
Total					**70,000**	**70,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Bud Proj - Trail Maintenance					70,000	70,000
Total					**70,000**	**70,000**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Parks
Contact Public Works Director

Project # **PRK 023**
Project Name **Brekke Park Hockey Boards**

Type Improvement
Useful Life 15
Category Park Improvements
Priority 4 Low

Year Completed

Total Project Cost: **$75,000**

Description

Replace Brekke Park hockey boards

Justification

The hockey boards at Brekke Park are made of lumber. The lumber is beginning to rot especially the support posts.

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Construction/Maintenance		75,000				75,000
Total		**75,000**				**75,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Bud Proj - Park&Trl Improvements		75,000				75,000
Total		**75,000**				**75,000**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Parks
Contact

Project # **PRK 024**
Project Name **Swager Park Tennis Court -Resurface**

Type Maintenance
Useful Life 10 years
Category Park Improvements
Priority 3 Moderate

Year Completed

Total Project Cost: **$20,000**

Description

Resurface Tennis courts at Swager Park as part of preventative maiantenance

Justification

The City recently invested in replacing the tennis court at Swager Park. As a future budget item to consider; the tennis court surface will eventually need to be replaced and should be done as preventative maintenance rather than reactionary maintenance. This ensures the facility remains in good condition and prolongs the life of the initial investment.

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Construction/Maintenance	20,000					20,000
Total	**20,000**					**20,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Bud Proj - Tennis Court Resurfacing	20,000					20,000
Total	**20,000**					**20,000**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Parks
Contact

Project # **PRK 025**
Project Name **Park Shelter Oak Park Crossing**

Type Improvement
Useful Life 25
Category Unassigned
Priority 2 High

Year Completed

Total Project Cost: **$375,000**

Description

Planning discussions have included building a new four season shelter at the new Oak Park Crossing Park. This should be completed as part of Phase I of the park development.

Justification

Building a new shelter was included in the March 2012 adopted plan for the Moelter "Fly Ash" site

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Construction/Maintenance					375,000	375,000
Total					**375,000**	**375,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Xcel Energy - Moelter Site Commitment					375,000	375,000
Total					**375,000**	**375,000**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Parks
Contact

Project # **PRK 027**
Project Name **Replace Brekke Park Lower Ball Field Backstop**

Type Maintenance
Useful Life 15
Category Park Equipment
Priority 3 Moderate

Year Completed

Total Project Cost: **$20,000**

Description

Shift the lower ballfield 20-50 feet to the east and replace the backstop so the footings are not in the drainage ditch between the upper and lower ballfields.

Justification

The lower ballfield backstop at Brekke Park is set directly in a drainage trench at the bottom of the hill leading to the upper ballfield. Seasonal temperature changes cause the backstop foundations to shift and heave. The backstop now leans and the concrete footings have been pulled out of the ground. To correct the issue, the entireball field should be shifted to the east roughly 20-50 feet to the east and a new backstop should be installed outside of the drainage ditch.

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Equip/Vehicles/Furnishings					20,000	20,000
Total					**20,000**	**20,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Bud Proj - Park&Trl Improvements					20,000	20,000
Total					**20,000**	**20,000**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Parks
Contact

Project # **PRK 028**
Project Name **Park Entrance Signs**

Type Unassigned
Useful Life
Category Park Improvements
Priority 3 Moderate

Year Completed

Total Project Cost: **$25,000**

Description

The wood entrance theme dimensional signs (by Open woods studios) to parks are beginning to age, showing visible cracks, except for Oak Park Crossing.

Justification

Each sign costs roughly $5,000 to replace. 5 Parks =$25,000

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Construction/Maintenance					25,000	25,000
Total					**25,000**	**25,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Bud Proj - Park&Trl Improvements					25,000	25,000
Total					**25,000**	**25,000**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Parks
Contact

Project # **PRK 029**
Project Name **Brekke Park Climbing Structure**

Type Unassigned
Useful Life 10 years
Category Unassigned
Priority 3 Moderate

Year Completed

Description

Total Project Cost: **$40,000**

Add a climbing play structure for older children to climb.

Justification

Brekke is a heavily used park. Adding a climbing structure equipment for older children will provide play equipment for a wider age range.

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Equip/Vehicles/Furnishings					40,000	40,000
Total					**40,000**	**40,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Bud Proj - Park&Trl Improvements					40,000	40,000
Total					**40,000**	**40,000**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Parks
Contact
Type Unassigned
Useful Life
Category Unassigned
Priority 2 High

Project # **PRK 030**
Project Name **Trail Connection to Upper Playground - Brekke**

Year Completed

Total Project Cost: **$100,000**

Description

Add trails to Brekke Park that connect the lower park to the upper portion of the park.

Justification

Currently there is no trail connection between the Brekke Park parking lot and the upper portion of the park. Park users must walk across the lawn and up a steep hill to reach soccer fields, baseball fields and the upper playground equipment. Adding a trail will allow easy access to the upper park.

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Construction/Maintenance					100,000	100,000
Total					**100,000**	**100,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Bud Proj - Park&Trl Improvements					100,000	100,000
Total					**100,000**	**100,000**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Parks
Contact
Type Unassigned
Useful Life
Category Unassigned
Priority 3 Moderate

Project # **PRK 031**
Project Name **Trail Connections to Ballfields at Brekke Park**

Year Completed

Total Project Cost: **$100,000**

Description

Add trail connections to ballfields at Brekke Park.

Justification

Adding a trail behind the Brekke Park ballfields would provide a hard surface access to the ball fields and along with other trail additions would provide a looped trail system at the park. The trail would run along the DNR wetland area to the south of the park property, which would also provide pleasant scenery while using the trail.

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Construction/Maintenance					100,000	100,000
Total					**100,000**	**100,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Bud Proj - Park&Trl Improvements					100,000	100,000
Total					**100,000**	**100,000**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Parks
Contact
Type Unassigned
Useful Life
Category Unassigned
Priority 3 Moderate

Project # **PRK 032**
Project Name **Add Trail Connections OP Crossings to VV Park**

Year Completed

Total Project Cost: **$100,000**

Description

Connect existing trail along the eastern edge of Oak Park Crossing Park and Valley View Park to the Valley View bridge trail.

Justification

This trail connection would complete the loop around the Valley View Park and the Oak Park Crossing Park.

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Construction/Maintenance					100,000	100,000
Total					**100,000**	**100,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Bud Proj - Park&Trl Improvements					100,000	100,000
Total					**100,000**	**100,000**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Parks
Contact

Project # **PRK 033**
Project Name **Add Drinking Fountain to Oak Park Crossing**

Type Unassigned
Useful Life
Category Unassigned
Priority 2 High

Year Completed

Description

Total Project Cost: **$55,000**

Add a drinking fountain/water bottle filling station at or near the Oak Park crossing Park. This would require adding a service tap to a water main and bringing it to the surface.

Justification

There is currently no access to potable drinking water at Oak Park Crossing Park.

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Equip/Vehicles/Furnishings	55,000					55,000
Total	**55,000**					**55,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Xcel Energy - Moelter Site Commitment	55,000					55,000
Total	**55,000**					**55,000**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Parks
Contact
Type Unassigned
Useful Life
Category Unassigned
Priority 2 High

Project # **PRK 034**
Project Name **Add Swings to Oak Park Crossing Park**

Year Completed

Total Project Cost: **$30,000**

Description

Add swings to the park playground equipment. Placement of swings with footings/concrete pad will need consideration due to the shallow ground cover over the fly ash cap

Justification

Swings will add variety to the available equipment for play.

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Equip/Vehicles/Furnishings					30,000	30,000
Total					**30,000**	**30,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Bud Proj - Park&Trl Improvements					30,000	30,000
Total					**30,000**	**30,000**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Parks
Contact

Project # **PRK 035**
Project Name **Install Exercise Equipment Along Trail/In Parks**

Type Unassigned
Useful Life
Category Unassigned
Priority 3 Moderate

Year Completed

Total Project Cost: **$30,000**

Description

Add low maintenance exercise equipment in the parks along the trail system.

Justification

Trails are heavily used in OPH. Having exercise equipment available for park users along the trail is a requested amenity.

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Equip/Vehicles/Furnishings		30,000				30,000
Total		**30,000**				**30,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Bud Proj - Park&Trl Improvements		30,000				30,000
Total		**30,000**				**30,000**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Parks
Contact

Project # **PRK 036**
Project Name **Deck Addition to East Side of Valley View Shelter**

Type Unassigned
Useful Life
Category Unassigned
Priority 3 Moderate

Year Completed

Total Project Cost: **$30,000**

Description

Add a deck or similar structure to wrap around to the east side of the Valley View Park shelter.

Justification

The addition of a deck would increase the size of the gathering area under or around the Valley View Park shelter.

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Construction/Maintenance					30,000	30,000
Total					**30,000**	**30,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Bud Proj - Park&Trl Improvements					30,000	30,000
Total					**30,000**	**30,000**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Parks
Contact
Type Unassigned
Useful Life
Category Unassigned
Priority 3 Moderate

Project # PRK 037
Project Name Extend North Side of Valley View Shelter

Year Completed

Total Project Cost: $100,000

Description

Extend the Valley View park shelter to the north to increase the size of the gathering area under the roof.

Justification

Expanding the shelter would increase the size of the gathering area under the Valley View Park shelter roof.

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Construction/Maintenance					100,000	100,000
Total					**100,000**	**100,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Bud Proj - Park&Trl Improvements					100,000	100,000
Total					**100,000**	**100,000**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Parks
Contact
Type Unassigned
Useful Life
Category Unassigned
Priority 3 Moderate

Project # PRK 038
Project Name Trail Connection from VV Shelter thru Woods

Year Completed

Total Project Cost: $300,000

Description

Add a trail connection bearing north through the woods and across the ravine connecting to the existing valley view trail.

Justification

A trail connection across the ravine would provide a more direct route to access Oak Park Crossing Park. A bridge would be necessary to cross the ravine.

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Construction/Maintenance					300,000	300,000
Total					**300,000**	**300,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Bud Proj - Park&Trl Improvements					300,000	300,000
Total					**300,000**	**300,000**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department	Parks
Contact	
Type	Unassigned
Useful Life	
Category	Unassigned
Priority	3 Moderate

Project # **PRK 039**

Project Name **Trail Connection VV Shelter to North thru Ravine**

Year Completed

Total Project Cost: **$100,000**

Description

Add a trail connection from the Valley View shelter bearing east through the wood to connect to the existing valley view trail.

Justification

A trail from the shelter bearing east through the woods would provide direct access to the trail.

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Construction/Maintenance					100,000	100,000
Total					**100,000**	**100,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Bud Proj - Park&Trl Improvements					100,000	100,000
Total					**100,000**	**100,000**

Budget Impact/Other

- Projects by Department
    - Police

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Police
Contact Police Chief

Project # POL 01
Project Name Replace SD#4705 2008 Fd. Expedition - VIN A33178

Type Equipment
Useful Life 10 years
Category Vehicles
Priority 1 Very High

Year Completed

Total Project Cost: $35,000

Description

Replace the unmarked vehicle as driven by Investigator

Justification

This vehicle is an unmarked police vehicle used for investigations and/or the Chief's vehicle.
The Chief's vehicle is also a back up vehicle for training transportation and other missions by all department personnel. The vehicle is projected out as 10+ yr life expectancy. This vehicle was placed in service 2007.

The vehicle does not have radar or other emergency vehicle equipment with the exception of basic emergency lighting.

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Equip/Vehicles/Furnishings			35,000			35,000
Total			**35,000**			**35,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Bud Proj - Police Vehicles			35,000			35,000
Total			**35,000**			**35,000**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department	Police
Contact	Police Chief
Type	Equipment
Useful Life	10 years
Category	Vehicles
Priority	1 Very High

Project # **POL 02**

Project Name **Replace SD#4706 Fd Expedition- VIN A33177**

Year Completed

Total Project Cost: **$35,000**

Description

Replace the unmarked vehicle as driven by Chief of Police

Justification

This vehicle is an unmarked police vehicle used for investigations and/or the Chief's vehicle.
The Chief's vehicle is also a back up vehicle for training transportation and other missions by all department personnel. The vehicle is projected out as 10+ yr life expectancy. The vehicle was placed in service 2007.

This vehicle does not have radar or other emergency vehicle equipment with the exception of basic emergency lighting.

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Equip/Vehicles/Furnishings			35,000			35,000
Total			**35,000**			**35,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Bud Proj - Police Vehicles			35,000			35,000
Total			**35,000**			**35,000**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Police
Contact Police Chief

Project # **POL 08**
Project Name **Replace SD#4704 Crown Vic -VIN# 99X13170**

Type Equipment
Useful Life 10 years
Category Equipment - Police
Priority 1 Very High

Year Completed

Total Project Cost: **$45,000**

Description

This vehicle is is anticipated to be replaced in 2019, however review has extended it to 2021

Total Estimate Cost = $45000
Base cost of the vehicle $33,500
Basic emergency lighting package an install $10,000
Graphics removal for old squad and new install $1,500

Justification

This vehicle is used by our School Resource Officer, Investigator during summer, Safe and Sober enforcement vehicle and used as a backup for our basic patrol vehicles when needed. The original in-service date was spring 2007. With the heavy miles and even longer hours of operation this type of vehicle is at the end of its expected life for safe high speed emergency driving, and anticipated repair expenses with an age of 14 yrs at time of replacement.
This style vehicle is no longer made and will require significant new fitting of equipment.

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Equip/Vehicles/Furnishings			45,000			45,000
Total			**45,000**			**45,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Bud Proj - Police Vehicles			45,000			45,000
Total			**45,000**			**45,000**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Police
Contact Police Chief

Project # POL 10
Project Name Replace SD#4703 2016Ford PPV SUV

Type Equipment
Useful Life 5 years
Category Vehicles
Priority 1 Very High

Year Completed

Total Project Cost: **$84,500**

Description

Squad Car Replacements # 4703

Total Estimated Cost: $44,500
Base cost of the vehicle $33,000
Basic emergency lighting package and install $10,000
Graphics removal for old squad & new install - $1,500

Justification

Thisvehicles is one of 3 of our basic patrol vehicles. The original in-service date was Fall 2016 (2ea). Ford Crown Victoria cars. The vehicle sees approximately 30,000 miles each year. Projected mileage at replacement would be 100,000 miles or more. With the heavy miles and even longer hours of operation this type of vehicle is at the end of its expected life for safe high speed emergency driving, and anticipated repair expenses. Some equipment is replaced on each change over due to limited life of electronics in vehicles.

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Equip/Vehicles/Furnishings		44,500				44,500
Total		**44,500**				**44,500**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Bud Proj - Police Vehicles		44,500				44,500
Total		**44,500**				**44,500**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Police
Contact Police Chief

Project # **POL 11**
Project Name **Replace SD#4701 2016 Ford PPV SUV**

Type Equipment
Useful Life 5 years
Category Vehicles
Priority 1 Very High

Year Completed

Total Project Cost: **$84,500**

Description

Squad Car Replacements #4701

Total Estimated Cost: $44,500 .
Base cost of the vehicle $33,000
Basic emergency lighting package and install $10,000
Graphics removal for old squad & new install - $1,500

Justification

This vehicle is one of 3 of our basic patrol vehicles. The original in-service date was fall 2016 (2ea.) Ford Crown Victoria cars. The vehicle sees approximately 30,000 miles each year. Projected mileage at replacement would be 100,000 miles or more. With the heavy miles and even longer hours of operation this type of vehicle is at the end of its expected life for safe high speed emergency driving, and anticipated repair expenses. Some equipment is replaced on each change over due to limited life of electronics in vehicles.

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Equip/Vehicles/Furnishings		44,500				44,500
Total		**44,500**				**44,500**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Bud Proj - Police Vehicles		44,500				44,500
Total		**44,500**				**44,500**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Police
Contact

Project # **POL 12**
Project Name **Replacment of Police Computers - IN Squad**

Type Equipment
Useful Life 5 years
Category Equipment: Computers
Priority 1 Very High

Year Completed

Total Project Cost: **$25,000**

Description

Replacement of Squad Car Computers

Justification

We updated our squad car computers in spring 2011 due to mechanical break downs of the computers that were in service in those cars since July 2007. This was only 4 yrs of service before we started seeing significant inoperability issues. The computers that were replaced were not ruggedized for the environment of a squad car.

The replacement computers are ruggedized and intended for use in the squad environment and it is anticipated will last longer. However in speaking with computer technicians they recommend a 5 yr replacement cycle at the longest due to the harsh environment these computers are in, as well as the updates in technology and software. The city currently has a 5yr replacement cycle on computers within the building that see much less severe conditions. The squad computers see severe conditions but no less use. They are literally used continuously by the officer in the squad for receiving dispatched call information, records checks, reports, and other information.

I had to replace the computer in squad 4704 with a grant funded computer in 2016 due to mechanical failure. I had secured 3 computers via grants. Those 3 computers were expected to be put in service with the new dispatching system that was to have been implementd in 2016. This did not come to fruition with the county. It is expected again possibly in 2017 in which the remaining 2 on hand computers will be implemented and another will need to be purchased.

Current costs for suitable replacement computers are $5,000 per unit. We utilize 4 in car computers. I would recommend $5,000 per unit for a total $20,000 in 2021

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Equip/Vehicles/Furnishings			20,000			20,000
Total			**20,000**			**20,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Bud Proj - Police Computer Equip			20,000			20,000
Total			**20,000**			**20,000**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Police
Contact

Project # **POL 13**
Project Name **Police Radio Equipment - Replace Radios**

Type Equipment
Useful Life 10 years
Category Equipment - Police
Priority 1 Very High

Year Completed

Total Project Cost: **$47,000**

Description

Replace Police Radios

Justification

Our current radios went into service in March 2009. The expected life of the radio with normal wear and tear is 10 yrs. Our maintenance and repair program is only applicable for a radio 10 yrs old or less. These radios see very hard use being carried on the person of the officer and in the squads going in and out of extreme temperatures and high moisture environments. Technology and user preferences will most likely have also changed dramatically in the 10 yr life expectancy.

The current replacement cost is apx. $2,800 per portable and $3,500 for a squad radio. We use 1 desk top for front desk which is a squad radio on 12v power supply, 9 portable radios, 4 squad radios = marked squads only. Chief and Investigator do not use squad radio's and only utilize portables.

I would predict cost increases and suggest budgeting $3,000 for a portable and $4,000 for a squad radio.
With those projections the requested total capital outlay in 2019 would be $47,000.00.

We have been told by the Met Radio Board which oversees the entire system that our current radios will not be supported past 2019 for repairs by the manufacturer. The radio will still be usable but as they break they will need to be replaced.

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Equip/Vehicles/Furnishings		47,000				47,000
Total		**47,000**				**47,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Bud Proj - Police Radio Equipment		47,000				47,000
Total		**47,000**				**47,000**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Police
Contact Police Chief

Project # POL 14
Project Name Emergency Siren Update -Replacement fund

Type Equipment
Useful Life 20 years
Category Equipment - Police
Priority 1 Very High

Year Completed

Total Project Cost: $20,000

Description

Emergency Weather Sirens Set aside funds for replacement of at least one tower.
We presently have 4

Justification

We currently have 4 Emergency Weather siren towers. The towers are all operational at this time. Planning and preparation would indicate that funds be set aside for unforeseen catastrophic events requiring replacement of at least one tower.
We did see replacement in 2017 of one siren at city hall due to age and failure. Physical cost of the siren was $12,500 and labor was $5,400.

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Equip/Vehicles/Furnishings				20,000		20,000
Total				**20,000**		**20,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Bud Proj - Civil Defense				20,000		20,000
Total				**20,000**		**20,000**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Police
Contact Police Chief

Project # POL 15
Project Name Replace SD#4702 2017 Police Utiltiy Vehicle

Type Equipment
Useful Life 3 years
Category Vehicles
Priority 1 Very High

Year Completed

Total Project Cost: $85,000

Description

Squad Car#4702 Replacement - 2017 Ford Police Utility Vehicle

Base cost of the vehicle gov. bid 2017 is $29,000 I would price increase to $33,500.00 for 2021
Basic emergency lighting package and install - $10,000
this covers switch boxes, computer docks, wiring, misc. lighting, etc.
Graphics removal for old squad & new install - $1,500

Justification

This vehicle is one of 3 basic patrol vehicles. Original in-service date mid 2017. The vehicle sees nearly 30,000 miles each year. Projected mileage at replacement would be 120,000 miles or more with the past monthly average use. With the heavy miles and even longer hours of operation this type of vehicle is at the end of its expected life for safe high speed emergency driving, and anticipated repair expenses. There are the basic equipment replacements for emergency lighting and wiring that will need replacement as is customary every time.
This vehicle is projected to be replaced with another 4 wheel drive SUV to allow for winter emergency ability and other possible off road needs, pulling of radar trailer, pulling of equipment trailer of range supplies, or other needs for a 4 wheel or SUV capable vehicle.

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Equip/Vehicles/Furnishings			45,000			45,000
Total			**45,000**			**45,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Bud Proj - Police Vehicles			45,000			45,000
Total			**45,000**			**45,000**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Police
Contact

Project # POL 16
Project Name Video Systems- Vehicles

Type Equipment
Useful Life 10 years
Category Equipment - Police
Priority 2 High

Year Completed

Total Project Cost: $38,000

Description

Replacement of the current vehicle video systems as vehicles are replaced.

Starting 2020 through 2021 as marked police vehicles #4701, 4702, 4703, & 4704 are replaced

4 cameras - current price apx. $7,000
1 computer server current price apx. $10,000

Justification

The current marked police vehicles are all equipped with in car video technology. This has been a useful tool for the department in documentation, evidence gathering, incident review, and complaint resolution and investigation. The in squad cameras have become standard equipment in police vehicles and are an expected piece of equipment by the public and courts. This equipment was implemented within new OPH squads starting in 2009. We have been seeing increased costs for repairs with this equipment as it ages as they are essentially computers installed in a harsh environment but the repairs have not reached the point of being prohibitive compared to the outlay expense for new. The capital outlay for new replacements is set as the squads are replaced near the 10+ year life of the video systems. Part of the cost for replacement is the manufacturers no longer uses the DVD recording systems and instead uses wireless down to computer servers. This requires additional capital outlay for the cost of this server update for the equipment we purchased with the body worn cameras.
The new system is compatible and integrated with our body worn cameras.

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Equip/Vehicles/Furnishings		24,000	14,000			38,000
Total		**24,000**	**14,000**			**38,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Bud Proj - Police Vehicles		24,000	14,000			38,000
Total		**24,000**	**14,000**			**38,000**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Police
Contact Police Chief

Project # POL 17
Project Name Body Camera System and Software

Type Equipment
Useful Life 5 years
Category Equipment - Police
Priority 3 Moderate

Year Completed

Total Project Cost: $5,000

Description

Officer Worn Body Cameras (4)
To be done in conjunciton with the car camera replacements and updates.

Justification

As the city has adopted the use of body cameras and they have proven to be a valuable tool, this project does need to be supported with replacement and updates as needed. While the equipment may not need replacement it would be prudent to have the funding on hand to keep this project in place. We utilize 4 body cameras along with the storage server.

The body camera is an out of car extension of that technology allowing the officer to document in areas away from the sight of the squad camera. This is becoming an expectation of the public and courts with the common availability of this equipment just as did the use of in squad video. Studies have shown the use of cameras not only documents our officer's already professional response but has shown that subjects respond with better conduct when they know they are being recorded. This often times can prevent situations that require officer's need for use of force which often times result in injury to officers or the subject. Video documentation of suspect and witness statements and conduct at the scene has shown to lead to quicker court dispositions with less officer and prosecutor costs.

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Equip/Vehicles/Furnishings		5,000				5,000
Total		**5,000**				**5,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Bud Proj - Police Computer Equip		5,000				5,000
Total		**5,000**				**5,000**

Budget Impact/Other

- Projects by Department
    - Public Works

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Public Works
Contact

Project # **PW 008**
Project Name **Replace 2010 Ford 350 Pickup - General Use**

Type Equipment
Useful Life 8 years
Category Unassigned
Priority 3 Moderate

Year Completed

Total Project Cost: **$50,000**

Description

Replace 2010 Ford F350 Pickup wi/liftgate and plow package
Typical Roatation - Approx 8 years

Justification

The PW department abandoned the capitalimprovement project ot purchase a small size pickup truck for summer park staff to use as it was deemed more useful and necessary to have a full sized heavy duty pickup truck that would also be useful for full time staff to carry out mainatenance functions. The initial plan was to hold on to the 2010 pickup truck for an additional three years beyond the typical eight year replacement cycle and replace it in the rotation along with other public works vehicles.

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Equip/Vehicles/Furnishings			50,000			50,000
Total			**50,000**			**50,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Bud Proj - Public Works Vehicles			50,000			50,000
Total			**50,000**			**50,000**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Public Works
Contact

Project # **PW 010**
Project Name **Replace Kubota Tractor $60,000 and Equip $30,000**

Type Equipment
Useful Life 8 years
Category Unassigned
Priority 2 High

Year Completed

Total Project Cost: **$90,000**

Description

The Kubota is scheduled for replacement in 2020. If the equipment is is good shape the replacement date can be pushed out to a later year. Wear and tear on the vehicle over an eight (8) year period warrants replacement as maintenance costs begin to outweigh the cost of replacement.

Justification

The Kubota Tractor is used in the P.W. dept. for numerous tasks including but not limited to lifting and maneuvering heavy equipment/materials to snow removal in the winter, trail clearing in the spring and fall and various small excavation/grading projects in the summer.

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Equip/Vehicles/Furnishings		90,000				90,000
Total		**90,000**				**90,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Bud Proj - Public Works Vehicles		90,000				90,000
Total		**90,000**				**90,000**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department	Public Works
Contact	
Type	Equipment
Useful Life	
Category	Unassigned
Priority	3 Moderate

Project # PW 011

Project Name Wood Chipper

Year Completed

Total Project Cost: $30,000

Description

Purchase a wood chipper to mulch brush removed from City owned trees.

Justification

The City does not have a convenient nearby facility to dump brush that is trimmed from the countless bld. trees and trees along the City's extensive trail system and parks. The expense and time to haul small brush loads in a F550 dump box truck to Woodbury or north of Stillwater will add up fast, as will a chipper rental at ~ $285 per day. Storage of brush piles within the OPH City limits is not an option as OPH has no designated land for such storage.

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Equip/Vehicles/Furnishings	30,000					30,000
Total	**30,000**					**30,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Bud Proj - Public Works Equipment	15,000					15,000
Bud Proj - PW Tool Fund	15,000					15,000
Total	**30,000**					**30,000**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Public Works
Contact

Project # **PW 012**
Project Name **Replace Ford F550 Dump box truck**

Type Equipment
Useful Life 8 years
Category Unassigned
Priority 2 High

Year Completed

Total Project Cost: **$60,000**

Description

Replace Ford F550 Dump box truck.
Ford F550 was replaced in 2013. Wear and tear on the vehicle over an eight (8) year period warrants replacement as maintenance costs begin to outweigh the cost of replacement. The eight (8) year cycle would replace the F550 in 2020.

Justification

The Ford F550 is used for various maintenance activities such as hauling brush, rocks, dirt, pothole patch as well as snow plowing. These activities cause excessive wear and tear on the vehicle.

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Equip/Vehicles/Furnishings		60,000				60,000
Total		**60,000**				**60,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Bud Proj - Public Works Vehicles		60,000				60,000
Total		**60,000**				**60,000**

Budget Impact/Other

- Projects by Department
    - Sanitary Sewer

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Sewer Utility
Contact

Project # **Sewer - 006**
Project Name **Sanitary Sewer Lining - Continuous**

Type Maintenance
Useful Life 30 years
Category Unassigned
Priority 2 High

Year Completed

Total Project Cost: **$125,000**

Description

Line Sections of the Sanitary Sewer.

Year this should be accomplished yearly as funding is available.

Justification

Sewer cleaning and televising reports indicate cracks and in some cses breaks in sanitary sewer pipses. Sewer pipes with defects that lie eneath relatively new streets could be repaired using sewer lining rather than traditional methods or excavation. Sections would be reanked baed on serverity and completed as funiding is available.

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Construction/Maintenance		25,000		25,000	25,000	75,000
Total		**25,000**		**25,000**	**25,000**	**75,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Renewal Replace Fund - Water/Sewer Utilities		25,000		25,000	25,000	75,000
Total		**25,000**		**25,000**	**25,000**	**75,000**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Sewer Utility
Contact

Project # **Sewer - 007**
Project Name **Replace 9th Addition Lift Station**

Type Unassigned
Useful Life 30 years
Category Unassigned
Priority 1 Very High

Year Completed

Total Project Cost: **$500,000**

Description

Replace 9th Addition Lift Station

Justification

The ninth addition station is in good condition, however replacing lift stations is expensive, but a necessary endeavor. The station was built in or around 1987 so the main structure, the pumps and many of the components are 30 years old. Replacement in the not too distant future should be considered when budgeting.

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Equip/Vehicles/Furnishings					500,000	500,000
Total					**500,000**	**500,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Renewal Replace Fund - Water/Sewer Utilities					500,000	500,000
Total					**500,000**	**500,000**

Budget Impact/Other

- Projects by Department
    - Storm Sewer

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Storm Sewer Utility
Contact Public Works Director

Project # **STORM - 003**
Project Name **Storm Sewer Catch Basin Rehabilitation**

Type Maintenance
Useful Life 20 years
Category Storm Water Utility
Priority 4 Low

Year Completed

Total Project Cost: **$40,000**

Description

Storm Sewer Catch Basin Rehabilitation

This should be an on going project

The City likely should address 20+/- basins at one time. = $40,000.00

Justification

Several storm sewer catch basins throughout the City will be in need of repair or replacement due to compromised walls and failed grout seals due to eroision. Faile grout seals are typically the cause of erosion around catch basins.

Rough replacement/rehab costs are $2,000 per basin.

The City likely should address 20+/- basins at one time. = $40,000.00
Note that significant amount of catch basins were replaced in 2013 and 2014 with the Mndot SCRC Project.

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Construction/Maintenance	40,000					40,000
Total	**40,000**					**40,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Storm Sewer Utility Renew& Repl. Fund	40,000					40,000
Total	**40,000**					**40,000**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Storm Sewer Utility
Contact

Project # **STORM - 004**
Project Name **MS4 Plan and Implementation**

Type Report / Document
Useful Life
Category Planning
Priority 1 Very High

Year Completed

Total Project Cost: **$48,000**

Description

MS4 Plan and Implementation

Justification

The City is required to comply with the Municipal Storm Sewer System (MS4) requirements as issued by the Minnesota Pollution Control Agency. For this compliance two ACTIONS are required for submission to the MPCA. As these elements are technical in nature the City Engineer is best suited to perform the required tasks.

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Planning/Design	23,000					23,000
Total	**23,000**					**23,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Storm Water Utility Fund	23,000					23,000
Total	**23,000**					**23,000**

Budget Impact/Other

- Projects by Department
    - Streets

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department	Streets
Contact	
Type	Maintenance
Useful Life	
Category	Street Maintenance
Priority	2 High

Project # **STREET - 002**

Project Name **Mill and Overlay Area 5**

Year Completed

Total Project Cost: **$254,774**

Description

Mill and overlay - Area 5 3,628 LF
See Map

56th St N
55th St N
Novak Ave N

Justification

City streets, like all other infrastructure requires standard maintenance to prolong the initial investment and useful life. The industry standard major street maintenance cycle is as follows:

Initial constructionYear 0
First crack seal & seal coatYear 7 -10
Mill and OverlayYear 14 -20
Second crack seal and seal coatYear 21 -30
Street ReconstructionYear 28 -40

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Construction/Maintenance		254,774				254,774
Total		**254,774**				**254,774**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Bud Proj - Mill and Overlay		254,774				254,774
Total		**254,774**				**254,774**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Streets
Contact

Project # **STREET - 007**
Project Name **Mill and Overlay Area 8**

Type Maintenance
Useful Life 15
Category Street Maintenance
Priority 2 High

Year Completed

Total Project Cost: **$237,761**

Description

Area 8 (4,525 LF)
See Map

57th St N East of Osgood
58th St N East of Osgood
Osman Ave N
Upper 56th St N East of Osgood

Justification

City streets, like all other infrastructure requires standard maintenance to prolong the initial investment and useful life. The industry standard major street maintenance cycle is as follows:

Initial constructionYear 0
First crack seal & seal coatYear 7 -10
Mill and OverlayYear 14 -20
Second crack seal and seal coatYear 21 -30
Street ReconstructionYear 28 -40

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Construction/Maintenance		237,761				237,761
Total		**237,761**				**237,761**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Bud Proj - Mill and Overlay		237,761				237,761
Total		**237,761**				**237,761**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Streets
Contact

Project # **STREET - 008**
Project Name **Mill and Overlay Area 7**

Type Maintenance
Useful Life 15
Category Street Maintenance
Priority 2 High

Year Completed

Total Project Cost: **$918,172**

Description

Mill and overlay - Area 7 (13,652 LF)
See Map

55th St N
Oldfield Ave N
Oldfield Ct N
56th St N
Upper 56th St N
Upper 56th St Ct N
Omaha Ave
Omar Ave
Oren Ave
57th St N

Justification

City streets, like all other infrastructure requires standard maintenance to prolong the initial investment and useful life. The industry standard major street maintenance cycle is as follows:

Initial constructionYear 0
First crack seal & seal coatYear 7 -10
Mill and OverlayYear 14 -20
Second crack seal and seal coatYear 21 -30
Street ReconstructionYear 28 -40

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Construction/Maintenance					918,172	918,172
Total					**918,172**	**918,172**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Bud Proj - Mill and Overlay					918,172	918,172
Total					**918,172**	**918,172**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Streets
Contact

Project # **STREET - 009**
Project Name **Mill and Overlay Area 6**

Type Maintenance
Useful Life 15
Category Street Maintenance
Priority 2 High

Year Completed

Total Project Cost: **$416,574**

Description

Area 6 (7,115 LF)
See Map

53rd St N
Ojibway Ave N
54th St N
Upper 54th St N
O'Brien Ave N
City Hall Parking Lot

Justification

City streets, like all other infrastructure requires standard maintenance to prolong the initial investment and useful life. The industry standard major street maintenance cycle is as follows:

Initial constructionYear 0
First crack seal & seal coatYear 7 -10
Mill and OverlayYear 14 -20
Second crack seal and seal coatYear 21 -30
Street ReconstructionYear 28 -40

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Construction/Maintenance		416,574				416,574
Total		**416,574**				**416,574**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Bud Proj - Mill and Overlay		416,574				416,574
Total		**416,574**				**416,574**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Streets
Contact

Project # **STREET - 013**
Project Name **Seal Coat Area 9,10,11 (2014 St Recon Area)**

Type Unassigned
Useful Life 7 years
Category Street Paving
Priority 2 High

Year Completed

Total Project Cost: **$59,609**

Description

Seal Coat are9,10,11. This area was reconstructed in 2014. The first seal coat is due in 2021.

Justification

City streets, like all other infrastructure requires standard maintenance to prolong the initial investment and useful life. The industry standard major street maintenance cycle is as follows:

Initial constructionYear 0
First crack seal & seal coatYear 7 -10
Mill and OverlayYear 14 -20
Second crack seal and seal coatYear 21 -30
Street ReconstructionYear 28 -40

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Construction/Maintenance			59,609			59,609
Total			**59,609**			**59,609**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Bud Proj - Sealcoat			59,609			59,609
Total			**59,609**			**59,609**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Streets
Contact

Project # **STREET - 014**
Project Name **58th West of Stillwater Blvd**

Type Improvement
Useful Life 10 years
Category Unassigned
Priority 1 Very High

Year Completed

Total Project Cost: **$309,600**

Description

The interesection of 58th and Stillwater Blvd (West) has seen increase in activity and should be upgraded to improve the intersecion in the near-term until other improvement s to the west are better understood.

Justification

A review of the reconstruction of 58th Street and Memorial Ave was estimated at $1.7 Million. Such an expense was not possible to be fully accomplished at this time. The possible action by Washington County for a new County Highway to Manning could impact the project. An improvement to the intersection could facilitate the traffic flow until the the improvement to the whole area is better understood.

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Construction/Maintenance	264,000					264,000
Utilities	45,600					45,600
Total	**309,600**					**309,600**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Storm Sewer Utility Renew& Repl. Fund	45,600					45,600
Street Replacement Fund	264,000					264,000
Total	**309,600**					**309,600**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Streets
Contact

Project # **STREET- 015**
Project Name **Seal Coat Area 12 (2015 St Recon Area)**

Type Maintenance
Useful Life 7 years
Category Street Paving
Priority 2 High

Year Completed

Total Project Cost: **$56,500**

Description

Seal Coat Area 12. This area was reconstructed in 2015. The first seal coat is due in 2022.

Justification

City streets, like all other infrastructure requires standard maintenance to prolong the initial investment and useful life. The industry standard major street maintenance cycle is as follows:

Initial constructionYear 0
First crack seal & seal coatYear 7 -10
Mill and OverlayYear 14 -20
Second crack seal and seal coatYear 21 -30
Street ReconstructionYear 28 -40

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Construction/Maintenance				56,500		56,500
Total				**56,500**		**56,500**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Bud Proj - Sealcoat				56,500		56,500
Total				**56,500**		**56,500**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Streets
Contact

Project # **STREET - 016**
Project Name **Street Reconstruction - Area 14**

Type Improvement
Useful Life 30 years
Category Street Reconstruction
Priority 2 High

Year Completed

Description

Total Project Cost: **$874,000**

Area 14 was originally constructed in 1995 and was milled and overlayed in 2009 and sealcoated in 2016. This Street is scheduled for a full reconstruct in 2023.

Justification

City streets, like all other infrastructure requires standard maintenance to prolong the initial investment and useful life. The industry standard major street maintenance cycle is as follows:

Initial constructionYear 0
First crack seal & seal coatYear 7 -10
Mill and OverlayYear 14 -20
Second crack seal and seal coatYear 21 -30
Street ReconstructionYear 28 -40

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Construction/Maintenance					874,000	874,000
Total					**874,000**	**874,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Street Replacement Fund					874,000	874,000
Total					**874,000**	**874,000**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Streets
Contact

Project # **STREET - 017**
Project Name **Replace 62nd Street N (west of Osgood)**

Type Improvement
Useful Life 30 years
Category Street Reconstruction
Priority 2 High

Year Completed

Description

Total Project Cost: **$85,000**

Full street reconstruction including curb and gutter of 62nd St N.

Justification

62nd Street N is in poor condition and riddled with large potholes. 62nd Street N is the only OPH Street that has not been reconstructed to date. Original curbing was made from asphalt, but over the years has been damaged and removed and no longer exists. The street surface is riddled with potholes/patches and the base is no longer viable.

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Construction/Maintenance			85,000			85,000
Total			**85,000**			**85,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Street Replacement Fund			85,000			85,000
Total			**85,000**			**85,000**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Streets
Contact

Project # **STREET - 018**
Project Name **Replace Oakgreen Ave N**

Type Improvement
Useful Life 30 years
Category Street Maintenance
Priority 2 High

Year Completed

Description

Total Project Cost: **$308,000**

The condition of Oakgreen Ave south of 58th Street is declining and should be replaced. This work could potentially be done in conjunction with the street maintenance for area five (5) mill and overlay project.

Justification

Replacing Oakgreen Ave will require cooperation with Baytownship. Of the total 44,200 square feet, Oak Park Heights owns roughly 33,100 sq. ft. or about 75% of the street. The other 25% or roughly 11,100 sq ft is owned by Baytown Township.

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Construction/Maintenance		308,000				308,000
Total		**308,000**				**308,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Street Replacement Fund		231,000				231,000
UNFUNDED		77,000				77,000
Total		**308,000**				**308,000**

Budget Impact/Other

- Projects by Department
    - Water

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Water Utility
Contact Public Works Director

Project # **WU 002**
Project Name **Kern Center to High School Loop Main**

Type Improvement
Useful Life 20 years
Category Water Utility
Priority 5 Very Low

Year Completed

Total Project Cost: **$360,000**

Description

The Kern Center water main was originally designed to loop through what is now Lake Elmo and reconnect to our water system at McKean Square. The High School has a 10 inch water main loop completely around the school. We could connect to the High School loop from the 8 inch main on 55th Street to loop the Kern Center System.

Justification

To improve water system reliability and water quality. This would become a higher priority as the vacant lands west of Hwy 5 develop or if the planned location for well or tower are planned for this area.

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Construction/Maintenance					360,000	360,000
Total					**360,000**	**360,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Water Connection Charge Fund					360,000	360,000
Total					**360,000**	**360,000**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Water Utility
Contact Public Works Director

Project # WU 003
Project Name OakGreen to Osgood Loop Main

Type Improvement
Useful Life 20 years
Category Water Utility
Priority 4 Low

Year Completed

Description

Total Project Cost: $600,000

Extend the City's water main through the DNR property south of the City's Brekke Park to complete a water main loop.

There are two 6-inch mains (Upper 54th Street and 53rd Street) within Swager 9th Addition that could be extended/ through the DNR property, joined and a single main extended to Osgood.

Justification

To provide a redundant water source to OPH Correctional Facility and to Swager 9th Addition. Currently the prison is serviced by a single 10-inch water main. The loss of this main would have a severe impact on prison operations and completing the loop would improve water quality.

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Construction/Maintenance					600,000	600,000
Total					**600,000**	**600,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Water Connection Charge Fund					600,000	600,000
Total					**600,000**	**600,000**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Water Utility
Contact Public Works Director

Project # WU 004
Project Name Osgood to Stagecoach Loop Main

Type Improvement
Useful Life 30 years
Category Water Utility
Priority 4 Low

Year Completed

Total Project Cost: $600,000

Description

Extend the City's water main through the DNR property south of the City's Brekke Park to complete a water main loop.
Osgood to Stagecoach loop main and pressure reducing station.

Justification

Increase water quality and fire flow to Stagecoach Trail. The 6-inch main servicing southern Stagecoach Trail is a long dead ended main. This could be corrected via a new water main connection crossing the prison property.

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Construction/Maintenance					600,000	600,000
Total					**600,000**	**600,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Water Connection Charge Fund					600,000	600,000
Total					**600,000**	**600,000**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Water Utility
Contact Public Works Director

Project # **WU 006**
Project Name **Well #3 - NEW**

Type Improvement
Useful Life 30 years
Category Water Utility
Priority 4 Low

Year Completed

Total Project Cost: **$900,000**

Description

Add a new well # 3
Locate, design, drill and develop a new water well and tie in to the system.

Justification

1) Current maximum day demand exceeds the "firm" capacity (pumping rate with our best producing pump out not operating) of our water supply system.

2) The combination of a maximum daily demand for water along with the fire flow demand for a city of our size would empty the City's 750,000 gallon water towers in less than 5 hours.

3) Well #1 and Well #2 have overlapping areas of influence and are located only 800 feet apart. Contamination effecting one of the wells could effect the other well.

4) Energy curtailment allows only one well to run unless an additional generator is purchased or rented.

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Construction/Maintenance					900,000	900,000
Total					**900,000**	**900,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Water Connection Charge Fund					900,000	900,000
Total					**900,000**	**900,000**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Water Utility
Contact Public Works Director

Project # WU 010
Project Name Water Storage Tank - NEW (Tank #3)

Type Improvement
Useful Life 30 years
Category Water Utility
Priority 4 Low

Year Completed

Total Project Cost: **$1,900,000**

Description

Add a new water storage tank (tank # 3)

Project would be for a 1,000,000 gallon water storage tank. The tank could possibly be located at the southwest corner of OPH Correctional Facility, providing them with further redundant water supply. At this location it could also serve Baytown Township if ever needed. Another possible location would be north of Hwy 36 to allow segregation of the area north of Hwy 36 if needed. Location would need to be determined.

Justification

To provide increased storage of water for fire flow and increased flexibility in well operations to pump a large percentage of water during the off-peak times to save on electrical costs.

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Construction/Maintenance					1,900,000	1,900,000
Total					**1,900,000**	**1,900,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Water Connection Charge Fund					1,900,000	1,900,000
Total					**1,900,000**	**1,900,000**

Budget Impact/Other

Additional daily maintenance, reads and significant maintenance and updating every 10 years.

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Water Utility
Contact Public Works Director

Project # **WU 012**
Project Name **Water Meter Replacement Program**

Type Equipment
Useful Life 30 years
Category Water Utility
Priority 2 High

Year Completed

Total Project Cost: **$738,000**

Description

This project would replace all City owned water meters (Except those that have been replaced within recent years due to failure). A water meter replacement project is typically completed over several years in City's that have full funding and a dedicated staff to work solely on changing meters. The City of Oak Park Heights would have to contract the work; however when contracted, the project is typically completed within a shorter time period.

The City has been setting aside funds for the replacement of the meters. Approximately $79,000/year . The balance of this fund at the end of 2018 is expected to be $355,600. The $79,000 annual transfer from water and sewer utility funds has been built into the past and present rates. After SCADA was fully funded, the transfers continued to the Meter Replacement Funds. The balance needed to complete the project may be internally borrowed and paid back with the $79,000 annually for approximately 5.5 years at 2%.

Justification

Water meters throughout the City are ageing and some fail. The City replaces meters that fail; however old meters do not read accurately. When meters age, they read less accurately and therefore a loss in revenue occurs for actual water used.

New meter systems will be read by radio read, avoiding the need for a person or contractor to go to each individual home, instead it can be read from a vehilce outside the property in the street.

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Equip/Vehicles/Furnishings			738,000			738,000
Total			**738,000**			**738,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Bud Proj - Water Meter Replacement			738,000			738,000
Total			**738,000**			**738,000**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Water Utility
Contact Public Works Director

Project # **WU 017**
Project Name **Well #2 Rehab**

Type Maintenance
Useful Life 7 years
Category Water Utility
Priority 2 High

Year Completed

Total Project Cost: **$100,000**

Description

Rehab Well

Justification

Well maintenance/rehabilitation is necessary on a seven (7) year cycle. Well rehabs ensure the City's water supply well is in proper condition. Well #2 was last rehabbed in 2015.

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Construction/Maintenance				50,000		50,000
Total				**50,000**		**50,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Well Rehabilitation Fund				50,000		50,000
Total				**50,000**		**50,000**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

FY '19 *thru* **FY '23**

Department Water Utility
Contact

Project # **WU 020**
Project Name **Chlorine/Chemical Booster or Feed Station**

Type Unassigned
Useful Life 30 years
Category Water Utility
Priority 5 Very Low

Year Completed

Total Project Cost: **$200,000**

Description

Possible Chlorine / chemical booster and or feed station install.

Justification

Both well houses and chlorine feed points are located within 80 feet of the City. When chlorinating the water system, the chlorine / water mixture tends to be much stronger in the neighborhoods near the wells and chlorine feed point, and much weaker on the east and west sides ends of the City. Although flushing water through the system helps, it is time consuming and wastes a lot of water. IF the City chooses to chlorinate on a regular basis, a booster / feed station may need to be added to distribute chemicals more evenly throughout the distribution system.

Expenditures	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Utilities					200,000	200,000
Total					**200,000**	**200,000**

Funding Sources	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Bud Proj - Water Chlorine-Chem Booster					200,000	200,000
Total					**200,000**	**200,000**

Budget Impact/Other

- Funding Sources

FUNDING SOURCE SUMMARY

Source	FY '19	FY '20	FY '21	FY '22	FY '23	Total
Bud Proj - Civil Defense				20,000		*20,000*
Bud Proj - Computers - General Fund	4,000	53,700	6,000	39,750	6,000	*109,450*
Bud Proj - Computers - Utility Funds	2,000	26,300	0	13,250		*41,550*
Bud Proj - Docu Imaging			15,000			*15,000*
Bud Proj - Mill and Overlay		909,109			918,172	*1,827,281*
Bud Proj - Municipal Building Fund		15,000				*15,000*
Bud Proj - Park Building Maintenance					450,000	*450,000*
Bud Proj - Park&Trl Improvements		255,000			1,420,000	*1,675,000*
Bud Proj - Police Computer Equip		5,000	20,000			*25,000*
Bud Proj - Police Radio Equipment		47,000				*47,000*
Bud Proj - Police Vehicles		113,000	174,000			*287,000*
Bud Proj - Public Works Equipment	15,000					*15,000*
Bud Proj - Public Works Vehicles		150,000	50,000			*200,000*
Bud Proj - PW Tool Fund	15,000					*15,000*
Bud Proj - Sealcoat			59,609	56,500		*116,109*
Bud Proj - Tennis Court Resurfacing	20,000					*20,000*
Bud Proj - Trail Maintenance	20,000	20,000	20,000	20,000	90,000	*170,000*
Bud Proj - Water Chlorine-Chem Booster					200,000	*200,000*
Bud Proj - Water Meter Replacement			738,000			*738,000*
Park & Rec Dedication Fund					500,000	*500,000*
Renewal Replace Fund - Water/Sewer Utilities		25,000		25,000	525,000	*575,000*
State or DOT Funding- St Croix River Trail					250,000	*250,000*
Storm Sewer Utility Renew& Repl. Fund	85,600					*85,600*
Storm Water Utility Fund	23,000					*23,000*
Street Replacement Fund	264,000	231,000	85,000		874,000	*1,454,000*
UNFUNDED		77,000				*77,000*
Water Connection Charge Fund					4,360,000	*4,360,000*
Well Rehabilitation Fund				50,000		*50,000*
Xcel Energy - Moelter Site Commitment	55,000				375,000	*430,000*
GRAND TOTAL	**503,600**	**1,927,109**	**1,167,609**	**224,500**	**9,968,172**	***13,790,990***

City of Oak Park Heights, MN

Capital Improvement Plan

FY '19 thru **FY '23**

SOURCES AND USES OF FUNDS

Source		FY '19	FY '20	FY '21	FY '22	FY '23
Bud Proj - Civil Defense						
Beginning Balance		**26,134**	**29,134**	**32,134**	**35,134**	**18,134**
Revenues and Other Fund Sources						
Revenue						
Transfer in from General Fund		*3,000*	*3,000*	*3,000*	*3,000*	*3,000*
	Total	3,000	3,000	3,000	3,000	3,000
Total Revenues and Other Fund Sources		3,000	3,000	3,000	3,000	3,000
Total Funds Available		**29,134**	**32,134**	**35,134**	**38,134**	**21,134**
Expenditures and Uses						
Capital Projects & Equipment						
Police						
Emergency Siren Update -Replacement fund	POL 14	*0*	*0*	*0*	*(20,000)*	*0*
	Total	0	0	0	(20,000)	0
Total Expenditures and Uses		0	0	0	(20,000)	0
Change in Fund Balance		3,000	3,000	3,000	(17,000)	3,000
Ending Balance		**29,134**	**32,134**	**35,134**	**18,134**	**21,134**

Source		FY '19	FY '20	FY '21	FY '22	FY '23
Bud Proj - Computers - General Fund						
Beginning Balance		**52,337**	**67,337**	**32,237**	**44,837**	**23,687**
Revenues and Other Fund Sources						
Revenue						
Transfer in from Gen Fund		*19,000*	*18,600*	*18,600*	*18,600*	*18,600*
	Total	19,000	18,600	18,600	18,600	18,600
Total Revenues and Other Fund Sources		19,000	18,600	18,600	18,600	18,600
Total Funds Available		**71,337**	**85,937**	**50,837**	**63,437**	**42,287**
Expenditures and Uses						
Capital Projects & Equipment						
General Government						
Computer: Replacements - Continuous Cycle	GG 009	*(4,000)*	*(53,700)*	*(6,000)*	*(39,750)*	*(6,000)*
	Total	(4,000)	(53,700)	(6,000)	(39,750)	(6,000)
Total Expenditures and Uses		(4,000)	(53,700)	(6,000)	(39,750)	(6,000)
Change in Fund Balance		15,000	(35,100)	12,600	(21,150)	12,600
Ending Balance		**67,337**	**32,237**	**44,837**	**23,687**	**36,287**

Source		FY '19	FY '20	FY '21	FY '22	FY '23
Bud Proj - Computers - Utility Funds						
Beginning Balance		**25,857**	**30,057**	**9,957**	**16,157**	**9,107**
Revenues and Other Fund Sources						
Revenue						
Trans in from Sewer Utility		*1,975*	*1,975*	*1,975*	*1,975*	*1,975*
Trans in from Storm Utility		*1,975*	*1,975*	*1,975*	*1,975*	*1,975*
Trans in from Water Utility		*2,250*	*2,250*	*2,250*	*2,250*	*2,250*
	Total	6,200	6,200	6,200	6,200	6,200
Total Revenues and Other Fund Sources		6,200	6,200	6,200	6,200	6,200
Total Funds Available		**32,057**	**36,257**	**16,157**	**22,357**	**15,307**
Expenditures and Uses						
Capital Projects & Equipment						
General Government						
Computer: Replacements - Continuous Cycle	GG 009	*(2,000)*	*(26,300)*	*0*	*(13,250)*	*0*
	Total	(2,000)	(26,300)	0	(13,250)	0
Total Expenditures and Uses		(2,000)	(26,300)	0	(13,250)	0
Change in Fund Balance		4,200	(20,100)	6,200	(7,050)	6,200
Ending Balance		**30,057**	**9,957**	**16,157**	**9,107**	**15,307**

Source		FY '19	FY '20	FY '21	FY '22	FY '23
Bud Proj - Docu Imaging						
Beginning Balance		**5,000**	**5,000**	**10,000**	**0**	**0**
Revenues and Other Fund Sources						
Revenue						
Trans in from General Fund		*0*	*5,000*	*5,000*	*0*	*0*
	Total	0	5,000	5,000	0	0
Total Revenues and Other Fund Sources		0	5,000	5,000	0	0
Total Funds Available		**5,000**	**10,000**	**15,000**	**0**	**0**
Expenditures and Uses						
Capital Projects & Equipment						
General Government						
Replace High Capacity Copier/Scanner	GG 012	*0*	*0*	*(15,000)*	*0*	*0*
	Total	0	0	(15,000)	0	0
Total Expenditures and Uses		0	0	(15,000)	0	0
Change in Fund Balance		0	5,000	(10,000)	0	0
Ending Balance		**5,000**	**10,000**	**0**	**0**	**0**

Source		FY '19	FY '20	FY '21	FY '22	FY '23
Bud Proj - Mill and Overlay						
Beginning Balance		**514,950**	**714,950**	**5,841**	**205,841**	**405,841**
Revenues and Other Fund Sources						
Revenue						
Transfer from General Fund		*200,000*	*200,000*	*200,000*	*200,000*	*200,000*
Transfer from Street Reconstruction		*0*	*0*	*0*	*0*	*400,000*
	Total	200,000	200,000	200,000	200,000	600,000
Total Revenues and Other Fund Sources		200,000	200,000	200,000	200,000	600,000
Total Funds Available		**714,950**	**914,950**	**205,841**	**405,841**	**1,005,841**
Expenditures and Uses						
Capital Projects & Equipment						
Streets						
Mill and Overlay Area 5	STREET - 002	*0*	*(254,774)*	*0*	*0*	*0*
Mill and Overlay Area 8	STREET - 007	*0*	*(237,761)*	*0*	*0*	*0*
Mill and Overlay Area 7	STREET - 008	*0*	*0*	*0*	*0*	*(918,172)*
Mill and Overlay Area 6	STREET - 009	*0*	*(416,574)*	*0*	*0*	*0*
	Total	0	(909,109)	0	0	(918,172)
Total Expenditures and Uses		0	(909,109)	0	0	(918,172)
Change in Fund Balance		200,000	(709,109)	200,000	200,000	(318,172)
Ending Balance		**714,950**	**5,841**	**205,841**	**405,841**	**87,669**

Source		FY '19	FY '20	FY '21	FY '22	FY '23
Bud Proj - Municipal Building Fund						
Beginning Balance		**160,253**	**175,253**	**175,253**	**190,253**	**205,253**
Revenues and Other Fund Sources						
Revenue						
Transfer from General Fund		*15,000*	*15,000*	*15,000*	*15,000*	*15,000*
	Total	15,000	15,000	15,000	15,000	15,000
Total Revenues and Other Fund Sources		15,000	15,000	15,000	15,000	15,000
Total Funds Available		**175,253**	**190,253**	**190,253**	**205,253**	**220,253**
Expenditures and Uses						
Capital Projects & Equipment						
General Government						
Replace Delta ORCAweb Software-HVAC Controls	GG 013	*0*	*(15,000)*	*0*	*0*	*0*
	Total	0	(15,000)	0	0	0
Total Expenditures and Uses		0	(15,000)	0	0	0
Change in Fund Balance		15,000	0	15,000	15,000	15,000
Ending Balance		**175,253**	**175,253**	**190,253**	**205,253**	**220,253**

Source		FY '19	FY '20	FY '21	FY '22	FY '23
Bud Proj - Park Building Maintenance						
Beginning Balance		**258,948**	**258,948**	**308,948**	**358,948**	**408,948**
Revenues and Other Fund Sources						
Revenue						
Transfer from General Fund		*0*	*50,000*	*50,000*	*50,000*	*50,000*
	Total	0	50,000	50,000	50,000	50,000
Total Revenues and Other Fund Sources		0	50,000	50,000	50,000	50,000
Total Funds Available		**258,948**	**308,948**	**358,948**	**408,948**	**458,948**
Expenditures and Uses						
Capital Projects & Equipment						
Parks						
Valley View Shelter - Replace	PRK 016	*0*	*0*	*0*	*0*	*(450,000)*
	Total	0	0	0	0	(450,000)
Total Expenditures and Uses		0	0	0	0	(450,000)
Change in Fund Balance		0	50,000	50,000	50,000	(400,000)
Ending Balance		**258,948**	**308,948**	**358,948**	**408,948**	**8,948**

Source		FY '19	FY '20	FY '21	FY '22	FY '23
Bud Proj - Park&Trl Improvements						
Beginning Balance		351,154	401,154	196,154	246,154	296,154
Revenues and Other Fund Sources						
Revenue						
Transfer In From Gen Fund		*50,000*	*50,000*	*50,000*	*50,000*	*50,000*
	Total	50,000	50,000	50,000	50,000	50,000
Total Revenues and Other Fund Sources		50,000	50,000	50,000	50,000	50,000
Total Funds Available		401,154	451,154	246,154	296,154	346,154
Expenditures and Uses						
Capital Projects & Equipment						
Parks						
Install Trail -58th Str. to Upper Valley View Park	PRK 001	*0*	*0*	*0*	*0*	*(200,000)*
Update Swager Park Playground	PRK 004	*0*	*0*	*0*	*0*	*(75,000)*
Replace Park Fencing-Valley View & Swager	PRK 015	*0*	*(150,000)*	*0*	*0*	*0*
Wood Bridge -Perro Creek	PRK 017	*0*	*0*	*0*	*0*	*(100,000)*
Replace Autumn Hills Playground Equipment	PRK 019	*0*	*0*	*0*	*0*	*(100,000)*
Brekke Park Hockey Boards	PRK 023	*0*	*(75,000)*	*0*	*0*	*0*
Replace Brekke Park Lower Ball Field Backstop	PRK 027	*0*	*0*	*0*	*0*	*(20,000)*
Park Entrance Signs	PRK 028	*0*	*0*	*0*	*0*	*(25,000)*
Brekke Park Climbing Structure	PRK 029	*0*	*0*	*0*	*0*	*(40,000)*
Trail Connection to Upper Playground - Brekke	PRK 030	*0*	*0*	*0*	*0*	*(100,000)*
Trail Connections to Ballfields at Brekke Park	PRK 031	*0*	*0*	*0*	*0*	*(100,000)*
Add Trail Connections OP Crossings to VV Park	PRK 032	*0*	*0*	*0*	*0*	*(100,000)*
Add Swings to Oak Park Crossing Park	PRK 034	*0*	*0*	*0*	*0*	*(30,000)*
Install Exercise Equipment Along Trail/In Parks	PRK 035	*0*	*(30,000)*	*0*	*0*	*0*
Deck Addition to East Side of Valley View Shelter	PRK 036	*0*	*0*	*0*	*0*	*(30,000)*
Extend North Side of Valley View Shelter	PRK 037	*0*	*0*	*0*	*0*	*(100,000)*
Trail Connection from VV Shelter thru Woods	PRK 038	*0*	*0*	*0*	*0*	*(300,000)*
Trail Connection VV Shelter to North thru Ravine	PRK 039	*0*	*0*	*0*	*0*	*(100,000)*
	Total	0	(255,000)	0	0	(1,420,000)
Total Expenditures and Uses		0	(255,000)	0	0	(1,420,000)
Change in Fund Balance		50,000	(205,000)	50,000	50,000	(1,370,000)
Ending Balance		401,154	196,154	246,154	296,154	(1,073,846)

Source		FY '19	FY '20	FY '21	FY '22	FY '23
Bud Proj - Police Computer Equip						
Beginning Balance		32,612	38,612	39,612	25,612	31,612
Revenues and Other Fund Sources						
Revenue						
Transfer in From General Fund		*6,000*	*6,000*	*6,000*	*6,000*	*6,000*
	Total	6,000	6,000	6,000	6,000	6,000
Total Revenues and Other Fund Sources		6,000	6,000	6,000	6,000	6,000
Total Funds Available		38,612	44,612	45,612	31,612	37,612
Expenditures and Uses						
Capital Projects & Equipment						
Police						
Replacment of Police Computers - IN Squad	POL 12	*0*	*0*	*(20,000)*	*0*	*0*
Body Camera System and Software	POL 17	*0*	*(5,000)*	*0*	*0*	*0*
	Total	0	(5,000)	(20,000)	0	0
Total Expenditures and Uses		0	(5,000)	(20,000)	0	0
Change in Fund Balance		6,000	1,000	(14,000)	6,000	6,000
Ending Balance		38,612	39,612	25,612	31,612	37,612

Source		FY '19	FY '20	FY '21	FY '22	FY '23
Bud Proj - Police Radio Equipment						
Beginning Balance		**50,080**	**55,080**	**13,080**	**18,080**	**23,080**
Revenues and Other Fund Sources						
Revenue						
Transfer in From General Fund		*5,000*	*5,000*	*5,000*	*5,000*	*5,000*
	Total	5,000	5,000	5,000	5,000	5,000
Total Revenues and Other Fund Sources		5,000	5,000	5,000	5,000	5,000
Total Funds Available		**55,080**	**60,080**	**18,080**	**23,080**	**28,080**
Expenditures and Uses						
Capital Projects & Equipment						
Police						
Police Radio Equipment - Replace Radios	POL 13	*0*	*(47,000)*	*0*	*0*	*0*
	Total	0	(47,000)	0	0	0
Total Expenditures and Uses		0	(47,000)	0	0	0
Change in Fund Balance		5,000	(42,000)	5,000	5,000	5,000
Ending Balance		**55,080**	**13,080**	**18,080**	**23,080**	**28,080**

Source		FY '19	FY '20	FY '21	FY '22	FY '23
Bud Proj - Police Vehicles						
Beginning Balance		**214,703**	**277,203**	**226,703**	**115,203**	**177,703**
Revenues and Other Fund Sources						
Revenue						
Transfer in from General Fund		*62,500*	*62,500*	*62,500*	*62,500*	*62,500*
	Total	62,500	62,500	62,500	62,500	62,500
Total Revenues and Other Fund Sources		62,500	62,500	62,500	62,500	62,500
Total Funds Available		**277,203**	**339,703**	**289,203**	**177,703**	**240,203**
Expenditures and Uses						
Capital Projects & Equipment						
Police						
Replace SD#4705 2008 Fd. Expedition - VIN A33178	POL 01	*0*	*0*	*(35,000)*	*0*	*0*
Replace SD#4706 Fd Expedition- VIN A33177	POL 02	*0*	*0*	*(35,000)*	*0*	*0*
Replace SD#4704 Crown Vic -VIN# 99X13170	POL 08	*0*	*0*	*(45,000)*	*0*	*0*
Replace SD#4703 2016Ford PPV SUV	POL 10	*0*	*(44,500)*	*0*	*0*	*0*
Replace SD#4701 2016 Ford PPV SUV	POL 11	*0*	*(44,500)*	*0*	*0*	*0*
Replace SD#4702 2017 Police Utiltiy Vehicle	POL 15	*0*	*0*	*(45,000)*	*0*	*0*
Video Systems- Vehicles	POL 16	*0*	*(24,000)*	*(14,000)*	*0*	*0*
	Total	0	(113,000)	(174,000)	0	0
Total Expenditures and Uses		0	(113,000)	(174,000)	0	0
Change in Fund Balance		62,500	(50,500)	(111,500)	62,500	62,500
Ending Balance		**277,203**	**226,703**	**115,203**	**177,703**	**240,203**

Source		FY '19	FY '20	FY '21	FY '22	FY '23
Bud Proj - Public Works Equipment						
Beginning Balance		**14,950**	**7,950**	**15,950**	**23,950**	**31,950**
Revenues and Other Fund Sources						
Revenue						
Transfer from Sewer Revenue Fund		*2,500*	*2,500*	*2,500*	*2,500*	*2,500*
Transfer from Sorm Revenue Fund		*1,000*	*1,000*	*1,000*	*1,000*	*1,000*
Transfer from Water Revenue Fund		*4,500*	*4,500*	*4,500*	*4,500*	*4,500*
	Total	8,000	8,000	8,000	8,000	8,000
Total Revenues and Other Fund Sources		8,000	8,000	8,000	8,000	8,000
Total Funds Available		**22,950**	**15,950**	**23,950**	**31,950**	**39,950**
Expenditures and Uses						
Capital Projects & Equipment						
Public Works						
Wood Chipper	PW 011	*(15,000)*	*0*	*0*	*0*	*0*
	Total	(15,000)	0	0	0	0
Total Expenditures and Uses		(15,000)	0	0	0	0
Change in Fund Balance		(7,000)	8,000	8,000	8,000	8,000
Ending Balance		**7,950**	**15,950**	**23,950**	**31,950**	**39,950**

Source		FY '19	FY '20	FY '21	FY '22	FY '23
Bud Proj - Public Works Vehicles						
Beginning Balance		**218,618**	**273,793**	**179,293**	**172,493**	**215,693**
Revenues and Other Fund Sources						
Revenue						
Transfer in from General Fund		*8,500*	*8,325*	*6,500*	*6,500*	*6,500*
Transfer in from Sewer Utility		*16,650*	*16,650*	*12,950*	*12,950*	*12,950*
Transfer in from Storm Utility		*2,775*	*2,775*	*2,150*	*2,150*	*2,150*
Transfer in from Water Utility		*27,250*	*27,750*	*21,600*	*21,600*	*21,600*
	Total	55,175	55,500	43,200	43,200	43,200
Total Revenues and Other Fund Sources		55,175	55,500	43,200	43,200	43,200
Total Funds Available		**273,793**	**329,293**	**222,493**	**215,693**	**258,893**
Expenditures and Uses						
Capital Projects & Equipment						
Public Works						
Replace 2010 Ford 350 Pickup - General Use	PW 008	*0*	*0*	*(50,000)*	*0*	*0*
Replace Kubota Tractor $60,000 and Equip $30,000	PW 010	*0*	*(90,000)*	*0*	*0*	*0*
Replace Ford F550 Dump box truck	PW 012	*0*	*(60,000)*	*0*	*0*	*0*
	Total	0	(150,000)	(50,000)	0	0
Total Expenditures and Uses		0	(150,000)	(50,000)	0	0
Change in Fund Balance		55,175	(94,500)	(6,800)	43,200	43,200
Ending Balance		**273,793**	**179,293**	**172,493**	**215,693**	**258,893**

Source		FY '19	FY '20	FY '21	FY '22	FY '23
Bud Proj - PW Tool Fund						
Beginning Balance		**25,158**	**13,158**	**16,158**	**19,158**	**22,158**
Revenues and Other Fund Sources						
Revenue						
Transfer from General Fund		*3,000*	*3,000*	*3,000*	*3,000*	*3,000*
	Total	3,000	3,000	3,000	3,000	3,000
Total Revenues and Other Fund Sources		3,000	3,000	3,000	3,000	3,000
Total Funds Available		**28,158**	**16,158**	**19,158**	**22,158**	**25,158**
Expenditures and Uses						
Capital Projects & Equipment						
Public Works						
Wood Chipper	PW 011	*(15,000)*	*0*	*0*	*0*	*0*
	Total	(15,000)	0	0	0	0
Total Expenditures and Uses		(15,000)	0	0	0	0
Change in Fund Balance		(12,000)	3,000	3,000	3,000	3,000
Ending Balance		**13,158**	**16,158**	**19,158**	**22,158**	**25,158**

Source		FY '19	FY '20	FY '21	FY '22	FY '23
Bud Proj - Sealcoat						
Beginning Balance		233,339	333,339	433,339	473,730	517,230
Revenues and Other Fund Sources						
Revenue						
Transfer in From General Fund		*100,000*	*100,000*	*100,000*	*100,000*	*100,000*
	Total	100,000	100,000	100,000	100,000	100,000
Total Revenues and Other Fund Sources		100,000	100,000	100,000	100,000	100,000
Total Funds Available		333,339	433,339	533,339	573,730	617,230
Expenditures and Uses						
Capital Projects & Equipment						
Streets						
Seal Coat Area 9,10,11 (2014 St Recon Area)	STREET - 013	*0*	*0*	*(59,609)*	*0*	*0*
Seal Coat Area 12 (2015 St Recon Area)	STREET- 015	*0*	*0*	*0*	*(56,500)*	*0*
	Total	0	0	(59,609)	(56,500)	0
Total Expenditures and Uses		0	0	(59,609)	(56,500)	0
Change in Fund Balance		100,000	100,000	40,391	43,500	100,000
Ending Balance		333,339	433,339	473,730	517,230	617,230

Source		FY '19	FY '20	FY '21	FY '22	FY '23
Bud Proj - Tennis Court Resurfacing						
Beginning Balance		20,000	0	0	0	0
Revenues and Other Fund Sources						
Revenue						
No Funds		*0*	*0*	*0*	*0*	*0*
	Total	0	0	0	0	0
Total Revenues and Other Fund Sources		0	0	0	0	0
Total Funds Available		20,000	0	0	0	0
Expenditures and Uses						
Capital Projects & Equipment						
Parks						
Swager Park Tennis Court -Resurface	PRK 024	*(20,000)*	*0*	*0*	*0*	*0*
	Total	(20,000)	0	0	0	0
Total Expenditures and Uses		(20,000)	0	0	0	0
Change in Fund Balance		(20,000)	0	0	0	0
Ending Balance		0	0	0	0	0

Source		FY '19	FY '20	FY '21	FY '22	FY '23
Bud Proj - Trail Equipment						
Beginning Balance		45,943	53,943	59,943	65,943	71,943
Revenues and Other Fund Sources						
Revenue						
Transfer from General Fund		*8,000*	*6,000*	*6,000*	*6,000*	*6,000*
	Total	8,000	6,000	6,000	6,000	6,000
Total Revenues and Other Fund Sources		8,000	6,000	6,000	6,000	6,000
Total Funds Available		53,943	59,943	65,943	71,943	77,943
Change in Fund Balance		8,000	6,000	6,000	6,000	6,000
Ending Balance		53,943	59,943	65,943	71,943	77,943

Source		FY '19	FY '20	FY '21	FY '22	FY '23
Bud Proj - Trail Maintenance						
Beginning Balance		**51,070**	**51,070**	**51,070**	**51,070**	**51,070**
Revenues and Other Fund Sources						
Revenue						
Transfer in from Gen Fund		*20,000*	*20,000*	*20,000*	*20,000*	*20,000*
	Total	20,000	20,000	20,000	20,000	20,000
Total Revenues and Other Fund Sources		20,000	20,000	20,000	20,000	20,000
Total Funds Available		**71,070**	**71,070**	**71,070**	**71,070**	**71,070**
Expenditures and Uses						
Capital Projects & Equipment						
Parks						
Trail Maintenance	PRK 008	*(20,000)*	*(20,000)*	*(20,000)*	*(20,000)*	*(20,000)*
Replace "Easement" Walking Trails (Brekke, Swag…	PRK 020	*0*	*0*	*0*	*0*	*(70,000)*
	Total	(20,000)	(20,000)	(20,000)	(20,000)	(90,000)
Total Expenditures and Uses		(20,000)	(20,000)	(20,000)	(20,000)	(90,000)
Change in Fund Balance		0	0	0	0	(70,000)
Ending Balance		**51,070**	**51,070**	**51,070**	**51,070**	**(18,930)**

Source		FY '19	FY '20	FY '21	FY '22	FY '23
Bud Proj - Water Chlorine-Chem Booster						
Beginning Balance		**0**	**0**	**50,000**	**100,000**	**150,000**
Revenues and Other Fund Sources						
Revenue						
Transfer in Water Utility		*0*	*50,000*	*50,000*	*50,000*	*50,000*
	Total	0	50,000	50,000	50,000	50,000
Total Revenues and Other Fund Sources		0	50,000	50,000	50,000	50,000
Total Funds Available		**0**	**50,000**	**100,000**	**150,000**	**200,000**
Expenditures and Uses						
Capital Projects & Equipment						
Water Utility						
Chlorine/Chemical Booster or Feed Station	WU 020	*0*	*0*	*0*	*0*	*(200,000)*
	Total	0	0	0	0	(200,000)
Total Expenditures and Uses		0	0	0	0	(200,000)
Change in Fund Balance		0	50,000	50,000	50,000	(150,000)
Ending Balance		**0**	**50,000**	**100,000**	**150,000**	**0**

Source		FY '19	FY '20	FY '21	FY '22	FY '23
Bud Proj - Water Meter Replacement						
Beginning Balance		**355,600**	**434,700**	**513,800**	**(145,100)**	**(66,000)**
Revenues and Other Fund Sources						
Revenue						
Transfer in from Sewer Utility		*26,500*	*26,500*	*26,500*	*26,500*	*26,500*
Transfer In from Water Utility		*52,600*	*52,600*	*52,600*	*52,600*	*52,600*
	Total	79,100	79,100	79,100	79,100	79,100
Total Revenues and Other Fund Sources		79,100	79,100	79,100	79,100	79,100
Total Funds Available		**434,700**	**513,800**	**592,900**	**(66,000)**	**13,100**
Expenditures and Uses						
Capital Projects & Equipment						
Water Utility						
Water Meter Replacement Program	WU 012	*0*	*0*	*(738,000)*	*0*	*0*
	Total	0	0	(738,000)	0	0
Total Expenditures and Uses		0	0	(738,000)	0	0
Change in Fund Balance		79,100	79,100	(658,900)	79,100	79,100
Ending Balance		**434,700**	**513,800**	**(145,100)**	**(66,000)**	**13,100**

Source		FY '19	FY '20	FY '21	FY '22	FY '23
Park & Rec Dedication Fund						
Beginning Balance		**515,429**	**515,429**	**515,429**	**515,429**	**515,429**
Expenditures and Uses						
Capital Projects & Equipment						
Parks						
Acquire DNR Property - Osgood Ave.	PRK 002	*0*	*0*	*0*	*0*	*(500,000)*
	Total	0	0	0	0	(500,000)
Total Expenditures and Uses		0	0	0	0	(500,000)
Change in Fund Balance		0	0	0	0	(500,000)
Ending Balance		**515,429**	**515,429**	**515,429**	**515,429**	**15,429**

Source		FY '19	FY '20	FY '21	FY '22	FY '23
Renewal Replace Fund - Water/Sewer Utilities						
Beginning Balance		**4,018,369**	**4,387,869**	**4,732,369**	**5,101,869**	**5,446,369**
Revenues and Other Fund Sources						
Revenue						
Transfer from Sewer Fund		*170,000*	*170,000*	*170,000*	*170,000*	*170,000*
Transfer from Water Fund		*199,500*	*199,500*	*199,500*	*199,500*	*199,500*
	Total	369,500	369,500	369,500	369,500	369,500
Total Revenues and Other Fund Sources		369,500	369,500	369,500	369,500	369,500
Total Funds Available		**4,387,869**	**4,757,369**	**5,101,869**	**5,471,369**	**5,815,869**
Expenditures and Uses						
Capital Projects & Equipment						
Sewer Utility						
Sanitary Sewer Lining - Continuous	Sewer - 006	*0*	*(25,000)*	*0*	*(25,000)*	*(25,000)*
Replace 9th Addition Lift Station	Sewer - 007	*0*	*0*	*0*	*0*	*(500,000)*
	Total	0	(25,000)	0	(25,000)	(525,000)
Total Expenditures and Uses		0	(25,000)	0	(25,000)	(525,000)
Change in Fund Balance		369,500	344,500	369,500	344,500	(155,500)
Ending Balance		**4,387,869**	**4,732,369**	**5,101,869**	**5,446,369**	**5,290,869**

Source		FY '19	FY '20	FY '21	FY '22	FY '23
State or DOT Funding- St Croix River Trail						
Beginning Balance		**0**	**0**	**0**	**0**	**0**
Revenues and Other Fund Sources						
Revenue						
State Grant-DOT		*0*	*0*	*0*	*0*	*250,000*
	Total	0	0	0	0	250,000
Total Revenues and Other Fund Sources		0	0	0	0	250,000
Total Funds Available		**0**	**0**	**0**	**0**	**250,000**
Expenditures and Uses						
Capital Projects & Equipment						
Parks						
Trail Segments to St Croix River	PRK 003	*0*	*0*	*0*	*0*	*(250,000)*
	Total	0	0	0	0	(250,000)
Other Uses						
No Funds		*0*	*0*	*0*	*0*	*0*
	Total	0	0	0	0	0
Total Expenditures and Uses		0	0	0	0	(250,000)
Change in Fund Balance		0	0	0	0	0
Ending Balance		**0**	**0**	**0**	**0**	**0**

Source		FY '19	FY '20	FY '21	FY '22	FY '23
Storm Sewer Utility Renew& Repl. Fund						
Beginning Balance		1,714,395	1,718,795	1,808,795	1,898,795	1,988,795
Revenues and Other Fund Sources						
Revenue						
Transfer from General Fund		*90,000*	*90,000*	*90,000*	*90,000*	*90,000*
	Total	90,000	90,000	90,000	90,000	90,000
Total Revenues and Other Fund Sources		90,000	90,000	90,000	90,000	90,000
Total Funds Available		1,804,395	1,808,795	1,898,795	1,988,795	2,078,795
Expenditures and Uses						
Capital Projects & Equipment						
Storm Sewer Utility						
Storm Sewer Catch Basin Rehabilitation	STORM - 003	*(40,000)*	*0*	*0*	*0*	*0*
	Total	(40,000)	0	0	0	0
Streets						
58th West of Stillwater Blvd	STREET - 014	*(45,600)*	*0*	*0*	*0*	*0*
	Total	(45,600)	0	0	0	0
Total Expenditures and Uses		(85,600)	0	0	0	0
Change in Fund Balance		4,400	90,000	90,000	90,000	90,000
Ending Balance		1,718,795	1,808,795	1,898,795	1,988,795	2,078,795

Source		FY '19	FY '20	FY '21	FY '22	FY '23
Storm Water Utility Fund						
Beginning Balance		181,538	158,538	158,538	158,538	158,538
Revenues and Other Fund Sources						
Revenue						
No Funds		*0*	*0*	*0*	*0*	*0*
	Total	0	0	0	0	0
Total Revenues and Other Fund Sources		0	0	0	0	0
Total Funds Available		181,538	158,538	158,538	158,538	158,538
Expenditures and Uses						
Capital Projects & Equipment						
Storm Sewer Utility						
MS4 Plan and Implementation	STORM - 004	*(23,000)*	*0*	*0*	*0*	*0*
	Total	(23,000)	0	0	0	0
Total Expenditures and Uses		(23,000)	0	0	0	0
Change in Fund Balance		(23,000)	0	0	0	0
Ending Balance		158,538	158,538	158,538	158,538	158,538

Source		FY '19	FY '20	FY '21	FY '22	FY '23
Street Replacement Fund						
Beginning Balance		**2,821,001**	**2,954,972**	**3,133,882**	**3,471,090**	**3,905,964**
Revenues and Other Fund Sources						
Revenue						
Transfer In General Fund		*397,971*	*409,910*	*422,208*	*434,874*	*447,920*
	Total	397,971	409,910	422,208	434,874	447,920
Total Revenues and Other Fund Sources		397,971	409,910	422,208	434,874	447,920
Total Funds Available		**3,218,972**	**3,364,882**	**3,556,090**	**3,905,964**	**4,353,884**
Expenditures and Uses						
Capital Projects & Equipment						
Streets						
58th West of Stillwater Blvd	STREET - 014	*(264,000)*	*0*	*0*	*0*	*0*
Street Reconstruction - Area 14	STREET - 016	*0*	*0*	*0*	*0*	*(874,000)*
Replace 62nd Street N (west of Osgood)	STREET - 017	*0*	*0*	*(85,000)*	*0*	*0*
Replace Oakgreen Ave N	STREET - 018	*0*	*(231,000)*	*0*	*0*	*0*
	Total	(264,000)	(231,000)	(85,000)	0	(874,000)
Other Uses						
Transfer To Budgeted Proj- Mill and Overlay		*0*	*0*	*0*	*0*	*(400,000)*
	Total	0	0	0	0	(400,000)
Total Expenditures and Uses		(264,000)	(231,000)	(85,000)	0	(1,274,000)
Change in Fund Balance		133,971	178,910	337,208	434,874	(826,080)
Ending Balance		**2,954,972**	**3,133,882**	**3,471,090**	**3,905,964**	**3,079,884**

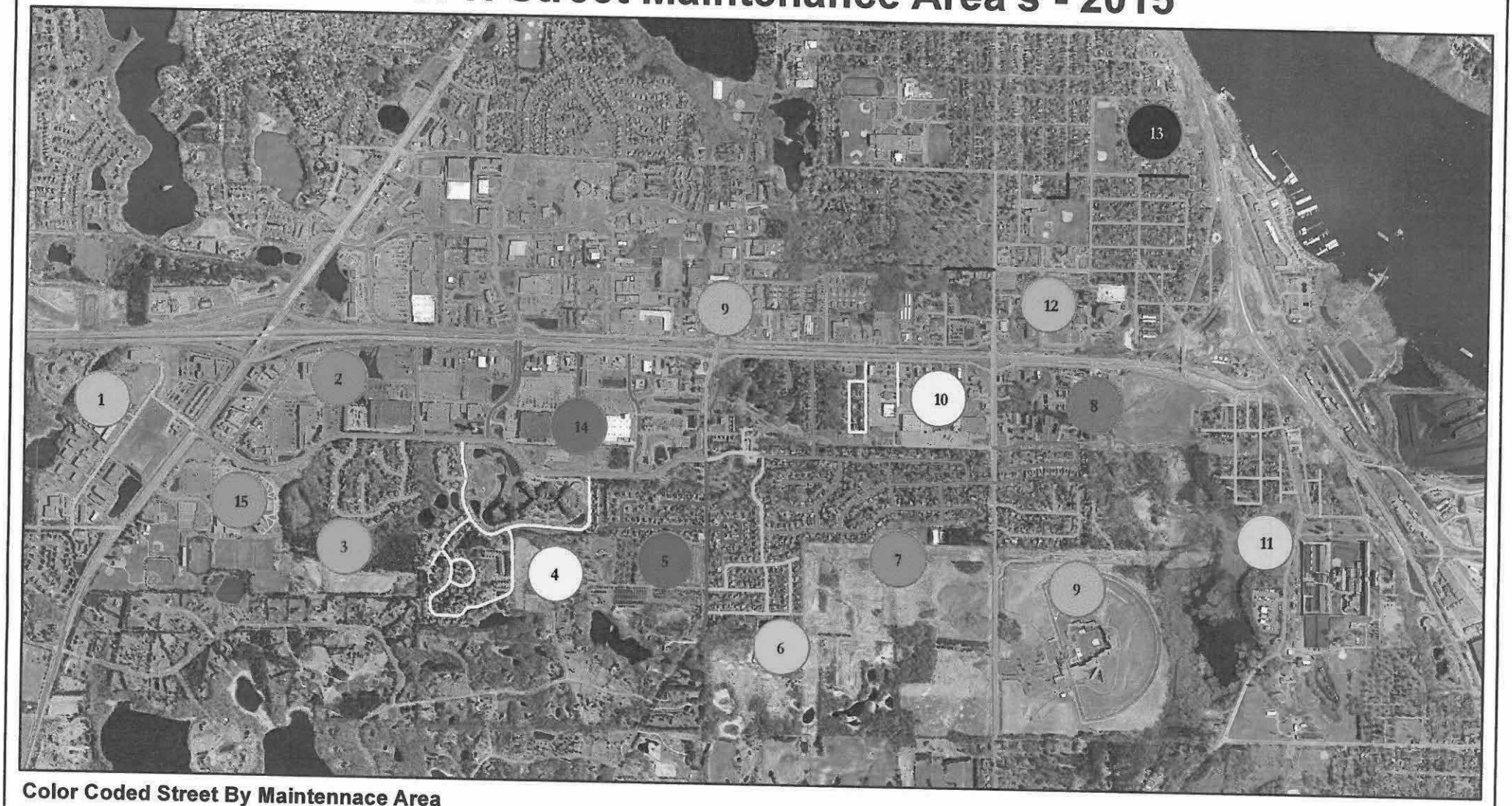
Source		FY '19	FY '20	FY '21	FY '22	FY '23
UNFUNDED						
Beginning Balance		**0**	**0**	**(77,000)**	**(77,000)**	**(77,000)**
Revenues and Other Fund Sources						
No Funds		*0*	*0*	*0*	*0*	*0*
	Total	0	0	0	0	0
Total Revenues and Other Fund Sources		0	0	0	0	0
Total Funds Available		**0**	**0**	**(77,000)**	**(77,000)**	**(77,000)**
Expenditures and Uses						
Capital Projects & Equipment						
Streets						
Replace Oakgreen Ave N	STREET - 018	*0*	*(77,000)*	*0*	*0*	*0*
	Total	0	(77,000)	0	0	0
Total Expenditures and Uses		0	(77,000)	0	0	0
Change in Fund Balance		0	(77,000)	0	0	0
Ending Balance		**0**	**(77,000)**	**(77,000)**	**(77,000)**	**(77,000)**

Source		FY '19	FY '20	FY '21	FY '22	FY '23
Water Connection Charge Fund						
Beginning Balance		723,000	723,000	723,000	723,000	723,000
Revenues and Other Fund Sources						
No Funds		*0*	*0*	*0*	*0*	*0*
	Total	0	0	0	0	0
Total Revenues and Other Fund Sources		0	0	0	0	0
Total Funds Available		723,000	723,000	723,000	723,000	723,000
Expenditures and Uses						
Capital Projects & Equipment						
Water Utility						
Kern Center to High School Loop Main	WU 002	*0*	*0*	*0*	*0*	*(360,000)*
OakGreen to Osgood Loop Main	WU 003	*0*	*0*	*0*	*0*	*(600,000)*
Osgood to Stagecoach Loop Main	WU 004	*0*	*0*	*0*	*0*	*(600,000)*
Well #3 - NEW	WU 006	*0*	*0*	*0*	*0*	*(900,000)*
Water Storage Tank - NEW (Tank #3)	WU 010	*0*	*0*	*0*	*0*	*(1,900,000)*
	Total	0	0	0	0	(4,360,000)
Total Expenditures and Uses		0	0	0	0	(4,360,000)
Change in Fund Balance		0	0	0	0	(4,360,000)
Ending Balance		723,000	723,000	723,000	723,000	(3,637,000)

Source		FY '19	FY '20	FY '21	FY '22	FY '23
Well Rehabilitation Fund						
Beginning Balance		140,117	151,117	162,117	173,117	134,117
Revenues and Other Fund Sources						
Revenue						
Transfer from Water Fund		*11,000*	*11,000*	*11,000*	*11,000*	*11,000*
	Total	11,000	11,000	11,000	11,000	11,000
Total Revenues and Other Fund Sources		11,000	11,000	11,000	11,000	11,000
Total Funds Available		151,117	162,117	173,117	184,117	145,117
Expenditures and Uses						
Capital Projects & Equipment						
Water Utility						
Well #2 Rehab	WU 017	*0*	*0*	*0*	*(50,000)*	*0*
	Total	0	0	0	(50,000)	0
Total Expenditures and Uses		0	0	0	(50,000)	0
Change in Fund Balance		11,000	11,000	11,000	(39,000)	11,000
Ending Balance		151,117	162,117	173,117	134,117	145,117

Source		FY '19	FY '20	FY '21	FY '22	FY '23
Xcel Energy - Moelter Site Commitment						
Beginning Balance		106,207	51,207	51,207	51,207	51,207
Expenditures and Uses						
Capital Projects & Equipment						
Parks						
Park Shelter Oak Park Crossing	PRK 025	*0*	*0*	*0*	*0*	*(375,000)*
Add Drinking Fountain to Oak Park Crossing	PRK 033	*(55,000)*	*0*	*0*	*0*	*0*
	Total	(55,000)	0	0	0	(375,000)
Total Expenditures and Uses		(55,000)	0	0	0	(375,000)
Change in Fund Balance		(55,000)	0	0	0	(375,000)
Ending Balance		51,207	51,207	51,207	51,207	(323,793)

OPH Street Maintenance Area's - 2015



Color Coded Street By Maintennace Area

- Not OPH Streets
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

N

This map is for reference use only.
The print is not an engineered plan.

Appendix B: Adjacent and Affected Jurisdiction Comments

From:	Sherri A. Buss
To:	scott@planningco.com
Cc:	Nancy Healey (nancy.healey@baytownmn.org); John Hall (john.hall@baytownmn.org); Eric A Johnson (E-mail)
Subject:	Baytown Township comments on OPH draft 2040 Comprehensive Plan
Date:	Tuesday, July 3, 2018 11:59:11 AM
Attachments:	image001.png

Scott,

Baytown Township has reviewed the Oak Park Heights Draft 2040 Comprehensive Plan and has the following comments:

- The Township noted that the City is not proposing to annex any areas currently within Baytown Township or provide municipal services to any areas within the Township through 2040. The City's policies are compatible with the land use goal in Baytown Township's 2040 Comprehensive Plan to "maintain the current geographic boundaries of the Township." The Township is strongly committed to maintain its current geographic boundaries and is opposed to annexation of any areas within Baytown Township to adjacent communities.
- The Township supports and the goal and policies in the City's plan to annex areas only when agreed to by the affected jurisdiction, and to cooperate in annexation requests by discussing the annexation issues with adjacent townships.
- The Township also noted the policy in the Community Facilities chapter of the plan that the City will "prohibit extension of service to properties outside the corporate limits without an agreement as to the annexation of the property." The Township suggests that the City consider some flexibility in this policy in cases where extension of utilities outside the City limits could provide benefits to potential development and to the community. For example, the City of Bayport has extended municipal water and sewer services to serve the St. Croix Preparatory Academy which is located within Baytown Township under a Joint Powers Agreement with the Township. The City benefits from the revenue generated by the services, and this use would not have generated property tax revenues for the City.

Thank you for the consideration of the Township's comments,

Sherri Buss,
Township Planner

tkda002

Sherri A. Buss, RLA, AICP | Senior Planner, Planning Group Manager

444 Cedar Street, Suite 1500, Saint Paul, MN 55101
P **651.292.4582** | C **651.368.0665**
sherri.buss@tkda.com
tkda.com

City of Oak Park Heights – Comprehensive Plan Update 2018
June 29, 2018

Adjacent or Affected Jurisdiction Name: Stillwater Township
Please check the appropriate box:

- ☐ We have reviewed the proposed Plan Update, do not have any comments, and are therefore waiving further review.
- ☑ We have reviewed the proposed Plan Update and offer the following comments (attach additional sheets if necessary)

The Township noted that the City's Comprehensive Plan considers potential annexation of an area at Highway 36 and manning Avenue that is currently within Stillwater Township. This area was previously part of the City of Lake Elmo. The property owner within the area successfully petitioned for detachment to the Township in 2013.

The Township supports the City's land use policy that it should consider annexation only if requested by the property owner and agreed to by the Township.

~~The Township will discuss issues related to annexation of the area at Highway 36 and Manning Avenue with the City if requested.~~

Name of Reviewer _____

Date _____

Signature of Reviewer _____

Board of Commissioners
Fran Miron, District 1
Stan Karwoski, District 2
Gary Kriesel, Chair, District 3
Jack Lavold, District 4
Lisa Weik, District 5

September 11, 2018

Scott D. Richards
The Planning Company LLC
3601 Thurston Avenue N, Suite 100
Anoka, MN 55303

RE: Review of the draft Oak Park Heights Comprehensive Plan

Dear Mr. Richards,

Washington County appreciates the opportunity to review the draft Oak Park Heights Comprehensive Plan. These comments are intended to be supportive and constructive in nature. The county recognizes the city's authority to adopt its plan and commends the city on the work performed to-date.

County staff from the departments of Administration, Public Health and Environment, and Public Works, and staff from the Washington County Community Development Agency have reviewed the draft plan. Comments are included as an attachment to this letter.

The comments provided are intended to identify opportunities to improve the draft plan, and provide additional information or context. The comments should be construed as suggestions for the city to consider as it works to finalize its comprehensive plan.

Again, we appreciate the opportunity to review the draft Oak Park Heights Comprehensive Plan and look forward to working with the city to create a common vision for the future of the county.

Sincerely,

Commissioner Gary Kriesel
Washington County Board Chair

Washington County Comments
Draft Oak Park Heights Comprehensive Plan

Land Use

- The county is encouraged by the City of Oak Park Heights policies and implementation items in the Land Use chapter supporting energy conservation and the use of renewable energy. It is especially encouraging to see the city's desire to model conservation of energy at city facilities as a model for the rest of the community. In addition, the county commends the city for prioritizing solar access protection though city zoning ordinances. The county looks forward to partnering with Oak Park Heights where and when opportunities arise to create a more sustainable region.
- Pages 47-49: The county is encouraged by the city's goals to 1) encourage recycling programs and solid waste reduction initiatives and to 2) reduce waste stream toxicity and amount; minimize generation of hazardous waste and increase reuse, recycling, composting and purchasing of environmentally preferred products with minimal or no packaging. The city may want to consider collaborating with the county in planning for and implementing programs to achieve these goals.

Housing

- Page 52, Residential Land Use Goal #1 and #3: The county supports the effort to provide a variety of housing types and values that are attractive to all age groups, and to have multifamily developments serve as a life cycle housing alternative to detached single family homes.
- Page 73, Housing Demand: The county suggests more clearly identifying the city's housing needs and detailing how they will be addressed.
- Page 73, Housing Demand: The county appreciates the support expressed by the city toward the Community Development Agency's (CDA) housing programs. The county suggests listing in an Implementation Table specific CDA housing programs such as its Home Improvement Assistance program, GROW Program, CDBG and HOME programs, and Low Income Housing Tax Credit Program.

Transportation

- Page 84, County State Aid Highway (CSAH) 15/TH 36 interchange: The CSAH 15/TH 36 interchange project is incorrectly described as an overpass. This project will be an interchange.
- Page 86, Traffic Volumes: Consider adding a Planning Level Roadway Capacities by Facility Type table like the one found on page 5-13 of the draft Washington County 2040 Comprehensive Plan.
- Page 98, Access Management: Consider matching Washington County's Access Spacing Guidelines table found on page 5-41 of the draft Washington County 2040 Comprehensive Plan.

Parks and Trails

- Page 132: The county appreciates the city's commitment to protect, preserve and improve environmentally sensitive areas and natural resources in all parks and trail corridor areas as part of your parks and trails goals/policies. To align with the Washington County Waste Management Master Plan 2018-2036 strategy in creating away-from-home recycling opportunities in parks, athletic fields, arenas, and recreation centers, consider collaborating with the county to add waste and recycling stations along city trails and throughout parks.
- Page 152, Regional Connections Map: Washington County no longer actively promotes the "bike loops" shown in this map. If the city is interested, the county can provide a map of its existing and planned Regional Trail network.

Healthy Communities *Please note: The city does not specifically include a Healthy Communities component in its draft comprehensive plan, but it is a component of the Resiliency and Sustainability chapter of the draft Washington County Comprehensive Plan.*

- The county is encouraged by the city's commitment to improve access to physical activity for all ages and abilities through active transportation planning, trail and sidewalk connections, safer crosswalks and park maintenance and improvements. The county looks forward to seeing the Bike and Pedestrian Plan when that becomes available.
- The county is also encouraged by the city's efforts to engage community members in the development of the 2040 Comprehensive Plan, and the recognition of the importance of affordable housing and the needs of the growing population over age 64 in the city.
- Other areas for consideration, with respect to healthy communities, include:
    - Tobacco-free living in housing, parks, and trails
    - Access to healthy foods (identified twice under healthy lifestyle issues, page 25)

BROWN'S CREEK WATERSHED DISTRICT
455 HAYWARD AVE N
OAKDALE, MN
55128
651.330.8220 X26 [PHONE]
651.330.7747 | FAX |
WWW.BCWD.ORG

VIA EMAIL AND MAIL

September 13, 2018

Eric Johnson, City Administrator
City of Oak Park Heights
14168 Oak Park Boulevard North
Oak Park Heights, MN 55082

Mr. Johnson,

In accordance with Minnesota Statutes section 103B.235, subdivision 3, BCWD staff have reviewed the draft Oak Park Heights Local Surface Water Management Plan received September 6, 2018, for consistency with BCWD's adopted 2017-2026 Watershed Management Plan (the BCWD WMP).

At its September 12, 2018, meeting, the Brown's Creek Watershed District Board of Managers conditionally approved Oak Park Heights' draft Local Surface Water Management Plan (the Plan). (Please see enclosed resolution.) The condition of approval is that Oak Park Heights 1. Revise the Plan to address comments denoted by bullets (•) in the attached memo, and consider revisions to address comments denoted by dashes (–).

If you have any questions regarding BCWD's conditional approval or the memo articulating the specifics articulating the specifics of the condition, BCWD staff are available to assist in revising the LSWMP to make clear and definitive statements of intent, authority and cooperation with regard to exercise of regulatory jurisdiction.

Sincerely,

Karen Kill
Administrator

Cc: Tyler Johnson, Stantec; Scott D. Richards, The Planning Company LLC

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BROWN'S CREEK WATERSHED DISTRICT
455 HAYWARD AVE N
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MEMORANDUM

TO: BCWD Board of Managers
FROM: Karen Kill
RE: Oak Park Heights LSWMP Comments
DATE: September 11, 2018

In accordance with Minnesota Statutes section 103B.235, subdivision 3, BCWD staff have reviewed the draft Oak Park Heights Local Surface Water Management Plan for consistency with BCWD's adopted 2017-2026 Watershed Management Plan (the BCWD WMP).

Following from this review, recommended conditions on approval of the Oak Park Heights Local Surface Water Management Plan (LSWMP) are denoted by bullets (•) where staff recommend the condition be required and consider revisions to address comments denoted by dashes (–).

Section 2 – Physical Setting

- There is no mention of the Drinking Water Supply Management Area or the Emergency Response Area. . A brief description and map(s) should be included in Section 2 of the Plan.

Section 3 – Regulatory Setting

- Section 3.4.1 The Brown's Creek Watershed District (Page 13) states that "Brown's Creek flows from the upper watershed southeast through Oak Park Heights to the St. Croix River". This is not correct. The main channel of Brown's Creek flows from the upper watershed through the City of Stillwater to the St. Croix River. Drainage from Oak Park Heights makes its way to the Long Lake Tributary of Brown's Creek, which is diverted to McKusick Lake at the Diversion Structure.
- Section 3.4.1 The Brown's Creek Watershed District (Page 13) should be modified to note that BCWD has a recently amended set of water-resource protection and flood-control rules and implements the rules through its permitting program.
- Section 3.7 Minnesota Pollution Control Agency (Page 15) should reflect the fact that the Brown's Creek TMDL Implementation Plan (February 6, 2012) assigns a waste load allocation to the City of Oak Park Heights for TSS and thermal load. The reduction goal

of 0% indicates that there should be no net increase in TSS and thermal load to Brown's Creek from the municipal boundary.

Section 4 – Related Studies, Plans and Reports

- Section 4.2 2017-2026 Brown's Creek Watershed Management Plan (Page 18) should be corrected to indicate that the most current plan is the District's fourth generation plan and the amendment process is complete.
- Section 4.2 2017-2026 Brown's Creek Watershed Management Plan (Page 18) should include a description of the BCWD's rules and permitting program similar to the description provided for the MSCWMO permitting program.

Section 5 – Water Resources Related Agreements

- Section 5.1.1 Revised Cooperative Agreement for the Trout Stream Mitigation Project (Page 22) needs to be corrected as follows, "In a cooperative agreement with the BCWD in 2000, the City of Stillwater ~~Oak Park Heights~~ agreed to construct and maintain the McKusick Lake Diversion Structure identified in the City of Stillwater's 1997 Alternative Urban Area Review. The agreement was revised in 2004 to include portions of the City of Oak Park Heights.

Section 6 – Current Assessment

- Section 6.1 Hydrologic Model (Page 24) indicates that the BCWD's 2004 XP-SWMM model was used in characterizing current conditions. As the 2017-2029 Watershed Management Plan indicates, the BCWD conducted a major overhaul of the 2004 model in 2015. This upgrade included revisions to subwatershed boundaries, changing the runoff methodology (from SCS to Green-Ampt), updating rainfall depths and updating to reflect changes in land use (new development and redevelopment activity). This more current model should be used to report the modeling information found in Appendix B of the Plan. BCWD will supply you with this information if requested.
- Section 6.2 Comparison of Regulatory Standards (Page 24) clearly describes the regulatory responsibility of the BCWD as follows: "Developing property within Oak Park Heights is subject to review and approval from one of the three watershed management organizations having jurisdiction within the City". Please see comments under section 8 to further clarify in that section of the Plan.
- Section 6.2 The Brown's Creek Watershed District (BCWD) Rules (Pages 24 and 25) indicates that the BCWD updated its Rules which were adopted in January of 2018. The first sentence of this section states that "a significant revision clarified and updated the requirements of the District's permit program regarding stormwater management, erosion control, buffers, shoreline and streambank alteration, stream and lake crossings, and floodplain alterations". This is an incorrect statement. The most recent rule revision

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process clarified present standards, incorporated rule interpretations that had developed over time, and addressed gaps or specific problem areas that had come to light over the prior decade (of rule implementation). The BCWD recommends replacing the sentence in the current draft of the LWMP with the sentence provided above.

- Section 6.2 The Brown's Creek Watershed District (BCWD) Rules (Page 25) walks the reader through the District's applicability requirements for Rule 2.0 Stormwater Management. Currently, the Plan identifies development and redevelopment activity as a subset of (1) Subdivision of four or more lots. This is incorrect. Please refer to the Rule 2.2 Applicability to find the three requirements for subdivisions of four or more lots, development and redevelopment activity, and linear projects. Correct or link directly to our current rules.
- Section 6.2.5 TMDLs (Page 27) should reflect the waste load allocations assigned to the City of Oak Park Heights. For example, drainage to Long Lake has a TSS and thermal load reduction goal of 0% meaning that there is no net increase from the conditions at the time of the TMDL Implementation Plan.

Section 7 – Goals and Policies

- Section 7.1 Summary (Page 30) second paragraph has a repeated sentence. "These goals are also in alignment with those identified by the WMO's in their WMPs" is repeated in the next sentence.
- Section 7.1 Summary (Page 30) needs to be updated so that the bullet referring to the BCWD's Rules reads "The Brown's Creek Watershed District: Rules Effective January 1, 2018".
- Section 7.3 Runoff Rate (Page 31), suggest adding "using NOAA Atlas 14 precipitation frequency data" to the BCWD's bullet so that it matches what is written for the VBWD and the MSCWMO.
- Section 7.2.2 Runoff Volume (Page 32), suggest the following addition to bullet re: the BCWD volume control requirement: "Within the BCWD: pre-settlement volume for a 2-year, 24-hour storm <u>and a 5-year, 24-hour storm within a landlocked basin or a subwatershed draining to a landlocked basin.</u>" Recommend deleting the bullet re: the BCWD volume control requirement for landlocked basins from fourth Policy under Section 7.3 Runoff Rate.
- Section 7.2.4 Nutrient and Sediment Loading (Page 34), add a policy that is consistent with the District's goals for achieving the revised TMDL load reduction for TSS and thermal loads to Brown's Creek and for restoring the water quality in District lakes and large ponds that do not currently meet State standards or their designated uses (e.g. Long Lake).
- Section 7.3.1 Wetland Management (Page 35), modify the goal as follows to be consistent with the goals of the BCWD 2017-2026 Watershed Management Plan: "Protect and preserve wetlands to maintain <u>and/or enhance</u> their function<u>s</u> and value<u>s.</u>

- Section 7.3.2 Groundwater Recharge and Protection (Page 39), the BCWD-specific bullet under the fourth Policy should read "Within the BCWD: 2-year runoff volume if feasible in the contributing area to a groundwater dependent natural resource ~~areas.~~
- Section 7.4.1 Floodplain Management (Page 40), add language to ensure consistency with the BCWD's goal of ensuring no net loss of flood storage capacity within the watershed.
- Section 7.4.2 Shoreland Management (Page 41), change the BCWD-specific bullet under the second Policy so that it reads: "Within the Brown's Creek Watershed District: A permit is required for disturbance below the ordinary high-water level (OHWL). ~~Steep slope development is subject to additional permit surety~~". According to Rule 5.2 "No person may disturb the natural shoreline or streambank partially or wholly below the OHWL of a waterbody, without first securing a permit from the District and posting a surety."
- Section 7.6 Support of Other Agencies (Page 43), to minimize the potential for confusion, replace the BCWD-specific bullet items under the first policy with the actual rule language articulating the applicability requirements.
- General comment for this section: consider adding a goal or policy that addresses impacts related to climate change. The BCWD has the following goal for climate change adaptation: "Develop a better understanding of climate change, its impact to the District's land and water resources, and adaptive strategies to address this emerging issue".

Section 8 - Implementation and Financial Considerations

- Section 8 must be amended to include a clear framework for implementation of regulatory authority:
    - In several places the plan references BCWD's continuing exercise of regulatory authority. E.g., 3.4.1; 6.1; 6.2.6. Minn. R. 8410.0160, subp. 3E(3) requires the plan to "clearly define the responsibilities of the local government unit from that of a[] [watershed] organization for carrying out the implementation components," and (4) requires a city water plan to "describe official controls and any changes to official controls relative to requirements of the organization's plan." Minn. R. 8410.0105, subp. 6, which requires watershed plans to "clearly distinguish between the responsibilities of the organization and the affected local government units relative to controls established according to this subpart." In keeping with this mandate, the BCWD 2017-2026 plan states that "as a condition of approval [] the local water management plan [must] state that the city or township will update its ordinances to maintain conformity to the BCWD rules or defer exercise of regulatory authority for the work covered by the revised rule… ." Given this legal framework and the previously mentioned references in the LSWMP to BCWD's ongoing exercise of regulatory authority, the draft plan should be revised to clarify that the City of Oak Park Heights intends to defer regulatory authority over

land-altering and other activities subject to the BCWD rules. Section 8 should explicitly state that "in accordance with Minnesota Statutes section 103B.211, subd. 1(a)(3)(iii), the city defers exercise of regulatory authority over the activities subject to the BCWD's rules to BCWD." In addition, language should be added or revised, as appropriate, in 3.4.1, 6.1 and 6.2.6. to clarify and make more explicit the city's decision to defer exercise of regulatory authority over stormwater-runoff management and other water-resource protection in the Brown's Creek watershed to BCWD.

Alternatively, if the city wishes to revise the Plan to provide for its exercise of sole regulatory authority to provide the protections in the BCWD rules within the city's jurisdiction, Table 8-2 in the Plan must be revised to replace the nonspecific commitment to "updates and modifications" with a specific commitment to amend its ordinances to ensure they are as least protective of water resources and control flooding as well as the BCWD rules. The Plan also would have to include a commitment to maintain conformity to the BCWD rules or defer exercise of regulatory authority for the activity covered by a revised BCWD rule within one year after the BCWD provides notice that it has significantly revised a rule. (The plan should allow 60 days for BCWD review.)

- Section 8.2.1 Capital Improvements (Page 46) the Appendix (D) referred to in this section is missing from the Plan.
- The BCWD 2017-2026 Watershed Management Plan identifies BMPs in the Menards Pond drainage area to address the BCWD's goal to "Restore the water quality in District lakes and large ponds that do not currently meet State standards or their designated uses". These BMPs were identified in the Long Lake Management Plan which was developed in 2006. The City of Oak Park Heights should identify its planned involvement in the implementation of these BMPs in its Implementation Program.
- The City of Oak Park Heights should consider increasing the number of times it performs street sweeping activities. More current guidance suggests sweeping twice in the spring and twice in the fall, as a minimum, and once monthly for the months in between.
- The Implementation Program description includes road deicing. The text does not make clear how road deicing contributes to the implementation of the Plan.
- Section 8.2.3 Funding identifies special tax districts under Minnesota Statutes section 473.882 as a source of funding for implementation of the Plan that the city will "attempt to utilize." The statutory section cited was repealed in 1990 and replaced by section 103B.245, which provides for the establishment of a water management tax district for funding implementation of either a watershed plan under 103B.231 or a local water management plan under 103B.235. At a minimum, the statutory reference should be corrected. From there though, the city should consider whether the mechanism cited is reasonably necessary, given that the implementation program in the Plan includes no capital improvements outside of routine maintenance and infrastructure upgrades that

could likely can be funded through the city's existing stormwater utility.
The same section indicates that project funds might be obtained from Minnesota Statutes section 103D.905 watershed-district levies. Note that the BCWD does not utilize this funding mechanism for anything other than basic organizational and administrative expenses, and given that there are no joint city-BCWD capital-improvement projects identified in the Plan, this mechanism does not appear to be a realistic source of funding in Brown's Creek watershed – again, especially given that the city already has a stormwater utility in place to fund routine maintenance and infrastructure upgrades.

Please let us know if you have any questions about the comments or suggestions submitted above.

Sincerely,

Karen Kill,
District Administrator

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BCWD Comments and Responses on Oak Park Heights' LSWMP - 1/2019

Only required comments were addressed (as indicated by solid bullet symbol on comment letter, versus optional comments which are indicated by a dash symbol).

Section of concern in plan	BCWD comment	Location of change in plan
Section 3 – Regulatory Setting	Section 3.4.1 The Brown's Creek Watershed District (Page 13) states that Brown's Creek flows from the upper watershed southeast through Oak Park Heights to the St. Croix River". This is not correct. The main channel of Brown's Creek flows from the upper watershed through the City of Stillwater to the St. Croix River. Drainage from Oak Park Heights makes its way to the Long Lake Tributary of Brown's Creek, which is diverted to McKusick Lake at the Diversion Structure.	Language changed in Section 3.4.1.
	Section 3.4.1 The Brown's Creek Watershed District (Page 13) should be modified to note that BCWD has a recently amended set of water-resource protection and flood-control rules and implements the rules through its permitting program.	Language added in Section 3.4.1.
	Section 3.7 Minnesota Pollution Control Agency (Page 15) should reflect the fact that the Brown's Creek TMDL Implementation Plan (February 6, 2012) assigns a waste load allocation for the City of Oak Park Heights for TSS and thermal load. The reduction goal of 0% indicates that there should be no net increase in TSS and thermal load to Brown's Creek from the municipal boundary.	This section exists to give a broad overview of the agency. Narrative regarding the TMDL has been added later in the plan. See Section 6.2.5.
Section 4 – Related Studies, Plans and Reports	Section 4.2 2017-2026 Brown's Creek Watershed Management Plan (Page 18) should be corrected to indicate that the most current plan is the District's fourth generation plan and the amendment process is complete.	Fixed in Section 4.2.
Section 5 – Water Resources Related Agreements	Section 5.1.1 Revised Cooperative Agreement for the Trout Stream Mitigation Project (Page 22) needs to be corrected as follows, "In a cooperative agreement with the BCWD in 2000, the City of Stillwater agreed to construct and maintain the McKusick Lake Diversion Structure identified in the City of Stillwater's 1997 Alternative Urban Area Review. The agreement was revised in 2004 to include portions of the City of Oak Park Heights."	Revised, Section 5.1.1.
Section 6 – Current Assessment	Section 6.1 Hydrologic Model (Page 24) indicates that the BCWD's 2004 XP-SWMM model was used in characterizing current conditions. As the 2017-2029 Watershed Management Plan indicates, the BCWD conducted a major overhaul of the 2004 model in 2015. This upgrade included revisions to subwatershed boundaries, changing the runoff methodology (from SCS to Green-Ampt), updating rainfall depths and updating to	City does not agree that an update to its hydrologic model is necessary at this time.

	reflect changes in land use (new development and redevelopment activity). This more current model should be used to report the modeling information found in Appendix B of the Plan. BCWD will supply you with this information if requested.	
	Section 6.2 The Brown's Creek Watershed District (BCWD) Rules (Page 25) walks the reader through the District's applicability requirements for Rule 2.0 Stormwater Management. Currently, the Plan identifies development and redevelopment activity as a subset of (1) Subdivision of four or more lots. This is incorrect. Please refer to the Rule 2.2 Applicability to find the three requirements for subdivisions of four or more lots, development and redevelopment activity, and linear projects. Correct or link directly to our current rules.	Referred to Rule 2.2.
	Section 6.2.5 TMDLs (Page 27) should reflect the waste load allocations assigned to the City of Oak Park Heights. For example, drainage to Long Lake has a TSS and thermal load reduction goal of 0% meaning that there is no net increase from the conditions at the time of the TMDL Implementation Plan.	Addressed in Section 6.2.6.
Section 7 – Goals and Policies	Section 7.1 Summary (Page 30) second paragraph has a repeated sentence: "These goals are also in alignment with those identified by the WMO's in their WMPs" is repeated in the next sentence.	Addressed in Section 7.1.
	Section 7.1 Summary (Page 30) needs to be updated so that the bullet referring to the BCWD's Rules reads: "The Brown's Creek Watershed District: Rules Effective January 1, 2018".	Fixed, Section 7.1.
	Section 7.2.4 Nutrient and Sediment Loading (Page 34), add a policy that is consistent with the District's goals for achieving the revised TMDL load reduction for TSS and thermal loads to Brown's Creek and for restoring the water quality in District lakes and large ponds that do not currently meet State standards on their designated uses (e.g. Long Lake).	Added a policy in Section 7.2.4 that the City, under its MS4 permit, will work towards load reduction for TSS and thermal loads, where practical, feasible and affordable.
	Section 7.3.1 Wetland Management (Page 35), modify the goal as follows to be consistent with the goals of the BCWD 2017-2026 Watershed Management Plan: "Protect and preserve wetlands to maintain and/or enhance their functions and values."	Addressed, Section 7.3.1.
	Section 7.3.2 Groundwater Recharge and Protection (Page 39), the BCWD-specific bullet under the fourth Policy should read "Within the BCWD: 2-year runoff volume if feasible in the contributing area to a groundwater dependent natural resource.	Addressed, Section 7.3.2.
	Section 7.4.1 Floodplain Management (Page 40), add language to ensure consistency with the	Added policy for the BCWD, Section 7.4.1.

	BCWD's goal of ensuring no net loss of flood storage capacity within the watershed.	
	Section 7.4.2 Shoreland Management (Page 41), change the BCWD-specific bullet under the second Policy so that it reads: "Within the Brown's Creek Watershed District: A permit is required for disturbance below the ordinary high-water level (OHWL). According to Rule 5.2 "No person may disturb the natural shoreline or streambank partially or wholly below the OHWL of a waterbody, without first securing a permit from the District and posting a surety."	See change in Section 7.4.2.
	Section 7.6 Support of Other Agencies (Page 43), to minimize the potential for confusion, replace the BCWD-specific bullet items under the first policy with the actual rule language articulating the applicability requirements.	Section 7.6 has been written to include actual rule language.
Section 8 – Implementation and Financial Considerations	Section 8 must be amended to include a clear framework for implementation of regulatory authority: In several places the plan references BCWD's continuing exercise of regulatory authority. E.g., 3.4.1; 6.1; 6.2.6. Minn. R. 8410.0160, subp. 3E(3) requires the plan to "clearly define the responsibilities of the local government unit from that of a [watershed] organization for carrying out the implementation components," and (4) requires a city water plan to "describe official controls and any changes to official controls relative to requirements of the organization's plan." Minn. R. 8410.0105 subp. 6, which requires watershed plans to "clearly distinguish between the responsibilities of the organization and the affected local government units relative to controls established according to this subpart." In keeping with this mandate, the BCWD 2017-2026 plan states that "as a condition of approval the local water management plan [must] state that the city or township will update its ordinances to maintain conformity to the BCWD rules or defer exercise of regulatory authority for the work covered by the revised rule…" Given this legal framework and the previously mentioned references in the LSWMP to BCWD's ongoing exercise of regulatory authority, the draft plan should be revised to clarify that the City of Oak Park Heights intends to defer regulatory authority over land-altering and other activities subject to the BCWD rules. Section 8 should explicitly state that "in accordance with Minnesota Statutes section 103B.211, subd. 1(a)(3)(iii), the city defers exercise of regulatory authority over the activities subject to the BCWD rules to BCWD." In addition, language should be added to revised, as appropriate, in 3.4.1, 6.1 and 6.2.6 to clarify and make more explicit the city's decision to defer exercise of regulatory authority over stormwater-	See additional language in Section 8. City clearly defines the role of the City and watershed management organizations. The City does not wish to defer regulatory authority to BCWD.

	runoff management and other water-resource protection in the Brown's Creek Watershed to BCWD. Alternatively, if the City wishes to revise the Plan to provide for its exercise of sole regulatory authority to provide the protections in the BCWD rules within the city's jurisdiction, Table 8-2 in the Plan must be revised to replace the non-specific commitment to "updates and modifications" with a specific commitment to amend its ordinances to ensure they are at least protective of water resources and control flooding as well as the BCWD rules. The Plan also would have to include a commitment to maintain conformity to the BCWD rules or defer exercise of regulatory authority for the activity covered by a revised BCWD rule within one year after the BCWD provides notice that it has significantly revised the rule. (The plan should allow 60 days for BCWD review.)	
	Section 8.2.1 Capital Improvements (Page 46) of the Appendix (D) referred to in this section is missing from the Plan.	Language omitted in Capital Improvement section from old Plan.
	The BCWD 2017-2026 Watershed Management Plan identifies BMPs in the Menards Pond drainage area to address the BCWD's goals to "Restore the water quality in District lakes and large ponds that do not currently meet State standards or their designated uses." These BMPs were identified in the Long Lake Management Plan which was developed in 2006. The City of Oak Park Heights should identify its planned involvement in the implementation of these BMPs in its Implementation Program.	The City has implemented policies in 7.2.4 that address goals in the Long Lake Management Plan.

MIDDLE ST. CROIX WATERSHED MANAGEMENT ORGANIZATION
455 Hayward Avenue, Oakdale MINNESTOA 55128
Phone 651.330.8220 x22 fax 651.330.7747 www.mscwmo.org

November 8, 2018

Eric Johnson, Administrator
City of Oak Park Heights
14168 Oak Park Boulevard North
Oak Park Heights, MN 55082

Dear Mr. Johnson,

In accordance with Minnesota Statutes Section 103B.235, subdivision 3, MSCWMO staff have reviewed the draft Oak Park Heights Local Surface Water Management Plan received September 6, 2018.

At its November 8, 2018, meeting, the Middle St. Croix Watershed Management Organization Board of Managers has conditionally approved Oak Park Heights draft Local Surface Water Management Plan (the Plan). Please address the following conditions:

Plan revisions adequately address comments in the Metropolitan Council review transmitted September 12, 2018.

In Section 2.6.1
Add a reference to the Lake St. Croix Completed TMDL (summarized in section 4.6)
Consider adding the following information: In 2014 the MSCWMO completed the Perro Creek Subwatershed Analysis. In 2016 and 2017 the MSCWMO monitored the outfalls from Perro Pond to Lake St. Croix and from Perro Pond at the outfall to Perro Creek and found "TP and TSS concentrations observed leaving Perro Pond were very low and are at acceptable levels for maintaining good water quality. " Source: http://www.mscwmo.org/targeted-monitoring

In Section 7.2.2
Recommend modifying the following policy to improve consistency with MSCWMO standards:
Policy: The City will incorporate the Middle St. Croix Watershed District's infiltration standard for those projects within their jurisdiction unless [restrictions arise where infiltration is not feasible or advised]. certain hardships exist. The MSCWMO Board will evaluate the validity of hardships [restrictions] during the watershed's project review process.

In Section 7.6 Support of Other Agencies
Please add a policy to collaboratively track, inspect and maintain water quality improvement practices so they provide their designated benefits.

Please re-submit the revised draft plan to MSCWMO staff review.

If you have any questions regarding MSCWMO's conditional approval, please feel free to contact me at (651) 330-8220 ext. 22.

Sincerely,

Mikael Isensee, CPESC
Administrator

MSCWMO Comments and Responses on Oak Park Heights' LSWMP - 1/2019

Section of concern in plan	MSCWMO comment	Location of change in plan
Section 2.6.1	Add a reference to the Lake St. Croix Completed TMDL (summarized in section 4.6) – consider adding the following information: In 2014 the MSCWMO completed the Perro Creek Subwatershed Analysis. In 2016 and 2017 the MSCWMO monitored the outfalls from Perro Pond to Lake St. Croix and from Perro Pond at the outfall to Perro Creek and found "TP and TSS concentrations observed leaving Perro Pond were very low and are at acceptable levels for maintaining good water quality. Source: http://mscwmo.org/targeted-monitoring.	Section 2.6.1, language suggested by MSCWMO has been added to this section.
Section 7.2.2	Recommend modifying the following policy to improve consistency with MSCWMO standards. Policy: The City will incorporate the Middle St. Croix Watershed District's infiltration standard for those projects within their jurisdiction unless [restrictions arise where infiltration is not feasible or advised]. certain hardships exist. The MSCWMO Board will evaluate the validity of these hardships [restrictions] during the watershed's project review process.	Section 7.2.2, language suggested by MSCWMO has been added to this section.
Section 7.6	Please add a policy to collaboratively track, inspect and maintain water quality improvement practices so they provide their designated benefits.	Section 7.6. Policy added.

August 24, 2018

Mr. Eric Johnson
City Administrator
14168 Oak Park Boulevard North
Oak Park Heights, MN 55082

Re: VBWD review of the City of Lake Elmo Local Surface Water Management Plan

Dear Mr. Johnson:

Thank you for submitting a copy of the June 2018 draft of the City of Oak Park Heights' *Local Surface Water Management Plan* (LSWMP), included as an attachment to the City's 2040 Comprehensive Plan, for 60-day review. On behalf of the Valley Branch Watershed District (VBWD) Board of Managers, I have reviewed the LSWMP for consistency with the VBWD 2015 Watershed Management Plan (VBWD Plan, adopted September 2015) and the VBWD's Rules and Regulations (adopted December 2013). The VBWD Managers reviewed and approved these comments at their August 23rd Board meeting. The Metropolitan Council also has authority to review the LSWMP per Minnesota Statutes 103B.235. At this time, the VBWD has not received comments from the Metropolitan Council.

Overall, the LSWMP is very well done and will provide good guidance for the City in pursuit of its goals. However, some revisions, as described in the attached table of comments, must be made to the LSWMP before the VBWD Managers can approve it. The comments in the attached table are organized by the draft LSWMP page numbers. Please re-submit the LSWMP and response to comments for VBWD approval after it has been revised to address the comments in the attached table.

Thank you for the opportunity to comment on this LSWMP. If you have any questions about these comments, please contact me at 952-832-2945 or gwilliams@barr.com.

Sincerely,

Greg Williams, P.E.

Barr Engineering Co.
Engineers for the Valley Branch Watershed District

c: VBWD Managers
Mikael Isensee, MSCWMO Administrator
Karen Kill, BCWD Administrator
Judy Sventek, Metropolitan Council

City Plan Page	Section/Topic	Comment
6	Groundwater	This section should note that the City obtains drinking water from municipal wells drawing from bedrock aquifers and should reference the City's Wellhead Protection Plan and relevant sections of the Comprehensive Plan.
7	Table 2.4	Consider adding a footnote to the table to indicate whether the Atlas 14 precipitation depths are based on a particular station or are based on interpolation to a specific point in the City.
9	Drainage Systems	Consider revising this section to describe the challenge facing the City as it seeks to maintain and update a stormwater system within a fully developed (or near fully developed) community.
9	Wetlands	This section should be revised to note that the VBWD has classified wetlands within its jurisdiction and reference the 2015 VBWD Plan.
12	City Services	Page 12 states: "The Engineering Department is also responsible for local administration of the Wetland Conservation Act." This section must be revised to clarify that the VBWD is the local governmental unit (LGU) responsible for WCA administration in the portions of the City within the VBWD. The text may note the coordination of the City's Engineering Department with the VBWD (and other watershed districts, if applicable).
14	VBWD	Section 3.4.3 must be revised to note that the VBWD has adopted Rules and implements a project review and permitting program for projects located within its jurisdiction to ensure compliance with its adopted Rules.
24	Comparison of Regulatory Standards	This section states: "Developing property within Oak Park Heights is subject to review and approval from one of the three watershed management organizations having jurisdiction within the City." The VBWD is pleased to continue to serve as a permit review authority within the City. However, consider revising the above statement to reference "Land-disturbing activity within Oak Park Heights" versus "Developing property," as the VBWD Rules apply to projects beyond land development.
24	Current Assessment	The 2015–2025 VBWD Watershed Management Plan identifies groundwater resource protection as a priority issue, citing risks to human and environmental health from pollutant loading. Figure 3-10 of the VBWD Plan shows that the portion of Oak Park Heights within the VBWD includes a portion of the City's wellhead protection area and has a water table with high sensitivity to pollution. The VBWD recommends that this section of the City Plan be revised to include a discussion of issues related to groundwater quality and groundwater resource protection.

City Plan Page	Section/Topic	Comment
26	VBWD Rules	Thank you for including a brief discussion of the VBWD Rules in section 6.2.3. In the second paragraph of Section 6.2.3, please revise the first sentence to read: "Any person undertaking an activity for which a VBWD permit is **required** must submit an application to the watershed district...."
31	Runoff Rate	The last policy on page 31 notes that the City's design events are based on a Type II distribution. The VBWD strongly recommends that the City require the use of the MSE3 distribution for stormwater design with Atlas 14 precipitation standards. This distribution is recommended by the Natural Resources Conservation Service (NRCS) and is used by the Minnesota Department of Transportation (MnDOT). The VBWD requires the use of an MSE3 or nested distribution for projects requiring a VBWD permit (including City projects).
32	Runoff Volume	The first policy in Section 7.2.2 incorrectly identifies the VBWD volume-control-performance standard. The current VBWD volume-control standard is based on the MPCA Minimal Impact Design Standards (MIDS) guidance and is described in Rule 2, Standard 6 of the VBWD Rules. This section must be revised to reflect the current VBWD volume-control-performance standards (or reference the volume-control standards included on page 39 of the City Plan).
32	Runoff Volume	The third policy in Section 7.2.2. states that the City will encourage the use of infiltration systems. The VBWD strongly recommends that the City include references to the MPCA MIDS guidance and the recently updated MPCA Construction Stormwater General Permit as guidance for determining the suitability of infiltration as a stormwater management practice relative to specific site conditions.
38	Phosphorus Loading	The second policy in Section 7.3.2 addresses phosphorus loading. Consider moving this policy to Section 7.2.4 - Nutrient and Sediment Loading.
43	Support of Other Agencies	Consider expanding the scope of the overall policy to include "efforts to **implement projects and programs to achieve common goals** ~~maintain and improve water quality~~ in the city."
43	Support of Other Agencies	With respect to the policy regarding WMO permits, please include a statement noting that proposers of projects must contact the applicable WMO to determine whether a WMO project review and/or permit is required.
48	Table 8.2	Per Minnesota Rules 8410.0160, the City implementation table must include the proposed funding source for activities. Table 8.2 must be revised to include funding source information.

City Plan Page	Section/Topic	Comment
48	Table 8.2	Per Minnesota Rules 8410.0160, the City Plan must include a table detailing its capital improvement program. The text of Section 8.2.1 references Appendix D of the 2014 Lake St. Croix Direct Discharge Stormwater Retrofit Analysis as a source of capital projects, including cost estimates. This appendix must be included in the City Plan or the relevant information incorporated into Table 8.2.

VBWD Comments and Responses on Oak Park Heights' LSWMP - 1/2019

Section of concern in plan	VBWD comment	Location of change in plan
Section 2.4	This section should note that the City obtains drinking water from municipal wells drawing from bedrock aquifers and should reference the City's Wellhead Protection Plan and relevant sections of the Comprehensive Plan.	Text has been added to Section 2.4.
Section 2.4	Consider adding a footnote to the table to indicate whether the Atlas 14 precipitation depths are based on a particular station or are based on interpolation to a specific point in the City.	Text has been added to Section 2.5 before Table 2.4.
Section 2.7	Consider revising this section to describe the challenge facing the City as it seeks to maintain and update a stormwater system within a fully developed (or nearly developed) community.	Text has been added to Section 2.7.
Section 2.6	This section should be revised to note that the VBWD has classified wetlands within its jurisdiction and reference the 2015 VBWD Plan.	Text has been added to Section 2.6.
Section 3.1	Page 12 states: "The Engineering Department is also responsible for local administration of the Wetland Conservation Act." This section must be revised to clarify that the VBWD is the local government unit (LGU) responsible for WCA administration in the portions of the City within the VBWD. The text may note the coordination of the City's Engineering Department within the VBWD (and other watershed districts, if applicable).	Text has been added to Section 3.1.
Section 3.4.3	Section 3.4.3 must be revised to note that the VBWD has adopted Rules and implements a project review and permitting program for projects located within its jurisdiction to ensure compliance with its adopted Rules.	Text has been added to Section 3.4.3.
Section 6.2	This section states: "Developing property within Oak Park Heights is subject to review and approval from one of the three watershed management organizations having jurisdiction within the City." The VBWD is pleased to continue to serve as a permit review authority within the City. However, consider revising the above statement to reference "Land-disturbing activity within Oak Park Heights" versus "Developing property," as the VBWD Rules apply to projects beyond land development.	Text has been added to Section 6.2.
Section 6.2.5	The 2015-2025 VBWD Watershed Management Plan identifies groundwater resource protection as a priority issue, citing risks to human and environmental health from pollutant loading. Figure 3-10 of the VBWD Plan shows that the portion of Oak Park Heights within the VBWD includes a portion of the City's wellhead protection area and has a water table with high sensitivity to pollution. The VBWD recommends that this	Added Section 6.2.5 to discuss groundwater management.

	section of the City Plan be revised to include a discussion of issues related to groundwater quality and groundwater resource protection.	
Section 6.2.3	Thank you for including a brief discussion of the VBWD Rules in section 6.2.3. In the second paragraph of Section 6.2.3, please revise the first sentence to read: "Any person undertaking an activity for which a VBWD permit is **required** must submit an application to the watershed district…"	Text has been revised in Section 6.2.3.
Section 7.3	The last policy on Page 31 notes that the City's design events are based on a Type II distribution. The VBWD strongly recommends that the City require the use of the MSE3 distribution for stormwater design with Atlas 14 precipitation standards. This distribution is recommended by the Natural Resources Conservation Service (NRCS) and is used by the Minnesota Department of Transportation (MnDOT). The VBWD requires the use of an MSE3 or nested distribution for projects requiring a VBWD permit (including City projects).	Text has been revised in Section 7.3.
Section 7.2.2	The first policy in Section 7.2.2 incorrectly identifies the VBWD volume-control performance standard. The current VBWD volume-control-performance standard is based on the MPCA Minimal Impact Design Standards (MIDS) guidance and is described in Rule 2, Standard 6 of the VBWD Rules. This section must be revised to reflect the current VBWD volume-control-performance standards (or reference the volume-control standards included on Page 39 of the City Plan).	Text has been added in Section 7.2.2 to reference the VBWD rules directly.
Section 7.2.2	The third policy in Section 7.2.2 states that the City will encourage the use of infiltration systems. The VBWD strongly recommends that the City include references to the MPCA MIDS guidance and the recently updated MPCA Construction Stormwater General Permit as guidance for determining the suitability of infiltration as a stormwater management practice relative to specific site conditions.	Text has been added in Section 7.2.2.
Section 7.2.4	The second policy in Section 7.3.2 addresses phosphorus loading. Consider moving this policy to Section 7.2.4 – Nutrient and Sediment Loading.	Text has been moved to Section 7.2.4.
Section 7.6	Consider expanding the scope of the overall policy to include "efforts to **implement projects and programs to achieve common goals** in the City."	No revision has been made. City would like to keep previous language.
Section 7.6	With respect to the policy regarding WMO permits, please include a statement noting that proposers of projects must contact the applicable WMO to determine whether a WMO project review and/or permit is required.	Revised to include language in Section 7.6.
Section 8.2	Per Minnesota Rules 8410.0160, the City implementation table must include the proposed	Table 8.2 now includes funding information.

	funding source for activities. Table 8.2 must be revised to include funding source information.	
Appendix	Per Minnesota Rules 8410.0160, the City Plan must include a table detailing its capital improvement program. The text of Section 8.2.1 references Appendix D of the 2014 Lake St. Croix Direct Discharge Stormwater Retrofit Analysis as a source of capital projects, including cost estimates. The appendix must be included in the City Plan or the relevant information incorporated into Table 8.2.	Reference has been deleted in 8.2.1.

United States Department of the Interior

NATIONAL PARK SERVICE
St. Croix National Scenic Riverway
401 North Hamilton Street
Saint Croix Falls, WI 54024

In Reply, Refer To:
1.A.1 (SACN)

August 29, 2018

Planning Commission
City of Oak Park Heights
Via email at scott@planningco.com

Dear Planning Commission Members:

Thank you for the opportunity to review the proposed Oak Park Heights Comprehensive Plan 2018. As you are aware, the St. Croix River forms the eastern edge of Oak Park Heights.

The Lower St. Croix National Scenic Riverway (Riverway) which runs from St. Croix Falls/Taylors Falls to the confluence with the Mississippi was added to the national wild and scenic rivers system under an amendment to the Wild and Scenic Rivers Act (Public Law 92-560) in 1972 to protect its free-flowing character, water quality, and outstandingly remarkable geologic, scenic, and recreational values. The National Park Service (NPS) manages the Riverway north of Stillwater, Minnesota and the states of Minnesota and Wisconsin jointly manage the Riverway south of the St. Croix Boom Site.

We applaud the foresight of the City of Oak Park Heights in preparing this Comprehensive Plan to guide future land use decisions. The NPS is please to see this proposed plan recognize the important resources of the Riverway. We have a few comments.

1. Page 1. "...lower St. Croix Scenic Riverway..." The designated name for the St. Croix River in this stretch is the Lower St. Croix National Scenic Riverway. Although it is not in the federally managed zone it is still a National Wild and Scenic River.
2. Appendix G, City of Oak Park Heights, Local Surface Water Management Plan, Section 2: Physical Setting, under "2.6.1 Rivers and Streams" on page 8. The St. Croix River was one of the first rivers to be designated a Wild and Scenic River under the Wild and Scenic Rivers Act (WSRA - P.L. 90-542 and amended in 1972 P.L 92-560 to add the Lower St. Croix).

3. Appendix G, City of Oak Park Heights, Local Surface Water Management Plan, Section 2: Physical Setting, under "2.6.1 Rivers and Streams" on page 8. The St. Croix National Scenic Riverway is managed by the National Park Service. The federal management zone begins at the north city limits of Stillwater, Minnesota and continues through St. Croix Falls/Taylors Falls to Gordon Dam. The States of Minnesota and Wisconsin manage the lower 25 miles between Stillwater, Minnesota and the confluence with the Mississippi River.
4. Appendix G, City of Oak Park Heights, Local Surface Water Management Plan, Section 3: Regulatory Setting, under "3.18 National Park Service (NPS)" on page 17. The NPS manages the Lower St. Croix River beginning at the north city limits of Stillwater, not Oak Park Heights. The "upper" St. Croix designation begins at St. Croix Falls/Taylors Falls.

Regarding the potential closure of Allen S. King Plant, we encourage any planning efforts focused on the future of this site to include consideration of the Wild & Scenic Rivers Act and the preservation, protection, and enhance of the values that led to the inclusion of the lower St. Croix River in the national wild and scenic rivers system.

We appreciate the opportunity to review and make comments on the proposed Comprehensive Plan as the City of Oak Park Heights considers land use management decisions near the Riverway. If you have any questions, please contact Lands Program Manager Laura Hojem at 715-483-2261 or via email at laura_hojem@nps.gov.

Sincerely,

Juliet L. Galonska
Superintendent

MCES Comments on Oak Park Heights' CSP

Section of concern in plan	MCES Comment	Location of change in plan
Section 2.0	A table that details adopted community sewered forecasts in 10-year increments to 2040 for households and employment. This data needs to be broken down by areas served by the Metropolitan Disposal System and subsurface sewage treatment systems (SSTS).	Table 2-2 was updated to reflect the SSTS within the City.
Appendix G	An electronic map or maps (GIS shape files or equivalent) showing the following information regarding the existing sanitary sewer system: o Lift stations. o Existing connections points to the metropolitan disposal system. o Future connection points for new growth if needed. o Local sewer service districts by connection point. o Intercommunity connections.	The sanitary sewer system map has been provided to show everything that has been requested by MCES when applicable. We will also supply electronic data per requested.
Section 4.2	Copy of intercommunity service agreements entered into with an adjoining community, including a map of areas covered by the agreement.	The text has been updated to reflect no new intercommunity flow agreements since 2008. Flow agreements prior to 2008 do not need to be included in the CSP.
Section 2.0	• Table or tables that assigns 2040 growth forecasts by Metropolitan interceptor facility.	Table 2-1 was updated to reflect the new projections for employment. Table 2-2 gives updated projected flows to MCES interceptor 7131-1.
Section 5.1.2 and Appendix F	Describe the requirements and standards in your community for minimizing inflow and infiltration (I/I): o Include a copy of the local ordinance or resolution that prohibits discharge from sump pumps, foundation drains. and/or rain leaders to the sanitary sewer system. o Include a copy of the local ordinance or resolution requiring the disconnection of existing foundation drains, sump pumps, and roof leaders from the sanitary sewer system.	This section was updated to include the City's ordinance embedded within the CSP. A full copy of the ordinance can also be found in Appendix F.

Section 5.1.1	Describe the sources, extent, and significance of existing inflow and infiltration in both the municipal and private sewer systems: o Include a breakdown of residential housing stock age within the community into pre- and post-1970 era, and what percentage of pre-1970 era private services have been evaluated for I/I susceptibility and repair. o Include the measured or estimated amount of clearwater flow generated from the public municipal and private sewer systems. o Include a cost summary for remediating the I/I sources identified in the community. If previous I/I mitigation work has occurred in the community, include a summary of flow reductions and investments completed. If costs for mitigating I/I have not been analyzed, include the anticipated wastewater service rates or other costs attributed to inflow and infiltration.	This section was updated to reflect the housing stock numbers for the City, an analysis of whether the City produces clearwater flows, and explanations that I/I is not an issue in the City and has no record of being an issue therefore there is not a cost summary for remediating I/I sources.
Section 5.1.3	Describe the implementation plan for preventing and eliminating excessive inflow and infiltration from entering both the municipal and private sewer systems. o Include a list of priorities for I/I mitigation projects based on flow reduction, budget, schedule, or other criteria. o Include a schedule and the related financial mechanisms planned or needed to implement the I/I mitigation strategy.	This section was updated to acknowledge I/I is not an issue in the City and therefore do not have a list of priority locations. The section does include practices the City implements to maintain and analyze their system for I/I.
Section 4.1 and 6.0	For new trunk sewer systems that require connection to the Metropolitan Disposal System: o A table that details the proposed time schedule for the construction of the new trunk sewer system. o Type and capacity of the treatment facilities, whether municipally or privately owned. o Copies of the associated National Pollutant Discharge Elimination System (NPDES) or	These sections were updated to acknowledge the City has a fully built out sewer trunk system. The current system is capable of handling future growth within the City limits. If expansion were needed, it would be to service areas outside of the City limits.

	State Disposal System (SOS) permits.	
Appendix G	Map or maps (GIS shape files or equivalent) showing the following information: (6 SSTS) o Location of sub-surface sewage treatment systems. o Location of nonconforming systems or systems with problems	The sanitary sewer system map has been provided and updated to include the SSTS systems
Appendix G	Subsurface Sewage Treatment Systems (SSTS) (Jim Larsen. 651-602-1151) The Plan is incomplete for SSTS review. The Plan will need to include a map depicting the location of the six remaining individual SSTS in the City. Council staff suggests adding their locations to the Comprehensive Sewer Plan Appendix G Sanitary Sewer System Map.	The sanitary sewer system map has been provided and updated to include the SSTS systems

COMPREHENSIVE SEWER PLAN

Prepared for:
City of Oak Park Heights, MN

Prepared by:
Stantec Consulting Services Inc.

Project No.: 193803889

October 2, 2019

Table of Contents

EXECUTIVE SUMMARY I

1.0 BACKGROUND 1.1
1.1 INTRODUCTION 1.1
1.2 PHYSICAL SETTING 1.1
1.3 EXISTING SANITARY SEWER SYSTEM 1.3

2.0 FORECASTS 2.4

3.0 SANITARY SEWER DESIGN CRITERIA 3.7
3.1 LAND USE 3.7
3.2 ESTIMATED AVERAGE WASTEWATER FLOWS 3.7
3.3 PEAK FLOW FACTORS 3.8

4.0 SANITARY SEWER TRUNK SYSTEM 4.10
4.1 GENERAL 4.10
4.2 INTERCOMMUNITY FLOWS 4.11
4.3 SUBSURFACE SEWAGE TREATEMENT SYSTEMS (SSTS) 4.11
4.4 PUBLICLY AND PRIVATELY-OWNED WASTEWATER TREATMENT PLANTS 4.11
4.5 SYSTEM DESIGN AND RECOMMENDATIONS 4.12
4.5.1 North District 4.12
4.5.2 West District 4.13

5.0 INFILTRATION AND INFLOW 5.14
5.1 GENERAL 5.14
5.1.1 Sources and Extent of I/I 5.14
5.1.2 Goals, Policies, and Strategies to Address I/I 5.15
5.1.3 I/I Implementation Plan 5.16
5.1.4 I/I Cost Estimates 5.16

6.0 FINANCING 6.17
6.1 FINANCING 6.17

7.0 SUMMARY AND OUTCOMES 7.18

LIST OF TABLES

Table 2-1 - Metropolitan Council City-Wide Projections 2.4
Table 2-2 - Metropolitan Council 2040 City-Wide Projections Based on MCES Connection Point 2.5
Table 2-3 - Metropolitan Council Average Wastewater Flow Projections 2.5
Table 3-1 - System Design Wastewater Unit Flow Rates 3.8
Table 4-1 - Sanitary Sewer Districts 4.12
Table 4-2 - North District Land Use 4.12

Table 4-3 - West District Land Use.....4.13

LIST OF FIGURES

Figure 1-1 - Location Map.....1.2
Figure 3-1 - Peak Flow Factors.....3.9

LIST OF APPENDICES

APPENDIX A AREAS FOR THE ULTIMATE SYSTEM.....A.1

APPENDIX B AVERAGE FLOWS (MGD) FOR THE ULTIMATE SYSTEM.....B.1

APPENDIX C DESIGN FLOWS FOR THE ULTIMATE SYSTEM.....C.1

APPENDIX D PIPE CAPACITIES FOR THE ULTIMATE SYSTEM.....D.1

APPENDIX E 2040 LAND USE MAP.....E.1

APPENDIX F SANITARY SEWER ORDINANCE.....F.1

APPENDIX G SANITARY SEWER SYSTEM MAP.....G.1

Executive Summary

The Oak Park Heights Comprehensive Sewer Plan (CSP) updates previous sewer planning efforts and describes in detail the City's current sanitary sewer system. The report has been based on the land use and population data provided in Oak Park Heights' Comprehensive Plan Update. This information is summarized in Sections 2 and 3 of this CSP. Layouts of both the existing and proposed sanitary sewer system are presented in Appendix G of this report. The report has been prepared in accordance with the Metropolitan Council's guidelines for local Comprehensive Sewer Plans.

All of Oak Park Heights' sewer system has been constructed and is in good condition. Sewer modeling accompanies this CSP for the City's ultimate conditions. The modeling shows no major capacity issues in the City's existing sewer system. No major sewer upgrades are proposed within the City.

1.0 BACKGROUND

1.1 INTRODUCTION

The Metropolitan Land Planning Act (amended 1995) requires local governments to prepare Comprehensive Plans and submit these Plans to the Metropolitan Council to determine their consistency with Metropolitan System Plans. The local Comprehensive Plan must include a wastewater plan element describing the collection and disposal of wastewater generated by the community. Similarly, the Metropolitan Sewer Act requires local governments to submit a Comprehensive Sewer Plan (CSP), which describes the current and future service needs required from the Metropolitan Council.

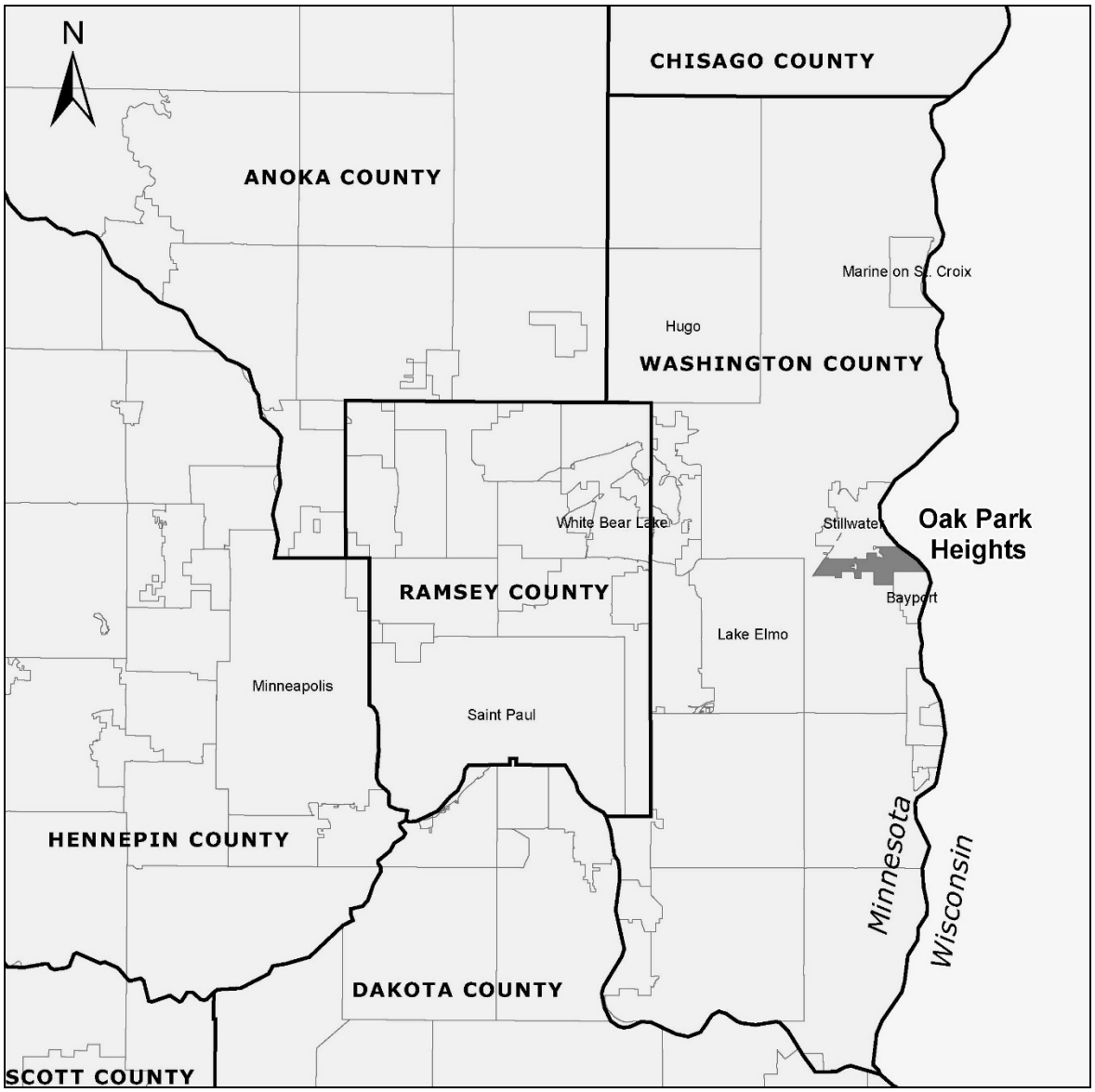
The Metropolitan Council's 2040 Water Resources Policy Plan (2040 WRPP) outlines requirements for the wastewater plan element of the comprehensive plan as well as the Comprehensive Sewer Plan. For simplicity, the Metropolitan Council has combined the required elements of both plans into a single set of criteria, contained in the 2040 WRPP.

This 2017 Oak Park Heights CSP addresses the criteria of the 2040 WRPP. It provides growth projections, design parameters for the existing sanitary sewer system, proposed improvements to, or expansion of the system, and strategies for addressing excessive infiltration and inflow (I/I) in the system. The CSP updates previous sewer planning efforts and describes in detail the expansion of the City's sanitary sewer system to serve projected urban development.

1.2 PHYSICAL SETTING

The City of Oak Park Heights is located in the north-central portion of Washington County with the majority of the City positioned along the south side of State Highway 36 between Manning Avenue and the St. Croix River. The local economy of Oak Park Heights is based on a mixture of commercial and industrial activities. The majority of these activities are located along the State Highway 36 corridor.

Figure 1-1 - Location Map



1.3 EXISTING SANITARY SEWER SYSTEM

This study details the Oak Park Heights trunk sanitary sewer system, which includes all lines ten inches in diameter or larger, as well as other main lines and facilities (ex. lift stations) which all are a vital part of the trunk sewer system. Since the capacity and extent of the trunk sewer system determines the ultimate service area, it is essential that an overall trunk plan be available as a guide for future development. Such a plan should be flexible enough to absorb some changes in planning and development patterns. Periodic review and update is needed so that newly constructed facilities can be shown and costs adjusted to reflect built infrastructure.

The City of Oak Park Heights' existing and proposed sanitary sewer system for the ultimate development of the City is shown in Appendix G. The City has two major sewer districts geographically described as North (N) and West (W). Given the layout of the city, it would seem more logical to refer to the north sewer district as "East", but to remain consistent with the previous Comprehensive Sewer Plan, it will continue to be referred to the "North" district. Each sewer district is divided into subdistricts where sewer flows can be quantified separately for areas of the Oak Park Heights trunk sanitary sewer main.

The existing and proposed trunk sewer system is shown in Appendix G. Appendix G shows trunk expansion into portions of the West (W) and East (E) Districts. Currently, there is no plan to service areas outside of the City of Oak Park Heights with sanitary sewer, as indicated in the previous CSP. These areas are shown in the previous CSP as W-4 and W-12; one of these areas lies west of Stillwater Boulevard while the other lies southwest of Oakgreen Avenue and the 55th Street intersection. If there were to be consideration of servicing areas outside of the City's limits, analysis should be conducted to determine capacity.

Oak Park Heights' trunk sanitary sewer system discharges to the existing MCES interceptor 7131-1 system, which carries wastewater flows to the St. Croix Valley Wastewater Treatment Plant located in Oak Park Heights. The existing MCES interceptors are also shown in Appendix G.

2.0 FORECASTS

Table 2-1 presents the Metropolitan Council's projections for population and number of households in the City of Oak Park Heights from the 2040 Water Resources Policy Plan. The number of employees has been revised to reflect City projections for employment based on supplemental information provided by the City to the Metropolitan Council on October 9th, 2018.

Table 2-1 - Metropolitan Council City-Wide Projections

Year	Population	Households	Employment
2010	4,445	1,911	4,358
2020	4,880	2,200	4,600
2030	5,300	2,420	5,100
2040	5,700	2,600	5,500

The City of Oak Park Heights uses the Metropolitan Council's projections as the basis for its sewer planning efforts. The facilities described in this report are designed to serve the City under conditions of ultimate development. Actual growth rates will only affect the timing of trunk sewer construction and not the actual design of the system.

It should be noted that the interceptor system through Oak Park Heights serves portions of Stillwater and Bayport. The populations of these cities are not included in the projections above, nor are they included in Oak Park Heights's future flow projections.

Table 2-2 presents the approximate household and employment forecasts by MCES interceptor connection point based on the transportation analysis zones (TAZ) provided by MCES. It is important to note that the data supplied by MCES included data for the City of Oak Park Heights and adjacent communities. The values found below were calculated for the City of Oak Park Heights based on the proportion of the City in each TAZ boundary. Thus, given that the housing and employment data is scaled data and not actual data, it should not be used for planning purposes.

Table 2-2 - Metropolitan Council 2040 City-Wide Projections Based on MCES Connection Point

Year	Population	To MCES Interceptor from Sewer District N-3		To MCES Interceptor from Sewer District N-0		To MCES Interceptor from Sewer District N-1	
		Households	Employment	Households	Employment	Households	Employment
2040	5,700	1,752	5,457	185	26	654	17

Table 2-3 presents projected wastewater flows for the City of Oak Park Heights, as provided by the Metropolitan Council. It is assumed that Metropolitan Council projections pertain to Oak Park Heights only and do not include flows entering the interceptors from outside City limits.

Table 2-3 - Metropolitan Council Average Wastewater Flow Projections

Year	Oak Park Heights Projected Average Flow (MGD)	
	To MCES Interceptor 7131-1[1]	To Subsurface Sewage Treatment Systems (SSTS)
2010	0.54	0.0033
2020	0.57	0.0025
2030	0.59	0.0025
2040	0.61	0.0025

[1]Metropolitan Council's 2040 Water Resources Policy Plan

The flow projections presented in the appendices originate from the land use estimates shown in Appendix A. These estimates were developed from the ultimate land use plan, based on Metropolitan Council 2040 projections (the 2040 Land Use Map is included in Appendix E). Certain reductions in land use area are made to account for non-developable land (i.e. wetlands, steep slopes, floodplains, right-of-way), and a net developable acreage for each land use category is determined. The net acreage is multiplied by standard unit flow rates to obtain an average flow for each sanitary sewer district. Appendix B provides these average flows and aggregates them for all districts within the Oak Park Heights CSP.

The total average daily flow indicated in Appendix B exceeds the projected 2040 flows indicated in Table 2-2. This is a result of the conservative nature of flow modeling, particularly concerning the capacity of City trunk sewer lines. Typical maximum values for unit flow rate (indicated in MGD), for each land use category were used and are listed in Table 3-1 below. The conservative approach used to estimate sanitary sewer flows not only allows the City to remain flexible in planning for future development, but also allows for localized developments of higher intensity use than originally planned for, and the protection of potential sewer backups.

Oak Park Heights' full development modeled peak flow is 1.10 MGD based on a modeled average flow of 0.299 MGD and a peak flow factor of 3.7 (see Figure 3-1 for peak flow factors). Based on Metropolitan Council population and employment estimates for the City of Oak Park Heights, an average flow of 0.61 MGD was calculated (see Table 2-2). Using a peak flow factor of 3.4 (per Figure 3-1) a peak flow of 2.07 MGD was determined for the City, using Metropolitan Council estimates. Note that the Metropolitan Council flow rate projection is much larger than the City model flow rate projection (but that this City model is also conservative).

3.0 SANITARY SEWER DESIGN CRITERIA

3.1 LAND USE

The ultimate land use plan (based on 2040 projections) for the City of Oak Park Heights (see Appendix A) served as the basis for the development of the sanitary sewer flow projections and analysis of the trunk system's capacity. The Metropolitan Council requires phased-flow projections through 2040, and the land use plan from the City's latest Comprehensive Plan is the basis of these flow projections. Other than in-fill development, the City's expansion is limited to two areas: business/residential transitional west of the current City limits; and low-density residential south of 55th Street and west of Oakgreen Avenue.

Using the ultimate land use plan, the acreage of each land use type per subdistrict was determined. Detailed descriptions of the various land uses are found in the City of Oak Park Heights Comprehensive Plan. Areas of each land use by sewershed are presented in Appendix A.

3.2 ESTIMATED AVERAGE WASTEWATER FLOWS

Municipal wastewater is made up of a mixture of domestic wastewater, commercial and industrial wastes, groundwater infiltration, and surface water inflows. With proper design and construction, groundwater infiltration and surface water inflows, Infiltration/Inflow (I/I), can be minimized. The flows due to I/I are accounted for in the analysis and design of the trunk sewer system. The anticipated average wastewater flows from the various sewersheds were determined by applying unit flow rates to each of the land use categories. The "system design" unit flow rates are presented in Table 3-1. The average wastewater flows for each sewershed are presented in Appendix B.

For all land uses, unit rates/acre were used to generate average flow projections. Densities (number of units per acre and population in each unit) for low, medium, and high density residential were based on information from the City Planning staff. Estimated flows are in accordance with standard engineering practice in accordance with our experience in Oak Park Heights as well as other communities in the Twin Cities area and are generally considered conservative. A separate, conservative flow value was selected for the Gravel Mining Area sewershed (consisting of Regional Mixed Use) based on trends in development density occurring in adjacent areas, so that a separate, detailed analysis of the area could be completed.

Table 3-1 - System Design Wastewater Unit Flow Rates

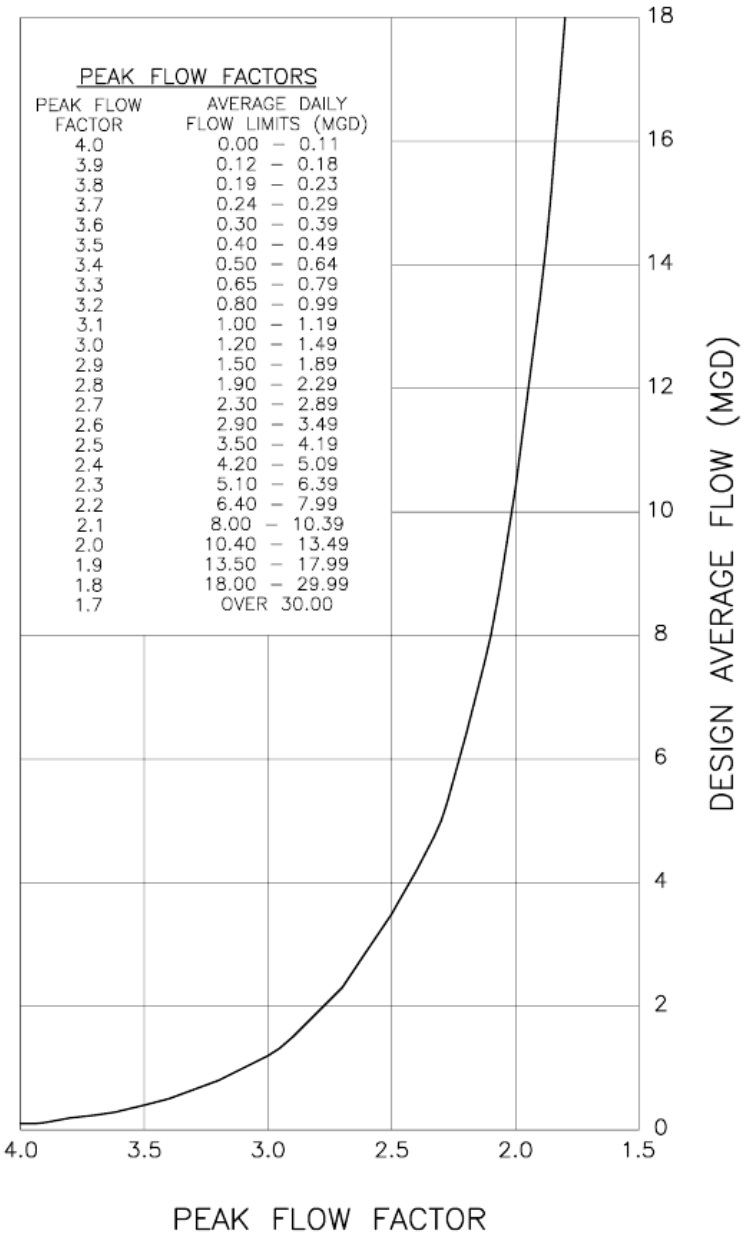
Land Use Type	Gal/Acre/Day
Low Density	954
Medium Density	1272
High Density	2226
Commercial/Industrial	1000
Public/Institutional	1,000
Parks/Open Space	0

3.3 PEAK FLOW FACTORS

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

The PFF values applied in this study are shown in Figure 3-1 in both curve and tabular form. These values are generally conservative and are widely used throughout the state for municipal planning. They include a standard allowance for I/I, which is typical of new sanitary sewer construction as well as properly operating existing sewers. The design flows for each sewershed are presented in Appendix C.

Figure 3-1 - Peak Flow Factors



4.0 SANITARY SEWER TRUNK SYSTEM

4.1 GENERAL

The trunk sewer system layout for the City of Oak Park Heights is presented in Appendix G. This figure shows the main sanitary sewersheds, existing and proposed trunk sanitary sewers, existing and proposed Metropolitan Council Interceptors, and some of the existing and proposed lift stations and force mains. The City's sanitary sewer system is fully built-out to support future growth within City limits. If expansion of the trunk line were to occur, there would be enough capacity to service areas outside of the City limits. The City currently does not have plans to expand their trunk system.

The modeling of the sanitary sewer system was based on a variety of parameters, including land use, population density, standard wastewater generation rates, and topography. Based on the topography of the undeveloped areas, sewersheds were determined, and the most cost-effective locations for future trunk line facilities were determined. The location of smaller sewer laterals and service lines are dependent upon future land development plats and cannot be accurately located from a study of this type.

Both the existing and proposed pipe systems were evaluated and broken up into design segments. Each end of a design segment has a node assigned to it. The nodes were designated for the following reasons:

1. Flow from a sewershed entering the pipe network.
2. Significant grade change has occurred.
3. Change in pipe size.
4. Two or more trunk lines connect.
5. Manmade elements (roads, railroads, etc.) affecting location and installation costs for the trunk system or lateral service of the sewersheds.

The proposed alignments shown in Appendix G generally follow the natural drainage of the land to minimize the use of lift stations and consequently provide the City with the most economical ultimate design sanitary sewer system. Minor adjustments in the routing and size of the trunk facilities will take place as determined by the specific land use and development conditions at the time of final design. Any such adjustments are expected to deviate minimally from this plan.

Each sewershed contains at least one collection point where the sewershed's wastewater is defined to enter the pipe network. Upstream of that collection point, a lateral network of 8-inch gravity lines can serve unserved areas.

4.2 INTERCOMMUNITY FLOWS

There are no flows from Oak Park Heights into any other community's sanitary sewer system. Flows from a small area of Stillwater enter the Oak Park Heights system to sanitary subdistricts N-1, N-5, N-17 and N-18 (refer to Appendix G for Sanitary Sewer Map). The average flow from Stillwater into Oak Park Heights is estimated to be 0.018 MGD.

Billing for intercommunity flows is dealt with differently for the various connection points. Flow from the Sunnyside Condominium property enters subdistrict N-1. The City of Oak Park Heights charges wastewater fees to these residents because the wastewater infrastructure is owned by the City of Oak Park Heights. The City of Stillwater gets a credit from the Metropolitan Council for this usage.

For the other connections into the City of Oak Park Heights' wastewater system, the City of Stillwater gives a report of water usage to the City of Oak Park Heights for the first quarter of the year. It should be noted that this is how the City of Oak Park Heights determines wastewater rates for its own residents for the remainder of the year. The City of Oak Park Heights then bills residents for Oak Park Heights sanitary sewer at Oak Park Heights rates.

The City has not entered into any new intercommunity flow agreements since the last 2008 CSP update. The City is not planning new or additional trunk connections to the regional interceptor system.

4.3 SUBSURFACE SEWAGE TREATEMENT SYSTEMS (SSTS)

Within the existing City limits, there are approximately nine lots that are currently served by subsurface sewage treatment systems (SSTS). They are located throughout the City in districts W-1, W-10, W-11, N-20, and N-5. The Sanitary Sewer System Map found in Appendix G shows the approximate location of each SSTS.

The City of Oak Park Heights is committed to the ongoing maintenance of SSTS within its municipal limits. Due to the small number of systems in the City, Oak Park Heights has given administrative responsibility for septic systems to Washington County. The transfer of authority was conducted under the premise that Washington County is better equipped to keep abreast of evolving regulation regarding septic systems. An electronic copy of the Washington County ordinance in regard to Individual Sewage Treatment Systems can be found at the following URL: https://www.co.washington.mn.us/DocumentCenter/View/90.

4.4 PUBLICLY AND PRIVATELY-OWNED WASTEWATER TREATMENT PLANTS

There is one publicly owned wastewater treatment plant within Oak Park Heights. This facility is owned and operated by MCES. There are no privately-owned wastewater treatment plants within the City.

4.5 SYSTEM DESIGN AND RECOMMENDATIONS

The City of Oak Park Heights is divided into two sewer districts, each defining the limits of service. These districts are further subdivided into smaller sewersheds that were used to develop design flows and then determine cumulative design flows in the various pipe segments. The major sanitary sewer districts and their corresponding prefix abbreviations are given in Table 4-1.

Table 4-1 - Sanitary Sewer Districts

Sewer District	Abbreviation
West	W
North	N

A summary of characteristics and special issues within each district is provided below.

4.5.1 North District

The North District consists of the original core of the City of Oak Park Heights. Generally, this consists of the area east of Oakgreen Avenue. The ultimate land use within the North District is listed in Table 4-2. A detailed breakdown is provided in Appendix A.

Table 4-2 - North District Land Use

Land Use	Acres
Residential	306
Commercial/Industrial	279
Public/Institutional	226
Parks/Open Space	119
Non Developable	602
Total	**1556**

One aspect to note about the North District is the fact that lift station use has changed since the previous Plan. Previously, Sub-District N-5 was serviced via lift station N5LS. Due to the realignment and reconstruction of the Highway 36 corridor, this Sub-District is now serviced by a gravity sanitary trunk that crosses the corridor and discharges into the Stillwater interceptor just north of the MCES Treatment Plant (City trunk node N1.1). The new gravity connection eliminated the need for lift station N5LS.

There is currently an existing lift station that serves Sub-District N-20 and has a node name of N20LS. This lift station is the only station that serves the North District.

4.5.2 West District

The West District generally consists of the area west of Oakgreen Avenue. The ultimate land use within the West District is listed in Table 4-3. A detailed breakdown is provided in Appendix A.

Table 4-3 - West District Land Use

Land Use	Acres
Residential	123
Commercial/Industrial	240
Public/Industrial	129
Parks/Open Space	34
Non Developable	153
Total	**680**

The majority of the wastewater generated in the Western District, with the exception of Sub-Districts W-1, W-3 and approximately half of W-2, is lifted via W7LS to the east approximately 2,800 feet and is discharged into the existing gravity line. Currently, W7LS discharges into a 12" gravity line at Node W2.2.

Sub-District W-11 is serviced via lift station W11LS, where it is lifted to the gravity system in sub-district W-8.

5.0 INFILTRATION AND INFLOW

5.1 GENERAL

In February 2006, Metropolitan Council instituted its Infiltration/Inflow (I/I) Surcharge Program. The fundamental policy statement summarizing this program is that Metropolitan Council "will not provide additional capacity within its interceptor system to serve excessive inflow and infiltration." The Council establishes Inflow and Infiltration thresholds for each of the communities that use its system. Communities that exceed this threshold are required to eliminate this excess flow within a reasonable timeframe or pay a surcharge fee. Oak Park Heights has not been identified by Metropolitan Council as a municipality with excessive I/I. However, the City does have an aggressive sewer maintenance program to limit I/I and preserve capacity within its system. This program is described in the following sections.

5.1.1 Sources and Extent of I/I

In 2002, an independent wastewater audit from MCES conducted by the City revealed that the I/I found in the City's system was within the acceptable range. There have been relatively few backups in the sanitary sewer system, and these have largely been the result of clogging. I/I has not typically been observed by City staff during sewer televising or pipe rehabilitation and replacement. Likewise, lift station pumping records do not indicate excessive I/I.

The *EPA Guide for Estimating Infiltration and Inflow (June 2014)* was used to estimate the proportion of I/I contribution in the City's wastewater system. Monthly flow data were obtained from Metropolitan Council Environmental Services, for the period from 1991 to 2016. 2012 to 2016 monthly data were used to obtain monthly average flows for the five-year period from March to November (representative of a wet portion of the year) and December to February (representative of a dry portion of the year). It was determined that the wet monthly average flow (March-November) was 16.34 mg, and that the dry monthly average flow (December-February) was 14.72 mg. Thus, on average, I/I contributes roughly 1.62 mg monthly (roughly 11% of base flows). The peak flow for the City of Oak Park Heights is 19.80 mg in July 2013, which is roughly 35% of base flows.

Potential sources of I/I could include:

- Groundwater infiltration in low areas around the lakes within the City.
- Underground springs that may contribute to groundwater infiltration.
- The increasing frequency of high-intensity rain events in the region that contribute inflow, especially when the 100-year high water level is exceeded.
- Compromised sewer lines and manholes.

Starting in 2006, pipe televising and cleaning occurred to detect issues with the City's current infrastructure and detect any I/I issues. In total, over 123,000 feet of pipe was televised and cleaned when necessary.

The City of Oak Park Heights is generally a fully-developed City. Construction within the City typically consists of infill development of both residential and commercial properties. Of the 2,077 parcels within City limits, 1,474 parcels have public building information associated with them. Of these 1,474 parcels, only 293 parcels have buildings on them that were constructed in 1970 or prior. The buildings for which there are public data constitute ~20% of the City's buildings. The remaining ~80%, 1,181 parcels, were constructed after 1970. Currently there is no program in place to inspect buildings constructed prior to 1970, but the City does have an implementation strategy which includes televising sewer pipes when necessary to help determine the condition of their sewer system and evaluate potential I/I.

The City does not have an ongoing history of having I/I issues in the community. Since there have not been issues historically, remediation has not been necessary to address I/I within the City and therefore costs cannot be summarized for remediation efforts to I/I. The City plans to continue implementing strategies that will help monitor their sewer system and help identify potential areas where I/I occurs. This work will be funded by a combination of sewer fees (base charge plus usage fee) and the City's capital fund.

5.1.2 Goals, Policies, and Strategies to Address I/I

The City's goals generally are to identify and prevent I/I from exceeding local and regional system capacity and causing local backups, and to work to remove I/I from the system to the maximum extent practicable. The City's ordinance addressing sump pumps and rain leaders is provided in Appendix F. As stated in the City Code in Section 1001.215 - Regulation of the Use of Water and Sewer: "It shall be unlawful for any owner, occupant, or user of any residential or commercial premises to direct into or allow any stormwater, surface water, ground water, well water, or water from residential, industrial, or commercial air conditioning system to drain into the sanitary sewer systems of the City. No rain spout or other form of surface drainage and no foundation drainage or sump pump shall be directly connected or discharged into any sanitary sewer system. Further, no owner, occupant, or user of any residential or commercial premises shall directly pipe or install any conduit for sump pump, pool foundation drainage or other surface water drainage system through the City's curbing along any City street to facilitate its entry into the City storm water drainage system." Specific strategies to address inflow and infiltration include:

- Installing new sewer facilities in accordance with the latest design standards, with watertight pipes and manholes, and watertight castings in flood-prone areas,
- Televising and inspecting sewers and manholes on a regular basis,
- Performing repairs or rehabilitation of pipes and manholes (as needed),

- Identifying and disconnecting sump pump and roof leader connections to the sanitary sewer system, and
- Working with MCES to reduce regional I/I contributions.

5.1.3 I/I Implementation Plan

Since the City does not have an excessive I/I issue, it does not have a priority area of focus for I/I reduction. The City does have implementation activities and schedules to prevent or eliminate excessive I/I from the system including performing specific evaluations of areas with suspected I/I by televising and inspecting pipes and manholes, and inspecting portions of the system on an annual basis. In addition to these activities, the City will:

- Continue to repair and rehabilitate trunk sanitary sewer and manholes
    - As needed when street reconstructions occur
- Consider programs to reduce I/I contributions from private property and pursue grant funding from the MCES (if available and applicable)
    - Timing to be determined
- Monitor MCES metering and work with the MCES to identify and reduce regional I/I contributions to the system
    - On an ongoing basis

5.1.4 I/I Cost Estimates

The City does not have a history of excessive I/I. The City is currently under the Metropolitan Council's average daily flow threshold for acceptable flows based on flow data. The City will continue to fund its implementation program by a combination of sewer fees (base charge plus usage fee) and the City's capital fund.

6.0 FINANCING

6.1 FINANCING

The current policy of the City of Oak Park Heights is to finance new trunk sanitary sewer with area charges and sanitary sewer upgrades and replacements through assessments and the City's general fund. The City has a fully built-out sanitary sewer trunk system and expansion will not be needed to service the future growth within the City's limits. If expansion were to occur, the purpose would be to service areas outside of City limits. We recommend that the City review and adjust these costs on an as needed basis, to account for items such as inflation.

7.0 SUMMARY AND OUTCOMES

The Comprehensive Sanitary Sewer Plan presented herein is intended to serve as an inventory of the City of Oak Park Heights' existing sanitary sewer trunk facilities and as a guide for expanding the trunk sewer system to service future development in the City. Based on the information analyzed in this study and presented in this report, the following outcomes are desired:

1. That the Metropolitan Council use its population and flow projections presented in Tables 2-1 and 2-2 in determining the appropriate capacity for regional facilities.

2. That the City Council adopt the sanitary sewer layout, as presented in the Sanitary Sewer System Map (Appendix G), as the development guide for sanitary sewer construction within the study area.

APPENDICES

Appendix A AREAS FOR THE ULTIMATE SYSTEM

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APPENDIX A - AREAS FOR THE ULTIMATE SYSTEM

Area Designation	Residential Low Density (Total Units)	Residential Low Density (Acres)	Residential Medium Density (Total Units)	Residential Medium Density (Acres)	Residential High Density (Total Units)	Residential High Density (Acres)	Commercial Industrial (Acres)	Public Institutional (Acres)	Park Open Space (Acres)	Non Developable (Acres)	TOTAL (Acres)
Northern District											
N-0	0	0	0	0	16	1	0	9	1	21	32
N-1	0	0	0	0	143	12	8	0	0	50	70
N-2	0	0	0	0	0	0	176	0	0	270	446
N-3	25	6	0	0	0	0	2	0	9	17	35
N-4	0	0	0	0	0	0	1	0	36	5	41
N-5	132	33	0	0	7	1	0	0	0	20	53
N-5A	49	12	0	0	16	1	0	0	0	35	48
N-6	79	20	0	0	134	11	4	28	0	31	95
N-7	0	0	0	0	46	4	20	5	0	19	47
N-8	0	0	24	4	69	6	1	0	0	3	14
N-9	0	0	81	14	117	10	5	2	0	8	38
N-10	64	16	0	0	0	0	0	0	0	4	20
N-11	0	0	0	0	0	0	0	170	39	58	267
N-12	22	6	0	0	0	0	0	0	1	2	8
N-13	154	38	0	0	0	0	0	0	11	11	60
N-14	110	27	0	0	0	0	0	2	0	8	37
N-15	7	2	0	0	0	0	12	0	0	1	15
N-16	0	0	0	0	0	0	31	0	0	3	34
N-17	56	14	0	0	4	0	6	0	4	5	29
N-18	10	3	0	0	0	0	0	0	0	11	14
N-19	0	0	0	0	0	0	0	10	0	2	13
N-20	202	51	0	0	0	0	0	0	0	17	68
N-21	64	16	0	0	0	0	13	0	19	22	70
Subtotal	**975**	**244**	**106**	**18**	**537**	**45**	**279**	**226**	**119**	**602**	**1556**

APPENDIX A - AREAS FOR THE ULTIMATE SYSTEM

Area Designation	Residential Low Density (Total Units)	Residential Low Density (Acres)	Residential Medium Density (Total Units)	Residential Medium Density (Acres)	Residential High Density (Total Units)	Residential High Density (Acres)	Commercial Industrial (Acres)	Public Institutional (Acres)	Park Open Space (Acres)	Non Developable (Acres)	TOTAL (Acres)
Western District											
W-1	41	10	37	6	184	15	11	0	4	15	62
W-2	0	0	0	0	0	0	60	0	0	12	72
W-3	0	0	39	6	169	14	0	0	1	5	27
W-5	0	0	134	22	102	9	0	27	0	10	68
W-6	0	0	62	10	0	0	0	0	13	15	39
W-7	0	0	0	0	0	0	41	1	0	8	50
W-8	0	0	0	0	0	0	48	0	0	22	70
W-9	119	30	0	0	0	0	0	0	0	9	39
W-10	0	0	0	0	0	0	0	101	0	18	119
W-11	0	0	0	0	0	0	80	0	15	39	134
Subtotal	**160**	**40**	**273**	**45**	**456**	**38**	**240**	**129**	**34**	**153**	**680**
TOTAL	**1,135**	**284**	**379**	**63**	**992**	**83**	**519**	**356**	**153**	**755**	**2,235**

Appendix B AVERAGE FLOWS (MGD) FOR THE ULTIMATE SYSTEM

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APPENDIX B - AVERAGE FLOWS FOR THE DISTRICTS

Area Designation	Residential (MGD)	Commercial Industrial (MGD)	Public Institiutional (MGD)	Park Open Space (MGD)	Non Developable (MGD)	TOTAL (MGD)
Northern District						
N-0	0.002	0.000	0.014	0.000	0.000	0.016
N-1	0.021	0.007	0.000	0.000	0.000	0.028
N-2	0.000	0.211	0.000	0.000	0.000	0.211
N-3	0.006	0.003	0.000	0.000	0.000	0.008
N-4	0.000	0.001	0.000	0.000	0.000	0.001
N-5	0.031	0.000	0.000	0.000	0.000	0.031
N-5A	0.013	0.000	0.000	0.000	0.000	0.013
N-6	0.037	0.005	0.003	0.000	0.000	0.045
N-7	0.006	0.024	0.008	0.000	0.000	0.038
N-8	0.014	0.001	0.000	0.000	0.000	0.015
N-9	0.033	0.005	0.002	0.000	0.000	0.041
N-10	0.014	0.000	0.000	0.000	0.000	0.014
N-11	0.000	0.000	0.002	0.000	0.000	0.002
N-12	0.005	0.000	0.000	0.000	0.000	0.005
N-13	0.035	0.000	0.000	0.000	0.000	0.035
N-14	0.025	0.000	0.002	0.000	0.000	0.027
N-15	0.002	0.009	0.000	0.000	0.000	0.011
N-16	0.000	0.020	0.000	0.000	0.000	0.020
N-17	0.013	0.007	0.000	0.000	0.000	0.020
N-18	0.002	0.000	0.000	0.000	0.000	0.002
N-19	0.000	0.000	0.016	0.000	0.000	0.016
N-20	0.046	0.000	0.000	0.000	0.000	0.046
N-21	0.014	0.021	0.002	0.041	0.005	0.084
Subtotal	**0.303**	**0.293**	**0.033**	**0.000**	**0.000**	**0.729**
Western District						
W-1	0.042	0.004	0.000	0.000	0.000	0.046
W-2	0.000	0.024	0.000	0.000	0.000	0.024
W-3	0.031	0.000	0.000	0.000	0.000	0.031
W-5	0.040	0.000	0.041	0.000	0.000	0.080
W-6	0.012	0.000	0.000	0.000	0.000	0.012
W-7	0.000	0.031	0.001	0.000	0.000	0.033
W-8	0.000	0.025	0.000	0.000	0.000	0.025
W-9	0.027	0.000	0.000	0.000	0.000	0.027
W-10	0.000	0.000	0.000	0.000	0.000	0.000
W-11	0.000	0.096	0.000	0.000	0.000	0.096
Subtotal	**0.151**	**0.181**	**0.042**	**0.000**	**0.000**	**0.374**
TOTAL	**0.454**	**0.474**	**0.076**	**0.000**	**0.000**	**1.103**

Appendix C DESIGN FLOWS FOR THE ULTIMATE SYSTEM

Stantec

APPENDIX C - DESIGN FLOWS FOR THE ULTIMATE SYSTEM

From Point	To Point	Subdistrict Added	Average Flow Added (MGD)	Cumulative Average Flow (MGD)	Peak Flow Factor (PFF)	DESIGN FLOW (MGD)
Northern District						
W1.1	N18.1		0.000	0.343	3.6	1.24
N18.1	N17.2	N-18, N-19	0.018	0.361	3.6	1.30
N17.2	N17.1	N-17	0.020	0.381	3.6	1.37
N17.1	N16.1		0.000	0.381	3.6	1.37
N16.1	N8.4	N-16	0.020	0.401	3.5	1.40
N8.4	N8.3		0.000	0.401	3.5	1.40
N8.3	N8.2		0.000	0.401	3.5	1.40
N8.2	N8.1		0.000	0.401	3.5	1.40
N8.1	N4.3	N-8	0.015	0.417	3.5	1.46
N7.1	N6.5	N-7	0.038	0.038	4	0.15
N6.5	N6.4		0.000	0.038	4	0.15
N6.4	N6.3		0.000	0.038	4	0.15
N6.3	N6.2		0.000	0.038	4	0.15
N6.2	N6.1	N-6	0.045	0.083	4	0.33
N6.1	N4.5		0.000	0.083	4	0.33
N4.5	N4.4		0.000	0.083	4	0.33
N4.4	N4.3		0.000	0.083	4	0.33
N4.3	N4.2		0.000	0.500	3.5	1.75
N4.2	N4.1	N-4	0.000	0.500	3.5	1.75
N20.1	N14.6	N-14	0.027	0.027	4	0.11
N14.6	N14.5		0.000	0.027	4	0.11
N14.5	N14.4		0.000	0.027	4	0.11
N14.4	N14.3		0.000	0.027	4	0.11
N14.3	N14.2		0.000	0.027	4	0.11
N14.2	N14.1	N-13	0.035	0.062	4	0.25
N14.1	N9.4	N-12, N-15	0.016	0.078	4	0.31
N9.4	N9.3		0.000	0.078	4	0.31
N9.3	N9.2		0.000	0.078	4	0.31
N9.2	N9.1	N-9	0.041	0.119	4	0.47
N9.1	N11.3	N-10	0.014	0.133	3.9	0.52
N11.3	N11.2		0.000	0.133	3.9	0.52
N11.2	N11.1		0.000	0.133	3.9	0.52
N11.4	N11.1	N-11	0.002	0.002	4	0.01
N11.1	N4.1		0.000	0.135	3.9	0.53
N4.1	N3.6	N-4	0.000	0.635	3.4	2.16
N3.6	N3.5		0.000	0.635	3.4	2.16
N5.3	N5.2	N5-A	0.013	0.013	4	0.05
N5.2	N5.1		0.000	0.013	4	0.05
N5.1	N3.9		0.000	0.013	4	0.05
N3.9	N3.8		0.000	0.013	4	0.05
N3.8	N3.7		0.000	0.013	4	0.05
N3.7	WWTP		0.000	0.044	4	0.18
N3.5	N3.4	N-3	0.008	0.644	3.4	2.19
N3.4	N3.3		0.000	0.644	3.4	2.19
N3.3	N3.2		0.000	0.644	3.4	2.19
N3.2	N3.1		0.000	0.644	3.4	2.19
N3.1	WWTP		0.000	0.644	3.4	2.19
N21.1	WWTP	N-21	0.084	0.084	4	0.33
N2.2	WWTP	N-2	0.211	0.211	3.8	0.80
N5LS	N3.7	N-5	0.031	0.031	4	0.12
N1.1	WWTP	N-1	0.028	0.072	4	0.29
N1.2	WWTP	N-0	0.016	0.299	3.7	1.11

APPENDIX C - DESIGN FLOWS FOR THE ULTIMATE SYSTEM

From Point	To Point	Subdistrict Added	Average Flow Added (MGD)	Cumulative Average Flow (MGD)	Peak Flow Factor (PFF)	DESIGN FLOW (MGD)
Western District						
W11.2	W11.1	W-11	0.096	0.096	4	0.38
W11.1	W11LS		0.000	0.096	4	0.38
W11LS	W8.2		0.000	0.096	4	0.38
W8.2	W8.1		0.000	0.096	4	0.38
W8.1	W7.2	W-8	0.025	0.121	3.9	0.47
W7.2	W7.1		0.000	0.121	3.9	0.47
W5.1	W7.3	W-5,W-6	0.092	0.092	4	0.37
W7.3	W7.1	W-7, W-9, W-10	0.060	0.152	3.9	0.59
W7.1	W7LS		0.000	0.273	3.7	1.01
W7LS	W2.2		0.000	0.273	3.7	1.01
W2.2	W2.1	W-2	0.024	0.297	3.7	1.10
W2.1	W1.2		0.000	0.297	3.7	1.10
W1.2	W1.1	W-1	0.046	0.343	3.6	1.24
N20LS	W4LS	W-3, N-20	0.077	0.077	4	0.31
W1.4	W1.3		0.000	0.000	4	0.00
W1.3	W1.1		0.000	0.000	4	0.00

Appendix D PIPE CAPACITIES FOR THE ULTIMATE SYSTEM

Stantec

APPENDIX D - ULTIMATE TRUNK SYSTEM DESIGN AND CAPACITY INFORMATION

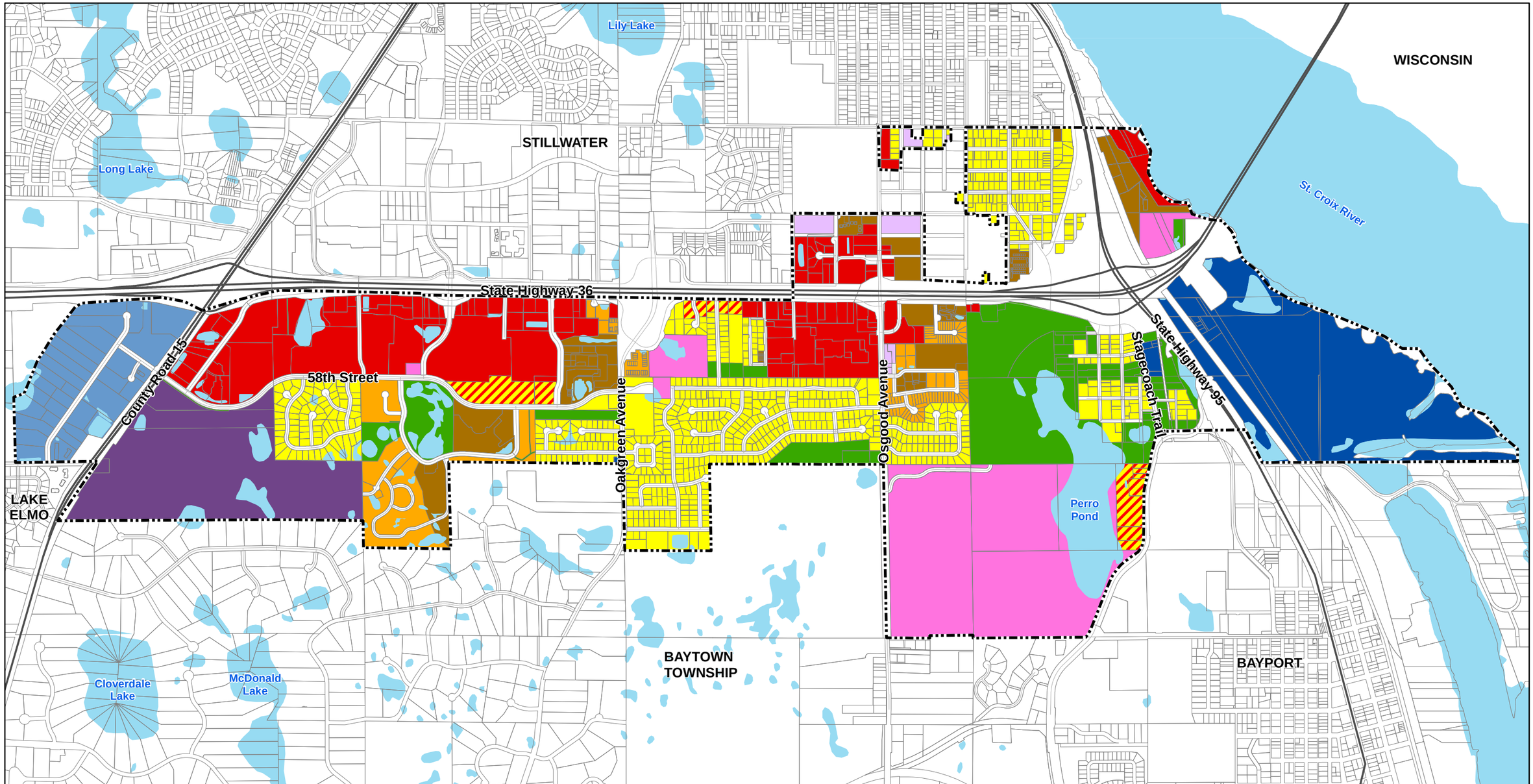
From Point	To Point	Design Flow (MGD)	Pipe-Existing/ Proposed	Size (in.)	Design Material	Length (ft.)	Upstream Inv. Elev. (ft.)	Downstream Inv. Elev. (ft.)	Slope (%)	Upstream Rim Elev. (ft.)	Depth of cut (ft.)	Street Restor.	Street Restor. (ft)	Pipe Jacking (ft)	Inlet Control Flow Rate (cfs)	Inlet Control Flow Rate (MGD)	Outlet Control Flow Rate (cfs)	Outlet Control Flow Rate (MGD)	Capacity (MGD)	Capacity/ Design Flow
Western District																				
W11.2	W11.1	0.38	Existing	8	PVC	2679	928.00	917.30	0.40	NA	NA	0	0	0	1.21	0.78	0.90	0.58	0.58	1.52
W11.1	W11LS	0.38	Existing	8	DIP	542	917.30	915.00	0.42	NA	NA	0	0	0	1.21	0.78	0.93	0.60	0.60	1.57
W11LS	W8.2	0.38	Exist. FM	6	DIP	3062	915.39	932.00	-0.54	NA	NA	0	0	0	NA	NA	NA	NA	NA	NA
W8.2	W8.1	0.38	Existing	8	PVC	70	932.00	923.07	12.76	NA	NA	0	0	0	1.21	0.78	5.10	3.30	0.78	2.04
W8.1	W7.2	0.47	Existing	10	PVC	2466	923.07	910.72	0.50	NA	NA	0	0	0	2.12	1.37	1.83	1.18	1.18	2.51
W7.2	W7.1	0.47	Existing	8	PVC	50	910.72	910.52	0.40	NA	NA	0	0	0	1.21	0.78	0.90	0.58	0.58	1.24
W5.1	W7.3	0.37	Existing	8	DIP	1893	927.13	908.54	0.98	NA	NA	0	0	0	1.21	0.78	1.42	0.91	0.78	2.13
W7.3	W7.1	0.59	Existing	12	RCP	1245	908.54	906.21	0.19	NA	NA	0	0	0	3.34	2.16	1.82	1.18	1.18	1.99
W7.1	W7LS	1.01	Existing	12	PVC	422	906.21	905.54	0.16	NA	NA	0	0	0	3.34	2.16	1.68	1.08	1.08	1.07
W7LS	W2.2	1.01	Exist. FM	10	DIP	400	918.58	935.25	-4.17	NA	NA	0	0	0	NA	NA	NA	NA	NA	NA
W2.2	W2.1	1.10	Existing	12	PVC	783	935.25	930.80	0.57	NA	NA	0	0	0	3.34	2.16	3.17	2.05	2.05	1.87
W2.1	W1.2	1.10	Existing	12	PVC	314	930.80	921.71	2.90	NA	NA	0	0	0	3.34	2.16	7.16	4.63	2.16	1.96
W1.2	W1.1	1.24	Existing	12	Concrete	780	921.71	912.81	1.14	NA	NA	0	0	0	3.34	2.16	3.81	2.46	2.16	1.75
N20LS	W4LS	0.31	Proposed	8	PVC	1101	894.50	890.10	0.40	906.9	12	Resid. St	780	0	1.21	0.78	0.90	0.58	0.58	1.90
W1.4	W1.31	0.00	Proposed	8	PVC	776	952.30	938.36	1.80	959.3	7	Resid. St	750	0	1.21	0.78	1.91	1.24	0.78	0.00
W1.31	W1.3	0.00	Existing	8	PVC	707	938.36	916.66	3.07	NA	NA	0	0	0	1.21	0.78	2.50	1.62	0.78	0.00
W1.3	W1.1	0.00	Existing	8	VCP	386	916.66	912.81	1.00	NA	NA	0	0	0	1.21	0.78	1.43	0.92	0.78	0.00
Northern District																				
W1.1	N18.1	1.24	Existing	12	Concrete	441	912.18	910.12	0.47	NA	NA	0	0	0	3.34	2.16	2.44	1.57	1.57	1.27
N18.1	N17.2	1.30	Existing	18	Concrete	1067	910.12	907.82	0.22	NA	NA	0	0	0	9.20	5.94	4.88	3.15	3.15	2.42
N17.2	N17.1	1.37	Existing	15	Concrete	733	907.84	898.34	1.30	NA	NA	0	0	0	5.83	3.77	7.35	4.75	3.77	2.75
N17.1	N16.1	1.37	Existing	15	Concrete	275	898.34	896.02	0.84	NA	NA	0	0	0	5.83	3.77	5.93	3.83	3.77	2.75
N16.1	N8.4	1.40	Existing	18	Concrete	1709	896.02	890.97	0.30	NA	NA	0	0	0	9.20	5.94	5.71	3.69	3.69	2.63
N8.4	N8.3	1.40	Existing	12	Concrete	648	890.97	863.33	4.27	NA	NA	0	0	0	3.34	2.16	7.36	4.75	2.16	1.54
N8.3	N8.2	1.40	Existing	12	Concrete	31	863.33	845.70	56.51	NA	NA	0	0	0	3.34	2.16	26.78	17.30	2.16	1.54
N8.2	N8.1	1.40	Existing	12	Concrete	49	845.70	839.80	12.04	NA	NA	0	0	0	3.34	2.16	12.36	7.99	2.16	1.54
N8.1	N4.3	1.46	Existing	12	Concrete	775	839.80	793.99	5.91	NA	NA	0	0	0	3.34	2.16	8.66	5.59	2.16	1.48
N7.1	N6.5	0.15	Existing	9	VCP	257	893.02	887.56	2.13	NA	NA	0	0	0	1.21	0.78	2.85	1.84	0.78	5.20
N6.5	N6.4	0.15	Existing	9	VCP	54	887.56	886.96	1.11	NA	NA	0	0	0	1.21	0.78	2.06	1.33	0.78	5.20
N6.4	N6.3	0.15	Existing	9	VCP	200	886.96	881.95	2.51	NA	NA	0	0	0	1.21	0.78	3.09	2.00	0.78	5.20
N6.3	N6.2	0.15	Existing	9	VCP	150	881.95	875.38	4.38	NA	NA	0	0	0	1.21	0.78	4.09	2.64	0.78	5.20
N6.2	N6.1	0.33	Existing	8	VCP	975	875.38	841.90	3.43	NA	NA	0	0	0	1.21	0.78	2.65	1.71	0.78	2.36
N6.1	N4.5	0.33	Existing	8	VCP	176	841.90	837.49	2.51	NA	NA	0	0	0	1.21	0.78	2.26	1.46	0.78	2.36
N4.5	N4.4	0.33	Existing	8	VCP	203	836.35	794.98	20.38	NA	NA	0	0	0	1.21	0.78	6.45	4.16	0.78	2.36
N4.4	N4.3	0.33	Existing	8	VCP	50	794.98	793.99	1.98	NA	NA	0	0	0	1.21	0.78	2.01	1.30	0.78	2.36
N4.3	N4.2	1.75	Existing	12	Concrete	350	793.64	777.77	4.53	NA	NA	0	0	0	3.34	2.16	7.58	4.90	2.16	1.23
N4.2	N4.1	1.75	Existing	18	Concrete	308	777.77	776.50	0.41	NA	NA	0	0	0	9.20	5.94	6.75	4.36	4.36	2.49
N20.1	N14.6	0.11	Existing	9	VCP	824	947.23	944.48	0.33	NA	NA	0	0	0	1.21	0.78	1.13	0.73	0.73	6.71
N14.6	N14.5	0.11	Existing	8	VCP	548	944.48	932.83	2.13	NA	NA	0	0	0	1.21	0.78	2.08	1.35	0.78	7.20
N14.5	N14.4	0.11	Existing	8	PVC	600	932.83	930.52	0.39	NA	NA	0	0	0	1.21	0.78	0.89	0.57	0.57	5.26

APPENDIX D - ULTIMATE TRUNK SYSTEM DESIGN AND CAPACITY INFORMATION

From Point	To Point	Design Flow (MGD)	Pipe- Existing/ Proposed	Size (in.)	Design Material	Length (ft.)	Upstream Inv. Elev. (ft.)	Downstream Inv. Elev. (ft.)	Slope (%)	Upstream Rim Elev. (ft.)	Depth of cut (ft.)	Street Restor.	Street Restor. (ft)	Pipe Jacking (ft)	Inlet Control Flow Rate (cfs)	Inlet Control Flow Rate (MGD)	Outlet Control Flow Rate (cfs)	Outlet Control Flow Rate (MGD)	Capacity (MGD)	Capacity/ Design Flow
Northern District continued																				
N14.4	N14.3	0.11	Existing	8	PVC	1540	930.52	891.07	2.56	NA	NA	0	0	0	1.21	0.78	2.29	1.48	0.78	7.20
N14.3	N14.2	0.11	Existing	8	PVC	725	891.07	886.01	0.70	NA	NA	0	0	0	1.21	0.78	1.19	0.77	0.77	7.09
N14.2	N14.1	0.25	Existing	8	PVC	348	886.01	880.63	1.55	NA	NA	0	0	0	1.21	0.78	1.78	1.15	0.78	3.17
N14.1	N9.4	0.31	Existing	8	PVC	357	880.25	878.09	0.61	NA	NA	0	0	0	1.21	0.78	1.11	0.72	0.72	2.31
N9.4	N9.3	0.31	Existing	8	PVC	131	877.56	866.45	8.48	NA	NA	0	0	0	1.21	0.78	4.16	2.69	0.78	2.52
N9.3	N9.2	0.31	Existing	8	PVC	396	866.45	863.42	0.76	NA	NA	0	0	0	1.21	0.78	1.25	0.81	0.78	2.52
N9.2	N9.1	0.47	Existing	8	PVC	677	863.42	843.53	2.94	NA	NA	0	0	0	1.21	0.78	2.45	1.58	0.78	1.65
N9.1	N11.3	0.52	Existing	8	PVC	241	843.53	832.38	4.63	NA	NA	0	0	0	1.21	0.78	3.07	1.98	0.78	1.51
N11.3	N11.2	0.52	Existing	8	PVC	155	832.38	810.00	14.44	NA	NA	0	0	0	1.21	0.78	5.43	3.51	0.78	1.51
N11.2	N11.1	0.52	Existing	8	PVC	75	784.03	782.97	1.41	NA	NA	0	0	0	1.21	0.78	1.70	1.10	0.78	1.51
N11.4	N11.1	0.01	Existing	15	Concrete	1587	795.15	782.24	0.81	NA	NA	0	0	0	5.83	3.77	5.83	3.76	3.76	461.24
N11.1	N4.1	0.53	Existing	18	Concrete	535	781.86	777.49	0.82	NA	NA	0	0	0	9.20	5.94	9.49	6.13	5.94	11.28
N4.1	N3.6	2.16	Existing	24	Concrete	1772	777.49	765.92	0.65	NA	NA	0	0	0	18.89	12.20	18.28	11.81	11.81	5.47
N3.6	N3.5	2.16	Existing	24	Concrete	339	765.92	759.95	1.76	NA	NA	0	0	0	18.89	12.20	30.02	19.39	12.20	5.65
N3.5	N3.4	2.19	Existing	24	Concrete	137	750.07	748.95	0.82	NA	NA	0	0	0	18.89	12.20	20.45	13.21	12.20	5.58
N3.4	N3.3	2.19	Existing	18	Concrete	160	748.95	744.38	2.86	NA	NA	0	0	0	9.20	5.94	17.75	11.47	5.94	2.72
N3.3	N3.2	2.19	Existing	15	Concrete	135	744.38	730.20	10.48	NA	NA	0	0	0	5.83	3.77	20.91	13.51	3.77	1.72
N3.2	N3.1	2.19	Existing	21	Concrete	133	730.20	717.32	9.68	NA	NA	0	0	0	13.53	8.74	49.31	31.85	8.74	3.99
N5.3	N5.2	0.05	Existing	8	PVC	86	814.05	796.71	20.09	NA	NA	0	0	0	1.21	0.78	6.40	4.14	0.78	14.70
N5.2	N5.1	0.05	Existing	9	PVC	560	796.71	795.06	0.29	NA	NA	0	0	0	1.21	0.78	1.06	0.69	0.69	12.87
N5.1	N3.9	0.05	Existing	8	PVC	60	795.06	794.19	1.45	NA	NA	0	0	0	1.21	0.78	1.72	1.11	0.78	14.70
N3.9	N3.8	0.05	Existing	8	PVC	329	794.19	776.69	5.32	NA	NA	0	0	0	1.21	0.78	3.29	2.13	0.78	14.70
N3.8	N3.7	0.05	Existing	8	PVC	275	774.05	756.09	6.52	NA	NA	0	0	0	1.21	0.78	3.65	2.36	0.78	14.70
N5	N3.7	0.12	Existing	8	PVC	1490	763.45	733.06	0.38	NA	N/A	0	0	0	1.21	0.78	0.88	0.57	0.57	4.63
N3.7	WWTP	0.18	Existing	9	PVC	684	748.80	710.55	0.72	NA	NA	0	0	0	1.21	0.78	1.66	1.07	0.78	4.44

Appendix E 2040 LAND USE MAP

Stantec



City of Oak Park Heights

TPC The Planning Company

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- City Limits
- Low Density Residential
- Medium Density Residential
- High Density Residential
- Business/Residential Transitional
- Quasi-Public Facilities
- School Facilities
- Government Facilities
- Commercial
- Industrial
- Highway Business/Warehouse
- Park Facilities/Open Space
- Right-of-Way
- Open Water

N

0 1,500 3,000 Feet

City of Oak Park Heights Comprehensive Plan

Proposed Land Use Map

Source: The City of Oak Park Heights, The Planning Company, & Stantec

April 2018

E-1

Appendix F SANITARY SEWER ORDINANCE

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ORDINANCE ESTABLISHING AN INDUSTRIAL USER STRENGTH CHARGE IN ADDITION TO THE CHARGE BASED UPON THE VOLUME OF DISCHARGE BY AN INDUSTRIAL USER AND ESTABLISHING AN INDUSTRIAL USER STRENGTH CHARGE FORMULA FOR THE COMPUTATION THEREOF TO RECOVER OPERATION AND MAINTENANCE COSTS OF WASTE TREATMENT SERVICES ATTRIBUTABLE TO THE STRENGTH OF THE DISCHARGE OF INDUSTRIAL WASTE INTO THE SEWER SYSTEM AND ESTABLISHING TAX LIEN AGAINST PROPERTY SERVED IN CONNECTION WITH SUCH STRENGTH CHARGE.

THE CITY COUNCIL OF THE CITY OF OAK PARK HEIGHTS, WASHINGTON COUNTY, MINNESOTA, DOES ORDAIN:

1007.01 Recitals.

The Metropolitan Waste Control Commission, a metropolitan commission organized and existing under the laws of the State of Minnesota, hereinafter referred to as the "Commission", in order to receive and retain grants in compliance with the Federal Water Pollution Control Act Amendments of 1972 and regulations thereunder, hereinafter referred to as the "Act", has determined to impose an industrial user sewer strength charge upon users of the Metropolitan Disposal System as defined in Minnesota Statutes, §473.121, Subdivision 24 to recover operation and maintenance costs of treatment works attributable to the strength of the discharge of industrial waste, such sewer strength charge being in addition to the charge based upon the volume of discharge. In order for the City to pay such costs based upon strength of industrial discharge and allocated to it each year by the Commission, it is hereby found, determined and declared to be necessary to establish sewer strength charges and a formula for the computation thereof for all industrial users receiving waste treatment services within or served by the City. Furthermore, Minnesota Statutes, §444.075, Subdivision 3, empowers the City to make such sewer charge a charge against the owner, lessee, occupant, or all of them and certify unpaid charges to the county auditor as a tax lien against the property served.

1007.02 Establishment of Strength Charges.

For the purpose of paying the costs allocated to the City each year by the Commission that are based upon the strength of discharge of all industrial users receiving waste treatment services within or served by the City, there is hereby approved, adopted, and established, in addition to the sewer charge based upon the volume of discharge, a sewer charge upon each person, company, or corporation receiving waste treatment services within or served by the City, based upon strength of industrial waste discharged into the sewer system of the City, hereinafter referred to as the "Strength Charge."

1007.03 Establishment of Strength Charge Formula.

For the purpose of computation of the Strength Charge established by Section 1007.02 hereof, there is hereby established, approved, and adopted in compliance with the Act the same Strength Charge formula designated in Resolution No. 76-172 adopted by the governing body of the Commission on June 15, 1976, such formula

being based upon pollution qualities and difficulty of disposal of the sewage produced through an evaluation of pollution qualities and quantities in excess of an annual average base and the proportionate costs of operation and maintenance of waste treatment services provided by the Commission.

1007.04 Strength Charge Payment.

It is hereby approved, adopted and established that the Strength Charge established by Section 1007.02 hereof, shall be paid by each industrial user receiving waste treatment services and subject thereto before the twentieth (20th) day next succeeding the date of billing thereof to such user by or on behalf of the City, and such payment thereof shall be deemed to be delinquent if not so paid to the billing entity before such date. Furthermore, it is hereby established, approved, and adopted that if such payment is not paid before such date an industrial user shall pay interest, compounded monthly, at the rate of two-thirds of one percent (2/3%) per month on the unpaid balance due.

1007.05 Establishment of Tax Lien.

As provided by Minnesota Statutes, §444.075, Subdivision 3, it is hereby approved, adopted, and established that if payment of the Strength Charge established by Section 1007.02 hereof, is not paid before the sixtieth (60th) day next succeeding the date of billing thereof to the industrial user by or on behalf of the City, said delinquent sewer strength charge, plus accrued interest established pursuant to Section 1007.04 hereof, shall be deemed to be a charge against the owner, lessee and occupant of the property served, and the City or its agent shall certify such unpaid delinquent balance to the county auditor with taxes against the property served for collection as other taxes are collected; provided, however, that such certification shall not preclude the City or its agent from recovery of such delinquent sewer strength charge and interest thereon under any other available remedy.

1007.06 Severability.

In the event any provision of this Ordinance shall be held invalid or unenforceable by any court of competent jurisdiction, such holding shall not invalidate or render unenforceable any other provision hereof.

Appendix G SANITARY SEWER SYSTEM MAP

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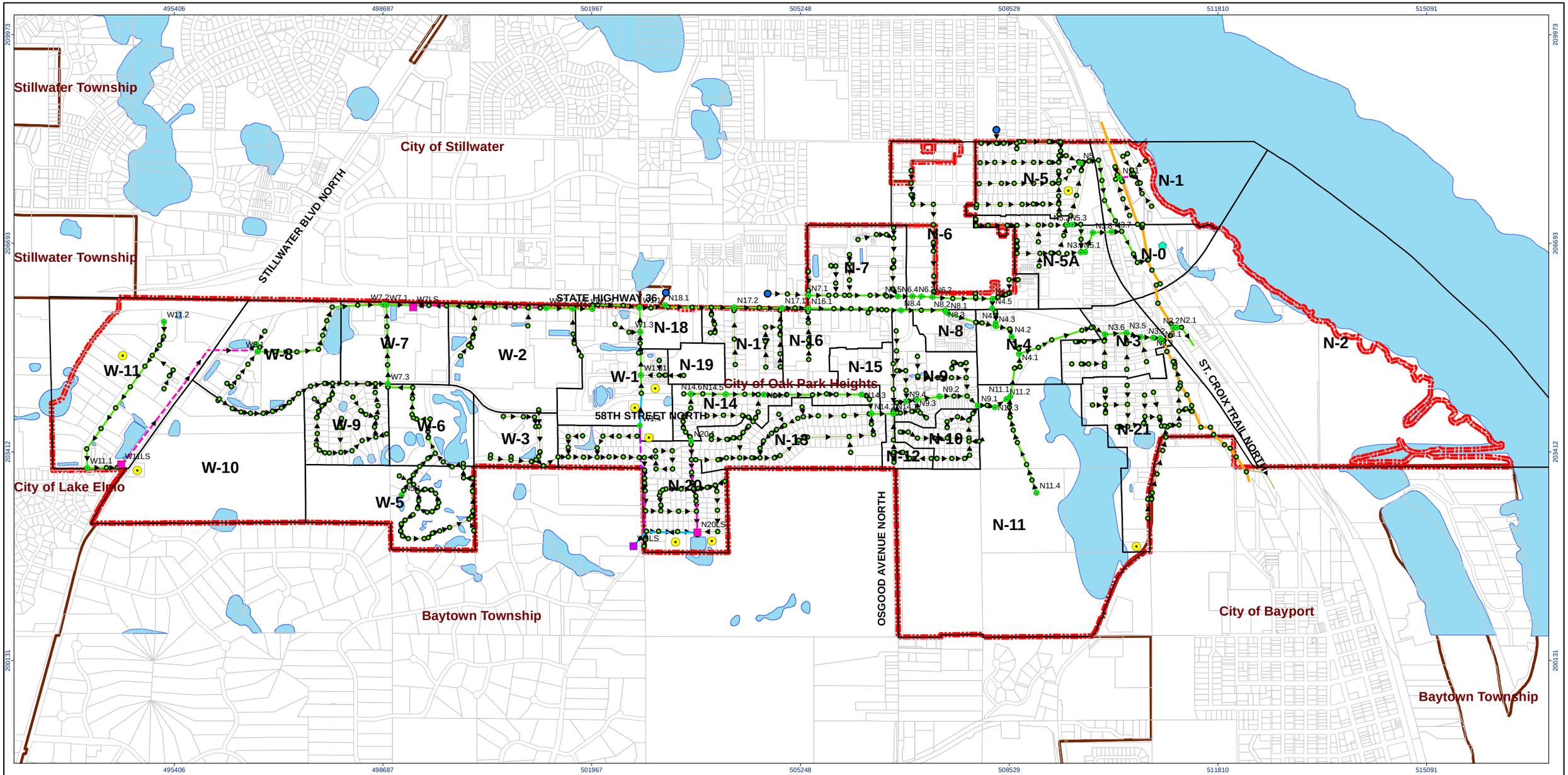

City of Oak Park Heights
2040 Comprehensive Plan

SANITARY SEWER SYSTEM MAP

Legend

- SSTS Locations
- Intercommunity Flow Connection Point
- Node Sanitary Sewer Nodes
- Existing Lift Station
- Proposed Lift Station
- St. Croix Valley WWTP
- Existing Sanitary Sewer Manholes
- Existing Sanitary Trunk Lines
- Existing Forcemains
- Existing Sanitary Laterl Lines
- Existing MCES Interceptor
- Proposed Forcemain
- Proposed Sanitary Trunk Line
- Sanitary Districts
- Parcels
- Oak Park Heights Boundary
- Water
- Municipal Boundaries

N

0 1,000 2,000 Feet

1:18,000 (At original document size of 11x17)
1 inch = 1,500 feet

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Water System Master Plan

City of Oak Park Heights

May 25, 2018

Prepared for:

City of Oak Park Heights

Prepared by:

Stantec Consulting Services

Table of Contents

EXECUTIVE SUMMARY

1.0 INTRODUCTION 1.1
1.1 PURPOSE AND OBJECTIVES 1.1
1.2 MUNICIPAL WATER SYSTEM BASICS 1.2

2.0 EXISTING WATER SYSTEM 2.3
2.1 WATER SUPPLY 2.3
2.2 WATER DISTRIBUTION SYSTEM 2.3
2.3 WATER STORAGE 2.5

3.0 WATER DEMANDS 3.1
3.1 VARIATIONS IN WATER USE 3.1
3.2 EXISTING WATER SYSTEM DEMAND 3.2
3.2.1 Historical Water Use 3.2
3.2.2 Existing Design Demands 3.3
3.3 PROJECTED COMMUNITY GROWTH 3.4
3.3.1 Water Use by Population Projections 3.4
3.3.2 Water Use by Land Use Projections 3.5
3.4 PROJECTED WATER SYSTEM DEMAND 3.7

4.0 EXISTING WATER SYSTEM EVALUATION 4.1
4.1 HYDRAULIC MODEL 4.1
4.2 WATER SYSTEM HYDRAULIC EVALUATION 4.1
4.2.1 Water System Pressure 4.1
4.2.2 Water System Fire Flow 4.3
4.2.3 Water System Headloss and Velocity 4.6
4.3 SUPPLY – STORAGE EVALUATION 4.7
4.4 EXISTING WATER SYSTEM EVALUATION SUMMARY 4.9

5.0 PROPOSED FUTURE WATER SYSTEM EVALUATION 5.1
5.1 PROPOSED FUTURE WATER SYSTEM IMPROVEMENTS 5.1
5.2 WATER SYSTEM HYDRAULIC EVALUATION 5.1
5.2.1 Water System Pressure 5.3
5.2.2 Water System Fire Flow 5.3
5.2.3 Water System Headloss and Velocity 5.3
5.2.4 Water System Replacement and Rehabilitation 5.6
5.3 SUPPLY – STORAGE EVALUATION 5.6
5.4 PROPOSED FUTURE WATER SYSTEM EVALUATION SUMMARY 5.7

6.0 CAPITAL IMPROVEMENTS PLAN 6.1
6.1 PROPOSED FUTURE WATER SYSTEM 6.1
6.2 COST ESTIMATES 6.1

LIST OF TABLES

Table 1 – Existing Groundwater Supply Wells 2.3
Table 2 – Water System Pressure Zones 2.5
Table 3 – Existing Water Storage 2.5
Table 4 – Historical Water Use Data 3.2
Table 5 – Existing Design Water Demand 3.3
Table 6 – Future Water Requirements by Population 3.5
Table 7 – Future Development Acres and Water Requirements by Land Use 3.5
Table 8 – Water Demand Projections for Future Growth 3.7
Table 9 – Existing Water Supply and Storage Recommendations 4.8
Table 10 – Proposed Future Water Supply and Storage Recommendations 5.6
Table 11 – Proposed Future Trunk Water System Costs 6.1

LIST OF FIGURES

Figure 1 – Existing Water System 2.4
Figure 2 – Existing Pressure Zones 2.6
Figure 3 – Time of Day Demand Curve 3.4
Figure 4 – 2040 Future Land Use 3.6
Figure 5 – Existing Average Day Water System Pressure 4.2
Figure 6 – Existing Recommended Fire Flow by Land Use 4.4
Figure 7 – Existing Maximum Day Available Fire Flow 4.5
Figure 8 – Proposed Future Trunk Water System 5.2
Figure 9 – Proposed Average Day Water System Pressure 5.4
Figure 10 – Proposed Maximum Day Available Fire Flow 5.5

LIST OF APPENDICES

APPENDIX A WATER SUPPLY PLAN
APPENDIX B COST ESTIMATES

Executive Summary

WATER SYSTEM MASTER PLAN PURPOSE AND OBJECTIVES

The City of Oak Park Heights Water System Master Plan project was conducted to develop an updated hydraulic model and a complete improvement plan to meet future water system needs. The Water System Master Plan is based on the population growth in the City's *Water Supply Plan* and future land use provided in the 2040 Comprehensive Plan. The project updated the City hydraulic model to include recent water main improvements and updated water demands to match the existing City water use. The proposed future water system includes improvements to support the future growth detailed in the Comprehensive Plan.

EXISTING WATER SYSTEM

The City of Oak Park Heights water system includes water supply and treatment, distribution, and storage to meet the water demands of the utilities' customers. The utility operates two groundwater wells to supply water and maintains two water towers in the distribution system to sustain water system pressures and provide water during emergencies. The water distribution system contains approximately 29 miles of water main. Due to the large variations in ground elevation in the City of Oak Park Heights, the water system operates four pressure zones to provide adequate water system pressures to all customers.

For evaluation of the water system, existing average day, maximum day, and peak hour water demands were used. The recommended design average day demand is 0.6 million gallons per day (MGD) based on water pumpage since 2010. The highest maximum day pumpage exceeded 1.75 MGD in 2005 and 2006 but has averaged approximately 1.24 MGD since 2010. The design maximum day demand ratio is recommended to be 2.6 with the calculated design maximum day demand of 1.6 MGD. The peak hour demand is the maximum hour of water demand which occurs on the maximum day. The recommended design peak hour ratio is 1.6 with a calculated peak hour demand of 1,750 gallons per minute (gpm).

PROJECTED COMMUNITY GROWTH

To project future water demand, future community growth projections are needed. Two methods for determining future water demands were completed. Future water demand was calculated on a per capita basis in the *Water Supply Plan* based on Metropolitan Council's population projections. An evaluation of future developable land was also conducted to determine future demand based on land use from the 2040 Comprehensive Plan.

With only 43 acres for future growth, the additional future water demand is 0.14 MGD maximum day. Future water demand based on the 2040 projected population of 5,700 provides a future water demand of 0.33 MGD maximum day. For a conservative evaluation of the water system and future infrastructure needs, it was recommended to use the per capita water demands based on the Metropolitan Council 2040 population of 5,700.

Future average day demand is based on water demand for a 2040 population of 5,700 and was calculated at approximately 0.74 MGD. Future maximum day and peak hour demand factors were based on design demand factors determined to be 2.6 and 1.6 for existing and future evaluation. Future maximum day demand is 1.93 MGD and peak hour demand is 2,140 gpm.

EXISTING WATER SYSTEM EVALUATION

A hydraulic analysis of the water supply and distribution system was conducted using the hydraulic model. Water system pressures range from 40 to 95 psi during all existing demand conditions. Fire Flows within the water system range from approximately 775 gpm to well over 3,500 gpm. The lowest available fire flows exist at dead end water mains and on small diameter water mains. Available fire flows greater than 3,500 gpm are available throughout the majority of the large diameter water mains which make up the trunk water system. Areas exist where water main improvements will increase available fire flow; several areas were reviewed further with water main improvements suggested.

Current water storage exceeds recommended capacity, but existing water supply does not meet maximum day demand. Firm water supply capacity, with one well out of service, is approximately 1.22 MGD, less than the design maximum day demand of 1.6 MGD. Several evaluations were conducted to review options to meet the water supply need. A third well is recommended to meet existing and future water demands.

PROPOSED FUTURE WATER SYSTEM EVALUATION

Additional water supply and trunk water mains are proposed to meet existing needs and support future growth to serve the 2040 population of 5,700 as detailed in the *Water Supply Plan*. Proposed water mains were designed to provide an economical and adequate water system to support future growth and provide satisfactory service to all City of Oak Park Heights customers.

To meet existing and future water demands, additional water supply is required. Based on groundwater contamination southeast of the City, a third well should be located at the west end of the City. A well siting study is recommended to determine the best location.

A hydraulic analysis of the proposed future water supply and distribution system was conducted using the hydraulic model. Throughout the water system pressures continue to range from 40 to 95 psi during all demand conditions. The 8 inch water main between Well 1 and the City Hall water tower was identified to have high headlosses during peak water demand conditions. This water main is recommended to be upsized when replacement is needed.

Fire Flows within the water system range from approximately 775 gpm to well over 3,500 gpm. Recommended distribution system improvements were made for several locations to improve fire flow. Available fire flows greater than 3,500 gpm are available at nearly all locations throughout the proposed trunk water system serving commercial, industrial, and public land uses. Fire flow availability should be reviewed with Fire Officials based on occupancy use and building construction.

1.0 INTRODUCTION

1.1 PURPOSE AND OBJECTIVES

The City of Oak Park Heights Water System Master Plan project was conducted to develop an updated hydraulic model and a complete improvement plan to meet future water system needs. The Water System Master Plan is based on the population growth in the City's *Water Supply Plan* and future land use provided in the 2040 Comprehensive Plan. The project updated the City hydraulic model to include recent water main improvements and updated water demands to match the existing City water use. The proposed future water system includes improvements to support the future growth detailed in the Comprehensive Plan. A previous comprehensive water system study was completed by Stantec in 2007 and revised in 2009.

The purpose of this report is to provide a complete improvement program to meet the near-term and future water supply needs for the City of Oak Park Heights water system. The primary objective of the project was to update the hydraulic model and create a Water System Master Plan with demand projections based on Metropolitan Council's 2040 population projection and the City of Oak Park Heights 2040 Comprehensive Plan. Specific objectives are as follows:

- **Create an updated water system hydraulic model** based on the water utility GIS to incorporate all available water system data and recent water demand data.
- **Assign actual water demands** to the updated hydraulic model based on 2016 customer consumption to provide an accurate water demand allocation.
- **Determine the future water demands** expected within the planning boundary and the supply and storage required to meet these demands.
- **Analyze the existing and future system** to identify weak water main connections and propose solutions to ensure adequate residual pressures and fire flow.
- **Optimize supply, storage, and distribution combinations** to develop an economical and efficient ultimate water system.
- **Develop preliminary cost estimates** for supply and distribution facilities to form a basis for a satisfactory financing program.

1.2 MUNICIPAL WATER SYSTEM BASICS

A municipal water system can be divided into three main categories: supply and treatment facilities, storage facilities, and the distribution system.

- **Supply and Treatment** include all equipment necessary to pump, treat, and distribute the amount of water demanded by the system. For the City of Oak Park Heights, it is proposed to consider only groundwater supply sources, although this does not preclude the possibility of using surface water or another supply at some future date. The supply facilities include the wells, pumps, pump houses, controls, water treatment equipment, and all related facilities. For the City of Oak Park Heights, supply facilities will be recommended to provide a firm capacity equal to 100 percent of maximum day demand.

- The **Storage Facilities** are the reservoirs used throughout the system to store water for use during emergency and peak conditions. Water from storage is fed into the system by gravity or by pumping from a booster station. Two types of reservoirs feed water directly into the system by gravity. These include a ground reservoir with the floor resting on the surface (typically on a hill or other high point), or an elevated reservoir with column(s) supporting the tank, often referred to as a “water tower.” Current water storage in Oak Park Heights is completely supplied by elevated water towers.

- The **Distribution System** consists of the trunk water mains (10 inches or larger in diameter), the lateral water mains (up to 8 inches in diameter), the service pipes, valves, hydrants, and all appurtenances necessary to convey water from the supply sources and storage facilities to the points of demand. The existing City of Oak Park Heights water distribution system contains trunk water main ranging in diameter from 10 inches to 16 inches. Since the water laterals are normally routed along residential streets within a development, it is impossible to predict with any degree of accuracy where future laterals will be placed in undeveloped areas. Therefore, future lateral lines are excluded from consideration in analyzing the proposed future trunk distribution system hydraulics.

The phased construction of the City of Oak Park Heights water distribution system has primarily been dependent on development within the City. Where development occurs, water mains are constructed to serve those specific developments. However, development is not always absolutely contiguous and gaps in the distribution system may result. As development continues to move farther away from the supply sources and reservoirs, these gaps can cause problems with insufficient supply and pressures since undeveloped areas prevent the "looping" of the distribution system. Looping of the distribution system provides system reliability in the event of a water main break, but more importantly it provides the large flows needed for fighting fires.

2.0 EXISTING WATER SYSTEM

The City of Oak Park Heights water system includes water supply and treatment, distribution, and storage to meet the water demands of the utilities' customers. The utility operates two groundwater wells to supply water and maintains two water towers in the distribution system to sustain water system pressures and provide water during emergencies. Figure 1 illustrates the existing water distribution system from the hydraulic model.

2.1 WATER SUPPLY

The City of Oak Park Heights operates two active groundwater wells, both located in the center of the City near City Hall. City well capacities are approximately 1,000 gallons per minute (gpm) and 850 gpm based on recent pumping. Well water from the wells is disinfected with chlorine and fluoride is added to the water to prevent tooth decay prior to delivering it to the water distribution system.

Table 1 details the two wells with unique id, well aquifer, depth in feet (ft), date well drilled, inner casing diameter in inches (in), casing depth in ft, and approximate operational capacity.

Table 1 – Existing Groundwater Supply Wells

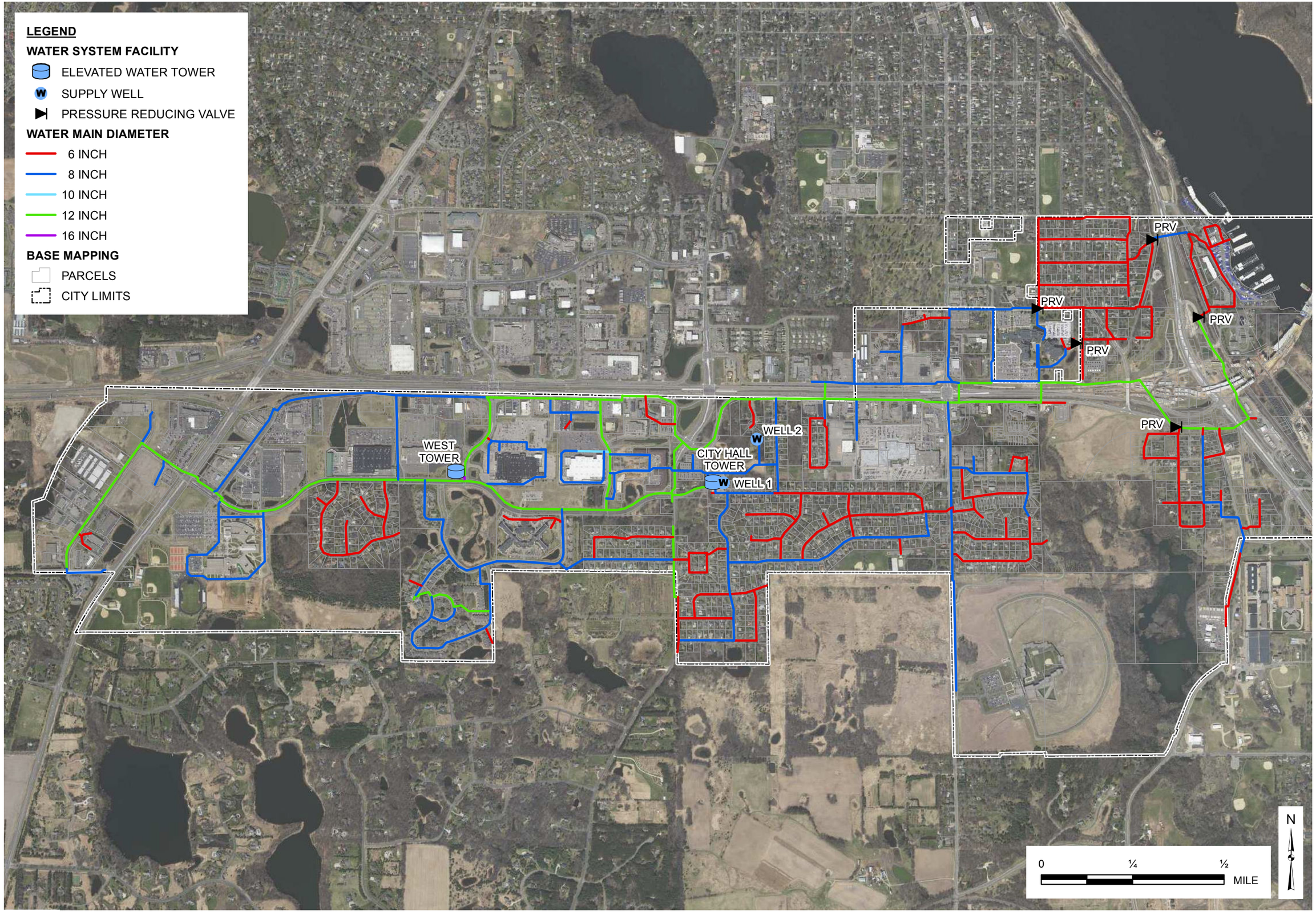
Source	Unique ID	Aquifer	Well Depth	Well Drilled	Casing Diameter	Casing Depth	Operational Capacity
Well 1	208794	Jordan	310 ft	1967	16 in	234 ft	1,000 gpm
Well 2	112205	Jordan	290 ft	1975	16 in	232 ft	850 gpm

The total raw water supply capacity is 1,850 gpm (2.66 million gallons per day (MGD)) based on all wells operational. The total firm capacity is 850 gpm (1.22 MGD) with the largest well out of service. To calculate firm capacity, it is recommended that the largest well be considered out of service to account for emergency repairs or well maintenance.

2.2 WATER DISTRIBUTION SYSTEM

The distribution system consists of trunk water mains (primarily 10 inches or larger in diameter), lateral water mains (6 inch and 8 inch diameter), service pipes, valves, hydrants, and all appurtenances to convey water from the supply sources and storage reservoirs to the point of demand. Typically, a network of large distribution mains extending from the water supply sources to the storage facilities located throughout the city form the core of the system.

The modeled water distribution system contains approximately 6.4 miles of trunk water main ranging in diameter from 10 inches to 16 inches out of a total of approximately 28.6 miles of total water main. Due to the large variations in ground elevation in the City of Oak Park Heights, the water system operates four pressure zones to provide adequate water system pressures to all customers.



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V:\1938\active\193803888\GIS\Projects\Fig 1 - Existing System.mxd

FIGURE 1 - EXISTING WATER SYSTEM

CITY OF OAK PARK HEIGHTS

May 2018

Stantec
Stantec Consulting Services
2335 Highway 36 West
Saint Paul, MN 55113
651.636.4600

Three pressure zones serve customers closest to the St. Croix River where ground elevation is lower than the rest of the City. The North Pressure Zone serves north of Highway 36 and east of Panama Ave., the South Pressure Zone serves south of Highway 36 and east of Valley View Park, and the Sunnyside Pressure Zone serves the residents and marina east of St. Croix Trail.

Each pressure zone is served by two pressure reducing valve (PRV) stations; each station has two PRVs to reduce pressure for domestic and fire flow water supply. The South Pressure Zone is primarily feed from the Main Pressure Zone through one PRV station, but a second PRV station on 59th St. N. can provide emergency supply from the Sunnyside Pressure Zone through flow reversal. The different pressure zones are illustrated in Figure 2 and details on each pressure zone are included in Table 2.

Table 2 – Water System Pressure Zones

Pressure Zone	Water Supply	Water Storage	Approximate Hydraulic Grade
Main Pressure Zone	Wells 1 and 2	0.75 MG	1,084 ft
North Pressure Zone	PRV Stations	-	1,005 ft
South Pressure Zone	PRV Stations	-	922 ft
Sunnyside Pressure Zone	PRV Stations	-	885 ft

2.3 WATER STORAGE

Maximum water demands are supplied through a combination of water from the supply facilities and water drawn from water storage facilities in the water distribution system. Although the rate of consumption is high during periods of peak hour demand, the duration of the extreme rate is relatively short. Therefore, a moderate quantity of water withdrawn from water storage reservoirs strategically located in the system assures satisfactory service, minimizes the total peak hour pumping and trunk main capacity required, and permits more uniform and economical operation of the pumping facilities.

Water storage in the system is also an important factor in insuring reliability of service during emergencies resulting from loss of power, temporary outages of water supply facilities, and from sudden demands for firefighting. Water storage allows these fluctuations in water demands to be met without having additional supply pumping capacity, which would typically be held in reserve. The City of Oak Park Heights maintains two elevated storage tanks, as detailed in Table 3. The total elevated water storage capacity is 0.75 MG.

Table 3 – Existing Water Storage

Tank	Location	Capacity	High Water Level	Head Range
City Hall Tower	Oak Park Road	0.25 MG	1,084 ft	32.5 ft
West Tower	58th Street N.	0.5 MG	1,084 ft	38.0 ft

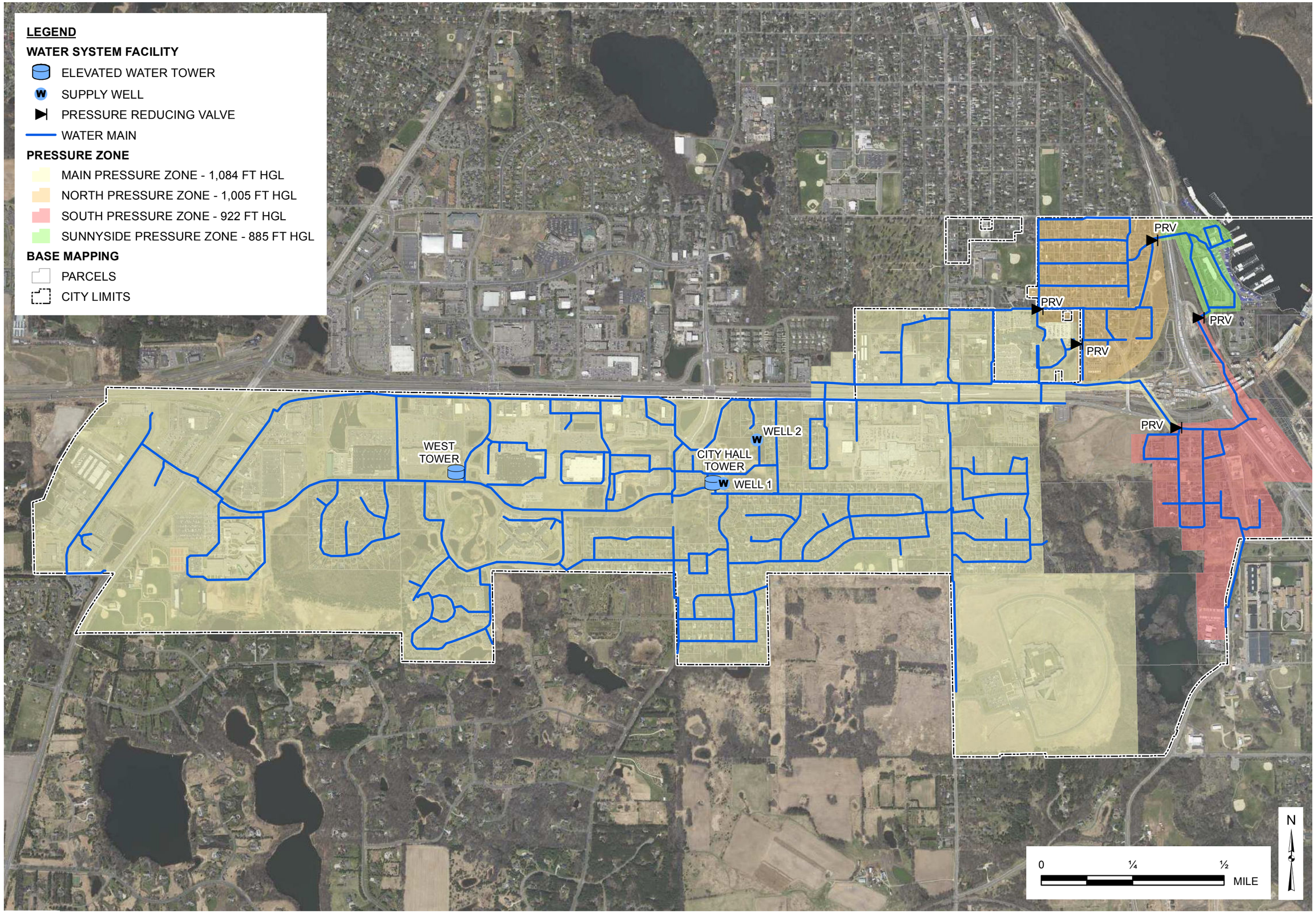

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FIGURE 2 - EXISTING PRESSURE ZONES

CITY OF OAK PARK HEIGHTS

May 2018

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3.0 WATER DEMANDS

Capacity requirements for the three water system components of supply, storage, and distribution are dictated by the demands placed upon them for production and distribution. The design of the water supply and distribution system improvements is based on estimates of the future water demands.

Water demand (both average and peak) is affected by many factors including population, population distribution, commercial and industrial activity, water quality, water rates, climate, soil conditions, economic level of the community, sewer availability, water pressures, and the condition of the water system. However, the most important factor is land use, which encompasses residential and non-residential development. Future land use data and industry standard water demands were used to estimate water demands for future service areas.

3.1 VARIATIONS IN WATER USE

The rate of water consumption will typically vary over a wide range during different periods of the year and during different hours of the day. Several characteristic demand periods are recognized as being critical factors in the design and operation of a water system. The system must be designed to provide satisfactory service at all times.

The average day demand is equal to the total annual pumpage divided by the number of days in the year. The principal significance of the average day demand is as an aid in estimating maximum day and peak hour demands. The average day demand is also used in estimating future revenues and operating costs such as power and chemical requirements, as these items are determined primarily by the total annual water requirements.

The maximum day demand is the critical factor in the design of certain elements of the water system. The principal items affected by the maximum day demand are raw water supply facilities and water storage requirements. Daily demand rates are expressed in million gallons per day (MGD).

The peak demands upon the water system are encountered during short periods of time on days of maximum consumption. These short period demands are referred to as hourly demands, which seldom extend over a period of more than four to six hours, during hot summer mornings or evenings when the domestic and sprinkling load is the greatest. The peak hour consumption rates impose critical demands on the distribution system. Hourly demand rates are expressed in gallons per minute (gpm).

The water supply facilities must be adequate to supply water near the maximum day demand. Sufficient water storage should be provided to meet hourly demands in excess of the water supply capacity. The total capacities should also include reserves for operation, future growth, industrial development, and fire protection.

3.2 EXISTING WATER SYSTEM DEMAND

Historical water use, current water use trends, and water demand variations were all evaluated to determine water demands for evaluation of the existing system. Additionally, an analysis of past water consumption characteristics was reviewed with population and land use growth projections for future water use.

3.2.1 Historical Water Use

Annual pumpage and sales data was reviewed from 2005 through 2016 from data provided in the City of Oak Park Heights *Water Supply Plan* in Appendix A. A summary of the historical pumpage and sales data is included in Table 4. The highest water pumpage over the last twelve years was in 2007 at 260.79 MGY. Total pumpage and water sales have decreased slightly over the last twelve years despite annual variations. Total water pumped decreased below 210 MGY in 2015 and 2016.

Table 4 – Historical Water Use Data

Year	Water Pumped	Residential Water Sold	Non-Residential Water Sold	Other Uses	UFW %	Average Day Demand	Maximum Day Demand
2005	223.896	104.893	107.350	17.0	3.9%	0.61	1.86
2006	248.730	121.415	131.825	23.0	-	0.68	1.75
2007	260.790	119.368	106.322	3.0	12.3%	0.71	1.65
2008	239.427	108.786	101.558	3.0	10.9%	0.65	1.45
2009	248.863	119.455	92.322	3.0	13.7%	0.68	1.39
2010	210.271	105.597	83.237	20.0	8.8%	0.57	1.11
2011	216.626	103.523	87.375	21.0	10.5%	0.59	1.35
2012	243.760	115.391	87.682	23.0	15.5%	0.66	1.25
2013	228.233	112.105	86.179	21.0	11.8%	0.62	1.45
2014	221.999	96.650	83.487	17.0	17.5%	0.60	1.37
2015	209.314	96.267	84.453	18.0	12.2%	0.57	1.10
2016	206.465	97.738	87.840	22.5	8.2%	0.57	1.04

Water sales have decreased from a high of over 250 MGY in 2007 to 180 MGY in 2014 and 2015. Total water delivered has been below 200 MGY for five of the last seven years. The City has sold nearly 1 billion gallons of water in the last five years. Other water uses includes non-essential water usage and water used for distribution system maintenance (e.g. flushing, water main repairs, and water to prevent freezing). Since 2007, unaccounted for water (UFW), i.e. water lost, has averaged approximately 12 percent. As an industry standard, it is recommended that the percentage of unaccounted for water should be maintained below 10 percent.

Water sales are reported to the Minnesota DNR in five categories: residential, commercial, industrial, agricultural, and other. Since 2010, residential water sales are approximately 104 MGY and accounted for roughly 54 percent of all water sales. Individual non-residential customers can account for a large portion of water sales. In 2015, the largest 5 water users accounted for 21.5 percent of total water sales. Four of the five largest water users are public institutions and the fifth is a residential care center. Water sales for the ten largest water users are listed in the *Water Supply Plan* in Appendix A.

3.2.2 Existing Design Demands

For evaluation of the City of Oak Park Heights water system, existing average day, maximum day, and peak hour water demands were used. The average water pumpage since 2010 is approximately 0.6 MGD. The recommended design average day demand is 0.6 MGD. The highest maximum day pumpage exceeded 1.75 MGD in July of 2005 and 2006 but has averaged approximately 1.24 MGD since 2010. To determine the design maximum day demand, a review of the maximum to average day ratios is required.

Since 2005, the maximum to average day pumpage ratio has varied between 1.77 in 2010 and 3.05 in 2005. In 2006, the maximum day ratio was approximately 2.6 times average day. Since 2010, the maximum day ratio exceeded 2.3 times only twice. For a conservative evaluation of the water system and future infrastructure needs, the design maximum day demand ratio must not be exceeded. For this study, the design maximum day demand ratio is recommended to be 2.6 with the calculated design maximum day demand of 1.6 MGD.

The peak hour demand is the maximum hour of water demand which occurs on the maximum day. Peak hour demands typically occur in the morning or evening when residential and irrigation water use increase. Peak hour ratios typically range from 1.4 to 2.0 times maximum day demand. A higher percentage of industrial or commercial water use decreases the peak, since industrial usage does not fluctuate significantly from hour to hour. An industry standard time of day demand curve from the American Water Works Association (AWWA) is illustrated in Figure 3. It is recommended a design peak hour ratio of 1.6 be used.

The design existing water demands for this study are summarized in Table 6. The average day demand was based on evaluation of the average total pumpage over the last six years. As discussed, the maximum day and peak hour ratios were determined based on Oak Park Heights water demand trends and typical industry standards.

Table 5 – Existing Design Water Demand

Average Day Demand	Maximum Day Demand	Peak Hour Demand
0.6 MGD	1.6 MGD[1]	1,750 gpm[2]

[1] Maximum day demand design factor equal to 2.6.
[2] Peak hour demand design factor equal to 1.6.

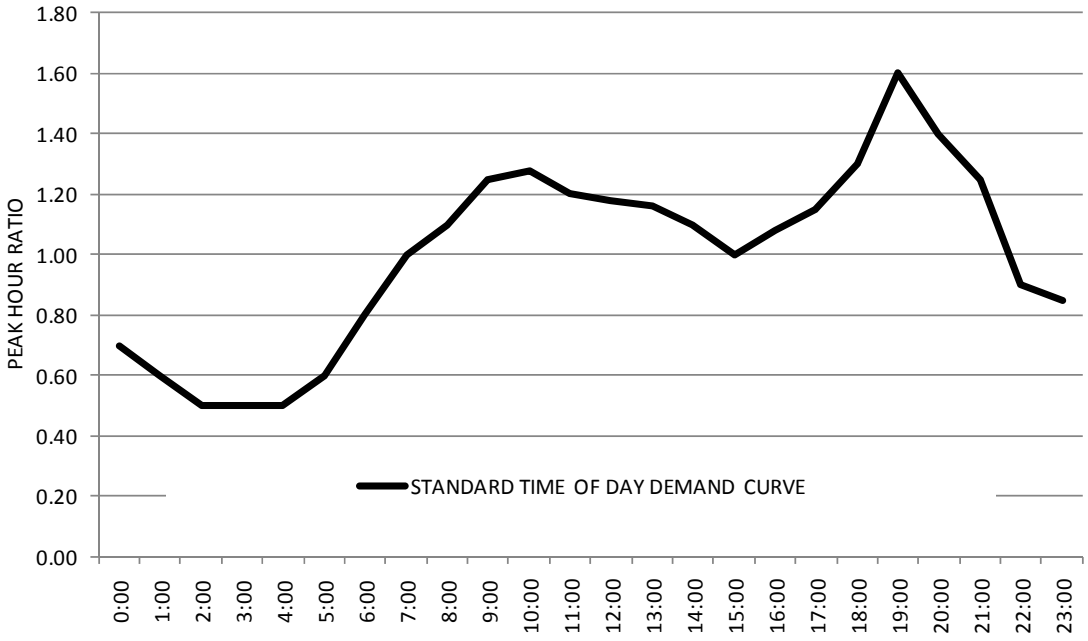

Figure 3 – Time of Day Demand Curve

3.3 PROJECTED COMMUNITY GROWTH

To project future water demand, future community growth projections are needed. Two methods for determining future water demands were completed. Future water demand was calculated on a per capita basis in the *Water Supply Plan* based on Metropolitan Council's population projections. An evaluation of future developable land was also conducted to determine future demand based on land use. The City of Oak Park Heights 2040 Comprehensive Plan provides future land use.

3.3.1 Water Use by Population Projections

The Metropolitan Council's future population projections are included in the *Thrive MSP 2040* Plan and are required to be used in the City's *Water Supply Plan*. The Plan projected 2030 population is 5,300 and the 2040 population is 5,700 for the City of Oak Park Heights. The total water use per person was determined to be approximately 130 gallons per capita per day (gpcd) since 2010. Additional details are provided in the *Water Supply Plan*, included as Appendix A.

Table 6 – Future Water Requirements by Population

Year	Population	Projected Total Per Capita Water Use	Projected Average Day Demand	Projected Maximum Day Demand
2016	4,741	130 gpcd	0.62 MGD	1.60 MGD
2020	4,880	130 gpcd	0.63 MGD	1.65 MGD
2030	5,300	130 gpcd	0.69 MGD	1.79 MGD
2040	5,700	130 gpcd	0.74 MGD	1.93 MGD

The future 2040 maximum day demand of 1.93 MGD is an approximately 20 percent increase from the existing design demand.

3.3.2 Water Use by Land Use Projections

The City of Oak Park Heights 2040 Comprehensive Plan determined the parcels and acres available for development. Figure 4 illustrates the future land use as provided in the City Comprehensive Plan. The total acres for future development were determined in the Comprehensive Plan and are listed in Table 7 along with projected water use. Water demands were projected per acre of developable land based on historical water use, current water use trends, future planning efforts, and industry standards.

Water demand requirements of 1,500 gpd/ac for industrial and commercial land uses are projected to cover anticipated growth within the City of Oak Park Heights. Demand projections should be reviewed if a large, wet industry locates in the water system or major changes in water use are planned at existing industrial customers.

Table 7 – Future Development Acres and Water Requirements by Land Use

Land Use Type	Available Acres	Water Demand (gpd/ac)	Average Day Water Demand
Commercial	26.0	1,500	0.039 MGD
Low Density Residential	7.0	600	0.004 MGD
Medium Density Residential	5.0	1,125	0.006 MGD
High Density Residential	5.0	1,200	0.006 MGD
Total	43 AC	-	0.055 MGD

With only 43 acres for future growth, the additional future water demand is 0.055 MGD average day and 0.14 MGD maximum day demand. Future water demand based on the 2040 projected population of 5,700 provides a future water demand of 0.33 MGD maximum day. For a conservative evaluation of the water system and future infrastructure needs, it is recommended to use the per capita water demands based on the Metropolitan Council 2040 population of 5,700.

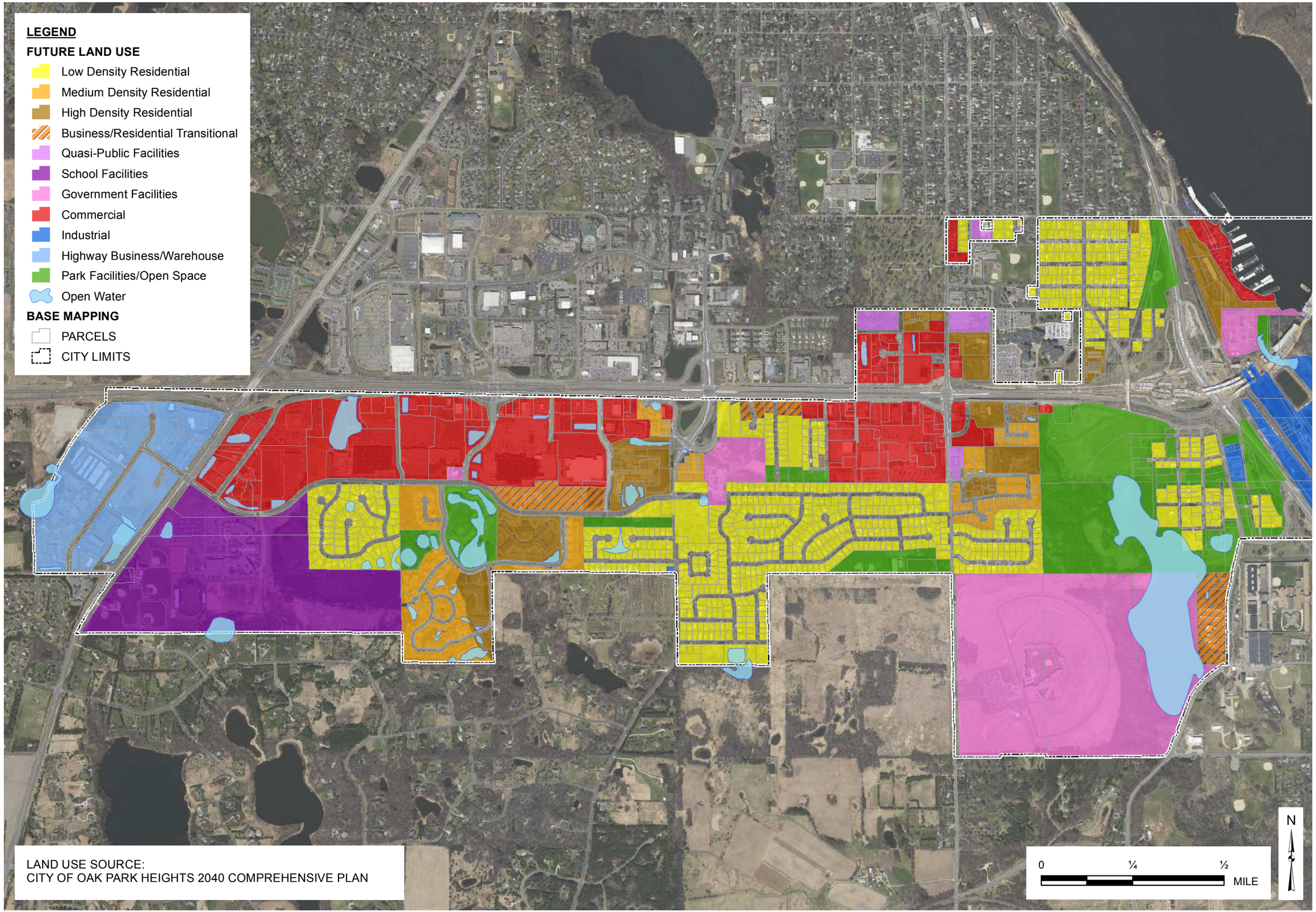

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FIGURE 4 - 2040 FUTURE LAND USE

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3.4 PROJECTED WATER SYSTEM DEMAND

Based on the existing demand conditions and projected growth estimates the design water demands are summarized in Table 8. Future average day demand is based on water demand for a 2040 population of 5,700 as included in Table 6. Future maximum day and peak hour demand factors were based on design demand factors determined to be 2.6 and 1.6 for existing and future evaluation.

Table 8 – Water Demand Projections for Future Growth

Demand Condition	Existing Design Water Demand	Future Design Water Demand
Average Day Demand	0.6 MGD	0.74 MGD
Maximum Day Demand	1.6 MGD[1]	1.93 MGD[1]
Peak Hour Demand	1,750 gpm[2]	2,140 gpm[2]

[1] Maximum day demand design factor equal to 2.6
[2] Peak hour demand design factor equal to 1.6.

4.0 EXISTING WATER SYSTEM EVALUATION

4.1 HYDRAULIC MODEL

An updated computer hydraulic model was developed to represent the current water system. A hydraulic model of nearly all water mains 6 inch and larger was created using WaterCAD V8i software from Bentley Systems, Inc. The hydraulic model performs hydraulic analysis based the Hazen-Williams energy loss formula and the Hardy Cross procedure. The Hardy Cross procedure is an iterative process in which both flows and energy losses are balanced throughout the entire system. The hydraulic model includes well supply, water mains, elevated water towers, and pressure reducing valves.

The hydraulic model is used for deficiency analysis, operation reviews, emergency planning, and long term planning. The hydraulic model was developed to represent the existing water system with existing water demands and the proposed future water system with future water demands. Field testing and hydraulic model calibration was not completed during this project.

All water main was reviewed and included from the most up to date GIS mapping available. Water system facilities were reviewed and modeled to provide water supply and water storage in the hydraulic model. 2016 water sales, pumpage, actual metered water usage of all water users was reviewed and applied to the hydraulic model. Using parcel id and water usage for each account, the actual metered water use was accurately applied to the hydraulic model.

4.2 WATER SYSTEM HYDRAULIC EVALUATION

Municipal water systems are typically designed with a minimum pressure of 35 psi at all locations in the service area under normal operating conditions. Minnesota Administrative Rules require minimum pressures be available to plumbing fixtures within buildings. When water system pressures exceed 80 psi, the Minnesota Plumbing Code requires installation of a pressure reducing valve on the water service. Water systems are also required to be designed and operated to maintain 20 psi residual pressure throughout the water system during emergency operation (e.g. firefighting conditions).

4.2.1 Water System Pressure

A hydraulic analysis of the Oak Park Heights water supply and distribution system was conducted using the hydraulic model. The existing average day water system pressure was calculated with a total distribution system demand of 0.6 MGD. The average day water system pressures are illustrated in Figure 5 with wells off and water tower levels 5 ft below overflow.

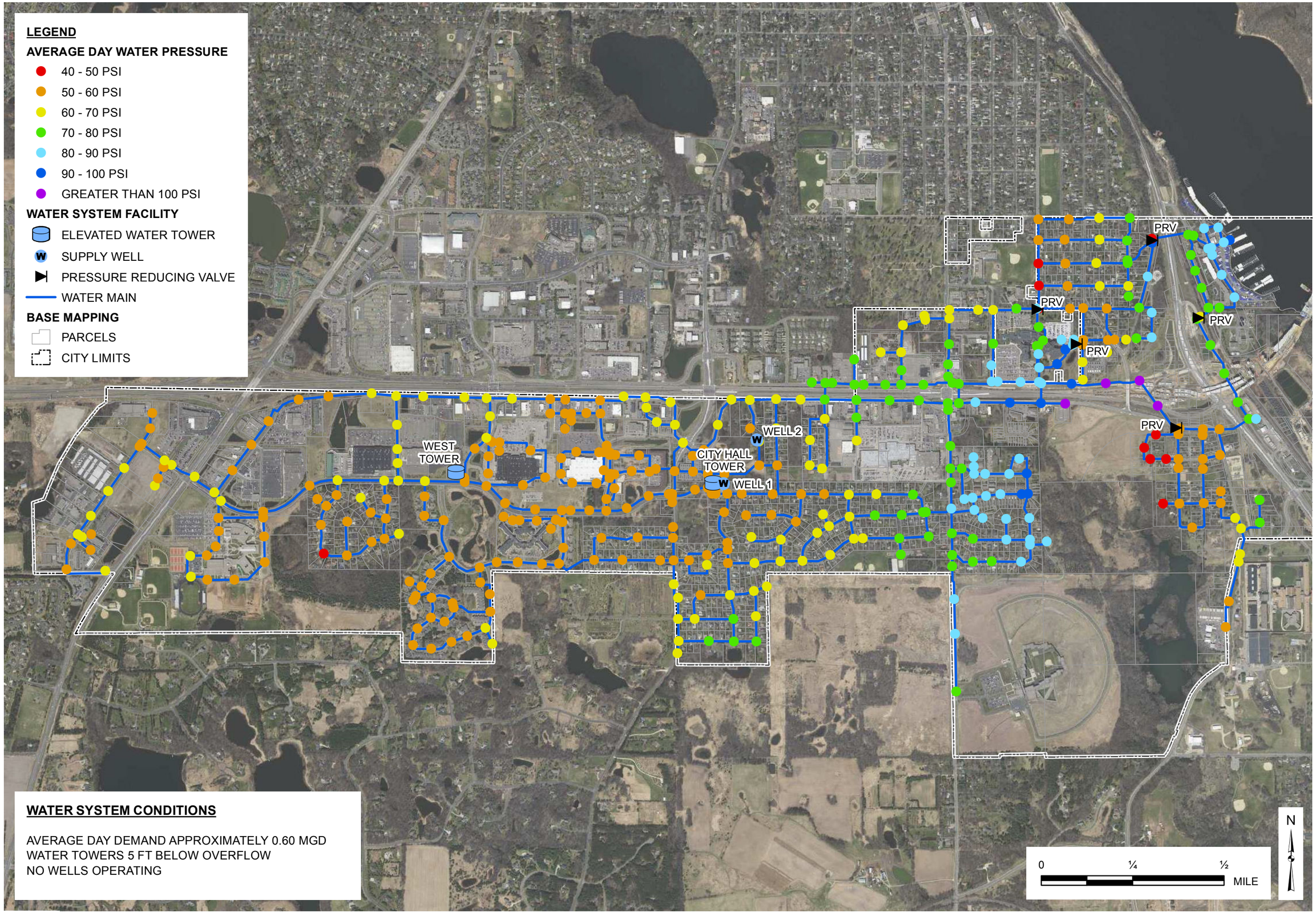

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FIGURE 5 - EXISTING AVERAGE DAY WATER SYSTEM PRESSURE

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Water system pressures range between 40 and 95 psi for nearly all customers. The pressure zones balance customer pressures as ground elevations drops to the river. Water system pressure exceeds 100 psi near Highway 36 and Beach Road where trunk water main serve the South Pressure Zone, but no customer service connections exist. Water pressures were also reviewed under peak hour water demands with a single well operating, but water system pressure did not fluctuate significantly. No area within the City fall below 35 psi during any demand conditions.

4.2.2 Water System Fire Flow

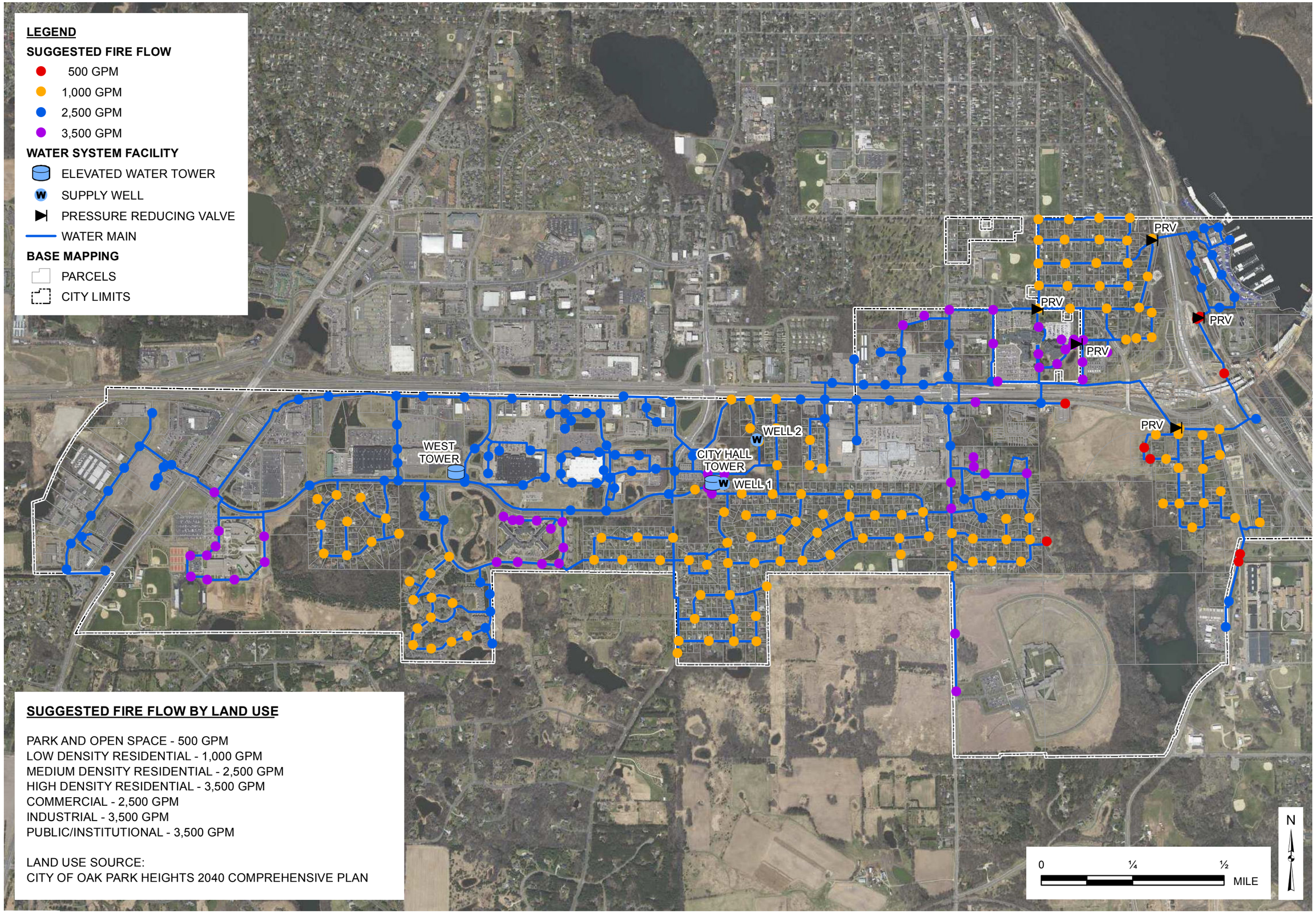
The hydraulic model was used to determine the approximate available fire flow while maintaining 20 psi within the distribution system. Needed fire flows at each location depend on the land use type and building construction. It is recommended that fire flow requirements are reviewed with staff and Fire Officials. Suggested fire flow recommendations were assigned based on the 2040 Comprehensive Plan land use are illustrated in Figure 6. Typical recommended fire flows by land use are listed below:

- Park, Open Space – 500 gpm
- Low Density Residential – 1,000 gpm
- Medium Density Residential and Commercial – 2,500 gpm
- High Density Residential, Industrial, and Public/Institutional – 3,500 gpm

The approximate available fire flow results while maintaining 20 psi throughout the water system are illustrated in Figure 7. Fire flow evaluations were conducted under existing maximum day demand conditions with a design demand of approximately 1.6 MGD. Well 1 was operating at 1,000 gpm and water tower levels are 10 ft below overflow.

Fire Flows within the water system range from approximately 775 gpm to well over 3,500 gpm. The lowest available fire flows exist at water main dead ends and on small diameter water mains. Available fire flows greater than 3,500 gpm are available throughout the majority of large diameter water mains which make up the trunk water system.

Continued looping of dead end water mains and replacement of old, small diameter water mains where higher fire flows are suggested will improve available fire flow. Industrial and institutional fire flow requirements should be met from 12 inch water main or strongly interconnected 8 inch water mains. Water main looping or small diameter replacement may be required if the available fire flow is not adequate for a utility customer.



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V:\1938\active\193803888\GIS\Projects\Fig 6 - Fire Flow Need.mxd

FIGURE 6 - SUGGESTED FIRE FLOW BASED ON LAND USE

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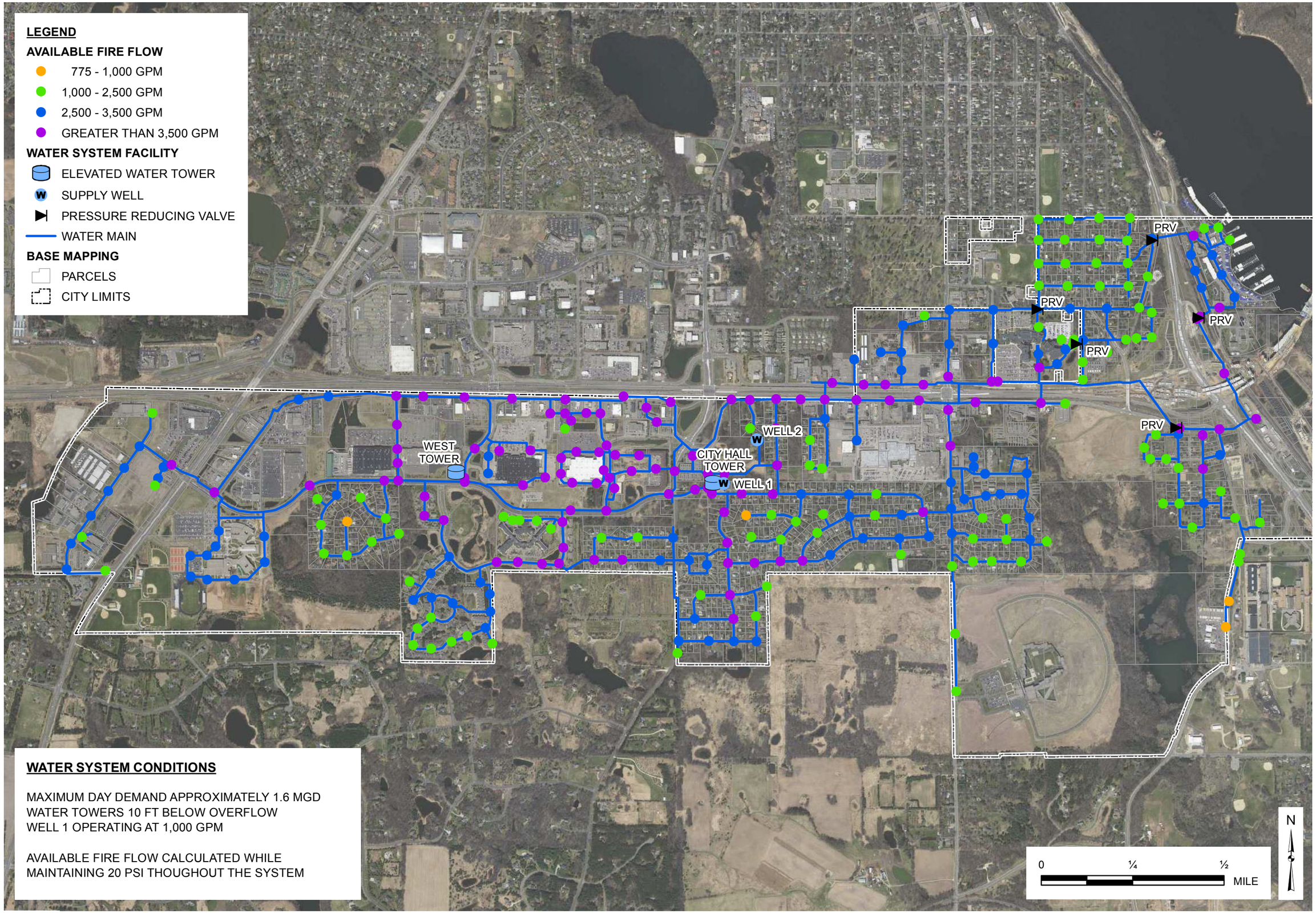

WATER SYSTEM CONDITIONS

MAXIMUM DAY DEMAND APPROXIMATELY 1.6 MGD
WATER TOWERS 10 FT BELOW OVERFLOW
WELL 1 OPERATING AT 1,000 GPM

AVAILABLE FIRE FLOW CALCULATED WHILE
MAINTAINING 20 PSI THOUGHOUT THE SYSTEM

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FIGURE 7 - EXISTING MAXIMUM DAY AVAILABLE FIRE FLOW

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Several areas in the water system where increases in fire flow would be possible through system improvements were identified for further review and are discussed below.

- The Kern Center, west of Stillwater Blvd., has fire flows between 1,900 – 3,250 gpm. Looping of the dead end water main will greatly increase available fire flow.
- Fire hydrants around Stillwater Area High School provide approximately 2,500 - 3,300 gpm fire flow. Looping of the school water mains would improve fire flow.
- Fire hydrants north of Boutwells Landing are served by a dead end 6 inch water main and provide 1,000 – 1,800 gpm. Fire flows on the adjacent roadways east and south provide greater than 3,500 gpm. Looping the 6 inch water main on the north is recommended to improve the fire flow.
- Several high density residential locations have limited fire flow due to existing 6 inch water mains. 6 inch water main on 62nd St. N. and around 58th St. N. prevent meeting the suggested fire flow. Looped 8 inch water mains would improve available fire flow.
- The 8 inch dead end water main serving the Minnesota Correctional Facility – Oak Park Heights on N. Osgood Ave provides only 1,400 gpm. Looping of the water main is recommended to improve fire flow and water supply redundancy. A 12 inch loop would be necessary to provide 3,500 gpm but would be costly and cause stagnant water, which may lead to water quality concerns.
- The fire hydrants around the Washington County Government Center and Law Enforcement Center are on dead end water mains. Fire flows on these dead end water mains do not reach the suggested fire flow of 3,500 gpm. These facilities likely have additional fire protection means and may not require additional fire flow.

Fire flows based on land use are not always as accurate as desired and therefore fire flow availability should be reviewed with Fire Officials based on occupancy use and building construction. For example, a large commercial facility may be better classified as industrial or institutional for firefighting purposes. A large commercial facility may require a higher fire flow than the commercial land use dictates, due to the size, construction, and use of the facility. Industrial or institutional buildings are assigned a fire flow as high as 3,500 gpm, but the facility may contain fire sprinklers, in which case fire flow requirement may be as low as 1,500 gpm.

4.2.3 Water System Headloss and Velocity

High velocity or headloss in water mains are indicators of potential capacity problems. Velocities greater than 5 feet per second (fps) and headlosses of 10 ft per 1,000 ft or greater during peak demands may contribute to low pressures and reduced fire flows. No water mains in the distribution system were identified to have velocities greater than 5 fps or 10 ft per 1,000 ft headlosses during all existing demand conditions.

4.3 SUPPLY – STORAGE EVALUATION

Supply capacity, storage volume, and distribution system capacity are interrelated. Water storage acts as additional supply sources during peak periods when the primary supply source is incapable of meeting the total demand. Therefore, water storage facilities stabilize the peaks in water demand and allow the system to produce water at a lower, more uniform rate. The system must also be capable of conveying water from the supply source to water storage without allowing the development of high pumping heads and high pressures in the system during low usage periods. There are an infinite number of combinations of supply and storage that can be used to meet peak water demands. An economical system can be obtained through an analysis of supply and storage needs.

For the majority of communities, the ideal combination of supply and storage is found when the supply equals 100 percent of the maximum day demand. This is consistent with the recommendations in both *Recommended Standards for Water Works* by Great Lakes Upper Mississippi River Board and American Water Works Association *Manual of Practice M32 - Distribution Network Analysis for Water Utilities*. The Oak Park Heights water system is not currently capable of supplying the design maximum day demand of 1.6 MGD.

The amount of storage required in the water system is determined from water demands, fire flow requirements, and operational needs. There are numerous ways to determine the required water storage for a water system. *Recommended Standards for Water Works* recommends an average day demand be provided by water storage. Large firefighting operations may require a fire flow volume of 3,500 gpm for 3 hours or 630,000 gallons. This is an industry standard fire flow for industrial and large institutional businesses and allows the City to receive the maximum points for the distribution system portion of the Insurance Services Office rating.

For larger communities, the recommended water storage volume typically includes fire flow capacity with additional operational space for pump operation or off peak pumping. However, communities the size of Oak Park Heights must balance providing this large fire flow storage against stagnate water and freezing concerns. Another approach to include capacity for hourly fluctuations, moderate fire flow needs, unusual demands on the system, and operational parameters is to provide 30 percent of the maximum day demand as the recommended water storage capacity.

Therefore, it is recommended the Oak Park Heights water system maintain between 30 percent of maximum day demand and average day demand or approximately 0.5 MG – 0.6 MG of water storage. The 0.75 MG of water storage in the existing two elevated water towers exceeds the recommendation.

Water supply reliability does not meet requirements of the water system as detailed in Table 9. Firm water supply capacity is approximately 1.22 MGD with the largest well out of service. Exiting water storage capacity exceeds the recommended storage volume.

Table 9 – Existing Water Supply and Storage Recommendations

Water System Component	Existing Firm Capacity	Recommended Capacity	Additional Capacity
Water Supply	1.22 MGD	1.6 MGD	0.38 MGD
Water Storage	0.75 MG	0.50 – 0.60 MG	NONE

Additional water supply is required to meet existing maximum day demands. With either well out of service, the well in service cannot supply the existing maximum day demand of 1.6 MGD. A third groundwater well is recommended to meet existing maximum day demands. Roughly ten years ago, a potential well site was evaluated at the end of Memorial Ave. N.; southwest of the intersection of Highway 36 and Stillwater Blvd. N. An evaluation of nearby wells indicated water quality was good for a municipal well at this location.

The current water supply need of 0.38 MGD or 265 gpm is only a portion of the supply from a new 1,000 gpm well. However, during maximum day demands on hot, dry summer days, there is often only a few hours to return water storage levels to full. While the City has more storage capacity than currently required, the 250,000 gallons of extra storage would be used quicker than it could be replenished with a single operable well.

An alternative option was considered during this project that may delay the need for a third well. A dedicated emergency interconnection with the City of Stillwater along 60th St. N. that supplied at least 265 gpm during maximum day demand could supplement water supply. The City of Oak Park Heights water system could receive additional supply at this location. However, no evaluation was completed, at this time, to determine if the City of Stillwater would be able to supply the required flow and pressure at this location or if the City would be willing to enter into a cooperative agreement.

4.4 EXISTING WATER SYSTEM EVALUATION SUMMARY

A hydraulic analysis of the Oak Park Heights water supply and distribution system was conducted using the hydraulic model. Water system pressures range from 40 to 95 psi during all existing demand conditions. No water mains were identified to have velocities greater than 5 fps or 10 ft per 1,000 ft headlosses during existing evaluations.

Fire Flows within the water system range from approximately 775 gpm to well over 3,500 gpm. The lowest available fire flows exist at dead end water mains and on small diameter water mains. Available fire flows greater than 3,500 gpm are available throughout the majority of the large diameter water mains which make up the trunk water system. Areas exist where water main improvements will increase available fire flow; several areas were reviewed further with water main improvements suggested.

Supply and storage requirements for the water system are shown in Table 9. Current water storage exceeds recommended capacity, but existing water supply does not meet maximum day demand. Firm water supply capacity is approximately 1.22 MGD, less than the design maximum day demand of 1.6 MGD. A third well is recommended to meet existing and future water demands.

5.0 PROPOSED FUTURE WATER SYSTEM EVALUATION

5.1 PROPOSED FUTURE WATER SYSTEM IMPROVEMENTS

The proposed future water system is detailed in this section to include all recommendations and subsequent evaluations. The proposed trunk water system is illustrated in Figure 8 and improvements are detailed in the sections below. Additional water supply and trunk water mains are proposed to meet existing needs and support future growth to serve the 2040 population of 5,700 as detailed in the *Water Supply Plan*. Proposed water mains were designed to provide an economical and adequate water system to support future growth and provide satisfactory service to all City of Oak Park Heights customers.

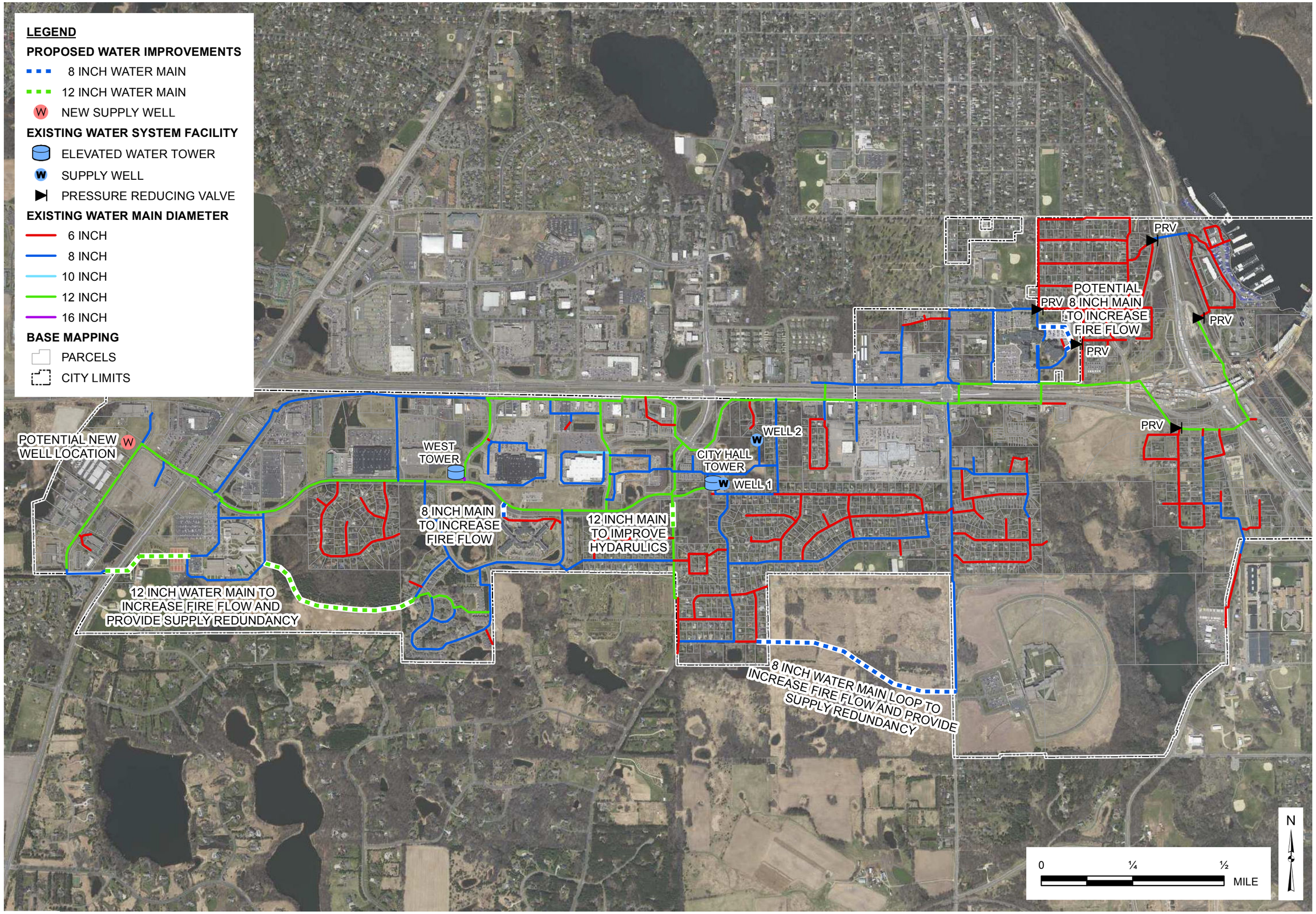
To meet the future design maximum day water demand of 1.93 MGD, additional water supply is required. A potential well location was previous sited near Highway 36 and Stillwater Blvd. The proposed future water system improvements are explained in detail throughout this section.

5.2 WATER SYSTEM HYDRAULIC EVALUATION

Future improvements are designed with a minimum pressure of 45 psi at all locations in the service area under all normal operating conditions. Water systems are required to be designed and operated to maintain 20 psi residual pressure throughout the water system during emergency operations. Future water system growth was designed to provide adequate pressure and fire flow along trunk water mains.

Additional trunk water mains are recommended to improve available fire flow, increase water supply redundancy, and support future growth. Improvements to the existing trunk system are included in several locations, including trunk water mains around the Stillwater Area High School, on Oakgreen Ave. N., loop the Minnesota Correction Facility supply on Osgood Ave to the west, and potentially complete a loop on the west side of the Washington County Law Enforcement Center. Trunk water mains are proposed to enhance the water system to meet existing needs and future growth.

As detailed in the 2007 Study, if development occurs along the City limits in Lake Elmo between Oakgreen Ave. and Nolan Parkway, the water system could be expanded to serve this area. Construction of water main through this location would allow 12 inch, trunk water main to be extended west completing a southern 12 inch water main loop. Since service outside the Oak Park Heights city limits was not included in this study, this water main is not included in the proposed future water system.



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V:\1938\active\193803888\GIS\Projects\Fig 8 - Future System.mxd

FIGURE 8 - PROPOSED FUTURE TRUNK WATER SYSTEM

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5.2.1 Water System Pressure

A hydraulic analysis of the proposed future Oak Park Heights water supply and distribution system was conducted using the hydraulic model. The average day water system pressure was calculated with a total system demand of 0.74 MGD. The average day water system pressure is illustrated in Figure 9. Water tower levels were modeled 5 ft below overflow and no wells were operating.

The proposed improvements and increased water demands resulted in no significant changes to the water system pressures. Pressures throughout the water system remain between 40 and 95 psi for nearly all customers. New water services areas are consistent with existing system pressures.

5.2.2 Water System Fire Flow

The hydraulic model was used to determine the approximate available fire flow while maintaining 20 psi within the distribution system. Suggested fire flow capacity assigned based on the Oak Park Heights Comprehensive Plan land use were illustrated previously in Figure 6.

The approximate future available fire flow results while maintaining 20 psi throughout the water system are illustrated in Figure 10. Fire flow evaluations were conducted under future maximum day demand conditions with a design demand of approximately 1.93 MGD. Well 1 was operating at 1,000 gpm and water tower levels were 10 ft below overflow.

Fire Flows within the water system range from approximately 775 gpm to well over 3,500 gpm. The lowest available fire flows exist at water main dead ends and small diameter water mains. Specific improvements were included to improve fire flow in several key areas. For higher fire flow needs, it is recommended that water main upsizing be included with any future street reconstruction project. Industrial and institutional fire flow requirements should be met from 12 inch water main or strongly interconnected 8 inch water mains. Available fire flows greater than 3,500 gpm are available throughout the majority of large diameter water mains which make up the trunk water system.

5.2.3 Water System Headloss and Velocity

High velocity or headloss in water mains are indicators of potential capacity problems. Velocities greater than 5 feet per second (fps) and headlosses of 10 ft per 1,000 ft or greater during peak demands may contribute to low pressures and reduced fire flows. High velocities and headlosses may also occur during periods of increased flow into and out of the water towers.

The 8 inch water main between Well 1 and the City Hall water tower was identified to have velocities at 5 fps and 11 ft per 1,000 ft headlosses during future peak water demand conditions. This water main is recommended to be upsized when replacement is needed. The water main just exceeds recommended maximum velocity and headloss during peak hour demands.

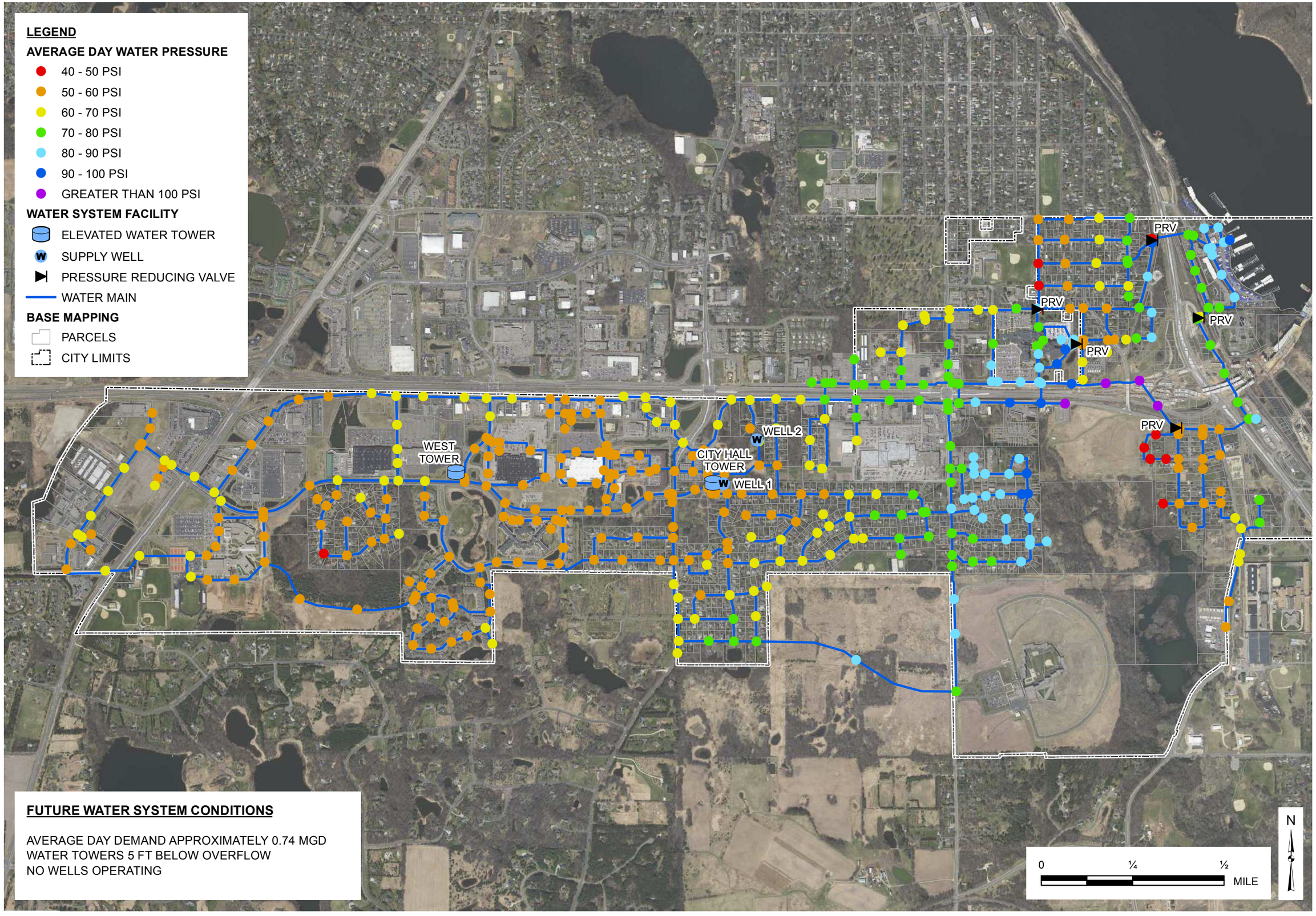

FIGURE 9 - PROPOSED AVERAGE DAY WATER SYSTEM PRESSURE

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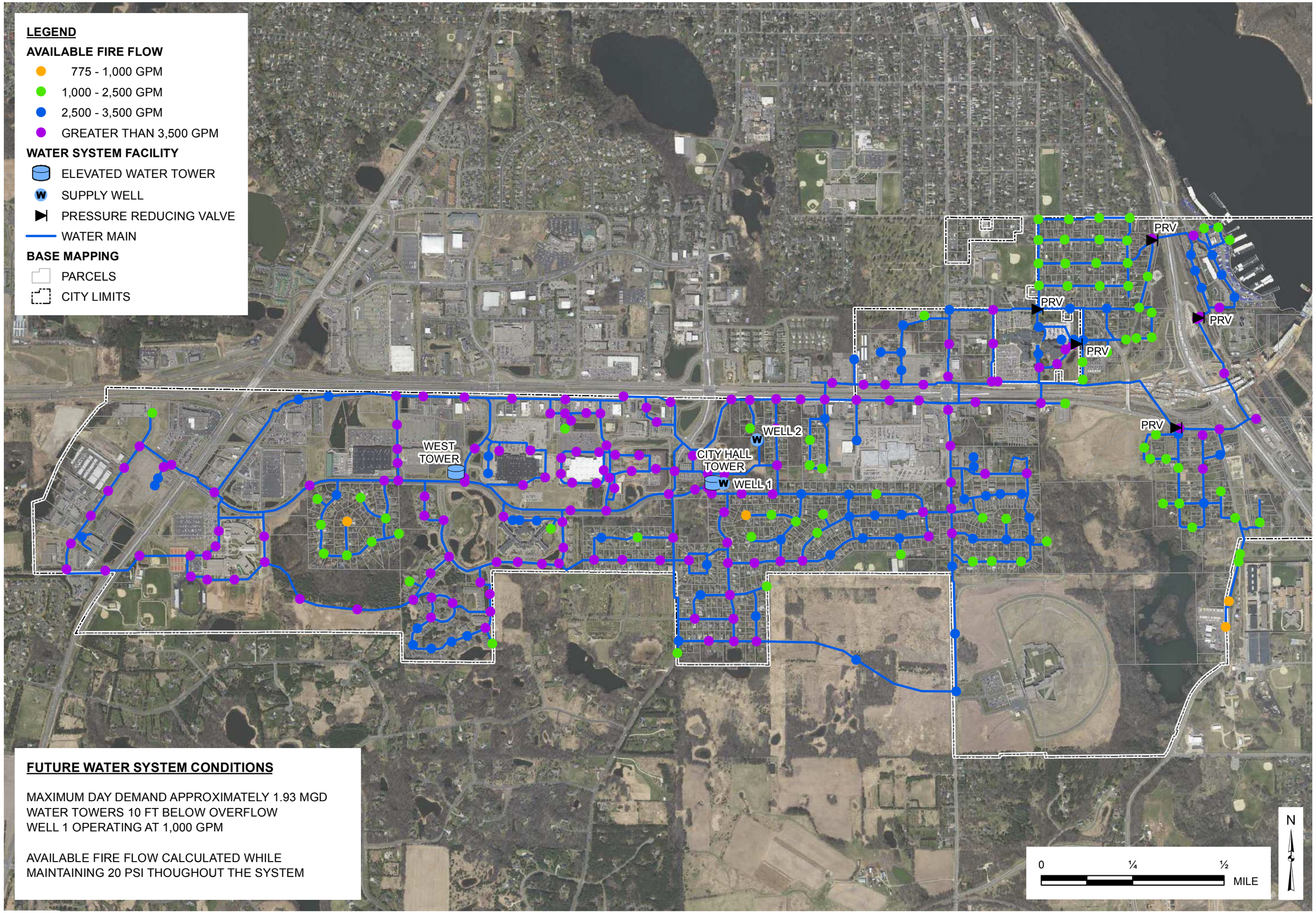

FUTURE WATER SYSTEM CONDITIONS

MAXIMUM DAY DEMAND APPROXIMATELY 1.93 MGD
WATER TOWERS 10 FT BELOW OVERFLOW
WELL 1 OPERATING AT 1,000 GPM

AVAILABLE FIRE FLOW CALCULATED WHILE
MAINTAINING 20 PSI THOUGHOUT THE SYSTEM

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V:\1938\active\193803888\GIS\Projects\Fig 10 - Future Fire Flow.mxd

FIGURE 10 - PROPOSED MAXIMUM DAY AVAILABLE FIRE FLOW

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5.2.4 Water System Replacement and Rehabilitation

As water systems age, it is important that a proactive water main replacement/rehabilitation program is implemented. Many water utilities plan to replace a small percentage of the water system each year. Oak Park Heights has been replacing aging infrastructure as street reconstruction projects occur. Review and inspection of old, critical water mains may identify water mains in need of replacement; preventing major failures or untimely breaks.

5.3 SUPPLY – STORAGE EVALUATION

Current firm capacity from the two Oak Park Heights wells is 1.22 MG; therefore, an additional 0.71 MGD is needed to meet the 1.93 MGD future maximum day demand. A new well will provide the water required and is anticipated to yield approximately 1,000 gpm similar to existing Jordan aquifer wells. The proposed future firm capacity is 2.66 MGD supplying the water system with one well out of service.

A third groundwater well increases the water system supply capacity beyond the future maximum day demands. As previously stated, a potential well site was evaluated near the southwest of the intersection of Highway 36 and Stillwater Blvd. N. Based on groundwater contamination southeast of the City, a third well should be located at the west end of the City. A well siting study is recommended to determine the best location. The existing 12 inch trunk watermain will provide sufficient capacity for the new well and the proposed water main looping will further improve hydraulics and provide additional redundancy.

Current and future water storage requirements are met in the water distribution system without additional water storage. Future storage capacity of 0.60 – 0.74 MG is recommended based on 30 percent of future maximum day demand up to total average day water usage.

Table 14 summarizes the future water system water supply and storage requirements.

Table 10 – Proposed Future Water Supply and Storage Recommendations

Water System Component	Future Firm Capacity	Recommended Capacity	Additional Capacity
Water Supply	2.66 MGD[1]	1.93 MGD	NONE
Water Storage	0.75 MG	0.60 – 0.74 MG	NONE

[1] Future supply capacity includes the proposed 1,000 gpm supply well.

5.4 PROPOSED FUTURE WATER SYSTEM EVALUATION SUMMARY

A hydraulic analysis of the proposed future Oak Park Heights water supply and distribution system was conducted using the hydraulic model. Throughout nearly the entire water system pressures continue to range from 40 to 95 psi during all demand conditions. The 8 inch water main between Well 1 and the City Hall water tower was identified to have velocities at 5 fps and 11 ft per 1,000 ft headlosses during peak water demand conditions. This water main is recommended to be upsized when replacement is needed.

Fire Flows within the water system range from approximately 775 gpm to well over 3,500 gpm. The lowest available fire flows exist on dead end and small diameter water mains. Recommended distribution system improvements were made for several locations to improve fire flow. Available fire flows greater than 3,500 gpm are available at nearly all locations throughout the proposed trunk water system serving commercial, industrial, and public land uses. Fire flow availability should be reviewed with Fire Officials based on occupancy use and building construction.

Supply and storage requirements are shown in Table 10. Additional water supply capacity is required to meet current and future water demands. To meet existing and future water supply, a new water supply well is recommended to be constructed. Previously, a future well was sited southwest of the intersection of Highway 36 and Stillwater Blvd. N. The proposed future trunk distribution system is illustrated in Figure 8.

6.0 CAPITAL IMPROVEMENTS PLAN

6.1 PROPOSED FUTURE WATER SYSTEM

Additional water supply and trunk water mains are required to meet existing and future water demands and growth in Oak Park Heights. A new groundwater well is recommended to meet water supply needs. Future water mains are proposed to improve existing distribution system and support future development. The proposed future trunk distribution system is illustrated in Figure 9 in the prior proposed improvements section.

Additional water supply is required to meet existing maximum day demands. With either well out of service, the well in service cannot supply the existing maximum day demand of 1.6 MGD. A third groundwater well is recommended to meet existing maximum day demands. About ten years ago, a potential well site was evaluated at the end of Memorial Ave. N.; southwest of the intersection of Highway 36 and Stillwater Blvd. N. An evaluation of nearby wells indicated water quality was good for a municipal well at this location.

6.2 COST ESTIMATES

To meet water system needs, additional water supply and trunk water mains will be required. Budget costs are provided for the proposed future improvements including trunk water mains and a well. Additional cost breakdown is included in Appendix C.

Proposed water mains were designed to provide an economical and adequate water system to support future growth and provide satisfactory service to all Oak Park Heights customers. The costs for constructing the Oak Park Heights proposed future trunk water system to serve the existing needs and future growth of the water system are summarized in Table 11. Approximately 8,200 ft of trunk water main and a supply well are required.

Table 11 – Proposed Future Trunk Water System Costs

Water System Component	Details	Cost
8 inch Water Main	Approx. 4,000 ft	$400,000
12 inch Water Main	Approx. 4,200 ft	$500,000
Water Supply	Well and Wellhouse	$1,300,000
Total	**8,200 ft**	**$2,200,000**

Contingency, administration, legal, and engineering costs are included; however, land acquisition costs and roadway reconstruction are not included.

Appendix A WATER SUPPLY PLAN

DEPARTMENT OF NATURAL RESOURCES

Minnesota Department of Natural Resources
Ecological and Water Resources
1200 Warner Road
St. Paul, MN 55106

February 8, 2018

Andy Kegley, Public Works Director
City of Oak Park Heights
14168 Oak Park Boulevard North, PO Box 2007
Oak Park Heights, MN 55082

RE: Oak Park Heights Water Supply Plan

Dear Mr. Kegley:

The Department of Natural Resources (DNR) has completed our review of the Oak Park Heights water supply plan for DNR Water Appropriation Permit #1975-6123. I am pleased to advise you that in accordance with Minnesota Statutes, Section 103G.291, Subd. 3, and on behalf of the Commissioner of the DNR, I hereby **approve your Water Supply Plan**. The Metropolitan Council has also indicated that the City of Oak Park Heights water supply plan is complete with regard to the information requested by the Metropolitan Council.

Your efforts on the plan and your commitment to water conservation are appreciated. The Met Council commends the City for its commitment to sustainable water supply planning. Please note that attached to this letter is a Water Supply Plan Review Checklist that contains many comments on the City of Oak Park Heights water supply plan. The City of Oak Park Heights should consider implementing suggestions from this checklist as a means of conserving water and money.

Please review these follow-up action items:

- We encourage cities to complete the attached "Certification of Adoption" form. Please upload the form to MPARS-Water Supply tab as soon as the city officially adopts the plan.
- The Metropolitan Council requires that within 30 days following the adoption of your community's local comprehensive plan, of which this local water supply plan is a part, please adopt and submit copies of the local controls identified in the plan to the Metropolitan Council, as required by Minnesota Statute 473.856.

In order to have a true conservation rate, the City of Oak Park Heights should change the current water rate to reduce the volume of water that is "given away" with the base fee from 5,000 gallons per month to a volume that is closer to the 1,925 gallons per month that is the residential per capita monthly use of the City of Oak Park Heights.

The City of Oak Park Heights has indicated that a new well will be constructed for the community water system. Before the DNR will approve the amendment of the DNR Water Appropriation Permit 1975-6123 to reflect the existence of a new well, the City of Oak Park Heights is required to install one Jordan Sandstone observation well and collect multiple daily water level measurements from the observation well or collect multiple daily water level measurements from all of the production wells. The new observation well should be located as close to the center of the well field as possible.

Thank you for your efforts in planning for the future of Oak Park Heights' water supply and for conserving the water resources of the State of Minnesota. If you have any questions or need additional assistance, please feel free to contact me.

Sincerely,

Joseph G. Richter

Joe Richter
District Appropriations Hydrologist
Minnesota Department of Natural Resources

cc: Lanya Ross, Metropolitan Council
Carmelita Nelson, DNR Water Supply Plan Coordinator
Jeanne Daniels, EWR South District Manager
Jenifer Sorensen, EWR Area Hydrologist

City of
Oak Park Heights

City of Oak Park Heights
Local Water Supply Plan

Formerly called Water Emergency & Water Conservation Plan

MNDNR

Table of Contents

PART 1. WATER SUPPLY SYSTEM DESCRIPTION AND EVALUATION....4

A. Analysis of Water Demand....4

B. Treatment and Storage Capacity....6

C. Water Sources....7

D. Future Demand Projections – *Key Metropolitan Council Benchmark*....8

E. Resource Sustainability....9

F. Capital Improvement Plan (CIP)....13

Part 2. Emergency Preparedness Procedures....15

A. Federal Emergency Response Plan....15

B. Operational Contingency Plan....15

C. Emergency Response Procedures....15

PART 3. WATER CONSERVATION PLAN....21

Progress since 2006....22

A. Triggers for Allocation and Demand Reduction Actions....22

B. Conservation Objectives and Strategies – *Key benchmark for DNR*....23

Objective 1: Reduce Unaccounted (Non-Revenue) Water loss to Less than 10%....23

Objective 2: Achieve Less than 75 Residential Gallons per Capita Demand (GPCD)....25

Objective 3: Achieve at least a 1.5% per year water reduction for Institutional, Industrial, Commercial, and Agricultural GPCD over the next 10 years or a 15% reduction in ten years.....26

Objective 4: Achieve a Decreasing Trend in Total Per Capita Demand....27

Objective 5: Reduce Peak Day Demand so that the Ratio of Average Maximum day to the Average Day is less than 2.6....27

Objective 6: Implement a Conservation Water Rate Structure and/or a Uniform Rate Structure with a Water Conservation Program....27

Objective 7: Additional strategies to Reduce Water Use and Support Wellhead Protection Planning....30

Objective 8: Tracking Success: How will you track or measure success through the next ten years?....30

C. Regulation....31

D. Retrofitting Programs....31

E. Education and Information Programs....32

Part 4. ITEMS FOR METROPOLITAN AREA COMMUNITIES 35

A. Water Demand Projections through 2040 35

B. Potential Water Supply Issues 35

C. Proposed Alternative Approaches to Meet Extended Water Demand Projections 35

D. Value-Added Water Supply Planning Efforts (Optional) 36

GLOSSARY 37

Acronyms and Initialisms 39

Appendix List

APPENDIX 1: WELL RECORDS AND MAINTENANCE SUMMARIES

APPENDIX 2: WATER LEVEL MONITORING PLAN

APPENDIX 3: WATER LEVEL GRAPHS FOR EACH WATER SUPPLY WELL

APPENDIX 4: CAPITAL IMPROVEMENT PLAN

APPENDIX 5: EMERGENCY TELEPHONE LIST

APPENDIX 6: COOPERATIVE AGREEMENTS FOR EMERGENCY SERVICES

APPENDIX 7: MUNICIPAL CRITICAL WATER DEFICIENCY ORDINANCE

APPENDIX 8: GRAPH SHOWING ANNUAL PER CAPITA WATER DEMAND FOR EACH CUSTOMER CATEGORY DURING THE LAST TEN-YEARS

APPENDIX 9: WATER RATE STRUCTURE

APPENDIX 10: ADOPTED OR PROPOSED REGULATIONS TO REDUCE DEMAND OR IMPROVE WATER EFFICIENCY

APPENDIX 11: IMPLEMENTATION CHECKLIST

Complete Table 1 with information about the public water supply system covered by this WSP.

Table 1. General information regarding this WSP

Requested Information	Description
DNR Water Appropriation Permit Number(s)	75-6123
Ownership	Public
Metropolitan Council Area	Yes -Washington County
Street Address	City of Oak Park Heights 14168 Oak Park Blvd. N. PO Box 2007
City, State, Zip	Oak Park Heights, MN 55082
Contact Person Name	Andy Kegley
Title	Public Works Director
Phone Number	651-439-4439
MDH Supplier Classification	Municipal

PART 1. WATER SUPPLY SYSTEM DESCRIPTION AND EVALUATION

The first step in any water supply analysis is to assess the current status of demand and availability. Information summarized in Part 1 can be used to develop Emergency Preparedness Procedures (Part 2) and the Water Conservation Plan (Part 3). This data is also needed to track progress for water efficiency measures.

A. Analysis of Water Demand

Complete Table 2 showing the past 10 years of water demand data.

- Some of this information may be in your Wellhead Protection Plan.
- If you do not have this information, do your best, call your engineer for assistance or if necessary leave blank.

If your customer categories are different than the ones listed in Table 2, please describe the differences below:

NA

Table 2. Historic water demand (see definitions in the glossary after Part 4 of this template)

Year	Pop. Served	Total Connections	Residential Water Delivered (MG)	C/I/I Water Delivered (MG)	Water used for Non-essential	Wholesale Deliveries (MG)	Total Water Delivered (MG)	Total Water Pumped (MG)	Water Supplier Services	Percent Unmetered/ Unaccounted	Average Daily Demand (MGD)	Max. Daily Demand (MGD)	Date of Max. Demand	Residential Per Capita Demand (GPCD)	Total per capita Demand (GPCD)
2005	4,664	1,277	104.893	107.35	14.0	0	215.242	223.896	3.0	3.9%	0.61	1.861	7/18/2005	61.6	131.5
2006	4,676	1,284	121.415	131.825	20.0	0	256.240	248.730	3.0	-	0.68	1.754	7/12/2006	71.1	145.7
2007	4,751	1,276	119.368	106.322	-	0	228.690	260.790	3.0	-	0.71	1.648	7/26/2007	68.8	150.4
2008	4,708	1,315	108.786	101.558	-	0	213.344	239.427	3.0	10.9%	0.65	1.45	7/6/2008	63.3	139.3
2009	4,653	1,315	119.455	92.322	-	0	214.777	248.863	3.0	13.7%	0.68	1.385	7/1/2009	70.3	146.5
2010	4,445	1,314	105.597	83.237	17.0	0	191.834	210.271	3.0	8.8%	0.57	1.11	6/23/2010	65.1	129.6
2011	4,593	1,319	103.523	87.375	18.0	0	193.898	216.626	3.0	10.5%	0.59	1.347	8/9/2011	61.8	129.2
2012	4,654	1,274	115.391	87.682	20.0	0	206.073	243.760	3.0	15.5%	0.66	1.245	7/13/2012	67.9	143.5
2013	4,738	1,274	112.105	86.179	18.0	0	201.284	228.233	3.0	11.8%	0.62	1.454	8/28/2013	64.8	132.0
2014	4,648	1,276	96.650	83.487	14.0	0	183.137	221.999	3.0	17.5%	0.6	1.373	8/15/2014	57.0	130.9
2015	4,706	1,289	96.267	84.453	15.0	0	183.720	209.314	3.0	12.2%	0.57	1.104	9/14/2015	56.0	121.9
Avg. 2010-2015	-	-	104.92	85.40	17.0	0	193.32	221.70	3.0	12.7%	0.60	1.27	-	62.1	131.2

MG – Million Gallons **MGD –** Million Gallons per Day **GPCD** – Gallons per Capita per Day

Complete Table 3 by listing the top 10 water users by volume, from largest to smallest. For each user, include information about the category of use (residential, commercial, industrial, institutional, or wholesale), the amount of water used in gallons per year, the percent of total water delivered, and the status of water conservation measures.

Table 3. Large volume users

Customer	Use Category (Residential, Industrial, Commercial, Institutional, Wholesale)	Amount Used (Gallons per Year)	Percent of Total Annual Water Delivered	Implementing Water Conservation Measures? (Yes/No/Unknown)
1. MCF-STATE	INSTITUTIONAL	17,567,000	9.4%	Unknown
2. WASH CTY-LEC	INSTITUTIONAL	8,678,000	4.7%	Unknown
3.PRES-HOMES-CARE CENTER	RESIDENTIAL	5,065,000	2.7%	Unknown
4.WASH-CTY-GOVT CENTER	INSTITUTIONAL	4,678,000	2.5%	Unknown
5.ISD #834	INSTITUTIONAL	4,065,000	2.2%	Unknown
6. OAK PARK ASSOC.	RESIDENTIAL	3,401,000	1.8%	Unknown
7.CARWASH PARTNERS	COMMERCIAL	3,052,000	1.6%	Unknown
8.PRESHOMES-ASST. LIVING	RESIDENTIAL	2,944,000	1.6%	Unknown
9.ST. CROIX CLEANERS	COMMERCIAL	2,610,000	1.4%	Unknown
10.OAKGREEN COMMONS - ASST. LIVING	RESIDENTIAL	2,558,000	1.4%	Unknown

B. Treatment and Storage Capacity

Complete Table 4 with a description of where water is treated, the year treatment facilities were constructed, water treatment capacity, the treatment methods (i.e. chemical addition, reverse osmosis, coagulation, sedimentation, etc.) and treatment types used (i.e. fluoridation, softening, chlorination, Fe/MN removal, coagulation, etc.). Also describe the annual amount and method of disposal of treatment residuals. Add rows to the table as needed.

Table 4. Water treatment capacity and treatment processes

Treatment Site ID (Plant Name or Well ID)	Year Constructed	Treatment Capacity (GPM)	Treatment Method	Treatment Type	Annual Amount of Residuals	Disposal Process for Residuals	Do You Reclaim Filter Backwash Water?
Well 1	1968	1,000	Chemical addition	Fluoride	NA	NA	NA
Well 2	1975	850		Fluoride	NA	NA	NA
Total	-	1,700	-	-	NA	-	-

Complete Table 5 with information about storage structures. Describe the type (i.e. elevated, ground, etc.), the storage capacity of each type of structure, the year each structure was constructed, and the primary material for each structure. Add rows to the table as needed.

Table 5. Storage capacity, as of the end of the last calendar year

Structure Name	Type of Storage Structure	Year Constructed	Primary Material	Storage Capacity (Gallons)
City Hall	Elevated storage	1967	Steel	250,000
West	Elevated storage	1991	Steel	500,000
Total	NA	NA	NA	750,000

Treatment and storage capacity versus demand

It is recommended that total storage equal or exceed the average daily demand.

Discuss the difference between current storage and treatment capacity versus the water supplier's projected average water demand over the next 10 years (see Table 7 for projected water demand):

The total well capacity of 2.66 MGD exceeds the projected 2025 maximum day of 1.72 MGD and the 2040 demand of 1.93 MGD. However, the existing firm water supply is only 1.22 MGD with one well out of service. Therefore, additional water supply is required.

The existing storage volume of 0.75 MG exceeds the projected 2025 average day demand of 0.66 MGD and the 2040 average day demand of 0.74 MGD. No additional water storage is needed.

C. Water Sources

Complete Table 6 by listing all types of water sources that supply water to the system, including groundwater, surface water, interconnections with other water suppliers, or others. Provide the name of each source (aquifer name, river or lake name, name of interconnecting water supplier) and the Minnesota unique well number or intake ID, as appropriate. Report the year the source was installed or established and the current capacity. Provide information about the depth of all wells. Describe the status of the source (active, inactive, emergency only, retail/wholesale interconnection) and if the source facilities have a dedicated emergency power source. Add rows to the table as needed for each installation.

Include copies of well records and maintenance summary for each well that has occurred since your last approved plan in **Appendix 1.**

Table 6. Water sources and status

Resource Type (Groundwater, Surface water, Interconnection)	Resource Name	MN Unique Well # or Intake ID	Year Installed	Capacity (Gallons per Minute)	Well Depth (Feet)	Status of Normal and Emergency Operations (active, inactive, emergency only, retail/wholesale interconnection))	Does this Source have a Dedicated Emergency Power Source? (Yes or No)
Groundwater	Jordan	208794	1968	1,000	310	Active	Yes, Generator
Groundwater	Jordan	112205	1975	850	291	Active	No
Interconnection	Stillwater	Connection btwn hydrants		0.5 MGD	-	Emergency	NA

Limits on Emergency Interconnections

Discuss any limitations on the use of the water sources (e.g. not to be operated simultaneously, limitations due to blending, aquifer recovery issues etc.) and the use of interconnections, including capacity limits or timing constraints (i.e. only 200 gallons per minute are available from the City of Prior Lake, and it is estimated to take 6 hours to establish the emergency connection). If there are no limitations, list none.

Emergency interconnection based on hydrant to hydrant connection which will require coordination and setup time. Stillwater and Oak Park Heights have hydrants on opposite sides of 65th Street and 62nd Street where an interconnection can be made.

D. Future Demand Projections – *Key Metropolitan Council Benchmark*

Water Use Trends

Use the data in Table 2 to describe trends in 1) population served; 2) total per capita water demand; 3) average daily demand; 4) maximum daily demand. Then explain the causes for upward or downward trends. For example, over the ten years has the average daily demand trended up or down? Why is this occurring?

Population growth in Oak Park Heights was approximately 1.6% between 2005 – 2015 (4,633 to 4,706).

Total per capita water demand is decreasing; from over 140 gpcd in 2005 – 2009 to 126 gpcd in 2014 – 2015. The total per capita water demand average was approximately 131 gpcd between 2010 and 2015.

Average day water demand has decreased slightly over the last 10 years as per capita water usage has dropped slightly as population has slowly increased. However, the maximum day water demands have decreased from a high of 1.86 MGD in 2005 to an average of 1.3 MGD in 2012 - 2015.

Use the water use trend information discussed above to complete Table 7 with projected annual demand for the next ten years. Communities in the seven-county Twin Cities metropolitan area must also include projections for 2030 and 2040 as part of their local comprehensive planning.

Projected demand should be consistent with trends evident in the historical data in Table 2, as discussed above. Projected demand should also reflect state demographer population projections and/or other planning projections.

Table 7. Projected annual water demand

Year	Projected Total Population	Projected Population Served	Projected Total Per Capita Water Demand (GPCD)	Projected Average Daily Demand (MGD)	Projected Maximum Daily Demand (MGD)
2016	4,741	4,741	130	0.62	1.60
2017	4,776	4,776	130	0.62	1.61
2018	4,810	4,810	130	0.63	1.63
2019	4,845	4,845	130	0.63	1.64
2020	4,880	4,880	130	0.63	1.65
2021	4,922	4,922	130	0.64	1.66

Year	Projected Total Population	Projected Population Served	Projected Total Per Capita Water Demand (GPCD)	Projected Average Daily Demand (MGD)	Projected Maximum Daily Demand (MGD)
2022	4,964	4,964	130	0.65	1.68
2023	5,006	5,006	130	0.65	1.69
2024	5,048	5,048	130	0.66	1.71
2025	5,090	5,090	130	0.66	1.72
2030	5,300	5,300	130	0.69	1.79
2040	5,700	5,700	130	0.74	1.93

GPCD – Gallons per Capita per Day **MGD** – Million Gallons per Day

Projection Method

Describe the method used to project water demand, including assumptions for population and business growth and how water conservation and efficiency programs affect projected water demand:

The total per capita water demand average was approximately 130 gpcd between 2010 and 2015. This per capita demand is projected forward through 2040 as population growth in Oak Park Height increases.

The projected maximum day demand was calculated based on a maximum to average day demand ratio of 2.6. The last several years the maximum day demand ratio has been lower (the average factor was 2.1 from 2010 to 2015.), but for planning purposes a conservative approach is preferred. A maximum day demand factor of 2.6 has not been exceeded since 2005.

E. Resource Sustainability

Monitoring – *Key DNR Benchmark*

Complete Table 8 by inserting information about source water quality monitoring efforts. The list should include all production wells, observation wells, and source water intakes or reservoirs. Additional information on groundwater level monitoring program at: http://www.dnr.state.mn.us/waters/groundwater_section/obwell/index.html Add rows to the table as needed.

Table 8. Information about source water quality monitoring

MN Unique Well # or Surface Water ID	Type of monitoring point	Monitoring program	Frequency of monitoring	Monitoring Method
Well 1 208794	☑ production well ☐ observation well ☐ source water intake ☐ source water reservoir	☐Routine MDH sampling ☑Routine water utility sampling ☐ other	☐continuous ☐hourly ☐ daily ☑ monthly ☐quarterly ☐annually	☑SCADA ☐ grab sampling ☐ steel tape ☐ stream gauge
Well 2 112205	☑ production well ☐ observation well ☐ source water intake ☐ source water reservoir	☐Routine MDH sampling ☑Routine water utility sampling ☐ other	☐continuous ☐hourly ☐ daily ☑ monthly ☐quarterly ☐annually	☑SCADA ☐ grab sampling ☐steel tape ☐ stream gauge

Water Level Data

A water level monitoring plan that includes monitoring locations and a schedule for water level readings must be submitted as **Appendix 2**. If one does not already exist, it needs to be prepared and submitted with the WSP. Ideally, all production and observation wells are monitored at least monthly.

Complete Table 9 to summarize water level data for each well being monitored. Provide the name of the aquifer and a brief description of how much water levels vary over the season (the difference between the highest and lowest water levels measured during the year) and the long-term trends for each well. If water levels are not measured and recorded on a routine basis, then provide the static water level when each well was constructed and the most recent water level measured during the same season the well was constructed. Also include all water level data taken during any well and pump maintenance. Add rows to the table as needed.

Provide water level data graphs for each well in **Appendix 3** for the life of the well, or for as many years as water levels have been measured. See DNR website for Date Time Water Level http://www.dnr.state.mn.us/waters/groundwater_section/obwell/waterleveldata.html

Table 9. Water level data

Unique Well Number or Well ID	Aquifer Name	Seasonal Variation (Feet)	Long-term Trend in water level data	Water level measured during well/pumping maintenance
Well 1 208794	Jordan	< 10 feet	☐ Falling ☑ Stable ☐ Rising	12/07/10: 145 ft 07/23/97: 136 ft 04/20/95: 134 ft 02/11/92: 143 ft
Well 2 112205	Jordan	< 5 feet	☐ Falling ☑ Stable ☐ Rising	12/04/15: 132 ft 12/08/10: 136 ft 06/27/08: 133 ft 11/24/98: 133 ft

Potential Water Supply Issues & Natural Resource Impacts – *Key DNR & Metropolitan Council Benchmark*

Complete Table 10 by listing the types of natural resources that are or could be impacted by permitted water withdrawals. If known, provide the name of specific resources that may be impacted. Identify what the greatest risks to the resource are and how the risks are being assessed. Identify any resource protection thresholds – formal or informal – that have been established to identify when actions should be taken to mitigate impacts. Provide information about the potential mitigation actions that may be taken, if a resource protection threshold is crossed. Add additional rows to the table as needed. See the glossary at the end of the template for definitions.

Some of this baseline data should have been in your earlier water supply plans or county comprehensive water plans. When filling out this table, think of what are the water supply risks, identify the resources, determine the threshold and then determine what your community will do to mitigate the impacts.

Your DNR area hydrologist is available to assist with this table.

For communities in the seven-county Twin Cities metropolitan area, the *Master Water Supply Plan Appendix 1 (Water Supply Profiles*, provides information about potential water supply issues and natural resource impacts for your community.

Table 10. Natural resource impacts

Resource Type	Resource Name	Risk	Risk Assessed Through	Describe Resource Protection Threshold*	Mitigation Measure or Management Plan	Describe How Changes to Thresholds are Monitored
☐ River or stream		☐ Flow/water level decline ☐ Degrading water quality trends and/or MCLs exceeded ☐ Impacts on endangered, threatened, or special concern species habitat or other natural resource impacts ☐Other: _____	☐ GIS analysis ☐ Modeling ☐ Mapping ☐ Monitoring ☐ Aquifer testing ☐ Other: ___		☐ Revise permit ☐ Change groundwater pumping ☐ Increase conservation ☐ Other	
☐ Calcareous fen		☐ Flow/water level decline ☐ Degrading water quality trends and/or MCLs exceeded ☐ Impacts on endangered, threatened, or special concern species habitat or other natural resource impacts ☐Other: _____	☐ GIS analysis ☐ Modeling ☐ Mapping ☐ Monitoring ☐ Aquifer testing ☐ Other: ___		☐ Revise permit ☐ Change groundwater pumping ☐ Increase conservation ☐ Other	
☐ Lake		☐ Flow/water level decline ☐ Degrading water quality trends and/or MCLs exceeded ☐ Impacts on endangered, threatened, or special concern species habitat or other natural resource impacts ☐Other: _____	☐ GIS analysis ☐ GIS analysis ☐ Modeling ☐ Mapping ☐ Monitoring ☐ Aquifer testing ☐ Other: ___		☐ Revise permit ☐ Change groundwater pumping ☐ Increase conservation ☐ Other	
☐ Wetland		☐ Flow/water level decline	☐ GIS analysis ☐ Modeling ☐ Mapping		☐ Revise permit	

Resource Type	Resource Name	Risk	Risk Assessed Through	Describe Resource Protection Threshold*	Mitigation Measure or Management Plan	Describe How Changes to Thresholds are Monitored
		☐ Degrading water quality trends and/or MCLs exceeded ☐ Impacts on endangered, threatened, or special concern species habitat or other natural resource impacts ☐Other: _____	☐ Monitoring ☐ Aquifer testing ☐ Other: ___		☐ Change groundwater pumping ☐ Increase conservation ☐ Other	
☐ Trout Stream		☐ Flow/water level decline ☐ Degrading water quality trends and/or MCLs exceeded ☐ Impacts on endangered, threatened, or special concern species habitat or other natural resource impacts ☐Other: _____	☐ GIS analysis ☐ Modeling ☐ Mapping ☐ Monitoring ☐ Aquifer testing ☐ Other: ___		☐ Revise permit ☐ Change groundwater pumping ☐ Increase conservation ☐ Other	
☑ Aquifer	Jordan Aquifer	☑ Flow/water level decline ☑ Degrading water quality trends and/or MCLs exceeded ☐ Impacts on endangered, threatened, or special concern species habitat or other natural resource impacts ☐Other: _____	☐ GIS analysis ☐ Modeling ☐ Mapping ☑ Monitoring ☑ Aquifer testing ☐ Other: ___	Established threshold guideline is water level drop no more than half of the available head. Law does not allow aquifer to be pumped so that a confined aquifer becomes unconfined.	☐ Revise permit ☑ Change groundwater pumping ☑ Increase conservation ☐ Other	DNR has oversight on thresholds (and permitting) for pumping from regional bedrock aquifers.
☐ Endangered, threatened, or special concern species habitat, other Natural resource impacts						

* Examples of thresholds: a lower limit on acceptable flow in a river or stream; water quality outside of an accepted range; a lower limit on acceptable aquifer level decline at one or more monitoring wells; withdrawals that exceed some percent of the total amount available from a source; or a lower limit on acceptable changes to a protected habitat.

Wellhead Protection (WHP) and Source Water Protection (SWP) Plans

Complete Table 11 to provide status information about WHP and SWP 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.

Table 11. Status of Wellhead Protection and Source Water Protection Plans

Plan Type	Status	Date Adopted	Date for Update
WHP	☐ In Process ☑ Completed ☐ Not Applicable	January 2013	2023
SWP	☐ In Process ☐ Completed ☑ Not Applicable	NA	NA

WHP – Wellhead Protection Plan **SWP** – Source Water Protection Plan

F. Capital Improvement Plan (CIP)

Please note that any wells that received approval under a ten-year permit, but that were not built, are now expired and must submit a water appropriations permit.

Adequacy of Water Supply System

Complete Table 12 with information about the adequacy of wells and/or intakes, storage facilities, treatment facilities, and distribution systems to sustain current and projected demands. List planned capital improvements for any system components, in chronological order. Communities in the seven-county Twin Cities metropolitan area should also include information about plans through 2040.

The assessment can be the general status by category; it is not necessary to identify every single well, storage facility, treatment facility, lift station, and mile of pipe.

Please attach your latest Capital Improvement Plan as **Appendix 4**.

Table 12. Adequacy of Water Supply System

System Component	Planned action	Anticipated Construction Year	Notes
Wells/Intakes	☐ No action planned - adequate ☑ Repair/replacement ☑Expansion/addition	2017 2020	Well #1 maintenance New supply well planned
Water Storage Facilities	☐ No action planned - adequate ☑ Repair/replacement ☑ Expansion/addition	2017 2020+	Repair existing altitude valve New elevated Tank
Water Treatment Facilities	☑ No action planned - adequate ☐ Repair/replacement ☐ Expansion/addition	-	-
Distribution Systems (pipes, valves, etc.)	☐ No action planned - adequate ☑ Repair/replacement ☐ Expansion/addition	Ongoing	Continued pipe looping and replacement program and preventative maintenance

System Component	Planned action	Anticipated Construction Year	Notes
Pressure Zones	☑ No action planned - adequate ☐ Repair/replacement ☐ Expansion/addition	-	-
Other:	☑ No action planned - adequate ☐ Repair/replacement ☐ Expansion/addition	-	-

Proposed Future Water Sources

Complete Table 13 to identify new water source installation planned over the next ten years. Add rows to the table as needed.

Table 13. Proposed future installations/sources

Source	Installation Location (approximate)	Resource Name	Proposed Pumping Capacity (gpm)	Planned Installation Year	Planned Partnerships
Groundwater	TBD	Jordan	850	2020	None
Surface Water	NA				
Interconnection to another supplier	NA				

Water Source Alternatives - *Key Metropolitan Council Benchmark*

Do you anticipate the need for alternative water sources in the next 10 years? ___ Yes _X_ No

For metro communities, will you need alternative water sources by the year 2040? ___ Yes _X_ No

If you answered yes for either question, then complete table 14. If no, insert NA.

Complete Table 14 by checking the box next to alternative approaches that your community is considering, including approximate locations (if known), the estimated amount of future demand that could be met through the approach, the estimated timeframe to implement the approach, potential partnerships, and the major benefits and challenges of the approach. Add rows to the table as needed.

For communities in the seven-county Twin Cities metropolitan area, these alternatives should include approaches the community is considering to meet projected 2040 water demand.

Table 14. Alternative water sources

Alternative Source Considered	Source and/or Installation Location (approximate)	Estimated Amount of Future Demand (%)	Timeframe to Implement (YYYY)	Potential Partners	Benefits	Challenges
☐ Groundwater	NA					
☐ Surface Water	NA					
☐ Reclaimed Stormwater	NA					
☐ Reclaimed Wastewater	NA					
☐ Interconnection to another supplier	NA					

Part 2. Emergency Preparedness Procedures

The emergency preparedness procedures outlined in this plan are intended to comply with the contingency plan provisions required by MDH in the WHP and SWP. Water emergencies can occur as a result of vandalism, sabotage, accidental contamination, mechanical problems, power failings, 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. Municipalities that already have written procedures dealing with water emergencies should review the following information and update existing procedures to address these water supply protection measures.

A. Federal Emergency Response Plan

Section 1433(b) of the Safe Drinking Water Act, (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.

Do you have a federal emergency response plan? ☑ Yes ☐ No

If yes, what was the date it was certified? __December 16, 2004__

Complete Table 15 by inserting the noted information regarding your completed Federal Emergency Response Plan.

Table 15. Emergency Preparedness Plan contact information

Emergency Response Plan Role	Contact Person	Contact Phone Number	Contact Email
Emergency Response Lead	Andy Kegley	651-775-5759	akegley@cityofoakparkheights.com
Alternate Emergency Response Lead	Andy Swenson	651-485-2304	aswenson@cityofoakparkheights.com

B. Operational Contingency Plan

All utilities should have a written operational contingency plan that describes measures to be taken for water supply mainline breaks and other common system failures as well as routine maintenance.

Do you have a written operational contingency plan? ☑ Yes ☐ No

At a minimum, a water supplier should prepare and maintain an emergency contact list of contractors and suppliers.

C. Emergency Response Procedures

Water suppliers must meet the requirements of MN Rules 4720.5280 . Accordingly, the Minnesota Department of Natural Resources (DNR) requires public water suppliers serving more than 1,000 people to submit Emergency and Conservation Plans. Water emergency and conservation plans that have been approved by the DNR, under provisions of Minnesota Statute 186 and Minnesota Rules, part 6115.0770, will be considered equivalent to an approved WHP contingency plan.

Emergency Telephone List

Prepare and attach a list of emergency contacts, including the MN Duty Officer (1-800-422-0798), as **Appendix 5**. A template is available at www.mndnr.gov/watersupplyplans

The list should include key utility and community personnel, contacts in adjacent water suppliers, and appropriate local, state and federal emergency contacts. Please be sure to verify and update the contacts on the emergency telephone list and date it. Thereafter, update on a regular basis (once a year is recommended). In the case of a municipality, this information should be contained in a notification and warning standard operating procedure maintained by the Emergency Manager for that community. Responsibilities and services for each contact should be defined.

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 and maintenance records should be maintained in secured central and back-up locations so that the records are accessible for emergency purposes. 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. It is critical that public water supplier representatives and emergency response personnel communicate about the response procedures and be able to easily obtain this kind of information both in electronic and hard copy formats (in case of a power outage).

Do records and maps exist? ☑ Yes ☐ No

Can staff access records and maps from a central secured location in the event of an emergency?
☑ Yes ☐ No

Does the appropriate staff know where the materials are located? ☑ Yes ☐ No

Procedure for Augmenting Water Supplies

Complete Tables 16 – 17 by listing all available sources of water that can be used to augment or replace existing sources in an emergency. Add rows to the tables as needed.

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. Municipalities are encouraged to execute cooperative agreements for potential emergency water services and copies should be included in **Appendix 6**. Outstate Communities may consider using nearby high capacity wells (industry, golf course) as emergency water sources.

WSP should include information on any physical or chemical problems that may limit interconnections to other sources of water. Approvals from the MDH are required for interconnections or the reuse of water.

Table 16. Interconnections with other water supply systems to supply water in an emergency

Other Water Supply System Owner	Capacity (GPM & MGD)	Note Any Limitations On Use	List of services, equipment, supplies available to respond
Stillwater	0.5 MGD	Hydrant to Hydrant	Temporary piping and valves

GPM – Gallons per minute MGD – million gallons per day

Table 17. Utilizing surface water as an alternative source

Surface Water Source Name	Capacity (GPM)	Capacity (MGD)	Treatment Needs	Note Any Limitations On Use
None				

If not covered above, describe additional emergency measures for providing water (obtaining bottled water, or steps to obtain National Guard services, etc.)

Allocation and Demand Reduction Procedures

Complete Table 18 by adding information about how decisions will be made to allocate water and reduce demand during an emergency. Provide information for each customer category, including its priority ranking, average day demand, and demand reduction potential for each customer category. Modify the customer categories as needed, and add additional lines if necessary.

Water use categories should be prioritized in a way that is consistent with Minnesota Statutes 103G.261 (#1 is highest priority) as follows:

1. Water use for human needs such as cooking, cleaning, drinking, washing and waste disposal; use for on-farm livestock watering; and use for power production that meets contingency requirements.
2. Water use involving consumption of less than 10,000 gallons per day (usually from private wells or surface water intakes)
3. Water use for agricultural irrigation and processing of agricultural products involving consumption of more than 10,000 gallons per day (usually from private high-capacity wells or surface water intakes)
4. Water use for power production above the use provided for in the contingency plan.
5. All other water use involving consumption of more than 10,000 gallons per day.
6. Nonessential uses – car washes, golf courses, etc.

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. Lower priority uses 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. Water use for lawn sprinkling, vehicle washing, golf courses, and recreation are legislatively considered non-essential.

Table 18. Water use priorities

Customer Category	Allocation Priority	Average Daily Demand (GDP)	Short-Term Emergency Demand Reduction Potential (GPD)
Residential	1	275,000	140,000
Institutional – MCF, Presb. Homes, Wash Co, SAHS	1	110,000	20,000
Commercial/ Industrial	2	90,000	20,000
Non-Essential	6	45,000	45,000
TOTAL	-	520,000	225,000

GPD – Gallons per Day

Tip: Calculating Emergency Demand Reduction Potential

The emergency demand reduction potential for all uses will typically equal the difference between maximum use (summer demand) and base use (winter demand). In extreme emergency situations, lower priority water uses must be restricted or eliminated to protect priority domestic water requirements. Emergency demand reduction potential should be based on average day demands for customer categories within each priority class. Use the tables in Part 3 on water conservation to help you determine strategies.

Complete Table 19 by selecting the triggers and actions during water supply disruption conditions.

Table 19. Emergency demand reduction conditions, triggers and actions (Select all that may apply and describe)

Emergency Triggers	Short-term Actions	Long-term Actions
☑ Contamination ☑ Loss of production ☑ Infrastructure failure ☑ Executive order by Governor ☐ Other: _____	☑ Supply augmentation through emergency interconnections. ☑ Enforce a critical water deficiency ordinance to penalize lawn watering, vehicle washing, golf course and park irrigation & other nonessential uses. ☐ Water allocation through____ ☐ Meet with large water users to discuss their contingency plan.	☑ Supply augmentation through emergency interconnections and temporary water treatment, if needed. ☑ Enforce a critical water deficiency ordinance to penalize lawn watering, vehicle washing, golf course and park irrigation & other nonessential uses. ☐ Water allocation through____ ☑ Meet with large water users to discuss their contingency plan.

Notification Procedures

Complete Table 20 by selecting trigger for informing customers regarding conservation requests, water use restrictions, and suspensions; notification frequencies; and partners that may assist in the notification process. Add rows to the table as needed.

Table 20. Plan to inform customers regarding conservation requests, water use restrictions, and suspensions

Notification Trigger(s)	Methods (select all that apply)	Update Frequency	Partners
☑ Short-term demand reduction declared (< 1 year)	☑ Website ☑ Email list serve ☑ Social media (e.g. Twitter, Facebook) ☑ Direct customer mailing, ☐ Press release (TV, radio, newspaper), ☐ Meeting with large water users (> 10% of total city use) ☑ Other: Washington County Code Red notification to resident's cell phones.	☐ Daily ☑ Weekly ☑ Monthly ☑ Annually	
☑ Long-term Ongoing demand reduction declared	☑ Website ☑ Email list serve ☑ Social media (e.g. Twitter, Facebook) ☑ Direct customer mailing, ☑ Press release (TV, radio, newspaper), ☑ Meeting with large water users (> 10% of total city use) ☑ Other: Washington County Code Red notification to resident's cell phones.	☑ Daily ☑ Weekly ☑ Monthly ☑ Annually	
☑ Governor's Critical water deficiency declared	☑ Website ☑ Email list serve ☑ Social media (e.g. Twitter, Facebook) ☑ Direct customer mailing, ☑ Press release (TV, radio, newspaper), ☑ Meeting with large water users (> 10% of total city use) ☑ Other: Washington County Code Red notification to resident's cell phones.	☑ Daily ☑ Weekly ☑ Monthly ☑ Annually	

Enforcement

Prior to a water emergency, municipal water suppliers must adopt regulations that restrict water use and outline the enforcement response plan. The enforcement response plan must outline how conditions will be monitored to know when enforcement actions are triggered, what enforcement tools will be used, who will be responsible for enforcement, and what timelines for corrective actions will be expected.

Affected operations, communications, and enforcement staff must then be trained to rapidly implement those provisions during emergency conditions.

Important Note:

Disregard of critical water deficiency orders, even though total appropriation remains less than permitted, is adequate grounds for immediate modification of a public water supply authority's water use permit (2013 MN Statutes 103G.291)

Does the city have a critical water deficiency restriction/official control in place that includes provisions to restrict water use and enforce the restrictions? (This restriction may be an ordinance, rule, regulation, policy under a council directive, or other official control) ☑Yes ☐ No

If yes, attach the official control document to this WSP as **Appendix 7**.

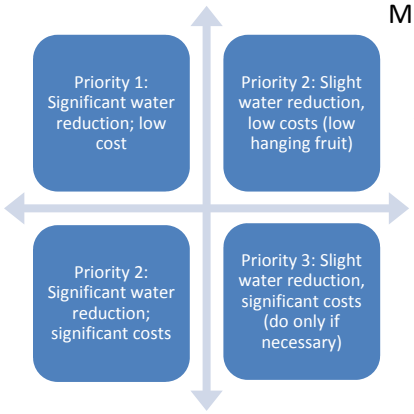
If no, the municipality must adopt such an official control within 6 months of submitting this WSP and submit it to the DNR as an amendment to this WSP.

Irrespective of whether a critical water deficiency control is in place, does the public water supply utility, city manager, mayor, or emergency manager have standing authority to implement water restrictions? ☑Yes ☐ No

If yes, cite the regulatory authority reference: Ordinance #1001.

If no, who has authority to implement water use restrictions in an emergency?

PART 3. WATER CONSERVATION PLAN



Minnesotans have historically benefited from the state's abundant water supplies, reducing the need for conservation. There are however, limits to the available supplies of water and increasing threats to the quality of our drinking water. Causes of water supply limitation may include: population increases, economic trends, uneven statewide availability of groundwater, climatic changes, and degraded water quality. Examples of threats to drinking water quality include: the presence of contaminant plumes from past land use activities, exceedances of water quality standards from natural and human sources, contaminants of emerging concern, and increasing pollutant trends from nonpoint sources.

There are many incentives for conserving water; conservation:

- reduces the potential for pumping-induced transfer of contaminants into the deeper aquifers, which can add treatment costs
- reduces the need for capital projects to expand system capacity
- reduces the likelihood of water use conflicts, like well interference, aquatic habitat loss, and declining lake levels
- conserves energy, because less energy is needed to extract, treat and distribute water (and less energy production also conserves water since water is use to produce energy)
- maintains water supplies that can then be available during times of drought

It is therefore imperative that water suppliers implement water conservation plans. The first step in water conservation is identifying opportunities for behavioral or engineering changes that could be made to reduce water use by conducting a thorough analysis of:

- Water use by customer
- Extraction, treatment, distribution and irrigation system efficiencies
- Industrial processing system efficiencies
- Regulatory and barriers to conservation
- Cultural barriers to conservation
- Water reuse opportunities

Once accurate data is compiled, water suppliers can set achievable goals for reducing water use. A successful water conservation plan follows a logical sequence of events. The plan should address both conservation on the supply side (leak detection and repairs, metering), as well as on the demand side (reductions in usage). Implementation should be conducted in phases, starting with the most obvious and lowest-cost options. In some cases one of the early steps will be reviewing regulatory constraints to water conservation, such as lawn irrigation requirements. Outside funding and grants may be available for implementation of projects. Engage water system operators and maintenance staff and customers in brainstorming opportunities to reduce water use. Ask the question: "How can I help save water?"

Progress since 2006

Is this your community's first Water Supply Plan? ☐ Yes ☑ No

If yes, describe conservation practices that you are already implementing, such as: pricing, system improvements, education, regulation, appliance retrofitting, enforcement, etc.

If no, complete Table 21 to summarize conservation actions taken since the adoption of the 2006 water supply plan.

Table 21. Implementation of previous ten-year Conservation Plan

2006 Plan Commitments	Action Taken?
Change Water Rates Structure to provide conservation pricing	☑ Yes ☐ No
Water Supply System Improvements (e.g. leak repairs, valve replacements, etc.)	☑ Yes ☐ No
Educational Efforts	☑ Yes ☐ No
New water conservation ordinances	☐ Yes ☑ No
Rebate or retrofitting Program (e.g. for toilet, faucets, appliances, showerheads, dish washers, washing machines, irrigation systems, rain barrels, water softeners, etc.	☐ Yes ☑ No
Enforcement	☑ Yes ☐ No
Describe Other	☐ Yes ☐ No

What are the results you have seen from the actions in Table 21 and how were results measured?

Total per capita water demand is decreasing; from over 140 gpcd in 2005 – 2007 to 130 gpcd in 2010 – 2015. Residential per capita water demand averaged 67 gpcd in 2005 – 2007, but is now approximately 55 gpcd in 2014-2015.

A. Triggers for Allocation and Demand Reduction Actions

Complete table 22 by checking each trigger below, as appropriate, and the actions to be taken at various levels or stages of severity. Add in additional rows to the table as needed.

Table 22. Short and long-term demand reduction conditions, triggers and actions

Objective	Triggers	Actions
Protect Surface Water Flows	☑ Low stream flow conditions ☑ Reports of declining wetland and lake levels	☑ Increase promotion of conservation measures ☐ Other: _____
Short-term demand reduction (less than 1 year)	☑ Extremely high seasonal water demand (more than double winter demand) ☑ Loss of treatment capacity ☑ Lack of water in storage ☑ State drought plan ☑ Well interference ☐ Other: _____	☑ Enforce the critical water deficiency ordinance to restrict or prohibit lawn watering, vehicle washing, golf course and park irrigation & other nonessential uses. ☑ Supply augmentation through emergency interconnections. ☐ Water allocation through____ ☐ Meet with large water users to discuss user's contingency plan.
Long-term demand reduction (>1 year)	☑ Per capita demand increasing ☐ Total demand increase (higher population or more industry) ☐ Water level in well(s) below elevation of _____ ☐ Other: _____	☑ Develop a critical water deficiency ordinance that is or can be quickly adopted to penalize lawn watering, vehicle washing, golf course and park irrigation & other nonessential uses. ☑ Meet with large water users to discuss user's contingency plan. ☑ Enhanced monitoring and reporting: audits, meters, billing, etc.
Governor's "Critical Water Deficiency Order" declared	☑ Determined by State	☑ Enact a water waste ordinance that targets overwatering (causing water to flow off the landscape into streets, parking lots, or similar), watering impervious surfaces (streets, driveways or other hardscape areas), and negligence of known leaks, breaks, or malfunctions.

B. Conservation Objectives and Strategies – *Key benchmark for DNR*

This section establishes water conservation objectives and strategies for eight major areas of water use.

Objective 1: Reduce Unaccounted (Non-Revenue) Water loss to Less than 10%

The Minnesota Rural Waters Association, the Metropolitan Council and the Department of Natural Resources recommend that all water uses be metered. Metering can help identify high use locations and times, along with leaks within buildings that have multiple meters.

It is difficult to quantify specific unmetered water use such as that associated with firefighting and system flushing or system leaks. Typically, water suppliers subtract metered water use from total water pumped to calculate unaccounted or non-revenue water loss.

Is your ten-year average (2005-2014) unaccounted Water Use in Table 2 higher than 10%? ☑Yes ☐ No

What is your leak detection monitoring schedule?

OPH monitors leaks as possible. Leaks that are discovered are fixed immediately.

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 American Water Works Association (AWWA) recommends that ten percent or less of pumped water is unaccounted-for water. Water audit procedures are available from the AWWA and MN Rural Water Association www.mrwa.com . Drinking Water Revolving Loan Funds are available for purchase of new meters when new plants are built.

What is the date of your most recent water audit? 1st Quarter of 2016

Frequency of water audits: ☑ **yearly** **other (specify frequency) _____**

Leak detection and survey: ☐ **every year** ☐ **every other year** ☑ **periodic as needed**

Year last leak detection survey completed: ___July 2016____

If Table 2 shows annual water losses over 10% or an increasing trend over time, describe what actions will be taken to reach the <10% loss objective and within what timeframe

The average annual water loss since 2005 is approximately 11%. Between 2013 -2015 the City was involved with MNDOT's St. Croix River Crossing Project, a major Hwy 36 approach and St. Croix River crossing bridge construction project. The Project replaced significant water main in the City of OPH. The project's water main reconstruction contributed to the unaccounted volume of water.

Metering -AWWA recommends that every water supplier install meters to account for all water taken into its system, along with all water distributed from its system at each customer's point of service. An effective metering program relies upon periodic performance testing, repair, maintenance or replacement of all meters. AWWA also recommends that water suppliers conduct regular water audits to ensure accountability. Some cities install separate meters for interior and exterior water use, but some research suggests that this may not result in water conservation.

Complete Table 23 by adding the requested information regarding the number, types, testing and maintenance of customer meters.

Table 23. Information about customer meters

Customer Category	Number of Customers	Number of Metered Connections	Number of Automated Meter Readers	Meter testing intervals (years)	Average age/meter replacement schedule (years)
Residential	1,276	1,276	NA	As Needed	Unknown/ 25 yrs
Irrigation meters	53	53	NA	As Needed	Unknown/ 25 yrs
Institutional	1	1	NA	As Needed	4 Yrs / 25 Yrs
Commercial	131	131	NA	As Needed	Unknown/ 25 yrs
Public Facilities	5	5	NA	As Needed	7 Yrs / 25 Yrs
TOTALS	1,466	1,466	-	-	-

For unmetered systems, describe any plans to install meters or replace current meters with advanced technology meters. Provide an estimate of the cost to implement the plan and the projected water savings from implementing the plan.

Customer meter replacement is planned for the next 5 years. $800,000 is budgeted to complete the meter replacement program; improving meter technology for better accuracy and automatic reading.

Table 24. Water source meters

	Number of Meters	Meter testing schedule (years)	Number of Automated Meter Readers	Average age/meter replacement schedule (years
Wells 1 and 2	2	NA	SCADA	8 Yrs/20 Yrs

Objective 2: Achieve Less than 75 Residential Gallons per Capita Demand (GPCD)

The 2002 average residential per capita demand in the Twin Cities Metropolitan area was 75 gallons per capita per day.

Is your average 2010-2015 residential per capita water demand in Table 2 more than 75? ☐ Yes ☑ No

What was your 2005 – 2014 ten-year average residential per capita water demand? 61 g/person/day

Describe the water use trend over that timeframe:

Residential per capita water is trended down during the last 11 years and was never more than 75 gpcd. Per capita demand was as high as 71 gpcd in 2006, but is now approximately 55 gpcd in 2014-2015.

Complete Table 25 by checking which strategies you will use to continue reducing residential per capita demand and project a likely timeframe for completing each checked strategy (Select all that apply and add rows for additional strategies):

Table 25. Strategies and timeframe to reduce residential per capita demand

Strategy to reduce residential per capita demand	Timeframe for completing work
☐ Revise city ordinances/codes to encourage or require water efficient landscaping.	
☐ Revise city ordinance/codes to permit water reuse options, especially for non-potable purposes like irrigation, groundwater recharge, and industrial use. Check with plumbing authority to see if internal buildings reuse is permitted	
☐ Revise ordinances to limit irrigation. Describe the restricted irrigation plan:	
☐ Revise outdoor irrigation installations codes to require high efficiency systems (e.g. those with soil moisture sensors or programmable watering areas) in new installations or system replacements.	
☑ **Make water system infrastructure improvements: Continue preventative maintenance to replace aging infrastructure.**	**Ongoing**
☐ Offer free or reduced cost water use audits) for residential customers.	
☐ Implement a notification system to inform customers when water availability conditions change.	
☐ Provide rebates or incentives for installing water efficient appliances and/or fixtures indoors (e.g., low flow toilets, high efficiency dish washers & washing machines, showerhead & faucet aerators, water softeners, etc.)	
☐ Provide rebates or incentives to reduce outdoor water use (e.g., turf replacement/reduction, rain gardens, rain barrels, smart irrigation, outdoor water use meters, etc.)	
☐ Identify supplemental Water Resources	
☐ Conduct audience-appropriate water conservation education and outreach.	
☑ **Customer meter replacement program to improve accuracy and provide automatic meter readings.**	**2018-2023**

Objective 3: Achieve at least a 1.5% per year water reduction for Institutional, Industrial, Commercial, and Agricultural GPCD over the next 10 years or a 15% reduction in ten years.
Complete Table 26 by checking which strategies you will used to continue reducing non-residential customer use demand and project a likely timeframe for completing each checked strategy (add rows for additional strategies).

Where possible, substitute recycled water used in one process for reuse in another. (For example, spent rinse water can often be reused in a cooling tower.) Keep in mind the true cost of water is the amount on the water bill PLUS the expenses to heat, cool, treat, pump, and dispose of/discharge the water. Don't just calculate the initial investment. Many conservation retrofits that appear to be prohibitively expensive are actually very cost-effective when amortized over the life of the equipment. Often reducing water use also saves electrical and other utility costs. Note: as of 2015, water reuse, and is not allowed by the state plumbing code, M.R. 4715 (a variance is needed). However several state agencies are addressing this issue.

Table 26. Strategies and timeframe to reduce institutional, commercial industrial, and agricultural and non-revenue use demand

Strategy to reduce total business, industry, agricultural demand	Timeframe for completing work
☐ Conduct a facility water use audit for both indoor and outdoor use, including system components	
☑ **Install enhanced meters capable of automated readings to detect spikes in consumption.**	**2018-2023**
☐ Compare facility water use to related industry benchmarks, if available (e.g., meat processing, dairy, fruit and vegetable, beverage, textiles, paper/pulp, metals, technology, petroleum refining etc.),	
☐ Install water conservation fixtures and appliances or change processes to conserve water	
☑ **Repair leaking system components: Require customer to immediately repair identified leaks and continue preventative maintenance to replace aging infrastructure.**	**Ongoing**
☐ Investigate the reuse of reclaimed water (e.g., stormwater, wastewater effluent, process wastewater, etc.)	
☐ Reduce outdoor water use (e.g., turf replacement/reduction, rain gardens, rain barrels, smart irrigation, outdoor water use meters, etc.)	
☐ Train Utility employees to provide conservation education to customers.	
☑ **Implement a notification system to inform non-residential customers when water availability conditions change: Use Washington Co. Code Red system for notifications and develop plan to use City newsletter mailing list for emergency notifications as needed.**	**2017**
☐ [Rainwater catchment systems intended to supply uses such as water closets, urinals, trap primers for floor drains and floor sinks, industrial processes, water features, vehicle washing facilities, cooling tower makeup, and similar uses shall be approved by the commissioner.	
☐ Describe other plans:	

Objective 4: Achieve a Decreasing Trend in Total Per Capita Demand

Include as **Appendix 8** one graph showing total per capita water demand for each customer category (i.e., residential, institutional, commercial, industrial) from 2005-2014 and add the calculated/estimated linear trend for the next 10 years.

Describe the trend for each customer category; explain the reason(s) for the trends, and where trends are increasing.

Total per capita water use continues to decline slightly. After a large decrease in commercial and institutional water use in 2006-2010, commercial and institutional per capita water use is approximately 42 gpcd with a slight downward trend.

Residential per capita demand averaged approximately 64 gpcd over the 11 years and trending downward. Residential per capita demand was approximately 55 gpcd in 2014-2015.

Objective 5: Reduce Peak Day Demand so that the Ratio of Average Maximum day to the Average Day is less than 2.6

Is the ratio of average 2005-2014 maximum day demand to average 2005-2014 average day demand reported in Table 2 more than 2.6? ☑ Yes ☐ No

Calculate a ten year average (2005 – 2014) of the ratio of maximum day demand to average day demand: _2.2_

The position of the DNR has been that a peak day/average day ratio that is above 2.6 for in summer indicates that the water being used for irrigation by the residents in a community is too large and that efforts should be made to reduce the peak day use by the community.

It should be noted that by reducing the peak day use, communities can also reduce the amount of infrastructure that is required to meet the peak day use. This infrastructure includes new wells, new water towers which can be costly items.

Objective 6: Implement a Conservation Water Rate Structure and/or a Uniform Rate Structure with a Water Conservation Program

Water Conservation Program

Municipal water suppliers serving over 1,000 people are required to adopt demand reduction measures that include a conservation rate structure, or a uniform rate structure with a conservation program that achieves demand reduction. These measures must achieve demand reduction in ways that reduce water demand, water losses, peak water demands, and nonessential water uses. These measures must be approved before a community may request well construction approval from the Department of Health or before requesting an increase in water appropriations permit volume (*Minnesota Statutes*, section 103G.291, subd. 3 and 4). Rates should be adjusted on a regular basis to ensure that revenue of the system is adequate under reduced demand scenarios. If a municipal water supplier intends to use a Uniform Rate Structure, a community-wide Water Conservation Program that will achieve demand reduction must be provided.

Current Water Rates

Include a copy of the actual rate structure in **Appendix 9** or list current water rates including base/service fees and volume charges below.

Volume included in base rate or service charge: 15,000 gallons or ____ cubic feet ___ other

Frequency of billing: ☐ Monthly ☐ Bimonthly ☑Quarterly ☐ Other: _____

Water Rate Evaluation Frequency: ☑ every year☐ every ___ years no schedule

Date of last rate change: January 1st 2016

Table 27. Rate structures for each customer category (Select all that apply and add additional rows as needed)

Customer Category	Conservation Billing Strategies in Use *	Conservation Neutral Billing Strategies in Use **	Non-Conserving Billing Strategies in Use ***
Residential	☐ Monthly Billing ☑ Increasing block rates (volume tiered rates) ☐ Seasonal rates ☐ Time of Use rates ☑ Water bills reported in gallons ☐ Individualized goal rates ☐ Excess Use rates ☐ Drought surcharge ☐ Use water bill to provide comparisons ☐ Service charge not based on water volume ☐ Other (describe)	☐ Uniform ☑ Odd/Even day watering	☐ Service charge based on water volume ☐ Declining block ☐ Flat Other (describe)
Commercial/ Industrial/ Institutional	☐ Monthly Billing ☑ Increasing block rates ☐ Seasonal rates ☐ Time of Use rates ☑ Bill water use in gallons ☐ Individualized goal rates ☐ Excess Use rates ☐ Drought surcharge ☐ Use water bill to provide comparisons ☐ Service charge not based on water volume ☐ Other (describe)	☐ Uniform	☐ Service charge based on water volume ☐ Declining block ☐ Flat Other (describe)
☐ Other			

*** Rate Structures components that may promote water conservation:**

- **Monthly billing:** is encouraged to help people see their water usage so they can consider changing behavior.
- **Increasing block rates (also known as a tiered residential rate structure):** Typically, these have at least three tiers: should have at least three tiers.
    - The first tier is for the winter average water use.

  - The second tier is the year-round average use, which is lower than typical summer use. This rate should be set to cover the full cost of service.
  - The third tier should be above the average annual use and should be priced high enough to encourage conservation, as should any higher tiers. For this to be effective, the difference in block rates should be significant.
- **Seasonal rate:** higher rates in summer to reduce peak demands
- **Time of Use rates:** lower rates for off peak water use
- **Bill water use in gallons:** this allows customers to compare their use to average rates
- **Individualized goal rates:** typically used for industry, business or other large water users to promote water conservation if they keep within agreed upon goals.
- **Excess Use rates**: if water use goes above an agreed upon amount this higher rate is charged
- **Drought surcharge:** an extra fee is charged for guaranteed water use during drought
- **Use water bill to provide comparisons**: simple graphics comparing individual use over time or compare individual use to others.
- **Service charge or base fee that does not include a water volume** – a base charge or fee to cover universal city expenses that are not customer dependent and/or to provide minimal water at a lower rate (e.g., an amount less than the average residential per capita demand for the water supplier for the last 5 years)
- **Emergency rates** -A community may have a separate conservation rate that only goes into effect when the community or governor declares a drought emergency. These higher rates can help to protect the city budgets during times of significantly less water usage.

****Conservation Neutral****

- **Uniform rate**: rate per unit used is the same regardless of the volume used
- **Odd/even day watering** –This approach reduces peak demand on a daily basis for system operation, but it does not reduce overall water use.

***** Non-Conserving *****

- **Service charge or base fee with water volume:** an amount of water larger than the average residential per capita demand for the water supplier for the last 5 years
- **Declining block rate:** the rate per unit used decreases as water use increases.
- **Flat rate:** one fee regardless of how much water is used (usually unmetered).

Provide justification for any conservation neutral or non-conserving rate structures. If intending to adopt a conservation rate structure, include the timeframe to do so:

While conservation neutral, Odd/Even day watering reduces peak water usage, reducing infrastructure needs required to meet peak demands.

Objective 7: Additional strategies to Reduce Water Use and Support Wellhead Protection Planning

Development and redevelopment projects can provide additional water conservation opportunities, such as the actions listed below. If a Uniform Rate Structure is in place, the water supplier must provide a Water Conservation Program that includes at least two of the actions listed below. Check those actions that you intent to implement within the next 10 years.

Table 28. Additional strategies to Reduce Water Use & Support Wellhead Protection

☐	Participate in the GreenStep Cities Program, including implementation of at least one of the 20 "Best Practices" for water
☐	Prepare a Master Plan for Smart Growth (compact urban growth that avoids sprawl)
☐	Prepare a Comprehensive Open Space Plan (areas for parks, green spaces, natural areas)
☐	Adopt a Water Use Restriction Ordinance (lawn irrigation, car washing, pools, etc.)
☐	Adopt an Outdoor Lawn Irrigation Ordinance
☐	Adopt a Private well Ordinance (private wells in a city must comply with water restrictions)
☑	**Implement a Stormwater Management Program**
☐	Adopt Non-Zoning Wetlands Ordinance (can further protect wetlands beyond state/federal laws-for vernal pools, buffer areas, restrictions on filling or alterations)
☐	Adopt a Water Offset Program (primarily for new development or expansion)
☐	Implement a Water Conservation Outreach Program
☐	Hire a Water Conservation Coordinator (part-time)
☐	Implement a Rebate program for water efficient appliances, fixtures, or outdoor water management
☐	Other

Objective 8: Tracking Success: How will you track or measure success through the next ten years?

Oak Park Heights will track per capita water demand on a regular basis to confirm the conservation trend and if needed, strength conservation practices.

Tip: The process to monitor demand reduction and/or a rate structure includes:

a) The DNR District Hydrologist or Groundwater Appropriation Hydrologist will call or visit the community the first 1-3 years after the water supply plan is completed.
b) They will discuss what activities the community is doing to conserve water and if they feel their actions are successful. The Water Supply Plan, Part 3 tables and responses will guide the discussion. For example, they will discuss efforts to reduce unaccounted for water loss if that is a problem, or go through Tables 33, 34 and 35 to discuss new initiatives.
c) The city representative and the hydrologist will discuss total per capita water use, residential per capita water use, and business/industry use. They will note trends.
d) They will also discuss options for improvement and/or collect case studies of success stories to share with other communities. One option may be to change the rate structure, but there are many other paths to successful water conservation.
e) If appropriate, they will cooperatively develop a simple work plan for the next few years, targeting a couple areas where the city might focus efforts.

C. Regulation

Complete Table 29 by selecting which regulations are used to reduce demand and improve water efficiencies. Add additional rows as needed.

Copies of adopted regulations or proposed restrictions or should be included in **Appendix 10** (a list with hyperlinks is acceptable).

Table 29. Regulations for short-term reductions in demand and long-term improvements in water efficiencies

Regulations Utilized	When is it applied (in effect)?
☑ Rainfall sensors required on landscape irrigation systems MN State Statue 103G.298	☑ Ongoing ☐ Seasonal ☐ Only during declared Emergencies
☑ Water efficient plumbing fixtures required 1992 Federal Energy Policy Act	☑ New Development ☑ Replacement ☐ Rebate Programs
☑ Critical/Emergency Water Deficiency ordinance	☑ Only during declared Emergencies
☑ Watering restriction requirements (time of day, allowable days, etc.)	☑ Odd/Even ☐ 2 days/week ☑ and during declared Emergencies
☐ Water waste prohibited (for example, having a fine for irrigators spraying on the street)	☐ Ongoing ☐ Seasonal ☐ Only during declared Emergencies
☐ Limitations on turf areas (requiring lots to have 10% - 25% of the space in natural areas)	☐ New Development ☐ Shoreland/zoning ☐ Other
☐ Soil preparation requirement s (after construction, requiring topsoil to be applied to promote good root growth)	☐ New Development ☐ Construction Projects ☐ Other
☐ Tree ratios (requiring a certain number of trees per square foot of lawn)	☐ New development ☐ Shoreland/zoning ☐ Other
☐ Permit to fill swimming pool and/or requiring pools to be covered (to prevent evaporation)	☐ Ongoing ☐ Seasonal ☐ Only during declared Emergencies
☐ Ordinances that permit stormwater irrigation, reuse of water, or other alternative water use (Note: be sure to check current plumbing codes for updates)	☐ Describe

D. 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 municipal water suppliers develop a long-term plan to retrofit public buildings with water efficient plumbing fixtures and appliances. Some water suppliers have developed partnerships with organizations having similar conservation goals, such as electric or gas suppliers, to develop cooperative rebate and retrofit programs.

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

Complete Table 30 by checking which water uses are targeted, the outreach methods used, the measures used to identify success, and any participating partners.

Table 30. Retrofitting programs (Select all that apply)

Water Use Targets	Outreach Methods	Partners
☐ low flush toilets, ☑ toilet leak tablets, ☐ low flow showerheads, ☐ faucet aerators;	☑ Education about ☐ free distribution of ☐ rebate for ☐ other	☐ Gas company ☐ Electric company ☐ Watershed organization
☐ water conserving washing machines, ☐ dish washers, ☐ water softeners;	☐ Education about ☐ free distribution of ☐ rebate for ☐ other	☐ Gas company ☐ Electric company ☐ Watershed organization
☑ rain gardens, ☑ rain barrels, ☑ Native/drought tolerant landscaping, etc.	☑ Education about ☑ free distribution of ☐ rebate for ☐ other	☐ Gas company ☐ Electric company ☑ Watershed organization

Briefly discuss measures of success from the above table (e.g. number of items distributed, dollar value of rebates, gallons of water conserved, etc.):

Seven (7) rain gardens were installed in 2015. The result of the conservation effort may result in less water used for irrigation. OPH has not collected data related to the water conservation information provided via newsletters.

E. Education and Information Programs

Customer education should take place in three different circumstances. First, customers should be provided information on how to conserve water and improve water use efficiencies. Second, information should be provided at appropriate times to address peak demands. Third, emergency notices and educational materials about how to reduce water use should be available for quick distribution during an emergency.

Proposed Education Programs

Complete Table 31 by selecting which methods are used to provide water conservation and information, including the frequency of program components. Select all that apply and add additional lines as needed.

Table 31. Current and Proposed Education Programs

Education Methods	General summary of topics	#/Year	Frequency
Billing inserts or tips printed on the actual bill			☐ Ongoing ☐ Seasonal ☐ During declared emergencies
Consumer Confidence Reports	Water Quality		☑ Ongoing ☐ Seasonal ☐ During declared Emergencies
Press releases to traditional local news outlets (e.g., newspapers, radio and TV)			☐ Ongoing ☐ Seasonal ☐ During declared Emergencies
Social media distribution (e.g., emails, Facebook, Twitter)	Water Conservation and water restrictions.		☐ Ongoing ☐ Seasonal ☑During declared Emergencies
Paid advertisements (e.g., billboards, print media, TV, radio, web sites, etc.)			☐ Ongoing ☐ Seasonal ☐ During declared Emergencies
Presentations to community groups			☐ Ongoing ☐ Seasonal ☐ During declared Emergencies
Staff training	General water distribution system education / Facility tours.		☑ Ongoing ☐ Seasonal ☐ During declared Emergencies
Facility tours			☐ Ongoing ☐ Seasonal ☐ During declared Emergencies
Displays and exhibits			☐ Ongoing ☐ Seasonal ☐ During declared Emergencies
Marketing rebate programs (e.g., indoor fixtures & appliances and outdoor practices)			☐ Ongoing ☐ Seasonal ☐ During declared Emergencies
Community news letters	General Water Conservation information, four times per year.		☑ Ongoing ☐ Seasonal ☐ During declared Emergencies
Direct mailings (water audit/retrofit kits, showerheads, brochures)			☐ Ongoing ☐ Seasonal ☐ During declared Emergencies
Information kiosk at utility and public buildings			☐ Ongoing ☐ Seasonal ☐ During declared Emergencies
Public Service Announcements	Drinking water related topics		☐ Ongoing ☐ Seasonal ☑ During declared Emergencies
Cable TV Programs			☐ Ongoing ☐ Seasonal During declared Emergencies
Demonstration projects (landscaping or plumbing)	City owned raingardens within parks		☑ Ongoing ☐ Seasonal ☐ During declared Emergencies

Education Methods	General summary of topics	#/Year	Frequency
K-12 Education programs (Project Wet, Drinking Water Institute, presentations)			☐ Ongoing ☐ Seasonal ☐ During declared Emergencies
Community Events (children's water festivals, environmental fairs)			☐ Ongoing ☐ Seasonal ☐ During declared Emergencies
Community education classes			☐ Ongoing ☐ Seasonal ☐ During declared Emergencies
Water Week promotions			☐ Ongoing ☐ Seasonal ☐ During declared Emergencies
Website www.cityofoakparkheights.com	Water conservation and water waste information.		☑ Ongoing ☐ Seasonal ☐ During declared Emergencies
Targeted efforts (large volume users, users with large increases)			☐ Ongoing ☐ Seasonal ☐ During declared Emergencies
Notices of ordinances	City Ordinance 1001 is available online.		☑ Ongoing ☐ Seasonal ☐ During declared Emergencies
Emergency conservation notices			☐ Ongoing ☐ Seasonal ☐ During declared Emergencies
Other:			☐ Ongoing ☐ Seasonal ☐ During declared Emergencies

Briefly discuss what future education and information activities your community is considering in the future:

The water utility could provide water conservation displays at the annual Party in the Park city-wide event.

Oak Park Heights will provide water conservation brochures and information at City Hall for customers and provide to any resident seeking ways to reduce water bill or for conservation.

With planned meter replacement program, utility will provide conservation information and ways to save on water bill to utility customers.

Part 4. ITEMS FOR METROPOLITAN AREA COMMUNITIES

Minnesota Statute 473.859 requires WSPs 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 information in Parts 1-3 addresses water demand for the next 10 years. However, additional information is needed to address water demand through 2040, which will make the WSP consistent with the Metropolitan Land Use Planning Act, upon which the local comprehensive plans are based.

This Part 4 provides guidance to complete the WSP in a way that addresses plans for water supply through 2040.

A. Water Demand Projections through 2040

Complete Table 7 in Part 1D by filling in information about long-term water demand projections through 2040. Total Community Population projections should be consistent with the community's system statement, which can be found on the Metropolitan Council's website and which was sent to the community in September 2015.

Projected Average Day, Maximum Day, and Annual Water Demands may either be calculated using the method outlined in *Appendix 2* of the *2015 Master Water Supply Plan* or by a method developed by the individual water supplier.

B. Potential Water Supply Issues

Complete Table 10 in Part 1E by providing information about the potential water supply issues in your community, including those that might occur due to 2040 projected water use.

The *Master Water Supply Plan* provides information about potential issues for your community in *Appendix 1 (Water Supply Profiles).* This resource may be useful in completing Table 10.

You may document results of local work done to evaluate impact of planned uses by attaching a feasibility assessment or providing a citation and link to where the plan is available electronically.

C. Proposed Alternative Approaches to Meet Extended Water Demand Projections

Complete Table 12 in Part 1F with information about potential water supply infrastructure impacts (such as replacements, expansions or additions to wells/intakes, water storage and treatment capacity, distribution systems, and emergency interconnections) of extended plans for development and redevelopment, in 10-year increments through 2040. It may be useful to refer to information in the community's local Land Use Plan, if available.

Complete Table 14 in Part 1F by checking each approach your community is considering to meet future demand. For each approach your community is considering, provide information about the amount of

future water demand to be met using that approach, the timeframe to implement the approach, potential partners, and current understanding of the key benefits and challenges of the approach.

As challenges are being discussed, consider the need for: evaluation of geologic conditions (mapping, aquifer tests, modeling), identification of areas where domestic wells could be impacted, measurement and analysis of water levels & pumping rates, triggers & associated actions to protect water levels, etc.

D. Value-Added Water Supply Planning Efforts (Optional)

The following information is not required to be completed as part of the local water supply plan, but completing this can help strengthen source water protection throughout the region and help Metropolitan Council and partners in the region to better support local efforts.

Source Water Protection Strategies

Does a Drinking Water Supply Management Area for a neighboring public water supplier overlap your community? ☑ Yes ☐ No

If you answered no, skip this section. If you answered yes, please complete Table 32 with information about new water demand or land use planning-related local controls that are being considered to provide additional protection in this area.

Table 32. Local controls and schedule to protect Drinking Water Supply Management Areas

Local Control	Schedule to Implement	Potential Partners
☐ None at this time		
☑ Comprehensive planning that guides development in vulnerable drinking water supply management areas	2018, with City comprehensive planning	City of Stillwater City of Lake Elmo
☐ Zoning overlay		
☐ Other:		

Technical assistance

From your community's perspective, what are the most important topics for the Metropolitan Council to address, guided by the region's Metropolitan Area Water Supply Advisory Committee and Technical Advisory Committee, as part of its ongoing water supply planning role?

☑ Coordination of state, regional and local water supply planning roles
☐ Regional water use goals
☐ Water use reporting standards
☐ Regional and sub-regional partnership opportunities
☐ Identifying and prioritizing data gaps and input for regional and sub-regional analyses
☐ Others: _____

GLOSSARY

Agricultural/Irrigation Water Use - Water used for crop and non-crop irrigation, livestock watering, chemigation, golf course irrigation, landscape and athletic field irrigation.

Average Daily Demand - The total water pumped during the year divided by 365 days.

Calcareous Fen - Calcareous fens are rare and distinctive wetlands dependent on a constant supply of cold groundwater. Because they are dependent on groundwater and are one of the rarest natural communities in the United States, they are a protected resource in MN. Approximately 200 have been located in Minnesota. They may not be filled, drained or otherwise degraded.

Commercial/Institutional Water Use - Water used by motels, hotels, restaurants, office buildings, commercial facilities and institutions (both civilian and military). Consider maintaining separate institutional water use records for emergency planning and allocation purposes. Water used by multi-family dwellings, apartment buildings, senior housing complexes, and mobile home parks should be reported as Residential Water Use.

Commercial/Institutional/Industrial (C/I/I) Water Sold - The sum of water delivered for commercial/institutional or industrial purposes.

Conservation Rate Structure - A rate structure that encourages conservation and may include increasing block rates, seasonal rates, time of use rates, individualized goal rates, or excess use rates. If a conservation rate is applied to multifamily dwellings, the rate structure must consider each residential unit as an individual user. A community may have a separate conservation rate that only goes into effect when the community or governor declares a drought emergency. These higher rates can help to protect the city budgets during times of significantly less water usage.

Date of Maximum Daily Demand - The date of the maximum (highest) water demand. Typically this is a day in July or August.

Declining Rate Structure - Under a declining block rate structure, a consumer pays less per additional unit of water as usage increases. This rate structure does not promote water conservation.

Distribution System - Water distribution systems consist of an interconnected series of pipes, valves, storage facilities (water tanks, water towers, reservoirs), water purification facilities, pumping stations, flushing hydrants, and components that convey drinking water and meeting fire protection needs for cities, homes, schools, hospitals, businesses, industries and other facilities.

Flat Rate Structure - Flat fee rates do not vary by customer characteristics or water usage. This rate structure does not promote water conservation.

Industrial Water Use - Water used for thermonuclear power (electric utility generation) and other industrial use such as steel, chemical and allied products, paper and allied products, mining, and petroleum refining.

Low Flow Fixtures/Appliances - Plumbing fixtures and appliances that significantly reduce the amount of water released per use are labeled "low flow". These fixtures and appliances use just enough water to be effective, saving excess, clean drinking water that usually goes down the drain.

Maximum Daily Demand - The maximum (highest) amount of water used in one day.

Metered Residential Connections - The number of residential connections to the water system that have meters. For multifamily dwellings, report each residential unit as an individual user.

Percent Unmetered/Unaccounted For - Unaccounted for water use is the volume of water withdrawn from all sources minus the volume of water delivered. This value represents water "lost" by miscalculated water use due to inaccurate meters, water lost through leaks, or water that is used but unmetered or otherwise undocumented. Water used for public services such as hydrant flushing, ice skating rinks, and public swimming pools should be reported under the category "Water Supplier Services".

Population Served - The number of people who are served by the community's public water supply system. This includes the number of people in the community who are connected to the public water supply system, as well as people in neighboring communities who use water supplied by the community's public water supply system. It should not include residents in the community who have private wells or get their water from neighboring water supply.

Residential Connections - The total number of residential connections to the water system. For multifamily dwellings, report each residential unit as an individual user.

Residential Per Capita Demand - The total residential water delivered during the year divided by the population served divided by 365 days.

Residential Water Use - Water used for normal household purposes such as drinking, food preparation, bathing, washing clothes and dishes, flushing toilets, and watering lawns and gardens. Should include all water delivered to single family private residences, multi-family dwellings, apartment buildings, senior housing complexes, mobile home parks, etc.

Smart Meter - Smart meters can be used by municipalities or by individual homeowners. Smart metering generally indicates the presence of one or more of the following:

- Smart irrigation water meters are controllers that look at factors such as weather, soil, slope, etc. and adjust watering time up or down based on data. Smart controllers in a typical summer will reduce water use by 30%-50%. Just changing the spray nozzle to new efficient models can reduce water use by 40%.
- Smart Meters on customer premises that measure consumption during specific time periods and communicate it to the utility, often on a daily basis.
- A communication channel that permits the utility, at a minimum, to obtain meter reads on demand, to ascertain whether water has recently been flowing through the meter and onto the premises, and to issue commands to the meter to perform specific tasks such as disconnecting or restricting water flow.

Total Connections - The number of connections to the public water supply system.

Total Per Capita Demand - The total amount of water withdrawn from all water supply sources during the year divided by the population served divided by 365 days.

Total Water Pumped - The cumulative amount of water withdrawn from all water supply sources during the year.

Total Water Delivered - The sum of residential, commercial, industrial, institutional, water supplier services, wholesale and other water delivered.

Ultimate (Full Build-Out) - Time period representing the community's estimated total amount and location of potential development, or when the community is fully built out at the final planned density.

Unaccounted (Non-revenue) Loss - See definitions for "percent unmetered/unaccounted for loss".

Uniform Rate Structure - A uniform rate structure charges the same price-per-unit for water usage beyond the fixed customer charge, which covers some fixed costs. The rate sends a price signal to the customer because the water bill will vary by usage. Uniform rates by class charge the same price-per-unit for all customers within a customer class (e.g. residential or non-residential). This price structure is generally considered less effective in encouraging water conservation.

Water Supplier Services - Water used for public services such as hydrant flushing, ice skating rinks, public swimming pools, city park irrigation, back-flushing at water treatment facilities, and other uses.

Water Used for Nonessential Purposes - Water used for lawn irrigation, golf course and park irrigation, car washes, ornamental fountains, and other non-essential uses.

Wholesale Deliveries - The amount of water delivered in bulk to other public water suppliers.

Acronyms and Initialisms

AWWA – American Water Works Association

C/I/I – Commercial/Institutional/Industrial

CIP – Capital Improvement Plan

GIS – Geographic Information System

GPCD – Gallons per capita per day

GWMA – Groundwater Management Area – North and East Metro, Straight River, Bonanza,

MDH – Minnesota Department of Health

MGD – Million gallons per day

MG – Million gallons

MGL – Maximum Contaminant Level

MnTAP – Minnesota Technical Assistance Program (University of Minnesota)

MPARS – MN/DNR Permitting and Reporting System (new electronic permitting system)

MRWA – Minnesota Rural Waters Association

SWP – Source Water Protection

WHP – Wellhead Protection

APPENDICES TO BE SUBMITTED BY THE WATER SUPPLIER

Appendix 1: Well records and maintenance summaries – see Part 1C

Appendix 2: Water level monitoring plan – see Part 1E

Appendix 3: Water level graphs for each water supply well – see Part 1E

Appendix 4: Capital Improvement Plan – see Part 1E

Appendix 5: Emergency Telephone List – see Part 2C

Appendix 6: Cooperative Agreements for Emergency Services – see Part 2C

Appendix 7: Municipal Critical Water Deficiency Ordinance – see Part 2C

Appendix 8: Graph showing annual per capita water demand for each customer category during the last ten-years – see Part 3 Objective 4

Appendix 9: Water Rate Structure – see Part 3 Objective 6

Appendix 10: Adopted or proposed regulations to reduce demand or improve water efficiency – see Part 3 Objective 7

Appendix 11: Implementation Checklist – summary of all the actions that a community is doing, or proposes to do, including estimated implementation dates

APPENDIX 1: WELL RECORDS AND MAINTENANCE SUMMARIES

2005 Well Pump Totals

	Well 1	Well 2	Total	Quarterly Totals
January	13,012	2710	15,722	43,917
February	14,607	22	14,629	
March	12,104	1452	13,566	
April	8,683	6447	15,130	49,085
May	12,951	2692	15,643	
June	16,810	1502	18,312	
July	8,118	13348	21,466	79,244
August	21,869	10439	32,308	
September	23,907	1563	25,470	
October	18,897	1016	19,913	51,660
November	16,503	716	17,219	
December	11,554	2974	14,528	

Total Yealy Pumpage in millions of Gallons **223,906**

Average Daily Demand	613441	
Max. Daily Demand 7-18-05		1.861

2006 Well Pump Totals

Month	Well 1		Well 2			Totals	Month	Quarterly
Jan	702614	5,285,000	679149	10,095,000		**15,380,000**	Jan	
Feb	711,838	9,224,000	683966	4,817,000		**14,041,000**	Feb	
Mar	722,721	10,883,000	689553	5,587,000		**16,470,000**	Mar	45,891,000
Apr	737,890	15,169,000	690858	1,305,000		**16,474,000**	Apr	
May	757,939	20,049,000	690858	0		**20,049,000**	May	
Jun	786,325	28,386,000	690858	0		**28,386,000**	Jun	64,909,000
Jul	818,802	32,477,000	697259	6,401,000		**38,878,000**	Jul	
Aug	843,447	24,645,000	700648	3,389,000		**28,034,000**	Aug	
Sep	864,438	20,991,000	700849	201,000		**21,192,000**	Sep	88,104,000
Oct	882,244	17,806,000	700849	0		**17,806,000**	Oct	
Nov	898,030	15,786,000	700849	0		**15,786,000**	Nov	
Dec	913,787	15,757,000	701326	477,000		**16,234,000**	Dec	49,826,000
Totals	**Totals**	**216,458,000**	**Totals**	**32,272,000**		**248,730,000**	**Totals**	

Average Daily Demand	**681452**
Max. Daily Demand 7-12-06	**1,754,000**

2007 Well Pump Totals

Month	Well 1		Well 2			Totals	Month	Quarterly
Jan	930,139	16,352,000	701326	0		**16,352,000**	Jan	
Feb	944,875	14,736,000	701326	0		**14,736,000**	Feb	
Mar	960,628	15,753,000	701326	0		**15,753,000**	Mar	46,841,000
Apr	977,227	16,599,000	701326	0		**16,599,000**	Apr	
May	1,001,491	24,264,000	701376	50,000		**24,314,000**	May	
Jun	1,029,100	27,609,000	705624	4,248,000		**31,857,000**	Jun	72,770,000
Jul	1,049,947	20,847,000	723500	17,876,000		**38,723,000**	Jul	
Aug	1,069,359	19,412,000	734953	11,453,000		**30,865,000**	Aug	
Sep	1,076,079	6,720,000	751047	16,094,000		**22,814,000**	Sep	92,402,000
Oct	1,077,234	1,155,000	767389	16,342,000		**17,497,000**	Oct	
Nov	1,088,224	10,990,000	771615	4,226,000		**15,216,000**	Nov	
Dec	1,103,253	15,029,000	772650	1,035,000		**16,064,000**	Dec	48,777,000
Totals	**Totals**	**189,466,000**	**Totals**	**71,324,000**		**260,790,000**	**Totals**	

Average Daily Demand	**714493**
Max. Daily Demand 7-26-07	**1,648,000**

2008 Well Pump Totals

Month	Well 1		Well 2		Totals	Month	Quarterly
Jan	114771	13,518,000	777176	4,526,000	**18,044,000**	Jan	
Feb	129,603	14,832,000	777176	0	**14,832,000**	Feb	
Mar	145,050	15,447,000	777176	0	**15,447,000**	Mar	48,323,000
Apr	160,841	15,791,000	777176	0	**15,791,000**	Apr	
May	180,496	19,655,000	777176	0	**19,655,000**	May	
Jun	204,076	23,580,000	777176	0	**23,580,000**	Jun	59,026,000
Jul	219,004	14,928,000	794087	16,911,000	**31,839,000**	Jul	
Aug	232,273	13,269,000	812395	18,308,000	**31,577,000**	Aug	
Sep	246,403	14,130,000	821294	8,899,000	**23,029,000**	Sep	86,445,000
Oct	246,403	0	838464	17,170,000	**17,170,000**	Oct	
Nov	260,311	13,908,000	838464	0	**13,908,000**	Nov	
Dec	262,150	1,839,000	851180	12,716,000	**14,555,000**	Dec	45,633,000
Totals	**Totals**	**160,897,000**	**Totals**	**78,530,000**	**239,427,000**	**Totals**	

Average Daily Demand	**654172**
Max. Daily Demand 7-6-08	**1,450,000**

2009 Well Pump Totals

Month	Well 1		Well 2			Totals	Month	Quarterly
Jan	262,173	23,000	866,147	14,512,000		**14,535,000**	Jan	
Feb	274,164	11,991,000	867,859	1,712,000		**13,703,000**	Feb	
Mar	288,373	14,209,000	868,438	579,000		**14,788,000**	Mar	43,026,000
Apr	880,969	12,531,000	219,340	2,967,000		**15,498,000**	Apr	
May	898,702	17,733,000	298,764	7,424,000		**25,157,000**	May	
Jun	319,620	20,856,000	906,257	7,955,000		**28,811,000**	Jun	69,466,000
Jul	328,534	8,914,000	927,755	21,498,000		**30,412,000**	Jul	
Aug	330,893	2,359,000	950,296	22,541,000		**24,900,000**	Aug	
Sep	976,124	25,828,000	330,893	0		**25,828,000**	Sep	81,140,000
Oct	988,980	12,856,000	333,853	2,958,000		**15,814,000**	Oct	
Nov	2,948	13,519,000	33414	288,000		**13,807,000**	Nov	
Dec	344,897	107,560	6588	3,644		**111,204**	Dec	29,732,204
Totals	**Totals**	**140,926,560**	**Totals**	**82,437,644**		**223,364,204**	**Totals**	

Average Daily Demand	**611957**
Max. Daily Demand 7-20-09	**1,256,000**

2010 Well Pump Totals

Month	Well 1	Well 2	Totals	Month	Quarterly
Jan	0	14,709,000	**14,709**	Jan	
Feb	0	12,972,000	**12,972**	Feb	
Mar	0	14,092,000	**14,092**	Mar	41,773
Apr	3,508,000	11,838,000	**15,346**	Apr	
May	6,798,000	12,459,000	**19,228**	May	
Jun	9,079,000	11,513,000	**20,592**	Jun	55,166
Jul	10,756,000	13,939,000	**24,695**	Jul	
Aug	10,801,000	12899000	**23,700**	Aug	
Sep	9,090,000	10,765,000	**19,855**	Sep	68,250
Oct	6,440,000	10,149,000	**16,589**	Oct	
Nov	6,411,000	7,240,000	**13,651**	Nov	
Dec	7,066,000	7,776,000	**14,842**	Dec	45,082
Totals	**Totals 69,920,000**	**Totals 140,351,000**	**210,271,000**	**Totals**	

Average Daily Demand	**576084**
Max. Daily Demand 7-2-2010	**1,256**

2011 Well Pump Totals

			Quarterly Totals
January	14,626		**42,558**
February	13,325		
March	14,607		
April	13,832		**51,888**
May	16,916		
June	21,140		
July	25,579		**74,372**
August	25,457		
September	23,336		
October	19,116		**46,791**
November	13,741		
December	13,934		

Total Yealy Pumpage in millions of Gallons **216,626**

Average Daily Demand (MGD)	593495
Max. Daily Demand (MGD) 8-9-2011	1.367

2012 Well Pump Totals

			Quarterly Totals
January	15,024		**52,966**
February	17,591		
March	20,351		
April	16,872		**60,293**
May	18,820		
June	24,601		
July	28,846		**83,939**
August	27,506		
September	27,587		
October	18,315		**46,562**
November	14,189		
December	14,058		

Total Yealy Pumpage in millions of Gallons **243,760**

Average Daily Demand (MGD)	667,835
Max. Daily Demand (MGD) 7-13-2012	1.245

2013 Well Pump Totals

	Well 1	Well 2	Total	Quarterly Totals
January	6,792	7610	14,402	41,874
February	6,270	6851	13,121	
March	6,714	7637	14,351	
April	6,748	7272	14,020	49,904
May	7,742	9173	16,915	
June	9,018	9951	18,969	
July	12,160	15686	27,846	89,712
August	12,485	21189	33,674	
September	13,181	15011	28,192	
October	8,559	9239	17,798	46,453
November	6,832	7358	14,190	
December	6,762	7703	14,465	

Total Yealy Pumpage in millions of Gallons **227,943**

Average Daily Demand 624501

Max. Daily Demand 8-28-13 1.454

2014 Well Pump Totals

January	14,776,000
February	13,496,000
March	15,811,000
Q1	**44,083,000**
April	15,158,000
May	17,556,000
June	21,847,000
Q2	**54,561,000**
July	24,841,000
August	28,646,000
September	22,616,000
Q3	**76,103,000**
October	18,287,000
November	14,434,000
December	14,531,000
Q4	**47,252,000**
Total	**221,999,000**

Average Daily Demand	608216
Max. Daily Demand 8-15-2014	1,373,000

2015 Well Pump Totals

	Well 1	Well 2	Total	Quarterly Totals
January	7,057	7477	14,534	42,156
February	5,831	7267	13,098	
March	7,464	7060	14,524	
April	7,010	7466	14,476	51,400
May	8,225	9288	17,513	
June	9,026	10385	19,411	
July	11,755	11362	23,117	69,862
August	11,413	14456	25,869	
September	9,636	11240	20,876	
October	8,951	9982	18,933	45,896
November	7,901	5463	13,364	
December	13,599	0	13,599	

Total Yealy Pumpage in millions of Gallons **209,314**

Average Daily Demand 573463

Max. Daily Demand 9/14/15 1,104,000

WELL 2 REHAB-2015

Keys Well Drilling Company

1/7/16

Summary of Work Performed

Project: Oak Park Heights Well Pump # 2

WO # 2015127

Scope: Scheduled Pump Maintenance

Pump inspection indicated bearing wear (.015 - .024), wear rings (.047-.051)

Column pipe show some pitting

Shafting – SS OK, line shaft bearings worn

Head shaft, packing bearing worn.

REPAIRS

Machine and replace bowl bearings
Machine and replace bowl wear rings
Machine and replace bowl shaft
Replace bowl bolting
Replace bottom 5' column pipe, 7ea x 10'
Replace all line shaft bearings
Fabricate and replace SS head shaft
Machine and replace packing bearing and packing
Install 1" PVC probe tube
Replace 8" suction pipe
Motor repair – replace bearings, steam clean, bake, and test

Depth measured at 276' – 14' of fill in hole. No well work done

Well put back in service Monday 1/5/16

1156 Homer Street. St. Paul, MN 55116-3232
Phone 651-646-7871 Fax 651-641-0216

Vertical Turbine

Job Name: OAK PARK HEIGHTS | Well: ✓ | Job #: 2015127 | Date: 12-4-15

Pump Type | Lineshaft ☒ | Sub ☐ | Mfg: AM MARSH | Size/Model: 12IC | Stages: 5

Well Size: 16" | Pump Setting: 210' | Well Depth/Measured: 276 | Dept Orig.: 290 | Fill: 14

SWL 132'

Inspection Report

17 3/8" stickup

								Good	Recommend Replace	Quest	Customer OK
Strainer	yes ☐	no ☐					Size N/A				
Tailpipe	yes ☒	no ☐					Size 8"				
Bowls		Mic out at					HAD TO cut OFF		1		
Bearings	Top	.024									
	Int	.023	.023	.022	.017				X		
	Bot	.015							X		
Wear Ring	Top	.047							X		
	Int	.047	.050	.051					X		
	Bot	.050							X		
Bowl Shaft	size	1 1/16 X 79" cut TO 1 3/16 12 THRd							X		
Impellers	open ☐	enclosed ☒					# 00066209	5			
Collets	ss ☒	carb ☐						5			
Bolts & Nuts	3/8 X 1 1/4 X 72							72			

Col/Shaft

				Amount	Good	Recommend Replace	Quest	Customer OK
Col Pipe	Dia 8"	TBE	59-1/4 59-1/2	1	1			
		T&C	119-1/4 119-1/2	20	13	6	1	
		T&C	59-1/4 59-1/2	1		1		
Shaft	ss ☒ carb ☐	Dia 1 3/16	5'	1	1			
	rs ☐ flush ☐		10'	20	20			
Shaft Couplings		thd 12		21	21			
Spider Bearings	# FSB 1 3/16			21		21		
Spiders	8" X 1 3/16 X 3/4"			21	21			
Headshaft	1 7/16 X 54" w 1 3/16 step coupling					1		
Motor Headshaft	ON site							
Discharge Head	size 8X8X16 1/2							
Pack Gland Bearing	1 7/16 X 2 3/16 X 6"			1		1		
Motor (hp)/make	US 100 HP							
PVC Tube/Probe	3/4"							
Misc Parts						220'		
Blast & Paint	yes ☐	no ☐						

Additional Repairs

Well 2 Rehab-2015

Oak Park Heights # 2

Job # 2015127

12/7/15

Description	Qty	Units	Price	Extension	
Part 1 - Labor to Remove Pump & Motor					
Operator	8	Hrs.	$ 85.00	$ 680.00	
Helper	8	Hrs.	$ 80.00	$ 640.00	
Pump Rig	8	Hrs.	$ 60.00	$ 480.00	
Flat Bed	1	Day	$ 50.00	$ 50.00	
Shop - Clean, Inspect and Furnish Report	12	Hrs.	$ 85.00	$ 1,020.00	
Total Part 1 - Labor to Remove Pump & Motor				**$ 2,870.00**	
Description	*Qty*	*Units*	*Price*	*Extension*	
Part 2 - Possible Repairs					
210 x 8" x 1-7/16" - (1-7/16" shaft not readly available)					
Pressure Transducer 100 PSI	0	Ea.	$ 300.00	$0.00	
Rebuild 100 Hp Standard Efficient Motor - **Estimate**	1	Ea.	$ 1,200.00	$1,200.00	
Balance motor	**1**	**Ea.**	**$ 350.00**	**$350.00**	added to bid form
Rebuild Discharge Head Packing Box	1	L.S.	$ 190.00	$190.00	
Sandblast & Paint Discharge Head	1	L.S.	$ 200.00	$200.00	
Replace Packing	1	L.S.	$ 15.00	$15.00	
Column .322 8" x 4' 11-1/4" TBE	0	Ea.	$ 240.00	$0.00	
Column .322 8" x 9' 11-1/4" T&C	7	Ea.	$ 330.00	$2,310.00	
Column .322 8" x 4' 11-1/4" T&C	1	Ea.	$ 240.00	$240.00	
Column .322 Suction Pipe 8" x 10' TOE	1	Ea.	$ 250.00	$250.00	
Headshaft - Stainless **1-3/16" x 1-7/16"** x 60" T&C	1	Ea.	$ 435.00	$435.00	
Shafting .416 1-3/16 x 10' T&C	0	Ea.	$ 175.00	$0.00	
Shafting .416 1-3/16 x 5' T&C	0	Ea.	$ 135.00	$0.00	
Retainer Bronze -Spider 8"x 2.5" x 3/4"	0	Ea.	$ 100.00	$0.00	
Bowl Shaft	1	Ea.	$ 325.00	$325.00	
Bowl Bearings	1	Set	$ 500.00	$500.00	
Bowl Wear Rings	5	Ea.	$ 380.00	$1,900.00	
Total Part 2 - Possible Repairs				**$7,915.00**	
Rubber bearing	21	Ea.	$ 30.00	$630.00	
3/4" PVC probe tube	220	lf	$ 1.00	$220.00	

Description	Est Repairs			$8,765.00	
Part 3 - Labor to Install Pump & Motor	Qty	Units	Price	Extension	
Operator	8	Hrs.	$ 85.00	$ 680.00	
Helper	8	Hrs.	$ 80.00	$ 640.00	
Pump Rig	8	Hrs.	$ 60.00	$ 480.00	
Flat Bed	1	Day	$ 50.00	$ 50.00	
Total Part 3 - Labor to Install Pump & Motor				**$1,850.00**	
	Qty	Units	Price	Extension	
Alternate 1 - Well Work					
Setup of Equipment and Building Pit		L.S.	$ 7,500.00	$0.00	
Wire Brush casing		**L.S.**	**$ 2,500.00**	**$0.00**	added to bid form
Furnish, Install and Remove Development Equipment		L.S.	$ 5,000.00	$0.00	
Explosives		Lbs	$ 40.00	$0.00	
Decompress Well		Hr.	$ 275.00	$0.00	
Air Lift sand from well		CY	$ 70.00	$0.00	
City to dispose of material airlifted from well					
Furnish, Install and Remove Test Pump		L.S.	$ 6,500.00	$0.00	
Test Pump		Hr.	$ 190.00	$0.00	
Total Alternate 1 - Well Work				**$0.00**	
Summary					
Total Part 1 - Labor to Remove Pump & Motor				**$2,870.00**	
Total Part 2 - Possible Repairs				**$8,765.00**	
Total Part 3 - Labor to Install Pump & Motor				**$1,850.00**	
Cost Estimate not including Alternate 1				**$13,485.00**	
Total Alternate 1 - Well Work if necessary				**$0.00**	
Total With Alternate				**$13,485.00**	
New pump for 800 GPM 345 TDH	1	LS	$ 7,800.00	$ 7,800.00	added to bid form

WELL 1 + 2 PUMP INSPECTIONS - 2010

RECEIVED DEC 10 2010

E.H. Renner & Sons

Incorporated

WELL DRILLING FOR FIVE GENERATIONS

15688 Jarvis Street NW * Elk River, Minnesota 55330

Phone (763) 427-6100 * Fax (763) 427-0533 * Toll Free (800) - 409-WELL

LINESHAFT TURBINE PUMP INSPECTION

City of Oak Park Heights
Andy Kegley
651-439-0574

Location: In Front of Garage
Installed: 2009
Pump: 1
File: 2087
Unique No:

	Date	12/7/10	11/24/98	7/23/97	4/20/95	2/11/92	4/29/88
	Report	7	6	5	4	3	2
Protection		Fuses	Fuses	Pump	Fuses	Fuses	Fuses
Size		200	200	Bound -	200	200	200
Starter - Danfoss		VFD	Mag	Would	Mag	Mag	Mag
Hertz		60	60	60	60	60	60
Estimated RPM Full Load	1784	1784	1784	1784	1784	1784	1784
Wiring		OK	OK	OK	OK	OK	OK
Drive Faults		NA					
Reset		NA					
Line Voltage	A-B	475	Running	474	468	480	470
	B-C	475		472	466	480	470
	A-C	475		473	464	480	470
Running Voltage	A-B	465	463		459	460	460
	B-C	465	463		458	460	460
	A-C	465	461		457	460	460
Amperage - Full Load	114						
	L1	98.7	93		97	97	108
	L2	98.7	93		99	98	104
	L3	98.7	94		96	98	102
DC Buss Volts		641	NA	NA	NA	NA	NA
Driver: **US 100 hp 404TP RUSI 460/60/3 Up Brg 7228BEM Low Brg 6212J**							
Static Water Level	(Ft)	144.8		136	134	143	138
Pumping Water Level	(Ft)	152.1	144		142	153	144.83
Gallons per Minute		**979**	**497.6**		**838**	**800**	**911.5**
Draw Down	(Ft)	7.3			8		
Gallons per Ft of D. D.		134.1			104.75		
Pressure	(PSI)	53	61		60	54	55
Est. Friction Loss	(Ft)	2	2		2	2	2
Est. Total Head	(Ft)	277	287		283	280	274
Pump: **Peerless 12MB - 6 stage 1000 GPM at 290 Ft. ?**							
Vibration - Parallel With Discharge Line (Displacement - Inches)							
	Top	0.0010	0.0010		0.0034	0.0020	0.0020
	Bottom	0.0004	0.0006		0.0024	0.0020	0.0010
	Head	0.0001	0.0001		0.0006	0.0010	0.0005
Vibration - Ninety Degrees From Discharge Line (Displacement - inches)							
	Top	0.0006	0.0008		0.0030	0.0025	0.0020
	Bottom	0.0003	0.0006		0.0018	0.0012	0.0010
	Head	0.0002	0.0003		0.0006	0.0005	0.0005
Noise	Top	Normal	Normal		Normal	Normal	Normal
	Bottom	Normal	Normal		Normal	Normal	Normal
	Head	Normal	Normal		Normal	Normal	Normal
Check Valve		OK	OK		OK	OK	OK
Oil		OK	OK		OK	OK	OK
Packing		OK	OK		OK	OK	OK
Hours							
Other							

E.H. Renner & Sons

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WELL DRILLING FOR FIVE GENERATIONS

15688 Jarvis Street NW * Elk River, Minnesota 55330

Phone (763) 427-6100 * Fax (763) 427-0533 * Toll Free (800) - 409-WELL

LINESHAFT TURBINE PUMP INSPECTION

City of Oak Park Heights
Andy Kegley
651-439-0574

Location: Behind City Hall to North

Installed: 7/2/2008

Pump: 2
File: 1668
Unique No: 208794

	Date	12/8/2010	7/3/2008	9/25/2007	11/24/98	7/23/97	4/20/95
	Report	10	9	8	7	6	5
Protection		CB	CB	CB	CB	CB	CB
Size		200	200	200	200	200	200
Starter - Danfoss		VFD	VFD	Mag	Mag	Mag	Mag
Hertz		60	60	60	60	60	60
Estimated RPM Full Load	1781	1781	1781	1781	1781	1781	1781
Wiring		OK	OK	OK	OK	OK	OK
Drive Faults		New	New	NA	NA	NA	NA
Reset		New	New	NA	NA	NA	NA
Line Voltage	A-B	486	486	486	487	487	480
	B-C	486	486	486	490	490	482
	A-C	482	482	482	488	488	481
Running Voltage	A-B	459.7	459.7	482	480	480	472
	B-C	459.7	459.7	483	481	483	473
	A-C	459.7	459.7	479	480	481	474
Amperage - Full Load		114	114	114	120	120	120
	L1	106	106	100	110	110	113
	L2	106	106	107	110	110	110
	L3	106	106	107	116	116	117
DC Buss Volts		NA	NA	NA	NA	NA	NA

Driver: **US 100 Hp RUSI 404TP - Installed 9/25/07 - Repaired 7/2/08**

Static Water Level	(Ft)	136			133	130	138
Pumping Water Level	(Ft)	169			145	166	174
Gallons per Minute		859.0	1100.0	900.0	911.2	911.2	899
Draw Down	(Ft)	33			12	36	36
Gallons per Ft of D. D.		26.0			75.9	25.3	25.0
Pressure	(PSI)	61	37	62	71	71	71
Est. Friction Loss	(Ft)	6.13	6.13	6.13	6.13	6.13	6.13
Est. Total Head	(Ft)	317			315	336	344

Pump: **American-Marsh 12IC - 5 Stage Bowl 800 GPM at 348 Ft. - 7/2/08**

Vibration - Parallel With Discharge Line (Displacement - Inches)							
	Top	0.0010	0.0021	0.0002	0.0010	0.0008	0.0018
	Bottom	0.0006	0.0012	0.0001	0.0008	0.0008	0.0009
	Head	0.0008	0.0010	0.0001	0.0006	0.0007	0.0004
Vibration - Ninety Degrees From Discharge Line (Displacement - inches)							
	Top	0.0019	0.0021	0.0009	0.0030	0.0040	0.0038
	Bottom	0.0012	0.0012	0.0001	0.0016	0.0016	0.0016
	Head	0.0008	0.0008	0.0001	0.0001	0.0004	0.0006
Noise	Top	Normal	Normal	Normal	Normal	Normal	Normal
	Bottom	Normal	Normal	Normal	Normal	Normal	Normal
	Head	Normal	Normal	Normal	Normal	Normal	Normal
Check Valve		OK	OK	OK	OK	OK	OK
Oil		Ok	New	New	OK	OK	OK
Packing		Repack	New	OK	OK	OK	OK
Hours				0			

Other: Tom reported Hot Smell in pump room wanted motor ch
10-09-07 Meg Ohms over 1000 All Three Legs,
Ohms .001 All Three Legs - Amp Draw 95 Amps

E. H. Renner & Sons

INCORPORATED

WELL DRILLING FOR FIVE GENERATIONS

15688 JARVIS STREET N.W. • ELK RIVER, MN 55330
PHONE: (763) 427-6100 • FAX: (763) 427-0533
www.ehrenner.com

INVOICE

INVOICE NO.:000113480000
CUSTOMER NO.:03568
DATE: 12/08/10

SOLD TO:
City of Oak Park Heights
Attn: Andy Kegley
14168 Oak Pk Blvd PO 2007
Oak Park Height, MN 55082

SHIP DATE	SHIPPED VIA	F.O.B.	TERMS	SALES-PERSON	ORDER DATE	P.O. NUMBER
12/07/10	JA	City	NET 30	02	12/07/10	Verbal

QUANTITY	DESCRIPTION	UNIT PRICE	AMOUNT
2	Pump Inspections	105.00	210.00

* T H A N K Y O U *	SUB-TOTAL	210.00	SHIPPING CHARGES 0.00
	SALES TAX	0.00	TOTAL 210.00

WHITE - CUSTOMER YELLOW - OFFICE PINK - REMITTANCE

WELL 1 REHAB-2009

Keys Well Drilling Company

Quotation

1156 Homer Street, St. Paul, MN 55116-3232
651-646-7871 Fax 651-641-0216

SAVE

To: City of Oak Park Heights

Date of Quotation: October 13, 2009
Attention: Andy Kegley
Project: Well Pump # 1
Location: City Hall

We are pleased to quote you as follows:

Estimate to remove pump, disassemble, inspect, repair and reinstall well Pump # 1

No.	Description	Unit	Est. Qty	Price	Extension
	Operator	Hr	8	75	600.00
	Helper	Hr	8	65	520.00
	Pump Rig	Hr	8	65	520.00
	Flat Bed Tk	Hr	1	150	150.00
	Shop time - clean and inspect	Hr	6	100	600.00
	VFD	Ea	1	8890	8890.00
	Pressure transducer	Ea	1	270	270.00
	VFD installation	Ea	1	1500	1500.00
	Discharge head packing box	Ls	1	120	120.00
	Sandblast and paint head	Ls	1	100	100.00
	Replace packing	Ls	1	15	15.00
	Column pipe 8" x 9'11-1/4" T & C	Ea	6	375	2250.00
	Column pipe 8" x 4'11-1/4" T & C	Ea	1	265	265.00
	Headshaft stainless	Ea	1	375	375.00
	Retainer - Bz spider	Ea	7	90	630.00
	Rubber bearing	Ea	20	25	500.00
	Replace Bowl Assembly	Ea	1	4825	4825.00
	1" PVC tubing	LF	200	1.5	300.00
	Shop time - Sandblast and paint column pipe	Hr	8	100	800.00
	Operator	Hr	10	75	750.00
	Helper	Hr	10	65	650.00
	Pump Rig	Hr	6	65	390.00
	Flat Bed Tk	Hr	1	150	150.00
	Balance motor	Ls	1	300	300.00
	Bacti test	Ls	1	50	50.00
	Total Repair Estimate			$	**25,520.00**

Terms: N-30
Quotation valid for 60 days
Quoted By _____
Jeffrey W. Keys

Accepted _____

Date 10/13/09

City of
Oak Park Heights

14168 Oak Park Blvd N.• Box 2007 • Oak Park Heights, MN 55082 • Phone (651) 439-4439 • Fax 439-0574

September 23, 2009

Mr. Jeff Keys
Keys Well Drilling Company
1156 Homer Street
St. Paul, MN 55116-3232

-Notice of Award-

Dear Mr. Keys,

On 9/22/09 the Oak Park Heights City Council did approve city staff's recommendation to award Keys Well Drilling Company a contract to rehab Well # 1 according to the specifications in the Request for Quotes. To initiate scheduling of work, please provide a performance security in the amount equal to your total submission (including quantities) for $42,540 no later than Wednesday September 30th, 2009. The security may be by performance bond or cashier's check and will be released from the city with final payment to the contractor and upon receipt of lien waivers, spec books and as-built drawings as stated in the Request for Quotes specifications.

Please also submit to the city proof of liability insurance in an amount not less than $1,000,000.00 naming the city as an insured party. Proof of insurance must be submitted no later than Monday September 28th, 2009.

Upon receipt of this information the city will issue a contract document and notice to proceed pursuant to the terms and conditions of the Request for Quotes.

Any questions may be directed to Andy Kegley, Interim Public Works Director.

Andy Kegley, Interim Public Works Director
651.439.4439
651.775.5759 (C)
akegley@cityofoakparkheights.com

AGREEMENT DATE – October 5nd, 2009

AGREEMENT TO PERFORM WELL # 1 REHAB AND VFD INSTALLATION

THIS DOCUMENT SERVES AS A FINAL AGREEMENT BETWEEN THE CITY OF OAK PARK HEIGHTS AND KEYS WELL DRILLING COMPANY (THE CONTRACTOR).

- The Contractor shall provide all services as delineated in the Request for Quotes and all subsequent amendments as returned to the City in an amount not to exceed $37,715.00 (base bid), this includes the provision and installation of the Danfoss VFD FC-200. The Contractor's quote(s) have been tabulated and is attached and incorporated into this Agreement as "Exhibit A". The City may select Alternate #1 in an amount of $4,825.00 when inspection results are complete and available. The above amounts include all applicable materials, labor, surcharges, licensures, taxes and fees.
- "Exhibit B" contains the Request for Quotes.
- This Agreement once fully executed shall serve as a notice of acceptance by the City of the Contractor's quote and also acts as a notice to proceed by the City for the anticipated work..
- The Contractor shall complete all work as outlined in the submitted Contractor's quote(s)and shall provide all final reporting and closing documents to the City not later than November 10th, 2009. Failure to complete by this date will entitle the City to withhold 5% of the contracted amount for each day thereafter. The City shall provide timely access to the property.
- For good cause, the City may terminate this Agreement without penalty and shall pay Contractor for equipment provided and work progressed as determined by the City. The City must perform this termination in writing.
- Except for intentional or willful acts by the City, the Contractor does hereby release the City from any loss or liability incurred by the Contractor related to the disposition of the work at the site or on this project. The Contractor shall implement best management practices to complete this project and will utilize appropriate caution to complete the work in a safe and efficient manner.
- The Contractor shall follow all federal, state, county or other laws that may be in effect related to the performance of this project.

ACCEPTED: _____ date 10/4/09
Jeff Keys, Keys Well Drilling Co.

President
Title

Notary

JENNIFER M. PINSKI
NOTARY PUBLIC - MINNESOTA
My Commission Expires Jan 31, 2012

_____ date 10/5/09
Andrew Kegley, Interim Public Works Director

Notary

JENNIFER M PINSKI
NOTARY PUBLIC - MINNESOTA
My Commission Expires Jan 31, 2012

Exhibit A – To the AGREEMENT TO PERFORM WELL # 1 REHAB AND VFD INSTALLATION:

Tabulation of Submitted Quotes from Contractor, incorporating all amendments.

KEYS

Subject: Well No. 01 quote tabulation sheet

Keys Well Drilling

Part 1 - Labor to Remove Pump & Motor	Qty	Units	Price	Extension
Operator	8	Hrs	$ 75.00	$ 600.00
Helper	8	Hrs	$ 65.00	$ 520.00
Pump Rig	8	Hrs	$ 65.00	$ 520.00
Flat Bed	1	day	$ 150.00	$ 150.00
1 - Labor to Remove Pump & Motor			TOTAL	$ 1,790.00

Evaluation phase		Hrs		
Shop - Clean, Inspect and Furnish Report	6	Hrs	$ 100.00	$ 600.00
Wire Brush Casing	1	LS	$ 2,000.00	$ 2,000.00
Televise well and measure depths - provide written report	1	LS	$ 1,400.00	$ 1,400.00
on current and future development needs			TOTAL	$ 4,000.00

Part 2 - Possible Repairs - no minimum or maximum quantities are implied or guaranteed

Description	Qty	Units	Price	Extension
Variable Frequency Drive NEMA Enclosure for 100 HP	1	Ea.	$ 8,890.00	$ 8,890.00
Pressure Transducer 100 PSI	1	Ea.	$ 270.00	$ 270.00
VFD Installation	1	Ea.	$ 1,500.00	$ 1,500.00
	TOTAL VFD COST			$ 10,660.00
Rebuild Discharge Head Packing Box	1	L.S.	$ 120.00	$ 120.00
Sandblast & Paint Discharge Head	1	L.S.	$ 100.00	$ 100.00
Replace Packing	1	L.S.	$ 15.00	$ 15.00
Column .322 8" x 4' 11-1/4" TBE	1	Ea.	$ 230.00	$ 230.00
Column .322 8" x 9' 11-1/4" T&C	19	Ea.	$ 375.00	$ 7,125.00
Column .322 8" x 4' 11-1/4" T&C	1	Ea.	$ 265.00	$ 265.00
Column .322 Suction Pipe 8" x 10' TOE	1	Ea.	$ 345.00	$ 345.00
Headshaft - Stainless 1-11/16" T&C	1	Ea.	$ 375.00	$ 375.00
Shafting .416 1-11/16 x 10' T&C	19	Ea.	$ 440.00	$ 8,360.00
Shafting .416 1-11/16 x 5' T&C	1	Ea.	$ 350.00	$ 350.00
Retainer Bronze -Spider 8"x 2.5" x 3/4" (20 rarely)	1	Ea.	$ 90.00	$ 90.00
Rubber Bearing	20	Ea.	$ 25.00	$ 500.00
Bowl Shaft	1	Ea.	$ 300.00	$ 300.00
Bowl Bearings	1	Set	$ 200.00	$ 200.00
Bowl Wear Rings	4	Ea.	$ 150.00	$ 600.00
	Total Part 2 - Possible Repairs			$ 29,635.00

Part 3 - Labor to Install Pump & Motor	Qty	Units	Price	Extension
Operator	10	Hrs.	$ 75.00	$ 750.00
Helper	10	Hrs.	$ 65.00	$ 650.00
Pump Rig	6	Hrs.	$ 65.00	$ 390.00
Flat Bed	1	Day	$ 150.00	$ 150.00
Optional balance service - if needed	1	LS	$ 300.00	$ 300.00
Disinfection and pass Bac-t test	1	LS	$ 50.00	$ 50.00
	Total Part 3 - Labor to Install Pump & Motor			$ 2,290.00

Description	Qty	Units	Price	Extension
Alternate 1 - Replacement Bowl Assembly 1000 GPM at 290 Feet				
Bowl Mfg & Model Stainless Steel Collets & Fasteners	1	Ea.	$ 4,825.00	$ 4,825.00

CITY OF OAK PARK HEIGHTS - WELL 1 - QUOTE SHEETS

Summary		COMPLETION DATE:	2-3 weeks
Total Part 1 - Labor to Remove Pump & Motor			$ 1,790.00
Evaluation phase			$ 4,000.00
Total Part 2 - Possible Repairs			$ 29,635.00
Total Part 3 - Labor to Install Pump & Motor			$ 2,290.00
Estimated Cost			$ 37,715.00
Total Alternate 1 Bowl & Motor Replacement	$ 4,825.00		$4,825.00
Total Amount of this Quote			$ 42,540.00

From Andy
Update 10-13-09

← BASE BID → $ 20,695.00
4 825.00

$ 25,520.00

Exhibit B – To the AGREEMENT TO PERFORM WELL # 1 REHAB AND VFD INSTALLATION:

Request for Quotes.

City of
Oak Park Heights

14168 Oak Park Blvd N.• Box 2007 • Oak Park Heights, MN 55082 • Phone (651) 439-4439 • Fax 439-0574

WELL # 1 MAINTENANCE AND REPAIR

REQUEST FOR QUOTES (RFQ)

The City of Oak Park Heights (the City) is requesting quotes for maintenance work on city well #1 located at 14168 Oak Park Blvd. N. Any companies interested in quoting on this work must complete the attached form and return it to Andy Kegley, Interim Director of Public Works, in a sealed envelope marked Well # 1 Quote on or before noon on Monday September 14th, 2009. It is required that you make an appointment to inspect Well # 1 prior to submitting a bid for this work; please contact the public works department at 651.439.4439. **NO FAXED OR EMAIL SUBMITTALS WILL BE ACCEPTED!**

Generally, Well # 1 is a 310 feet deep Jordan/Prairie Du Chien well constructed in 1975 with 231 feet of 16 inch steel liner terminating in an open hole. The well pump is a one thousand (1000) gpm water lubricated line shaft turbine consisting of an eight (8) inch by 1.6375 inch column and shaft and a 6- stage Peerless pump driven by a new 100 horsepower premium efficiency inverter duty 460 volt three (3) phase motor. The pump was installed in 2002.

Payment for maintenance work will be based on the following work plan. A quote evaluation sheet is provided to itemize estimated parts and quantities required. **Work will be performed on an as needed basis as determined by the City and parts and materials have no minimum or maximum quantities.**

1. The contractor must furnish all labor and equipment necessary to remove the well pump and motor for transportation, inspection, and repairs. The evaluation shall include full cleaning and furnishing of a complete written report with recommendations on repair and replacement options.

2. The contractor shall wire brush and televise the well casing and cavity with a high resolution color camera capable of surface control angle viewing. A DVD(s) of footage shall be provided along with a hard copy report of well conditions. In conjunction with televising, the contractor must measure well depth and provide in a written report, advice on current and future development needs.

3. The contractor shall provide price lists for parts that may need repair or replacement in order to return the well to optimal operation standards. No quantities or minimums or maximums are guaranteed.

4. The contractor shall provide all labor and equipment necessary to install the well pump, parts and motor and all final testing. Balancing service is required to bring vibration within guidelines. The contractor is also responsible to provide chlorination and "Bac-T" testing to prove full disinfection of the pump, piping and water.

5. The contractor shall provide an alternative quote for supplying a new pump if needed repairs on the existing are not feasible. The current selection is for an American-Marsh 12LC-5 stage with stainless steel collets and fasteners. The pump is to meet a specification of 1000 GPM at 290 feet of head.

6. The Contractor shall provide at no additional cost all "as-built" documentation and all equipment specification literature.

7. All prices submitted to the City shall be inclusive of all additional taxes, fees, and/or surcharges.

8. All provided materials and workmanship shall maintain a full warranty for not less than one-year from the date of final payment by the City. The contractor shall be fully responsible for all repairs and replacements during this period.

The Contractor acknowledges and agrees to comply with following conditions at no additional cost to the City:

- **The Contractor shall take all necessary precautions to protect the property from damage and keep it clean.**
- **The Contractor shall be responsible for any repairs and cleanup necessitated by the pump maintenance work.**
- **The Contractor shall perform amperage and vibration tests before pump removal and after replacement.**
- **The City shall receive written documentation of the above test results, demonstrating appropriate performance.**
- **Well #1 is one of two of the city's primary drinking water supply wells and cannot be out of service during peak water demand times. The contractor shall coordinate the project start date with the city so as to not interfere with city operations. It is anticipated that the project shall take approximately 4 to 6 weeks from the date of issuance of Notice to Proceed by City to the prevailing contractor.**

- The Contractor shall complete the project in a timely and professional manner, should the Contractor not complete the project in a timely fashion being consistent with industry standards, the City shall have the right to issue a penalty of up to 5% of the total quoted prices, and may also be withheld from any final payment. The City may, at no penalty, remove the contractor from the site and revoke the contract for good cause, including failure complete the project in a professional fashion and reasonable timeline. Such removal shall be in writing and shall state such reasons but shall be fully within the discretion of the City. Should such removal occur, proper work actually completed to-date and found to be in good standing will be compensated for by the City pursuant to the terms of this Request for Quotes.

- The Contractor shall be required to allow other contractors at the City Hall property to perform their tasks as required and the contractor may not charge the City a penalty for delays or conflicts with other contractors. Should there be an unforeseen substantial delay due to other contractors at the job site, the contractor shall notify the City in writing indicating the nature of the delay. Upon such notice, the City and the Contractor shall work in good-faith to alleviate any delays that may be occurring and/or agree to an amended reasonable timeline. Any and all amendments shall be in writing.

- The prevailing Contractor shall provide a Performance Security at the written request of the City and in an amount equal to their total submission. If requested, this shall be supplied within five business days. This security may be by performance bond or cashier's check. The City will release the Performance Security with the final payment to the contractor and upon the receipt of lien waivers, spec books and as-built drawings and other required items as stated in the RFQ.

- All submitted prices/quotes shall be valid for a period of 120 days commencing on 9/14/09.

The quotes submitted on the attached quote sheets are binding for 120 days once completed and submitted to the City, including dates, times, materials and all work on this project.

The City will issue a notice of award to the prevailing contractor upon the review of all received quotes. The City reserves the right to reject any and all quotes.

The City shall receive the full benefit of any Xcel Energy Rebates if any. Submitted quotes shall not include these amounts. The City will work directly with Xcel Energy.

The contractor shall provide proof of liability insurance in an amount not less than $1,000,000.00 and such policy document (certificate) shall name the City as an insured party. Proof of insurance shall be provided within three business days of the City's notice of award to the prevailing Contractor.

CITY OF OAK PARK HEIGHTS - WELL 1 - QUOTE SHEETS

SUBMITTAL TO:

City of Oak Park Heights
Andy Kegley Interim Director of PW
14168 Oak Park Blvd No.
Oak Park Heights, MN 55082
akegley@cityofoakparkheights.com

651-439-4439
651-775-5759

SUBMITTAL FROM:

Company	
Contact	
Address	
Phone	
Fax	

Subject: Well No. 01 Bid tabulation sheet **WORK COMPLETE:** date

Part 1 - Labor to Remove Pump & Motor	*Qty*	*Units*	*Price*	*Extension*
Operator		Hrs.		
Helper		Hrs.		
Pump Rig		Hrs.		
Flat Bed		Day		
Part 1 - Labor to Remove Pump & Motor			**TOTAL**	$ -

Evaluation phase				
Shop - Clean, Inspect and Furnish Report		Hrs.		
Wire Brush Casing	1	LS		
Televise well and measure depths - provide written report	1	LS		
on current and future development needs			**TOTAL**	$ -

Part 2 - Possible Repairs - no minimum or maximum quantities are implied or guaranteed

Description	*Qty*	*Units*	*Price*	*Extension*
Variable Frequency Drive NEMA Enclosure for 100 HP	1	Ea.		
Pressure Transducer 100 PSI	1	Ea.		
VFD Installation	1	Ea.		
		TOTAL VFD COST		$ -

Rebuild Discharge Head Packing Box	1	L.S.		$ -
Sandblast & Paint Discharge Head	1	L.S.		$ -
Replace Packing	1	L.S.		$ -
Column .322 8" x 4' 11-1/4" TBE	1	Ea.		$ -
Column .322 8" x 9' 11-1/4" T&C	1	Ea.		$ -
Column .322 8" x 4' 11-1/4" T&C	1	Ea.		$ -
Column .322 Suction Pipe 8" x 10' TOE	1	Ea.		$ -
Headshaft - Stainless 1-11/16" T&C	1	Ea.		$ -
Shafting .416 1-11/16 x 10' T&C	1	Ea.		$ -
Shafting .416 1-11/16 x 5' T&C	1	Ea.		$ -
Retainer Bronze -Spider 8"x 2.5" x 3/4"	1	Ea.		$ -
Rubber Bearing	1	Ea.		
Bowl Shaft	1	Ea.		$ -
Bowl Bearings	1	Set		$ -
Bowl Wear Rings	1	Ea.		$ -
		Total Part 2 - Possible Repairs		$ -

Part 3 - Labor to Install Pump & Motor	*Qty*	*Units*	*Price*	*Extension*
Operator		Hrs.		$ -
Helper		Hrs.		$ -
Pump Rig		Hrs.		$ -
Flat Bed		Day		$ -
Optional balance service - if needed	1	LS		$ -
Disinfection and pass Bac-t test	1	LS		$ -
			Total Part 3 - Labor to Install Pump & Motor	$ -

Initial_____ ← INITIAL HERE

Description		Qty	Units	Price	Extension
Alternate 1 - Replacement Bowl Assembly 1000 GPM at 290 Feet					
Bowl Mfg & Model Stainless Steel Collets & Fasteners		1	Ea.		$ -

CITY OF OAK PARK HEIGHTS - WELL 1 - QUOTE SHEETS

Summary	COMPLETION DATE:	
Total Part 1 - Labor to Remove Pump & Motor		$ -
Total Part 2 - Possible Repairs		$ -
Total Part 3 - Labor to Install Pump & Motor		$ -
Amount of This Budget Estimate		$ -
Total Alternate 1 Bowl & Motor Replacement	$ -	
Total Amount of this Quote		

Firm Name: _____

Name of Submitter: _____

Signature of Submitter: _____

Title: _____

Date: _____

Notary: _____

This is a notarization of the above signatory, Affix Stamp --->

the notary is acknowledging that the person signing is in fact who he/she represents

Well 2 REHAB - 2008

E.H. Renner & Sons

Incorporated

WELL DRILLING FOR FIVE GENERATIONS
15688 Jarvis Street NW * Elk River, Minnesota 55330
Phone (763) 427-6100 * Fax (763) 427-0533 * Toll Free (800) - 409-WELL

Well Pump #02

June 27, 2008

Owner

City of Oak Park Heigths

14168 57th Street No.
Oak Park Heigths, MN 55082

Tom Ozzello	Contact	Jeff Kellogg
651-439-4439	Phone	651-439-4439
651-439-0574	Fax	651-439-0574
651-485-3138	Mobile	651-775-6177
Tozzello@cityofoakparkheights.com	E-mail	

104*3*344

Project: Rehabilitation of Municipal Well and Pump No. 02
Location: North of City Hall

Project No. 08-735

Unq. No. 208794 Customer # 3568 File # 1668

Motor: 100 Hp Type RUSI 460/60/3 Pump: American-Marsh 12IC - 5 Stage

Design GPM	Total Head (Ft.)	RPM	Bowl Effc	Head Loss (Ft.)	Bowl HP
800	348	1770	85.00%	6	83

210 Ft. Setting 8 In Diam. 1.1875 In. Shaft

Well Depth (Ft.)	Well Diameter (In.)	Liner Length (Ft.)	Outer Casing (In.)	Depth (Ft.)	Open Hole Diameter (In.)
293	16	232	24	101	15.5

276.8 Ft. Depth 16.2 Ft. of Fill

Screen	Diameter (In.)	Length (Ft.)	Slot	Eelevation	Open Hole
None					61

Static Level (Ft.)	Test Rate	Pumping Level (Ft.)	Draw Down (Ft.)	SpecificYeild Gals/ft of DD	Date
133	800	183	50	16.0	2-Jun-75

Static Level (Ft.)	Design Rate	Pumping Level (Ft.)	Draw Down (Ft.)	SpecificYeild Gals/ft of DD	Pressure At Head
133	800	183.0	50.0	16	70.1

Date Well Drilled	Driller	Date Pump Installed	Pump Installer
6/2/1975	BC	6/27/2008	E.H. Renner & Sons, Inc.

E.H. Renner & Sons

incorporated

WELL DRILLING FOR FIVE GENERATIONS
15688 Jarvis Street NW * Elk River, Minnesota 55330
Phone (763) 427-6100 * Fax (763) 427-0533 * Toll Free (800) - 409-WELL

City of Oak Park Heigths
Tom Ozzello 439-4439

Well Pump 2 Data 24-Aug-98

	MOTOR
US	MFG.
100	HP
RUSI	TYPE
BF66	MODEL
404TP	FRAME
460	VOLTS
6700	POUNDS TOTAL THRUST
1110	POUNDS MOTOR WEIGHT
16.5	IN BD
41.625	IN AG HEIGHT
36.9375	IN CD HEIGHT
1.4375	IN BX DIAMETER
4	NO. OF POLES
3	PHASE
1800	N.L. RPM
1781	F.L. RPM
95.4%	NOMINAL EFF.
94.5%	EFFICIENCY FULL LOAD
95.5%	EFFICIENCY 3/4 LOAD
95.1%	EFFICIENCY 1/2 LOAD
86.3%	POWER FACTOR FULL LOAD
84.5%	POWER FACTOR 3/4 LOAD
78.5%	POWER FACTOR 1/2 LOAD
114	FULL LOAD AMPS
725	LOCKED ROTOR AMPS
Yes	V.F.D. RATED
HO100V2SLG	CATALOG NUMBER
7222BEW	UPPER BEARING
6212-J	LOWER BEARING
US ID # LO8-BF66M D21 001	
None	TYPE RIGHT ANGLE DRIVE
	HEIGHT OF DRIVE
9/25/2007	YEAR PURCHASED
E.H. Renner	CONTRACTOR

	COLUMN ASSEMBLY
210	FT COLUMN LENGTH
8	INCH DIAMETER
0.322	WALL
25.55	LB. WEIGHT PER FOOT
2.4	FRICTION LOSS / 100 FT.
0.41	VELOCITY LOSS / 100 FT.
6.1258	COLUMN FRIC LOSSS
Steel	MATERIAL
1.1875	IN SHAFT DIAMETER
12	THREADS PER INCH
3.8	WEIGHT PER FT
.416 SS	MATERIAL
0.92	HP LOSS PER 100 FT
1.93	SHAFT HP LOSS
None	IN OD SLEEVES
	MATERIAL
0.75	INCH RIM RETAINERS
Bronze	MATERIAL
2	INCH OD OF BEARING
3.125	INCH LENGTH
Rubber	MATERIAL
Steel	SUCTION PIPE
8	INCH DIAMETER
10	FOOT LENGTH
0.322	WALL
None	SURGE VALVE
	FRICTION LOSS
	MATERIAL
None	STRAINER
	DIAMETER
	FT. LENGTH
	TYPE
	MATERIAL
6/27/2008	YEAR INSTALLED
E.H. Renner	CONTRACTOR

E.H. Renner & Sons

Incorporated

WELL DRILLING FOR FIVE GENERATIONS
15688 Jarvis Street NW * Elk River, Minnesota 55330
Phone (763) 427-6100 * Fax (763) 427-0533 * Toll Free (800) - 409-WELL

City of Oak Park Heigths
Tom Ozzello 439-4439

Well Pump 2 Data 24-Aug-98

DISCHARGE HEAD

FM	MFG.
8 X16	TYPE
16.5	BASE DIAMETER
Steel	MATERIAL
8	IN. DISCHARGE DIAM.
8	IN. COLUMN PIPE DIAM.
15	IN HEIGHT
8	IN TO CENTER OF DISCH.
11.25	IN TO D. FLANGE FACE
0.5	IN DEDUCT COLUMN HEAD
790	HEAD WEIGHT
Packing	SHAFT SEAL
3/8	SIZE
250	LB. RATING
Graphite	MATERIAL
Yes	FOUNDATION PLATE
16	DIAM. OF OPENING
steel	MATERIAL
None	OSHA GUARD
	FT. AIR LINE 1/4"
	DIRECT READ GAUGE
None	1" PVC SOUNDING TUBE
0.32	FEET FRICTION LOSS
	TWO PC.HEADSHAFT
20.94	INCH MOTOR SHAFT
Stainless	MATERIAL
60.5	INCH TOP SHAFT
Stainless	MATERIAL
6/27/2008	YEAR REPAIRED
E.H. Renner	CONTRACTOR

6.45	FEET TOTAL FRICTION LOSS
7694	POUNDS TOTAL PUMP WEIGHT
226.43	FEET TOTAL PUMP LENGTH

BOWL ASSEMBLY

800	GALLONS PER MINUTE
345	FEET TOTAL HEAD
339	FEET BOWL HEAD
82.5%	EFFC.
84	BOWL HP
American-Marsh	BOWL MANUFACTURE
12IC	MODEL **Serial #**
5	STAGES
1760	CAT. RPM
1.000	EFFC MULTIPLIER
CI	MATERIAL
Enclosed	TYPE OF IMPELLER
9.25	IMPELLER DIAM FULL SIZE
69.6	FULL DIAM. FT./ STGE
28	IMPELLER WEIGHT
6.75	K FACTOR
Bronze	MATERIAL
740	POUNDS BOWL WEIGHT
27.125	INCH FIRST STAGE
10	IN. EA. SERIES LENGTH
12	IN BOWL DIAMETER
77.125	IN TOTAL BOWL LENGTH
1.6875	INCHES SHAFT DIAMETER
17.5	INCH STICK UP
Stainless	BOWL SHAFT
Bronze	BEARING MATERIAL
None	WEAR RINGS
Stainless	FASTNERS
Stainless	COLLETS
8	IN SUCTION DIAMETER
8	IN. DISCHARGE DIAMETER
None	CERTIFIED CURVE
6/27/2008	YEAR INSTALLED
E.H. Renner	CONTRACTOR

E.H. Renner & Sons

Incorporated

WELL DRILLING FOR FIVE GENERATIONS
15688 Jarvis Street NW * Elk River, Minnesota 55330
Phone (763) 427-6100 * Fax (763) 427-0533 * Toll Free (800) - 409-WELL

Owner: **City of Oak Park Heigths**
Contact: Tom Ozzello
Phone: 651-439-4439
Mobile: 651-485-3138

5/13/2008
Well # 2
Job # 1668

210 Ft. Setting | 8 In Diam. | 1.4375 In. Shaft | 17.5 In. Stickup

New	Reuse	Pulled									
	1	1	Motor - Installed 2007	No	Inspect	No	Repair	No	Replace		
			Motor Mfg	US	Hp	100	RPM	1770	Model	BF66	
			Type	RUSI	In. CD	36.9375	In. BX	1.4375	In. BD	16	
			FL Amps	114	Volts	460	Phase	3			
			Serial No.	US ID # LO8-BF66M D21 001			Location				
	1	1	Motor Shaft	1.4375	In. O.D.		In. Lgth.		Keyway		
			Single Motor Shaft	Yes		One Piece Head/Motor					
	1	1	Motor Shaft Coupling								
	1	1	Pump Head		Sandblast		Paint				
			Manufacture	FM		15	In. Height		In.Thrd Depth		
			Centerline of discharge	8	In.	Cente to face of flange		11.25	In.		
			Top Column and Head	74.75	In. Lgth.	8 X 16	Model				
1		1	Pump Packing Size	0.5	In.	30	Inches lenght		Material	Graphite	
1	Stan	1	Packing Box Bush	1.4375	In. I.D.	2	In. O.D.	6	In. Lgth.	Bronze	
	1	1	Top Column Pipe	8	In. Diam.	59.25	In. Lgth.	40	Sch Mat	Steel	
7	13	20	Int. Column Pipe	8	In. Diam.	119.25	In. Lgth.	40	Sch Mat	Steel	
1		1	Bot. Column Pipe	8	In. Diam.	59.25	In. Lgth.	40	Sch Mat	Steel	
8	13	21	Column Couplings	J	Style				Material	Steel	
	1	1	Suction Pipe	8	In. Diam.	120	In. Lgth.	40	Sch Mat	Steel	
21		21	Bear. Retainers	8	In. Diam.	0.75	In. Ring Tickness		Material	Bronze	
21		0	Rubber Bearings	1.1875	In. I.D.	2	In. O.D.	3.125	In. Lgth.	Rubber	
1	Stan	1	Head Shaft	1.4375	In. O.D.	54.25	In. Lgth.	12	TPI - Mat.	.416 SS	
20		0	Int. Shaft	1.1875	In. O.D.	120	In. Lgth.	12	TPI - Mat.	.416 SS	
1		0	Bot. Shaft	1.1875	In. O.D.	60	In. Lgth.	12	TPI - Mat.	.416 SS	
20			Shaft Coupl	1.1875	In. I.D.		In. Lgth.	12	TPI - Mat.	.416 SS	
1			Shaft Step Coupling	1-3/16x 1-7/16	In. I.D.		In. Lgth.	12 X 12	TPI - Mat.	.416 SS	
	0	21	Sleeve	1.4375	In. I.D.	7	In. O.D.	1.6875	In. Lgth.	.416 SS	
1		1	Bowl Assembly Mfg.	Arn-Marsh	Model	12IC	Stages	5	Bowl Mat.	CI	
				841	GPM	345	Ft. Head	1770	RPM		
				17.5	In. Stickup		Effc.	85.0%	Imp Mat.	Bronze	
				Serial No.			StickUp	17.5	Imp Diam	9.313	
1		1	Bowl Shaft	1.4375	In. O.D.		In. Lgth.	12	TPI - Mat.	.416 SS	
1		1	Disch. Brg.	1.4375	In. I.D.		In. O.D.		In. Lgth.	Bronze	
5		6	Seris Brg.	1.4375	In. I.D.		In. O.D.		In. Lgth.	Rubber	
1		1	Suction Brg	1.4375	In. I.D.		In. O.D.		In. Lgth.	Bronze	
5		6	Collets	Good	Fit				Material	.416 SS	
5		6	Impellers		In Diameter		Worn		Material	Bronze	
		6	Wear Rings		In. I.D.		In. O.D.		In. Lgth.	Bronze	
1		1	Disch.Case		Soft		Worn		Material	CI	
1		6	Serie Case		Soft		Worn		Material	CI	
1		1	Suct. Case		Soft		Worn		Material	CI	
All			Bowl Bolts						Material	.416 SS	
		0	Strainer		In. I.D.		In. O.D.		In. Lgth.		
210			Pipe 3/4" Sch 80 T&C								
11			Coupling 3/4" PVC Sch 80								
1			PVC Cap 3/4" Sch 80 FIP								
1			PVC 3/4" Plug FIP								

PUMP DATA SHEET American-Marsh Pumps

Company: E. H. Renner & Sons, Inc.
Name: Jerry Aljets
Date: 06/27/08

Oak Park No. 02

AMERICAN-MARSH PUMPS

.ıp:

Size: 12IC.... (5 stages)

Type: Vert-Turbine
Synch speed: 1800 rpm

Curve: 2996

Specific Speeds:

Dimensions:

Vertical Turbine:

Speed: 1760 rpm
Dia: 9.25 in

Impeller:

Ns: 1989
Nss: 11421

Suction: 8 in
Discharge: 6 in

Bowl size: 11.5 in
Max lateral: 0.625 in
Thrust K factor: 6.75 lb/ft

Search Criteria:

Flow: 800 US gpm

Head: 345 ft

Fluid:

Water
SG: 1
Viscosity: 1.105 cP

NPSHa: --- ft

Temperature: 60 °F
Vapor pressure: 0.2563 psi a
Atm pressure: 14.7 psi a

Motor:

Standard: NEMA
Enclosure: TEFC

Size: 100 hp
Speed: 1800
Frame: 405T

Sizing criteria: Max Power on Design Curve

Pump Limits:

Temperature: 250 °F
Pressure: 584 psi g
Sphere size: 0.625 in

Power: 400 hp
Eye area: --- in²

--- Data Point ---

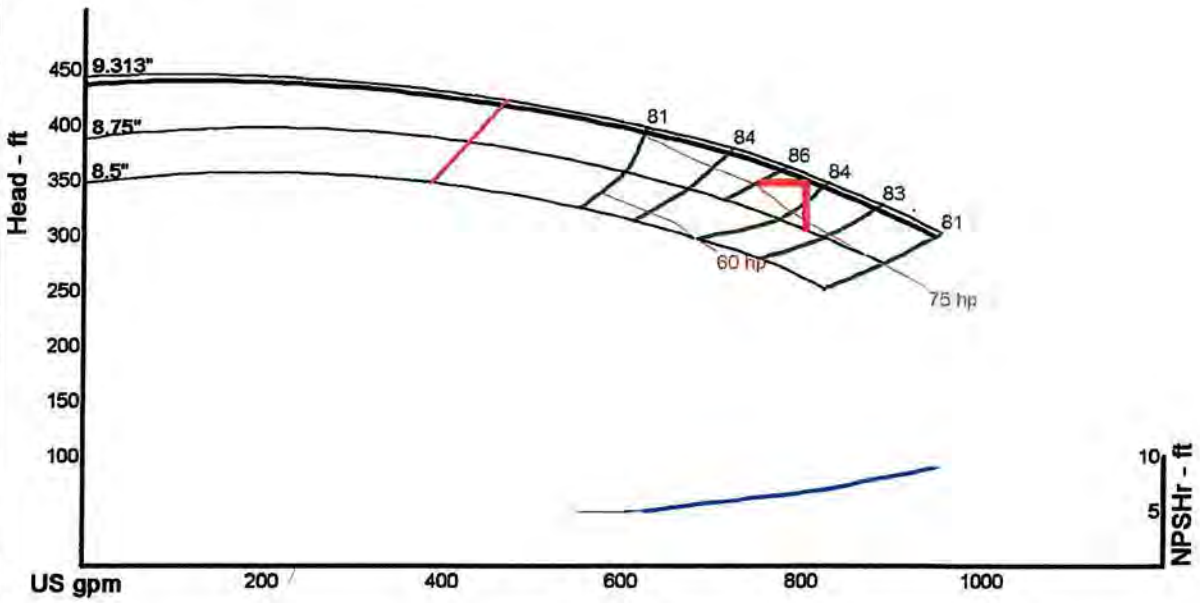
Flow: 800 US gpm
Head: 348 ft
Eff: 85%
Power: 82.6 hp
NPSHr: 6.73 ft

-- Design Curve --

Shutoff Head: 434 ft
Shutoff dP: 188 psi
Min Flow: 463 US gpm
BEP: 86% eff
@ 772 US gpm
NOL Pwr: 87.1 hp
@ 943 US gpm

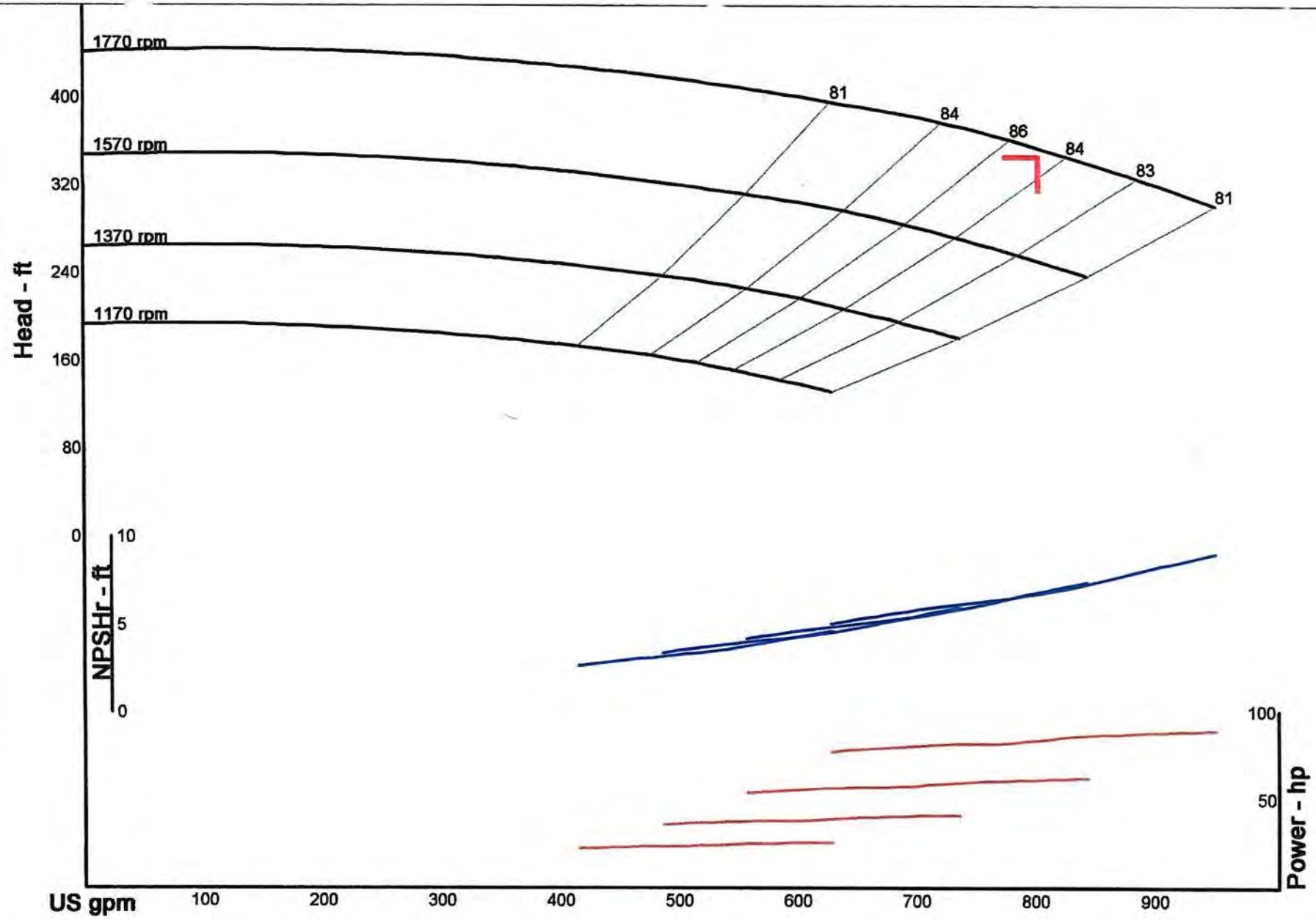
-- Max Curve --

Max Pwr: 88.7 hp
@ 950 US gpm



Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Pump %eff	Power hp	NPSHr ft
960	1760	---	---	---	---
800	1760	348	85	82.6	6.73
640	1760	387	82	76.4	5.18
480	1760	400	76	69.3	4.77
320	1760	---	---	---	---



Company: E. H. Renner & Sons, Inc.
Name: Jerry Aljets
06/27/08

American-Marsh Pumps
Catalog: AMPVT60, vers 1
Vert-Turbine - 1800

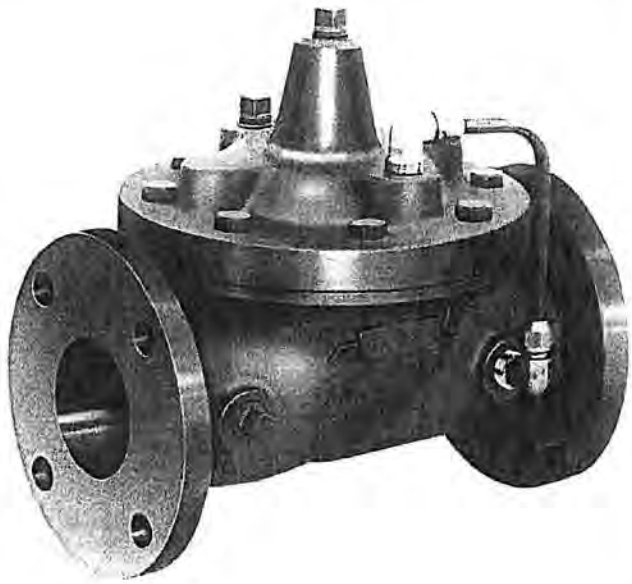
Size: 12IC.... 5 stages
Speed: 1170 - 1770 rpm
Dia: 9.25 in
Curve: 2996

AMERICAN-MARSH PUMPS

CLA-VAL™

MODEL 81-01 / 681-01

Check Valve



- **Simple Proven Design**
- **No-Slam Operation**
- **Drip Tight Shut Off**
- **No Packing Glands or Stuffing Boxes**
- **Easy to Install & Maintain**

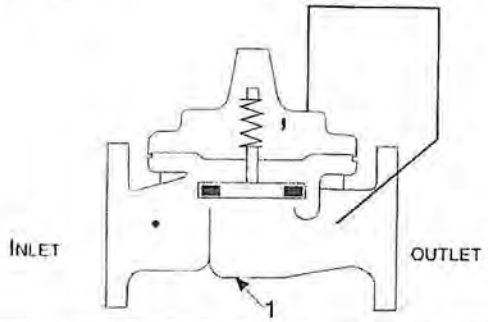
The Model 81-01/681-01 Check Valve is a hydraulically operated No-Slam Check Valve. This valve opens when the pressure at the inlet exceeds the discharge pressure. A gradual rate of opening prevents sudden opening surges. When a pressure reversal occurs the higher downstream pressure is applied to the cover chamber through the control tube lines, and the valve closes drip tight.

This valve is ideally suited for use where a positive shutoff is required. The rubber disc assures tight sealing even if the fluid contains grit or other small-size particles. The simple packless design insures reliable operation and freedom from leaks.

Note: The effectiveness of this valve is related to pipeline velocity. We recommend a maximum flow based on pipeline velocity of 6 feet per second. If pipeline velocities exceed 6 feet per second, consideration should be given to adding a Cla-Val Model 50-01 Pressure Relief Valve or a Cla-Val Model 52 Series Surge Control Valve to the system.

Schematic Diagram

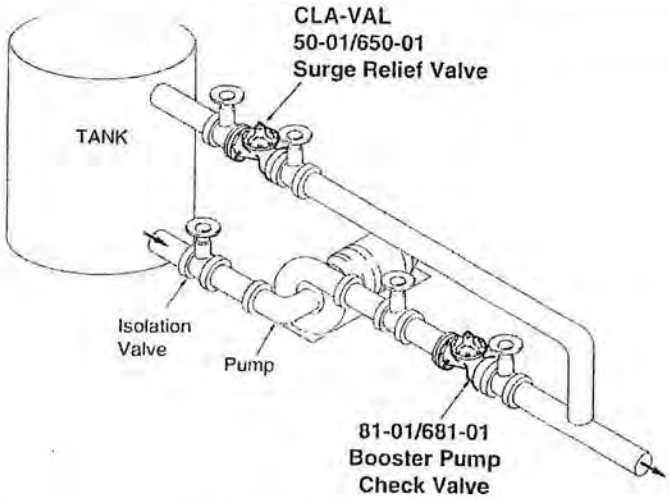
Item	Description
1	Hytrol (Reverse Flow Main Valve)



Typical Applications

Smaller sizes of this valve are used in pilot control systems in Cla-Val Automatic Control valves. This valve can also be used in any piping system where one-way flow is desired.

Install on the discharge of booster pumps to prevent return flow into tank when pump is off. Relief valve as shown is good practice to minimize surges when pump stops.



For valve sizes larger than 3", use Model 81-02.

Model 81-02 (Uses Basic Valve Model 100-01)

Pressure Ratings (Recommended Maximum Pressure - psi)

Valve Body & Cover		Pressure Class			
		Flanged			Screwed
Grade	Material	ANSI Standards*	150 lb.	300 lb.	End Details**
ASTM A-536	Ductile Iron	B16.42	250	400	400
ASTM A216-WCB	Cast Steel	B16.5	285	400	400
ASTM B62	Bronze	B16.24	225	400	400
Type 304	Stainless Steel	B16.5	285	400	400
356-T6	Aluminum	B16.1	275	—	—

Note: *ANSI standards are for flange dimensions only.
Flanged valves are available faced but not drilled.
** End Details machined to ANSI B2.1 specifications.

2" Globe, Screwed

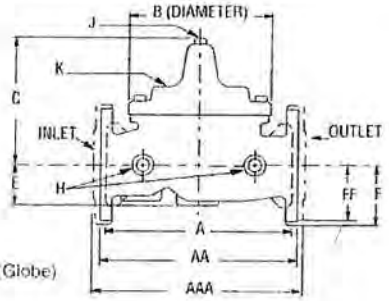
4" Globe, Flanged

4" Angle, Flanged

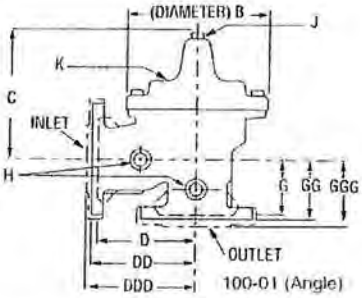
Materials

Component	Material Options				
Body & Cover	Ductile Iron	Cast Steel	Bronze	Stainless Steel	Aluminum
Available Sizes	2" - 16", 24"	2" - 16", 24"	2" - 16", 24"	2" - 16", 24"	2" - 16", 24"
Disc Retainer & Diaphragm Washer	Cast Iron	Cast Steel	Bronze	Stainless Steel	Aluminum
Trim: Disc Guide, Seat & Cover Bearing	Bronze is standard. Stainless Steel is optional.			Stainless Steel is standard.	
Disc	Buna-N® Rubber				
Diaphragm	Nylon Reinforced Buna-N® Rubber				
em, Nut & Spring	Stainless Steel				

Dimensions
(In inches)



100-01 (Globe)



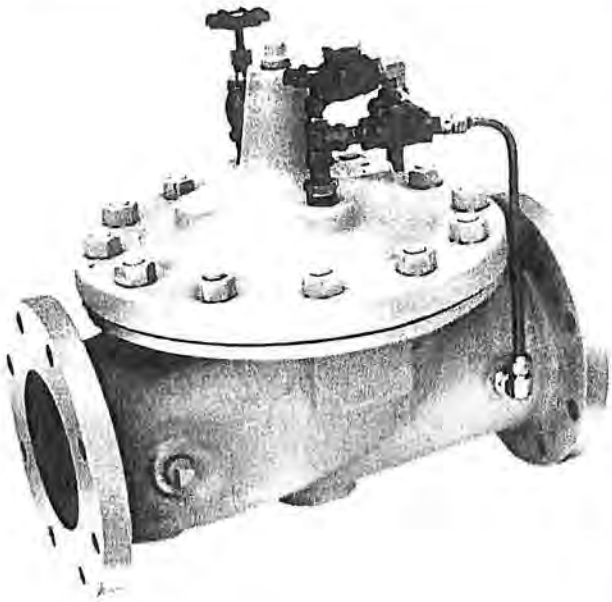
100-01 (Angle)

Valve Size (Inches)	2	2 ½	3	4	6	8	10	12	14	16	24
A Screwed	9.38	11.00	12.50	—	—	—	—	—	—	—	—
AA 150 ANSI	9.38	11.00	12.00	15.00	20.00	25.38	29.75	34.00	39.00	41.38	61.50
AAA 300 ANSI	10.00	11.62	13.25	15.62	21.00	26.38	31.12	35.50	40.50	43.50	—
B Dia.	6.62	8.00	9.12	11.50	15.75	20.00	23.62	28.00	32.75	35.50	53.16
C Max.	6.50	7.56	8.19	10.62	13.38	16.00	17.12	20.88	24.19	25.00	43.93
D Screwed	4.69	5.50	6.25	—	—	—	—	—	—	—	—
DD 150 ANSI	4.69	5.50	6.00	7.50	10.00	12.69	14.88	17.00	19.50	20.69	—
DDD 300 ANSI	5.00	5.81	6.63	7.81	10.50	13.19	15.56	17.75	20.25	21.75	—
E	1.50	1.69	2.06	3.19	4.31	5.31	9.25	10.75	12.62	15.50	17.75
F 150 ANSI	3.00	3.50	3.75	4.50	5.50	6.75	8.00	9.50	10.50	11.75	19.25
FF 300 ANSI	3.25	3.75	4.13	5.00	6.25	7.50	8.75	10.25	11.50	12.75	—
G Screwed	3.25	4.00	4.50	—	—	—	—	—	—	—	—
GG 150 ANSI	3.25	4.00	4.00	5.00	6.00	8.00	8.62	13.75	14.88	15.69	—
GGG 300 ANSI	3.50	4.31	4.38	5.31	6.50	8.50	9.31	14.50	15.62	16.50	—
NPT Body Tapping	3/8	1/2	1/2	3/4	3/4	1	1	1	1	1	1 1/2
NPT Cover Center Plug	1/2	1/2	1/2	3/4	3/4	1	1	1 1/4	1 1/2	2	4-1/4
K NPT Cover Tapping	3/8	1/2	1/2	3/4	3/4	1	1	1	1	1	1-1/2
Valve Stem Internal Thread UNF	10-32	10-32	1/4-28	1/4-28	3/8-24	3/8-24	3/8-24	3/8-24	3/8-24	1/2-20	3-12
Stem Travel	0.6	0.7	0.8	1.1	1.7	2.3	2.8	3.4	4.0	4.5	6.50
Approx. Ship Wt. Lbs.	35	50	70	140	285	500	780	1165	1500	2265	3000

CLA-VAL™

MODEL 81-02 / 681-02

Check Valve



- **Simple Proven Design**
- **No-Slam Operation**
- **Drip Tight Shut Off**
- **Dual Speed Control**
- **No Packing Glands or Stuffing Boxes**

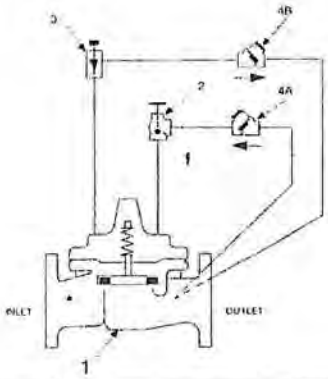
The Model 81-02/681-02 Check Valve is a hydraulically operated No-Slam Check Valve with dual speed controls. This valve opens when the pressure at the inlet exceeds the discharge pressure. A gradual rate of opening prevents sudden opening surges. When a pressure reversal occurs the higher downstream pressure is applied to the cover chamber through the control tube lines, and the valve closes drip tight.

This valve is ideally suited for use where a positive shutoff is required. The rubber disc assures tight sealing even if the fluid contains grit or other small-size particles. The simple packless design insures reliable operation and freedom from leaks.

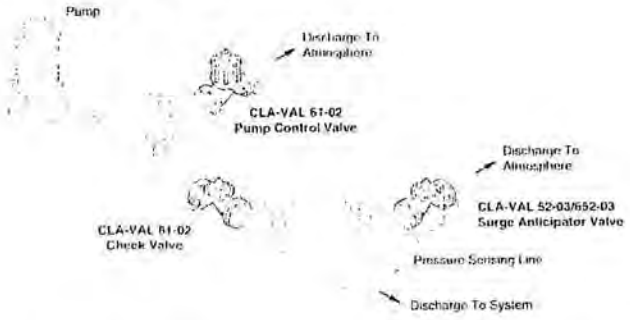
Note: The effectiveness of this valve is related to pipeline velocity. We recommend a maximum flow based on pipeline velocity of 6 feet per second. If pipeline velocities exceed 6 feet per second, consideration should be given to adding a Cla-Val Model 50-01 Pressure Relief Valve or a Cla-Val Model 52 Series Surge Control Valve to the system.

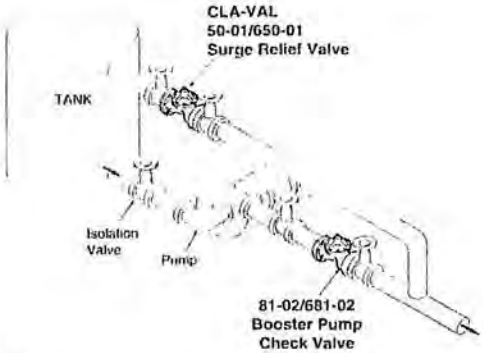
Schematic Diagram

Item	Description
1	Hytrol (Reverse Flow Main Valve)
2	CGA Angle Valve (Closing)
3	CNA Needle Valve (Opening)
4	CSC Swing Check Valve



Typical Applications





Deep Well Pump

This valve should be an integral part of any well designed pumping system. It is used to prevent damaging and sometimes expensive flow reversals.

Booster Pump

Install on the discharge of booster pumps to prevent return flow into tank when pump is off. Relief valve as shown is good practice to minimize surges when pump stops.

MN

Xcel Energy®

MOTOR REBATE APPLICATION - well #2

Business Customer Information

Company name City of Oak Park Heights Date submitted 11/30/09

Billing address 14168 Oak Park Blvd N. City Oak Park Hgts State MN ZIP 55082

Installation address (if different) 14290 58th Street N City Oak Park Heights State MN ZIP 55082

Contact name (print) Andy Kegley Day Phone (651) 439. 4439 E-mail* akegley@cityofoakparkheights.co

*By providing your e-mail address, you are granting Xcel Energy permission to send further e-mails regarding our programs and services.

Xcel Energy electric premise number 3 0 2 4 9 7 5 0 2

I verify the information on this application is correct and request consideration for participation in this program.

Customer signature _____ Date 11/30/09

Customer hereby certifies that: 1. the customer, and not Xcel Energy, is solely responsible for the accuracy of the information contained in this application; 2. all installation is complete and operational prior to submitting rebate; and 3. all rules of this Xcel Energy program have been followed. Further, the customer acknowledges that participation in this rebate program shall impose no liability on Xcel Energy. In particular, Xcel Energy shall not be liable for the work performed by the customer's engineer, contractor, or vendor.

Alternative Rebate Recipient

Note: Complete this section only if customer wants rebate check to go to someone other than the company tied to the account number:

Company name _____ Contact name _____ Phone no. _____

Address _____ City _____ State ___ ZIP _____

I authorize the above company to receive the rebate check for this project.

Customer signature _____ Date _____

Contractor Information

Contractor name _____ Contractor contact name _____

Invoice No. _____

Contractor address _____ City _____ State ___ ZIP _____

Daytime phone _____ Fax _____ E-mail* _____

*By providing your e-mail address, you are granting Xcel Energy permission to send further e-mails regarding our programs and services.

How to Apply for Rebates

1. Fill out the rebate application. Please note the application Rules and Requirements section (page 6) and efficiency standards (page 5).
2. Tear off and mail **completed and signed rebate form** (pages 1& 2) along with the **original paid invoices** and **manufacturer's specifications** to: Xcel Energy, Rebate Operations, P.O. Box 1438, Minneapolis, MN 55440-1438

INTERNAL USE ONLY – PLEASE DO NOT WRITE IN THIS SPACE

Xcel Energy account manager/BSC _____

kW _____, kWh _____, Rebate _____

Rebate Operations _____ Date _____

#2

E. H. Renner & Sons

SEP 2 7 2007

INVOICE

INCORPORATED
WELL DRILLING FOR FIVE GENERATIONS
15688 JARVIS STREET N.W. • ELK RIVER, MN 55330
PHONE: (763) 427-6100 • FAX: (763) 427-0533
www.ehrenner.com

INVOICE NO.:000090930000
CUSTOMER NO.:03568
DATE: 09/26/07

SOLD TO:
CITY OF OAK PARK HEIGHTS
14168 57th STREET NORTH
OAK PARK HGHHTS, MN 55082

SHIP TO:
Well No. 02

SHIP DATE	SHIPPED VIA	F.O.B.	TERMS	SALES-PERSON	ORDER DATE	P.O. NUMBER
09/25/07	12R	City	NET 30	02	09/20/07	Verbal

QUANTITY	DESCRIPTION		UNIT PRICE	AMOUNT
	Well No. 02 Emergency Service			
6.50	OPERATOR	/HR.	96.00	624.00
6.50	HELPER	/HR.	86.00	559.00
6.50	Pump Rig		125.00	812.50
1	FLAT BED TRUCK	/DAY	250.00	250.00
1	Misc.		40.00	40.00
1	100 Hp Prem Effc Inverter Duty Motor, Model BF66, Cat#HO100V2SLG 1800 RPM 4 Pole 460/60/3 95.4% Eff. WP1 Open Driproof		6,851.00	6,851.00

3760
V 735-44444-207
~~705-48100-207~~

Contractor - Real Property

CITY OF OAK PARK HEIGHTS
CLAIMS ENDORSEMENT
X ALLOWED IN THE SUM OF $ 9136.50
___ DISALLOWED IN THE SUM OF $ ___
DATE 10/9/07
SIGNATURE [signature]

SUB-TOTAL	9,136.50	SHIPPING CHARGES	0.00
SALES TAX	0.00	TOTAL	9,136.50

* T H A N K Y O U *

WHITE - CUSTOMER YELLOW - OFFICE PINK - REMITTANCE

MN

Xcel Energy®

MOTOR REBATE APPLICATION - well #1

Business Customer Information

Company name City of Oak Park Heights Date submitted 11/30/09

Billing address 14168 Oak Park Blvd N. City Oak Park Hgts State MN ZIP 55082

Installation address (if different) _____ City _____ State ____ ZIP ____

Contact name (print) Andy Kegley Day Phone (651) 439. 4439 E-mail* akegley@cityofoakparkheights.com

*By providing your e-mail address, you are granting Xcel Energy permission to send further e-mails regarding our programs and services.

Xcel Energy electric premise number ☐☐☐☐☐☐☐☐☐☐☐

I verify the information on this application is correct and request consideration for participation in this program.

Customer signature _____ **Date** 11/30/09

Customer hereby certifies that: 1. the customer, and not Xcel Energy, is solely responsible for the accuracy of the information contained in this application; 2. all installation is complete and operational prior to submitting rebate; and 3. all rules of this Xcel Energy program have been followed. Further, the customer acknowledges that participation in this rebate program shall impose no liability on Xcel Energy. In particular, Xcel Energy shall not be liable for the work performed by the customer's engineer, contractor, or vendor.

Alternative Rebate Recipient

Note: Complete this section only if customer wants rebate check to go to someone other than the company tied to the account number:

Company name _____ Contact name _____ Phone no. _____

Address _____ City _____ State ____ ZIP _____

I authorize the above company to receive the rebate check for this project.

Customer signature _____ Date _____

Contractor Information

Contractor name _____ Contractor contact name _____

Invoice No. _____

Contractor address _____ City _____ State ____ ZIP _____

Daytime phone _____ Fax _____ E-mail* _____

*By providing your e-mail address, you are granting Xcel Energy permission to send further e-mails regarding our programs and services.

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INTERNAL USE ONLY – PLEASE DO NOT WRITE IN THIS SPACE

Xcel Energy account manager/BSC _____

kW _____, kWh _____, Rebate _____

Rebate Operations _____ Date _____

E. H. Renner & Sons

INCORPORATED

WELL DRILLING FOR FIVE GENERATIONS

15688 JARVIS STREET N.W. • ELK RIVER, MN 55330
PHONE: (763) 427-6100 • FAX: (763) 427-0533
www.ehrenner.com

INVOICE

INVOICE NO.:000102220000
CUSTOMER NO.:03568
DATE: 06/05/09

SOLD TO:
City of Oak Park Heights
Attn: Tom Ozello
14168 57th Street North
Oak Park Height, MN 55082

SHIP TO:
Well No 01

SHIP DATE	SHIPPED VIA	F.O.B.	TERMS	SALES-PERSON	ORDER DATE	P.O. NUMBER
/ /			NET 30	02	05/13/09	Verbal Andy

QUANTITY	DESCRIPTION	UNIT PRICE	AMOUNT
1	MOTOR US 100HP RUSI/OAK PRK HGTS 1 Inverter Duty Prem Efficency Cat #HO100V2SLG	8,502.00	8,502.00
1	OIL TURBINE DTE - HEAVY MEDIUM Electrical Completed by Linner Remove and Reinstall Motor	19.00	19.00
5	OPERATOR /HR.	106.00	530.00
5	HELPER /HR.	90.00	450.00
5	SMEAL PUMP TRUCK /HR.	135.00	675.00

RECEIVED
JUN - 9 2009

V# 3760
735-44444-207

CITY OF OAK PARK HEIGHTS
CLAIMS ENDORSEMENT
X ALLOWED IN THE SUM OF $ 10 176 00
___ DISALLOWED IN THE SUM OF $ ___
DATE 6/9/09
SIGNATURE [signature]

	SUB-TOTAL 10,176.00	SHIPPING CHARGES	0.00
* THANK YOU *	SALES TAX 0.00	TOTAL	10,176.00

WHITE - CUSTOMER YELLOW - OFFICE PINK - REMITTANCE

Keys Well Drilling Company
1156 Homer Street
St. Paul, MN 55116-3232
Phone 651-646-7871 Fax 651-641-0216
Email jkeys@keyswell.com

License: 1347

INVOICE

DATE	NUMBER
11/20/2009	2009099

Well #1

Billed To: City of Oak Park Heights
PO Box 2007
Oak Park Heights MN 55082

Project: Oak Park Heights #1
PO Box 2007
Oak Park Heights MN 55082

Due Date: 12/19/2009 **Terms:** 30DY **Order#**

RECEIVED
NOV 25 2009
CITY OF OAK PARK HEIGHTS
AM PM

Description	Price	Unit	Qty	Amount
01 Operator	75.000000	HR	8.0000	600.00
02 Helper	65.000000	HR	8.0000	520.00
03 Pump Rig	65.000000	HR	8.0000	520.00
04 Flat Bed Truck	150.000000	HR	1.0000	150.00
05 Shop Time - Clean & Inspect	100.000000	HR	6.0000	600.00
06 VFD	8,890.000000	EA	1.0000	8,890.00
07 Pressure Transducer	270.000000	EA	1.0000	270.00
08 VFD Installation *	1,500.000000	EA	1.0000	1,500.00
09 Discharge Head Packing Box	120.000000	LS	1.0000	120.00
10 Sandblast & Paint Head	100.000000	LS	1.0000	100.00
11 Replace Packing	15.000000	LS	1.0000	15.00
12 Column Pipe 8" x 9'11-1/4" T & C	375.000000	EA	7.0000	2,625.00
13 Column Pipe 8" x 4'11-1/4" T & C	265.000000	EA	1.0000	265.00
14 Headshaft Stainless	375.000000	EA	1.0000	375.00
15 Retainer - Bz Spider	90.000000	EA	7.0000	630.00
16 Rubber Bearing	25.000000	EA	20.0000	500.00
17 Replace Bowl Assembly	4,825.000000	EA	1.0000	4,825.00
18 1" PVC Tubing	1.500000	LF	200.0000	300.00
19 Shop Time - Sandblast & Paint Column Pipe	100.000000	HR	8.0000	800.00
20 Operator	75.000000	HR	10.0000	750.00
21 Helper	65.000000	HR	10.0000	650.00
22 Pump Rig	65.000000	HR	6.0000	390.00
23 Flat Bed Truck	150.000000	HR	1.0000	150.00
24 Balance Motor	300.000000	LS	1.0000	300.00
25 Bacti Test	50.000000	LS	1.0000	50.00

* VFD = Danfoss VLT AQUA Drive FC 200

AC
12/01/09

A service charge of 0.00 % per annum will be charged on all amounts overdue on regular statement dates.

Thank you for your prompt payment!

Non-Taxable Amount:	25,895.00
Taxable Amount:	0.00
Sales Tax:	0.00
Amount Due	**25,895.00**

E. H. Renner & Sons

INCORPORATED

WELL DRILLING FOR FIVE GENERATIONS

15688 JARVIS STREET N.W. • ELK RIVER, MN 55330
PHONE: (763) 427-6100 • FAX: (763) 427-0533
www.ehrenner.com

INVOICE

INVOICE NO.:000096340000
CUSTOMER NO.:03568
DATE: 06/30/08

SOLD TO:
City of Oak Park Heights
Attn: Tom Ozello
14168 57th Street North
Oak Park Height, MN 55082

SHIP TO:
Well No 02

JUL 1 1 2008

SHIP DATE	SHIPPED VIA	F.O.B.	TERMS	SALES-PERSON	ORDER DATE	P.O. NUMBER
/ /			NET 30	02	05/05/08	Contract

QUANTITY	DESCRIPTION	UNIT PRICE	AMOUNT
8	OPERATOR /HR.	96.00	768.00
8	HELPER /HR.	82.00	656.00
8	R12 SMEAL PUMP TRUCK /HR.	125.00	1,000.00
1	FLAT BED TRUCK /DAY	250.00	250.00
5	Shop	80.00	400.00
1	Wire Brush Well OK'ED 900	+ 1,600.00	1,600.00
1	Video Well	1,400.00	1,400.00
1	VFD DANFOS 100HP 460V/OAK PK HTS 2	8,074.00	8,074.00
1	PRESSURE TRANSDUCER P-51-200-GBP	300.00	300.00
1	VFD Installation	5,700.00	5,700.00
1	Rebuild Discharge Head	110.00	110.00
1	Packing	30.00	30.00
30	PACKING 7/16 STYLE C1070 /INCH		
+6 7	COLUMN 8"X9'11-1/4" T&C/OAK PRK HT	457.00	3,199.00
1	COLUMN 8"X4'11-1/4" T&C/OAK PRK HT	317.00	317.00
-1	COUPLING STEP 1-3/16X1-7/16/OAK PK	242.00	242.00
1	AIR & VAC ARI D040-P-2 2" RELIEF VALVE	+ 369.00	369.00
1	AIR & VAC ARI D040-P-34 3/4"	+ 185.32	185.32
20 +1	SHAFTING 1-3/16"X10' TBE/OAK PK HT	198.00	3,960.00
1	SHAFTING 1-3/16"X5' TBE/OAK PRK HT	156.00	156.00
21 +20	RETAINER BRNZ 8X2X3/4/OAK PRK HTS	87.00	1,827.00
8	OPERATOR /HR.	96.00	768.00
8	HELPER /HR.	82.00	656.00
8	R12 SMEAL PUMP TRUCK /HR.	125.00	1,000.00
1	FLAT BED TRUCK /DAY	250.00	250.00
1	Disinfect and Bac T test	25.00	25.00
1	Am-Marsh 12IC Bowl Assembly	5,865.00	5,865.00
1	BOWL ASSY 12IC-5 STAGE/OAK PK HGTS		

SUB-TOTAL 39,107.32 SHIPPING CHARGES 0.00

* THANK YOU *

SALES TAX 0.00 TOTAL 39,107.32

V- 3760
735-44444-207 /

CITY OF OAK PARK HEIGHTS
CLAIMS ENDORSEMENT
X ALLOWED IN THE SUM OF $ 39,107 32
___ DISALLOWED IN THE SUM OF $ ___
DATE 7/17/08
SIGNATURE Dan Ozello

WHITE-CUSTOMER YELLOW-OFFICE PINK-REMITTANCE

APPENDIX 2: WATER LEVEL MONITORING PLAN

City of Oak Park Heights

14168 Oak Park Blvd N.• Box 2007 • Oak Park Heights, MN 55082 • Phone (651) 439-4439 • Fax 439-0574

Memorandum

To: Public Works Staff

From: Andrew Kegley, Public Works Director

Date: 11/17/2016

Re: Well Drawdown Reading Procedure

Public Works staff will record well drawdown readings each month. Recording well drawdown provides important information about the productivity of the well. The data collected will be:

Static water level of both wells
Well 1 pumping level
Well 1 flow rate
Well 2 Static while well 1 is running
Well 2 pumping level
Well 2 flow rate
Well 1 static while well 2 is running

Follow this procedure to collect and record well drawdown readings each month:

1. Turn both wells off. Let the wells sit undisturbed for approximately one (1) hour.
2. Take static reading at both wells.
3. Turn well 1 on. Let water level stabilize (up to 1 hour).
4. Take pumping level from well 1 and record flow rate.
5. While well 1 is running take static level of well 2.
6. Shut down well 1.
7. Turn on well 2. Let water level stabilize (up to 1 hour)
8. Take pumping level read from well 2 and record flow rate.
9. While well 2 is running take static level of well 1.
10. Make sure both well pumps are in “AUTO” when draw down readings are complete.
11. Fill out well drawdown form AND input data on the drawdown spreadsheet.

Collection of the above data will aid the department in calculating drawdown and specific capacity of each well.

- The feet of draw down is calculated by subtracting the pumping level from the static level.

- The pumping rate is measured by a transducer on the flow meter at each well, and the output is relayed to the SCADA RTU's and master computer. It was discovered that the flow rate measured by the transducer is more accurate than the flow rate dial on the flow meter.

- The specific capacity of the well is calculated by dividing the flow from the well by the feet of drawdown.

APPENDIX 3: WATER LEVEL GRAPHS FOR EACH WATER SUPPLY WELL

City of Oak Park Heights

14168 Oak Park Blvd N.• Box 2007 • Oak Park Heights, MN 55082 • Phone (651) 439-4439 • Fax 439-0574

Memorandum

To: Public Works Staff

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Well 1 flow rate
Well 2 Static while well 1 is running
Well 2 pumping level
Well 2 flow rate
Well 1 static while well 2 is running

Follow this procedure to collect and record well drawdown readings each month:

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3. Turn well 1 on. Let water level stabilize (up to 1 hour).
4. Take pumping level from well 1 and record flow rate.
5. While well 1 is running take static level of well 2.
6. Shut down well 1.
7. Turn on well 2. Let water level stabilize (up to 1 hour)
8. Take pumping level read from well 2 and record flow rate.
9. While well 2 is running take static level of well 1.
10. Make sure both well pumps are in “AUTO” when draw down readings are complete.
11. Fill out well drawdown form AND input data on the drawdown spreadsheet.

Collection of the above data will aid the department in calculating drawdown and specific capacity of each well.

- The feet of draw down is calculated by subtracting the pumping level from the static level.

- The pumping rate is measured by a transducer on the flow meter at each well, and the output is relayed to the SCADA RTU's and master computer. It was discovered that the flow rate measured by the transducer is more accurate than the flow rate dial on the flow meter.

- The specific capacity of the well is calculated by dividing the flow from the well by the feet of drawdown.

APPENDIX 4: CAPITAL IMPROVEMENT PLAN

City of Oak Park Heights, MN

Capital Improvement Plan

2016 thru 2020

PROJECTS BY DEPARTMENT

Department	Project#	Priority	2016	2017	2018	2019	2020	Total
Water Utility								
Kern Center to High School Loop Main	*WU 002*	4					360,000	*360,000*
Oak Green to Osgood Loop Main	*WU 003*	4					600,000	*600,000*
Osgood to Stagecoach Loop Main	*WU 004*	4					600,000	*600,000*
Well #3 - NEW	*WU 006*	4					900,000	*900,000*
Water Storage Tank - NEW (Tank #3)	*WU 010*	4					1,900,000	*1,900,000*
Water Meter Replacement Program	*WU 012*	1		738,000				*738,000*
Well #1 Rehab	*WU 018*	2	50,000					*50,000*
Replace Altitude Valve	*WU 019*	2		21,000				*21,000*
Water Utility Total			**50,000**	**759,000**			**4,360,000**	***5,169,000***
GRAND TOTAL			**50,000**	**759,000**			**4,360,000**	***5,169,000***

Capital Improvement Plan

2016 *thru* 2020

City of Oak Park Heights, MN

Department	Water Utility
Contact	Public Works Director
Type	Improvement
Useful Life	20 years
Category	Water Utility
Priority	4 Low

Project # **WU 002**

Project Name **Kern Center to High School Loop Main**

Year Completed

Total Project Cost: **$360,000**

Description

The Kern Center water main was originally designed to loop through what is now Lake Elmo and reconnect to our water system at McKean Square. The High School has a 10 inch water main loop completely around the school. We could connect to the High School loop from the 8 inch main on 55th Street to loop the Kern Center System.

Justification

To improve water system reliability and water quality. This would become a higher priority as the vacant lands west of Hwy 5 develop or if the planned location for well or tower are planned for this area.

Expenditures	2016	2017	2018	2019	2020	Total
Construction/Maintenance					360,000	360,000
Total					**360,000**	**360,000**

Funding Sources	2016	2017	2018	2019	2020	Total
Water Connection Charge Fund					360,000	360,000
Total					**360,000**	**360,000**

Budget Impact/Other

Capital Improvement Plan

2016 *thru* 2020

City of Oak Park Heights, MN

Department Water Utility
Contact Public Works Director

Project # **WU 003**
Project Name **Oak Green to Osgood Loop Main**

Type Improvement
Useful Life 20 years
Category Water Utility
Priority 4 Low

Year Completed

Total Project Cost: **$600,000**

Description

Extend the City's water main through the DNR property south of the City's Brekke Park to complete a water main loop.

There are two 6-inch mains (Upper 54th Street and 53rd Street) within Swager 9th Addition that could be extended/ through the DNR property, joined and a single main extended to Osgood.

Justification

To provide a redundant water source to OPH Correctional Facility and to Swager 9th Addition. Currently the prison is serviced by a single 10-inch water main. The loss of this main would have a severe impact on prison operations and would improve water quality.

Expenditures	2016	2017	2018	2019	2020	Total
Construction/Maintenance					600,000	600,000
Total					**600,000**	**600,000**

Funding Sources	2016	2017	2018	2019	2020	Total
Water Connection Charge Fund					600,000	600,000
Total					**600,000**	**600,000**

Budget Impact/Other

Capital Improvement Plan

2016 *thru* 2020

City of Oak Park Heights, MN

Department Water Utility
Contact Public Works Director

Project # **WU 004**
Project Name **Osgood to Stagecoach Loop Main**

Type Improvement
Useful Life 30 years
Category Water Utility
Priority 4 Low

Year Completed

Total Project Cost: **$600,000**

Description

Extend the City's water main through the DNR property south of the City's Brekke Park to complete a water main loop.
Osgood to Stagecoach loop main and pressure reducing station.

Justification

Increase water quality and fire flow to Stagecoach Trail. The 6-inch main servicing southern Stagecoach Trail is a long dead end. This could be corrected via a new water main connection crossing the prison property.

Expenditures	2016	2017	2018	2019	2020	Total
Construction/Maintenance					600,000	600,000
Total					**600,000**	**600,000**

Funding Sources	2016	2017	2018	2019	2020	Total
Water Connection Charge Fund					600,000	600,000
Total					**600,000**	**600,000**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

2016 *thru* 2020

Department Water Utility
Contact Public Works Director

Project # **WU 006**
Project Name **Well #3 - NEW**

Type Improvement
Useful Life 30 years
Category Water Utility
Priority 4 Low

Year Completed

Total Project Cost: **$900,000**

Description

Add a new well # 3
Locate, design, drill and develop a new water well and tie in to the system.

Justification

1) Current maximum day demand exceeds the "firm" capacity (pumping rate with our best producing pump out not operating) of our water supply system.

2) The combination of a maximum daily demand for water along with the fire flow demand for a city of our size would empty our water towers in less than 5 hours.

3) Well #1 and Well #2 have overlapping areas of influence and are located only 800 feet apart. Contamination effecting one of the wells could effect the other well.

4) Energy curtailment allows only one well to run unless an additional generator is purchased or rented.

Expenditures	2016	2017	2018	2019	2020	Total
Construction/Maintenance					900,000	900,000
Total					**900,000**	**900,000**

Funding Sources	2016	2017	2018	2019	2020	Total
Water Connection Charge Fund					900,000	900,000
Total					**900,000**	**900,000**

Budget Impact/Other

Capital Improvement Plan

2016 *thru* 2020

City of Oak Park Heights, MN

Department	Water Utility
Contact	Public Works Director
Type	Improvement
Useful Life	30 years
Category	Water Utility
Priority	4 Low

Project # **WU 010**

Project Name **Water Storage Tank - NEW (Tank #3)**

Year Completed

Total Project Cost: **$1,900,000**

Description

Add a new water storage tank (tank # 3)

Project would be for a 1,000,000 gallon ground storage tank. The tank could possibly be located at the southwest corner of OPH Correctional Facility, providing them with further redundant water supply. At this location it could also serve Baytown Township if ever needed. Another possible location would be north of Hwy 36 to allow segregation of the area north of Hwy 36 if needed. Location would need to be determined.

Justification

To provide increased storage of water for fire flow and increased flexibility in well operations to pump a large percentage of water during the off-peak times to save on electrical costs.

Expenditures	2016	2017	2018	2019	2020	Total
Construction/Maintenance					1,900,000	1,900,000
Total					**1,900,000**	**1,900,000**

Funding Sources	2016	2017	2018	2019	2020	Total
Water Connection Charge Fund					1,900,000	1,900,000
Total					**1,900,000**	**1,900,000**

Budget Impact/Other

Additional daily maintenance, reads and significant maintenance and updating every 10 years.

Capital Improvement Plan

2016 *thru* 2020

City of Oak Park Heights, MN

Department Water Utility
Contact Public Works Director

Project # **WU 012**
Project Name **Water Meter Replacement Program**

Type Equipment
Useful Life 30 years
Category Water Utility
Priority 1 Very High

Year Completed

Total Project Cost: **$738,000**

Description

This project would replace all City owned water meters (Except those that have been replaced within recent years due to failure). A water meter replacement project is typically completed over several years in City's that have full funding and a dedicated staff to work solely on changing meters. The City of Oak Park Heights would have to contract the work; however when contracted, the project is typically completed within a shorter time period.

The City has been setting aside funds for the replacement of the meters. Approximately $79,000/year . The balance of this fund at the end of 2016 is expected to be $250,000. The $79,000 annual transfer from water and sewer utility funds has been built into the past and present rates. After SCADA was fully funded, the transfers continued to the Meter Replacement Funds. The balance needed to complete the project may be internally borrowed and paid back with the $79,000 annually for approximately 5.5 years at 2%.

Justification

Water meters throughout the City are ageing and some fail. The City replaces meters that fail; however old meters do not read accurately. When meters age, they read less accurately and therefore a loss in revenue occurs for actual water used.

New meter systems will be read by radio read, avoiding the need for a person or contractor to go to each individual home, instead it can be read from a vehilce outside the property in the street.

Expenditures	2016	2017	2018	2019	2020	Total
Equip/Vehicles/Furnishings		738,000				738,000
Total		**738,000**				**738,000**

Funding Sources	2016	2017	2018	2019	2020	Total
Bud Proj - Water Meter Replacement		738,000				738,000
Total		**738,000**				**738,000**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

2016 *thru* 2020

Department Water Utility
Contact Public Works Director

Project # **WU 018**
Project Name **Well #1 Rehab**

Type Maintenance
Useful Life 7 years
Category Water Utility
Priority 2 High

Year Completed

Total Project Cost: **$50,000**

Description

Rehab Well

Justification

Well maintenance/rehabilitation is necessary on a seven (7) year cycle. Well rehabs ensure the City's water supply well is in proper condition.

Expenditures	2016	2017	2018	2019	2020	Total
Construction/Maintenance	50,000					50,000
Total	**50,000**					**50,000**

Funding Sources	2016	2017	2018	2019	2020	Total
Well Rehabilitation Fund	50,000					50,000
Total	**50,000**					**50,000**

Budget Impact/Other

Capital Improvement Plan

City of Oak Park Heights, MN

2016 *thru* 2020

Department Water Utility
Contact
Type Equipment
Useful Life
Category Unassigned
Priority 2 High

Project # **WU 019**
Project Name **Replace Altitude Valve**

Year Completed

Total Project Cost: **$21,000**

Description

Remove the existing valve and replace with an operable valve

Justification

The Altitude valve between water tower 1 and 2 (equalizes pressure between tanks) does not operate and is currently bypassed. Replacing the valve would allow roughly + 5 more feet of water to be pumped to Tower 2 before Tower 1 overflows; thus reducing well operating cycles and increasing water pressure in the zone.

Expenditures	2016	2017	2018	2019	2020	Total
Equip/Vehicles/Furnishings		21,000				21,000
Total		21,000				21,000

Funding Sources	2016	2017	2018	2019	2020	Total
Bud Proj - Water Altitute Valve		21,000				21,000
Total		21,000				21,000

Budget Impact/Other

APPENDIX 5: EMERGENCY TELEPHONE LIST

City of Oak Park Heights Public Works
Emergency Telephone List

Emergency Response Team	Name	Work Telephone	Alternate Telephone
Emergency Response Lead	Andy Kegley akegley@cityofoakparkheights.com	651-775-5759	
Alternate Emergency Response Lead	Andy Swenson aswenson@cityofoakparkheights.com	651-485-2304	
Alternate	Lisa Danielson ldanielson@cityofoakparkheights.com	651-775-6177	

State and Local Emergency Response Contacts	Name	Work Telephone	Alternate Telephone
State Incident Duty Officer	Minnesota Duty Officer	1-800/422-0798 Out State	651-649-5451 Metro
National Guard	Minnesota Duty Officer	1-800/422-0798 Out State	651-649-5451 Metro
Fire	Bayport Fire	651-275-4401	911
Sheriff	Washington County Sheriff	651-439-9381	911
Police	Oak Park Heights Police	651-439-4727	911

State and Local Agencies	Name	Work Telephone	Alternate Telephone
MDH District Engineer	Lucas Martin	651-201-4144	
MDH	Drinking Water Protection	651-201-4700	
State Testing Laboratory	Minnesota Duty Officer	1-800/422-0798 Out State	651-649-5451 Metro
MPCA	Minnesota Pollution Control Agency	651-269-6300	1-800-657-3864
DNR Area Hydrologist	Jenifer Sorenson	651-259-5754	

Utilities	Name	Work Telephone	Alternate Telephone
Electric Company	Xcel Energy Power Outage	1-800-895-1999	
Electric Company	Xcel Energy Street Lights	1-800-960-6235	
Gas Company	Xcel	1-800-895-2999	911
Telephone Company	Centurylink	1-855-742-6062	
Gopher State One Call	Utility Locates	1-800-252-1166	651-454-0002
Gopher State One Call EMERGENCY	EMERGENCY LOCATES	1-866-640-3637	
Highway Department	MN DOT Maintenance	651-366-4380	651-296-3000
Traffic Control Light Repair/Maintenance	St. Paul Traffic	651-487-7200	
Neighboring Water System	Stillwater Water Board	651-439-6231	

Technical/Contracted Services/Supplies	Name	Work Telephone	Alternate Telephone
MRWA Technical Services	MN Rural Water Association	800-367-6792	
Pump Repair-Liftstations	General Repair	651-766-0874	
Sewer Backup's/Liftstation issues	Brian Overline	612-554-5526	
Sewer Backup's/Liftstation issues	Pipe Services	952-445-3173	
Sewer Backup's/Liftstation issues	McDonough Sewer Service	651-436-3370	
Electrician	Linnear Electric	651-439-4072	
Fluoride	Hawkins Chemical	Matt Dunsmore 612-655-7105	
City Owned Water Main Breaks	Miller Excavating	Steve St. Clair 651-269-8176	Jared 651-338-4345
City Owned Water Main Breaks	Bell Excavating	John Bell 612-919-0941	
City Owned Water Main Breaks	Valley Rich Excavating	952-488-3002	
Pressure Reducing Station Parts	Northwestern Power Equipment Co.	Darin Kluck 612-240-9105	
Generator	Ziegler CAT	Kyle Bergquist 612-246-9783	952-887-4525
Towing	Stillwater Towing	651-439-5744	
Tree Removal	St. Croix Sav-A-Tree	715-749-3479	651-770-3744
Laboratory	Instrumental Research Inc.	763-571-3698	

APPENDIX 6: COOPERATIVE AGREEMENTS FOR EMERGENCY SERVICES

No written cooperative agreements exist for potential emergency water services.

APPENDIX 7: MUNICIPAL CRITICAL WATER DEFICIENCY ORDINANCE

REGULATION OF THE USE OF WATER AND SEWER

AN ORDINANCE RELATING TO AND REGULATING THE USE OF WATER AND SEWER IN THE CITY OF OAK PARK HEIGHTS ESTABLISHING RULES AND REGULATIONS FOR THE ADMINISTRATION OF THE WATER AND SEWER SYSTEMS IN THE CITY AND MATTERS RELATING THERETO, INCLUDING ALL PROPERTIES, MAINS, RATES AND CHARGES IN CONNECTION THEREWITH AND ESTABLISHING AN INDUSTRIAL USER STRENGTH CHARGE IN ADDITION TO THE CHARGE BASED UPON THE VOLUME OF DISCHARGE BY AN INDUSTRIAL USER AND ESTABLISHING TAX LIEN AGAINST PROPERTY SERVED IN CONNECTION WITH SUCH STRENGTH CHARGE AND SEWER AND WATER RULES AND REGULATIONS AND REPEALING ORDINANCES IN CONFLICT THEREWITH.

THE CITY COUNCIL OF THE CITY OF OAK PARK HEIGHTS, WASHINGTON COUNTY, MINNESOTA, DOES ORDAIN:

1001.01 Establishment of Department.

There is hereby established a Public Utilities Division of the Department of Public Works of the City of Oak Park Heights which shall be under the supervision of the Director of Public Works. The water and sewer systems as they are now constituted or shall hereafter be enlarged or extended shall be operated and maintained under the provisions of this ordinance subject to the authority of the City Council at any time to amend, alter, change or repeal the same. The City Council shall have responsibility for the management, maintenance, care, and operation of the sewer and water systems of the City subject to the delegation of such authority to City employees, individual Council members, or the City Clerk as the Council shall make from time to time.

1001.085 Water Conservation.

To secure the conservation of municipal water as a resource for the benefit of the people of the City of Oak Park Heights, all water sprinkling and irrigation systems and practices shall be regulated to allow water sprinkling and irrigation systems to operate in the following manner: as to all properties which property address ends in an even number, those properties will be allowed to sprinkle or irrigate on even numbered calendar days. As to all properties whose property address ends in an odd number, their right to use sprinkling and irrigation systems shall be limited to calendar number days ending in odd numbers.

1001.02 Applications, Permits and Fees.

No person, firm, or corporation shall make any type of connection or perform any service to the water system, sanitary sewer system or storm sewer system except upon making an application therefore on a form provided by the City and receiving a permit issued by the City and for such purposes. The application shall include the legal description of the property to be served, the uses for which the connection is requested, and the size of the service line to be used. At the time of making such application there shall be paid to the City Clerk fees which shall be set by the City Council from time to time by resolution for the following purposes:

A. No connection shall be made with respect to any sanitary sewer, water system or storm sewer system serving the property of any person or occupants of the land, parcel or premises affected that have not paid or provided for the payment of the full and proportionate share of the said utilities which share shall be payable as follows:

1. No connection shall be made to the City water or sewer system until the applicant or owner pays a connection charge as established by Council resolution from time to time. The connection fee shall be in addition to any fees or charges required under Subsections 2, 3, & 4.

2. For services to property to which service lines have not been previously run from the street laterals to the property line, the owner, occupant, or user shall pay into the City Treasury a service line charge, the amount of which shall not be less than the City's cost of making the necessary connections, taps, and installation of pipe and appurtenances to provide service to the property and the necessary street repairs, provided, however, with the approval of the City, the owner or applicant shall have the right to contract directly with a registered installer for the installation and connection of the service line.

3. Prior to any connections the owner, occupant or user shall pay in cash or agree to pay charges in the form of Special Assessments to be levied against the property to be spread over a number of years coincident with the maturity requirements of any Special Improvement Bonds sold for the purpose of financing the construction of sanitary sewer, municipal water or storm sewer system serving the property. Said cash payment of assessment charge shall be in the principal amount of not less than the payments made

by or charges placed against comparable properties for like services for such sanitary sewer, water or storm sewer system in an amount as may be established by the City Council. Payment to the City Treasury in the form of a Special Assessment charge shall be in the form of equal annual installments together with interest on the unpaid balance, which shall be established by Council resolution.

4. The City Council may establish water, sanitary sewer and storm sewer districts and establish area charges, connection charges and lateral charges for each said district by Council resolution.

B. Before proceeding with the construction, enlargement, alteration, repair of any water or sewer lines connecting the water system, sanitary sewer system or storm sewer system to any house or building, the owner or his agent shall first obtain a permit for such purposes from the municipality through its City Clerk.

C. The applicant shall pay to the City Clerk a permit fee the amount of which shall be established from time to time by Council resolution.

D. The Plumbing Inspector shall examine all applications before construction is begun, and after the construction, enlargement, alteration, or repair is complete, the Plumbing Inspector shall be notified. It shall be unlawful to cover any connecting line until an inspection has been made and such connection and the work incident thereto has been approved by the City as a proper and suitable connection.

1001.215 Storm Water, Sump Pumps, Etc.

It shall be unlawful for any owner, occupant, or user of any residential or commercial premises to direct into or allow any storm water, surface water, ground water, well water, or water from residential, industrial, or commercial air conditioning systems to drain into the sanitary sewer systems of the City. No rain spout or other form of surface drainage and no foundation drainage or sump pump shall be directly connected or discharged into any sanitary sewer system. Further, no owner, occupant, or user of any residential or commercial premises shall directly pipe or install any conduit for sump pump, pool, foundation drainage, or any other surface water drainage system through the City's curbing along any City street to facilitate its entry into the City storm water drainage system.

1001.03 Water Meter Regulations.

A. Before any water conveyed through the municipal water system shall be used or utilized on the land or premises of any person, firm, or corporation, there

shall first be installed a water meter that will accurately measure the water consumed on the premises, except and unless such installation shall be exempted by the City.

B. All applications for the installation, maintenance, and repair of water meters shall be made to the City Clerk, who shall proceed to comply with such application within a reasonable time thereafter. All meters installed shall be furnished by the City and shall remain the property of the City of Oak Park Heights. Regulations for the cost of furnishing and use of water meters shall be established by Council resolution.

C. No person, firm, or corporation, other than the City of Oak Park Heights or its designee, shall install and repair any water meter within the City limits. Every water meter connected to the water system shall be sealed by or under the direction of the City Clerk or City Department of Public Works and no person, firm, or corporation shall break or remove such seal. Whenever any seal attached to a water meter by or under the direction of the City Clerk or City Department of Public Works is found broken, the broken condition of such seal was broken contrary to the terms and provisions in violation of this Ordinance.

D. All water meters connected to the water system shall be accessible to the City Clerk or City Department of Public Works or designee at any reasonable hour of any business day and the refusal of admission by any owner or occupant of any premises wherein a water meter is installed after such owner or occupant has been notified that admission is desired for the purpose of inspecting a water meter installed in said premises shall constitute a violation of this Ordinance.

E. Water meters shall be repaired or replaced from time to time as is necessary to insure accurate measuring of the flow of water. The cost of said repair or replacement shall be borne by the City except that whenever a meter has been damaged due to negligence on the part of persons other than the employees of the City, the owner, occupant, or user of the premises or such other person desiring the use of the water shall reimburse the City for the expense of repairing or replacing any such meter. Upon failure to reimburse the City within a reasonable time and upon demand therefor, the water service and supply to said premises may be shut off or discontinued as determined to be in the best interest of the City.

F. It shall be unlawful for any person to tamper with, alter, by-pass, or in any manner whatsoever interfere with the proper use and functioning of any water meter within the City.

G. If a meter fails to register or accurately measure the water, the charge for water consumed shall be paid for at the established rate based upon past average billings as determined by the City Clerk.

H. Whenever a water user questions the accuracy of the meter, and desires that his meter be tested, he shall pay a fee, the amount of which shall be established from time to time by Council resolution, to have the meter tested. If the meter is accurate within a range of minus three percent (3%) to plus one and one-half percent (1 ½%), no charge will be made for testing and an adjustment on the water bill will be made for the period of time that the meter is assumed to be inaccurate, not to exceed two (2) billing periods.

I. Whenever a water use questions their computed consumption levels, the user must make such request for review within two billing periods otherwise the reading shall be deemed final.

1001.04 Meter Readings.

A. The City Council may provide a system of water meter reading by postcard, meter person, or any other method deemed suitable to the purpose by Council. The Council may also establish billing areas or districts and provide for the reading of meters and billing charges by calendar quarters or monthly or such periodic intervals as the City Council shall determine suitable and necessary from time to time by resolution; provided, however, where meter reading is done by postcard the City Council may establish a penalty for failure to return water meter reading card within the time designated on said card by Council resolution.

B. The City reserves the right to discontinue service to any customer of the water and sanitary sewer system without notice when necessary for repairs, additional connection, or reconnection.

C. The City reserves the right to discontinue service to any customer of water and sanitary sewer system with notice as hereinafter provided for non-payment of charges or bills or for disregard of any rules or regulations in connection with the use or operation of said system. The service of water or sanitary sewer shall not be shut off until notice and an opportunity for a hearing have first been given to the occupant and owner of the premises involved. The notice shall be personally served and shall state that, if

payment is not made before the date stated in the notice, but not less than ten (10) days after the date upon which the notice is given, the water supply to the premises will be shut off. The notice shall also state that the occupant may, before such date, demand a hearing before the City Council, in which case the supply will not be shut off until after the hearing is held. If, as a result of the hearing, the City Council finds that the amount claimed owing is actually due and unpaid and that there is no legal reason why the water supply of the delinquent customer may not be shut off in accordance with this Ordinance, the City may then shut off the supply.

D. Whenever any service has been discontinued for non-payment of charges or bills or for disregard of any rules or regulations in accordance with the procedures set forth above, it shall not be resumed except upon payment of the charges or bills accrued together with interest thereon, at a rate to be determined by Council resolution from time to time or compliance with the rules and regulations previously violated and payment to the City of restoration fee, the amount of which shall be set by the City Council from time to time by resolution.

E. In the event a water or sewer bill, whether incurred prior or subsequent to the passage of this Ordinance, is unpaid after the due date as established by Council resolution from time to time, the bill shall be considered delinquent and the service may be discontinued as provided in (B) above and the City Council may cause the charges noted in such billing to become a lien against the property served by certifying to the County Auditor the amount of said delinquent bill in accordance with the Statutes of the State of Minnesota. Such action is optional and may be subsequent to taking legal action to collect delinquent accounts.

1001.05 Liability for Repairs.

After the initial connection has been made to the curb stop or the sewer lead the applicant, owner, or the occupant or user of such premises shall be liable for all repairs required to any water line or any sanitary or storm sewer lines necessary for connection of the premises to the street main, including any repairs necessary to the curb stop box and any necessary street repairs; it shall be the responsibility of the applicant, owner, occupant or user to maintain the stop box at such height as will insure that it remains at the finished grade of the land or property

A. In the event a water main becomes frozen, the City of Oak Park Heights will be responsible for thawing the same. The property owner shall have the sole responsibility of thawing frozen water service line from its connection to the street main into the premises. All contractors engaged in thawing water lines

must comply with the provisions of Ordinance 302, Contractors Permits. No water customer shall be given a credit on a water bill for allowing water to run to prevent freezing without specific prior authorization from the Council annually.

1001.06 Implied Consent to Rules, Regulations, and Rates.

Every person applying for water or sewer service, every owner of property for which any such application is made, every person accepting water or sewer service, and every owner of property where such service is accepted subsequent to the passage of this Ordinance shall be deemed upon making such application or accepting such service to consent to all rules, regulations, and rates as established by this Ordinance and as may hereafter be set forth and adopted by the City Council by resolution or ordinance.

1001.07 Billing Regulations.

A. The City Council shall have the authority to prescribe by resolution the rates to be charged for water and sewer service to the customer from time to time and may prescribe the date of billing, a discount for payment within a prescribed period, and/or penalty for failure to pay within such period and such further rules and regulations relative to the use and operation of such systems as it may deem necessary from time to time.

B. The owner shall be liable for water supplies to his property whether he is occupying the property or not and any unpaid charges shall be a lien upon the property.

C. Where a water user has multiple connections to the City's water systems at one location, the City shall total the consumption, exempting independently metered irrigation connections, and apply the appropriate utility rates on said total ("location" being defined as one parcel, or grouping of contiguous parcels, serving a common purpose and owned or controlled by a single entity or taxpayer).

1001.08 Emergency Regulations.

A. The City Council may impose emergency regulations pertaining to the conservation of water by resolution of the City Council and by giving notice by publication or by posting in the City Hall and at such public places as the Council may direct.

B. Whenever the City Council determines that a shortage of water supply threatens the City, it may, by resolution, limit the times and hours during

which City water may be used for sprinkling, irrigation, car washing, and other external purposes. After publication of a Notice setting forth the restrictions for use of water for said purposes or two (2) days after mailing a copy of such Notice to each customer, no person shall use or permit water to be used in violation of the resolution and any customer who does so shall be charged such sum as established by resolution for each day of violation and the charge shall be added to the customer's next water bill. Continued violation shall be cause for discontinuance of water service.

1001.09 Leak in Service Line.

Any owner, occupant, or user of a premises who shall discover a leak in a service line to the premises shall notify the City Office within twenty-four (24) hours. Any water wasted due to failure of such person to comply with this regulation shall be estimated by the City Clerk and be charged for against the owner of such premises at the established rate.

1001.10 Installation of Connections.

All connections to the water system and sanitary sewer system shall be performed by a registered installer licensed to do plumbing in the City of Oak Park Heights; except that nothing in this Ordinance shall be construed as to prohibit an individual owner from obtaining a permit to connect to an existing service line located totally within the owner's property and installing such connection by his own labor provided, however, that said construction is conducted under the regulations of this Ordinance and all other City Ordinances and applicable Statues of the State of Minnesota and requirements of the City Engineer and City Plumbing Inspector.

1001.11 City Not Liable.

The City shall not be held liable at any time for any deficiency or failure in the supply of water to the customer whether the same be occasioned by shutting off the water for repairs or connections or for any cause whatever.

1001.12 Right to Enter Land.

The City of Oak Park Heights, by any authorized employee or agent, shall have the right to enter and be admitted to any lands and property in the City at any reasonable hour for the purpose of inspection of materials, plumbing work, and fixtures of all kinds used by or in connection with the water and sewer systems.

1001.13 Private Water not Permitted in City System.

Whenever any premises are connected to the City water system, there shall be maintained a complete physical separation between the City water supply system and the private water supply system so that it is impossible to intentionally or

unintentionally allow any water produced by a private system to be introduced in the supply line from the City system.

1001.14 Storm Water not Permitted in Sanitary Sewer System.
It shall be unlawful for any owner, occupant, or user of any premises to direct into or allow any storm water, surface water, ground water, well water or water from air conditioning systems to drain into the sanitary sewer system of the City of Oak Park Heights. No rain spout, or other form of surface drainage and no foundation drainage or sump pump shall be connected or discharged into any sanitary sewer.

1001.15 Delayed Connection Charge.
Any owner of a residence or commercial building to which water and sewer service is or becomes available shall be sublet to an additional charge as established by Council resolution from time to time upon connection to such service if such connection is not made within the period of time which shall be established by Council resolution after such services become available.

1001.16 Prohibited Wastes into Sanitary Sewer System.

A. Waste Discharge Regulations:
No person, firm, or corporation shall discharge any waste, or cause or allow any waste to be discharged into the sanitary sewer system unless in accordance with the following regulations:

1. Treatment of Prohibited Waste.
Where it is determined that any waste discharged or to be discharged has certain characteristics or elements which are or may be harmful to the structures, processes, or operation of the sanitary sewer system or persons operating it, such discharge shall be discontinued or the waste shall be treated prior to its discharge into the system in a manner which will eliminate such characteristics or elements.

2. Limitations on Discharge.
No person, firm, or corporation shall discharge, or cause or allow to be discharged into the sanitary sewer system any waste containing concentrations in excess of the following:

	Concentration
Chromium (total)	25.0 mg/1
Chromium (hexavalent)	10.0 mg/1
Copper	5.0 mg/1
Cyanide (total)	10.0 mg/1

Cyanide (readily released at 150 degrees F and pH = 4.5)	2.0 mg/1
Iron	50.0 mg/1
Lead	0.5 mg/1
Mercury	None at levels acutely toxic to humans or other plant or animal life
Nickel	10.0 mg/1
Zinc	15.0 mg/1
Temperature (except where higher temperatures are required by law)	not over 150 Deg. F
pH	5.5 - 9.5

3. Exclusion of Wastes.

No person, firm, or corporation shall discharge or cause or allow to be discharged into the sanitary sewer system any waste which contains any of the following:

a. More than one hundred (100) mg/1 of fats, wax, grease, or oils (hexane soluble), whether emulsified or not, or containing substances which may solidify or become viscous at temperatures between 32 degrees and 150 degrees F (0 degree and 65 degrees C) at the point of discharge into the sewer system.

b. Liquids, solids, or gases which by reason of their nature or quantity are or may be sufficient to cause fire or explosion or be injurious in any other way to the sanitary sewer system or to the operation of the system. At no time shall two (2) successive readings on an explosimeter, at the point of discharge into the sewer system, be more than five percent (5%) nor any single reading over ten percent (10%) of the Lower Explosive Limit (L.E.L.).

c. Any noxious or malodorous solids, liquids, or gases, which either singly or by interaction with other wastes, are capable of creating a public nuisance or hazard to like, or are or may be sufficient to prevent entry into a sewer for its maintenance and repair.

d. Any toxic substance, chemical elements, or compounds in quantities sufficient to interfere with the biological processes of efficiency of treatment works, or that will pass through a

treatment works and cause the effluent therefrom or the water into which it is discharged to fail to meet applicable State or Federal Standards.

e. Garbage that has not been ground or comminuted to such a degree that all particles will be carried freely in suspension under flow conditions normally prevailing in public sewers, with no particle greater than one-half inch (½") in any dimension.

f. Radioactive wastes or isotopes of such half-life or concentrations that they are in noncompliance with present or future regulations issued by the appropriate authority having control over their use and which will or may cause damage or hazards to the system or personnel operating it.

g. Solid or viscous wastes which will or may cause obstruction to the flow in a sewer, or other interference with the proper operation of any disposal system, such as grease, uncomminuted garbage, animal guts or tissues, paunch manure, bones, hair hides or fleshings, entrails, whole blood, feathers, ashes, cinders, sand, spent lime, stone or marble dust, metal, glass, straw, shavings, grass clippings, rags, spent grains, spent hops, waste paper, wood, plastic, gas tar, asphalt, residues from refining or processing of fuel or lubricating oil, gasoline, naphtha, and similar substances.

h. Any waste from septic tanks or similar facilities.

I. Any mineral acids, waste acid pickling, or plating liquors from the pickling or plating of iron, steel, brass, copper, or chromium, or any other dissolved or solid substances which will or may endanger health or safety, or attach or corrode any part of the sanitary sewer system.

j. Liquids or vapors having a temperature higher than 150 degrees F immediately prior to discharge into the sewer system.

k. Phenols or other taste- or odor-producing substances in concentrations which will or may cause the effluent from the

treatment works or the water into which it is discharged to fail to meet applicable State or Federal standards.

l. Materials which exert or cause:
   1) Unusually high concentrations of inert suspended solids or of dissolved solids.
   2) Excessive discoloration.
   3) Unusually high volume of flow or concentration of waste exceeding five (5) times the average daily concentration of flow during normal operation.

m. Unusually high concentrations of suspended solids, BOD, COD, or chlorine requirements in such quantities as to constitute a significant load on the treatment works.

n. Any substance which is not amenable to treatment or reduction by the type of sewage treatment processes employed to a degree sufficient to permit the effluent from the treatment works and the water into which it is discharged to meet applicable State and Federal standards.

1001.17 Recitals for Establishing Industrial User Strength Charge.

The Metropolitan Waste Control Commission, a metropolitan commission organized and existing under the laws of the State of Minnesota, hereinafter referred to as the "Commission," in order to receive and retain grants in compliance with the Federal Water Pollution Control Act Amendments of 1972 and regulations thereunder, hereinafter referred to as the "Act," has determined to impose an industrial user sewer strength charge upon users of the Metropolitan Disposal System as defined in Minnesota Statutes, § 473.121, Subdivision 24, to recover operation and maintenance costs of treatment works attributable to the strength of the discharge of industrial waste, such sewer strength charge being in addition to the charge based upon the volume of discharge. In order for the City to pay such costs based upon strength of industrial discharge and allocated to it each year by the Commission, it is hereby found, determined, and declared to be necessary to establish sewer strength charges and a formula for the computation thereof for all industrial users receiving waste treatment services within or served by the City. Furthermore, Minnesota Statutes, §444.075, Subdivision 3, empowers the City to make such sewer charge a charge against the owner, lessee, occupant, or all of them and certify unpaid charges to the County Auditor as a tax lien against the property served.

1001.18 Establishment of Strength Charges.

For the purpose of paying the costs allocated to the City each year by the Commission that are based upon the strength of discharge of all industrial users receiving waste treatment services within or served by the City, there is hereby approved, adopted, and established, in addition to the sewer charge based upon the volume of discharge, a sewer charge upon each person, company, or corporation receiving waste treatment services within or served by the City based upon strength of industrial waste discharged into the sewer system of the City, hereinafter referred to as the "Strength Charge."

1001.19 Establishment of Strength Charge Formula.

For the purpose of computation of the Strength Charge established by Section 1001.18 hereof, there is hereby established, approved, and adopted, in compliance with the act, the same Strength Charge formula designated in Resolution No. 76-172, adopted by the governing body of the Commission on June 15, 1976, such formula being based upon pollution qualities and difficulty of disposal of the sewage produced through an evaluation of pollution qualities and quantities in excess of an annual average base and the proportionate costs of operation and maintenance of waste treatment services provided by the Commission. Said Metropolitan Waste Control Commission Resolution 76-172, adopted June 15, 1976, is hereby made an attachment "A" to this Ordinance.

1001.20 Strength Charge Payment.

It is hereby approved, adopted, and established that the Strength Charge established by Section 1001.18 hereof, shall be paid by each industrial user receiving waste treatment services and subject thereto before the twentieth (20th) day next succeeding the date of billing thereof to such user by or on behalf of the City, and such payment thereof shall be deemed to be delinquent if not so paid to the billing entity before such date. Furthermore, it is hereby established, approved, and adopted that if such payment is not paid before such date an industrial user shall pay interest, compounded monthly, at the rate of two-thirds of one percent (2/3%) per month on the unpaid balance due.

1001.21 Establishment of Tax Lien.

As provided by Minnesota Statutes, § 444.975, Subdivision 3, it is hereby approved, adopted, and established that if payment of the Strength Charge established by Section 1001.18 hereof is not paid before the sixtieth (60th) day next succeeding the date of billing thereof to the industrial user by or on behalf of the City, said delinquent sewer strength charge, plus accrued interest established pursuant to Section 1001.20 hereof, shall be deemed to be a charge against the owner, lessee, and occupant of the property served, and the City or its agent shall certify such unpaid delinquent balance to the County Auditor with taxes against the property served for collection as other taxes are collected; provided, however, that such certification

shall not preclude the City or its agent from recovery of such delinquent sewer strength charge and interest thereon under any other available remedy.

1001.215 Storm Water, Sump Pumps, Etc.

It shall be unlawful for any owner, occupant, or user of any residential or commercial premises to direct into or allow any storm water, surface water, ground water, well water, or water from residential, industrial, or commercial air conditioning systems to drain into the sanitary sewer systems of the City. No rain spout or other form of surface drainage and no foundation drainage or sump pump shall be directly connected or discharged into any sanitary sewer system. Further, no owner, occupant, or user of any residential or commercial premises shall directly pipe or install any conduit for sump pump, pool, foundation drainage or other surface water drainage system through the City's curbing along any City street to facilitate its entry into the City storm water drainage system.

1001.22 Separability of Sections.

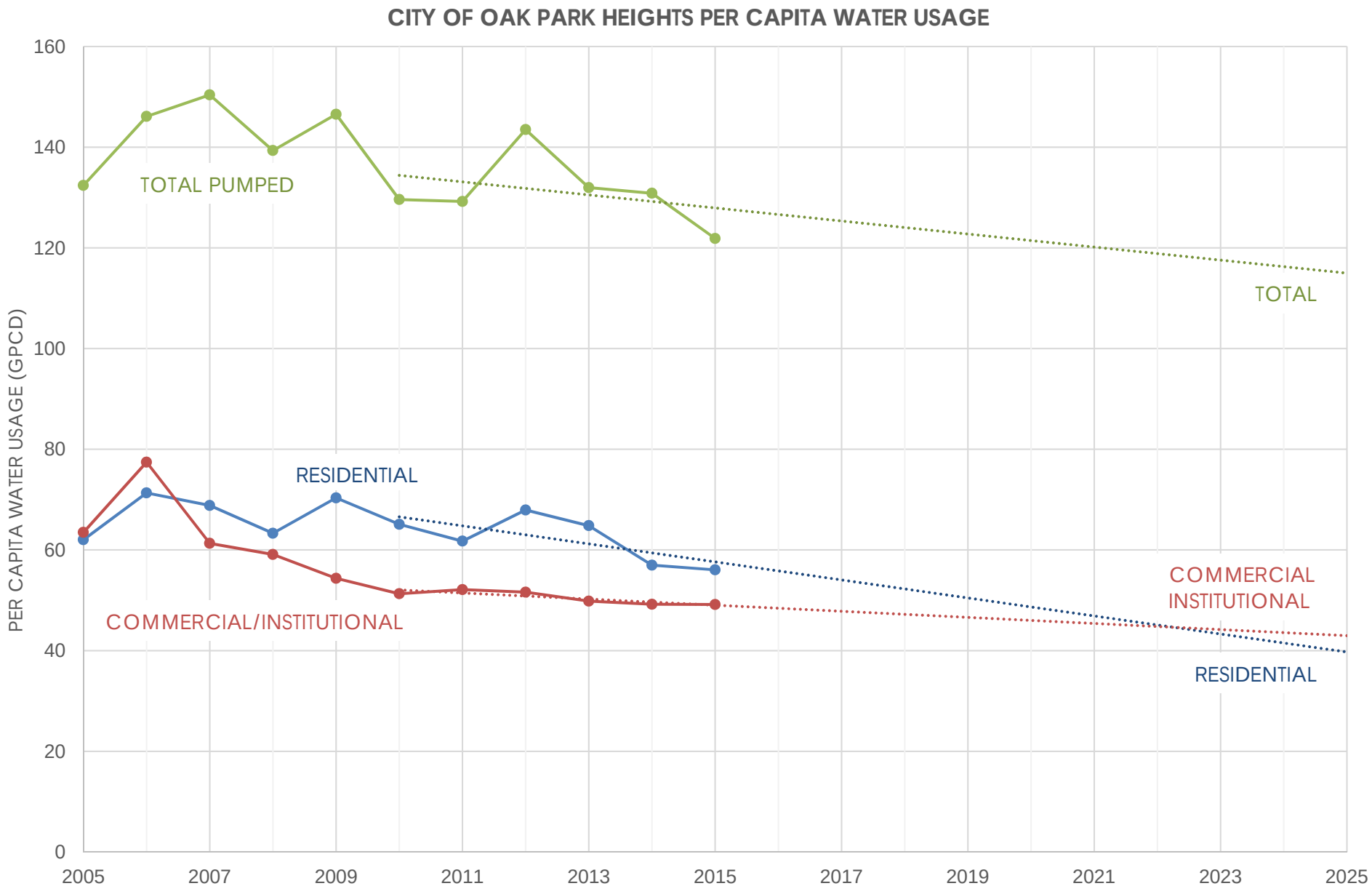
In the event any provision of this Ordinance shall be held invalid or unenforceable by any court of competent jurisdiction, such holding shall not invalidate or render unenforceable any other provision hereof.

1001.23 Penalty Provision.

Any person who shall do or commit any act that is forbidden by the provisions of this Ordinance shall be guilty of a misdemeanor and upon conviction thereof shall be punished by a fine not to exceed Seven Hundred Dollars ($700.00) or to be imprisoned in the County Jail for a period not to exceed ninety (90) days, or both.

Amended: Section 1001.02. Passed and adopted December 22, 2009
Added: Section 1001.03 I. Passed and adopted December 22, 2009
Section 1001.07 C. Passed and adopted December 22, 2009

APPENDIX 8: GRAPH SHOWING ANNUAL PER CAPITA WATER DEMAND FOR EACH CUSTOMER CATEGORY DURING THE LAST TEN-YEARS


CITY OF OAK PARK HEIGHTS PER CAPITA WATER USAGE
PER CAPITA WATER USAGE (GPCD)
160
140
120
100
80
60
40
20
0
2005
2007
2009
2011
2013
2015
2017
2019
2021
2023
2025
TOTAL PUMPED
TOTAL
RESIDENTIAL
COMMERCIAL/INSTITUTIONAL
COMMERCIAL
INSTITUTIONAL
RESIDENTIAL

APPENDIX 9: WATER RATE STRUCTURE

NOTICE OF WATER AND SEWER USAGE RATES
CITY OF OAK PARK HEIGHTS

Effective January 1, 2016, the City of Oak Park Heights shall establish a municipal water rate for all users as follows:

NC 1. A quarterly minimum charge of $38.19 for the first 15,000 gallons of water used.
NC 2. A rate of $3.05 per 1,000 gallons for water use above 15,000 up to 50,000 gallons.
NC 3. A rate of $3.55 per 1,000 gallons for water use above 50,000 up to 99,000 gallons.
NC 4. A rate of $4.42 per 1,000 gallons for water use above 99,000 up to 200,000 gallons.
NC 5. A rate of $5.24 per 1,000 gallons for water use above 200,000 gallons.

Effective January 1, 2016, the City of Oak Park Heights shall establish a municipal sewer rate for all users as follows:

C 1. A quarterly minimum charge of $70.50 for the first 15,000 gallons of water used.
C 2. A rate of $5.20 per 1,000 gallons of water used above 15,000 up to 50,000 gallons.
C 3. A rate of $5.60 per 1,000 gallons of water used above 50,000 gallons.

Residential sewer rates are determined by the amount of water used in the March quarter of each year. Commercial, industrial, institutional and high density residential sewer rates are based on actual usage.

NC = NO CHANGE FROM PRIOR YEAR C = CHANGED FROM PRIOR YEAR

APPENDIX 10: ADOPTED OR PROPOSED REGULATIONS TO REDUCE DEMAND OR IMPROVE WATER EFFICIENCY

REGULATION OF THE USE OF WATER AND SEWER

AN ORDINANCE RELATING TO AND REGULATING THE USE OF WATER AND SEWER IN THE CITY OF OAK PARK HEIGHTS ESTABLISHING RULES AND REGULATIONS FOR THE ADMINISTRATION OF THE WATER AND SEWER SYSTEMS IN THE CITY AND MATTERS RELATING THERETO, INCLUDING ALL PROPERTIES, MAINS, RATES AND CHARGES IN CONNECTION THEREWITH AND ESTABLISHING AN INDUSTRIAL USER STRENGTH CHARGE IN ADDITION TO THE CHARGE BASED UPON THE VOLUME OF DISCHARGE BY AN INDUSTRIAL USER AND ESTABLISHING TAX LIEN AGAINST PROPERTY SERVED IN CONNECTION WITH SUCH STRENGTH CHARGE AND SEWER AND WATER RULES AND REGULATIONS AND REPEALING ORDINANCES IN CONFLICT THEREWITH.

THE CITY COUNCIL OF THE CITY OF OAK PARK HEIGHTS, WASHINGTON COUNTY, MINNESOTA, DOES ORDAIN:

1001.01 Establishment of Department.

There is hereby established a Public Utilities Division of the Department of Public Works of the City of Oak Park Heights which shall be under the supervision of the Director of Public Works. The water and sewer systems as they are now constituted or shall hereafter be enlarged or extended shall be operated and maintained under the provisions of this ordinance subject to the authority of the City Council at any time to amend, alter, change or repeal the same. The City Council shall have responsibility for the management, maintenance, care, and operation of the sewer and water systems of the City subject to the delegation of such authority to City employees, individual Council members, or the City Clerk as the Council shall make from time to time.

1001.085 Water Conservation.

To secure the conservation of municipal water as a resource for the benefit of the people of the City of Oak Park Heights, all water sprinkling and irrigation systems and practices shall be regulated to allow water sprinkling and irrigation systems to operate in the following manner: as to all properties which property address ends in an even number, those properties will be allowed to sprinkle or irrigate on even numbered calendar days. As to all properties whose property address ends in an odd number, their right to use sprinkling and irrigation systems shall be limited to calendar number days ending in odd numbers.

1001.02 Applications, Permits and Fees.

No person, firm, or corporation shall make any type of connection or perform any service to the water system, sanitary sewer system or storm sewer system except upon making an application therefore on a form provided by the City and receiving a permit issued by the City and for such purposes. The application shall include the legal description of the property to be served, the uses for which the connection is requested, and the size of the service line to be used. At the time of making such application there shall be paid to the City Clerk fees which shall be set by the City Council from time to time by resolution for the following purposes:

A. No connection shall be made with respect to any sanitary sewer, water system or storm sewer system serving the property of any person or occupants of the land, parcel or premises affected that have not paid or provided for the payment of the full and proportionate share of the said utilities which share shall be payable as follows:

1. No connection shall be made to the City water or sewer system until the applicant or owner pays a connection charge as established by Council resolution from time to time. The connection fee shall be in addition to any fees or charges required under Subsections 2, 3, & 4.

2. For services to property to which service lines have not been previously run from the street laterals to the property line, the owner, occupant, or user shall pay into the City Treasury a service line charge, the amount of which shall not be less than the City's cost of making the necessary connections, taps, and installation of pipe and appurtenances to provide service to the property and the necessary street repairs, provided, however, with the approval of the City, the owner or applicant shall have the right to contract directly with a registered installer for the installation and connection of the service line.

3. Prior to any connections the owner, occupant or user shall pay in cash or agree to pay charges in the form of Special Assessments to be levied against the property to be spread over a number of years coincident with the maturity requirements of any Special Improvement Bonds sold for the purpose of financing the construction of sanitary sewer, municipal water or storm sewer system serving the property. Said cash payment of assessment charge shall be in the principal amount of not less than the payments made

by or charges placed against comparable properties for like services for such sanitary sewer, water or storm sewer system in an amount as may be established by the City Council. Payment to the City Treasury in the form of a Special Assessment charge shall be in the form of equal annual installments together with interest on the unpaid balance, which shall be established by Council resolution.

4. The City Council may establish water, sanitary sewer and storm sewer districts and establish area charges, connection charges and lateral charges for each said district by Council resolution.

B. Before proceeding with the construction, enlargement, alteration, repair of any water or sewer lines connecting the water system, sanitary sewer system or storm sewer system to any house or building, the owner or his agent shall first obtain a permit for such purposes from the municipality through its City Clerk.

C. The applicant shall pay to the City Clerk a permit fee the amount of which shall be established from time to time by Council resolution.

D. The Plumbing Inspector shall examine all applications before construction is begun, and after the construction, enlargement, alteration, or repair is complete, the Plumbing Inspector shall be notified. It shall be unlawful to cover any connecting line until an inspection has been made and such connection and the work incident thereto has been approved by the City as a proper and suitable connection.

1001.215 Storm Water, Sump Pumps, Etc.

It shall be unlawful for any owner, occupant, or user of any residential or commercial premises to direct into or allow any storm water, surface water, ground water, well water, or water from residential, industrial, or commercial air conditioning systems to drain into the sanitary sewer systems of the City. No rain spout or other form of surface drainage and no foundation drainage or sump pump shall be directly connected or discharged into any sanitary sewer system. Further, no owner, occupant, or user of any residential or commercial premises shall directly pipe or install any conduit for sump pump, pool, foundation drainage, or any other surface water drainage system through the City's curbing along any City street to facilitate its entry into the City storm water drainage system.

1001.03 Water Meter Regulations.

A. Before any water conveyed through the municipal water system shall be used or utilized on the land or premises of any person, firm, or corporation, there

shall first be installed a water meter that will accurately measure the water consumed on the premises, except and unless such installation shall be exempted by the City.

B. All applications for the installation, maintenance, and repair of water meters shall be made to the City Clerk, who shall proceed to comply with such application within a reasonable time thereafter. All meters installed shall be furnished by the City and shall remain the property of the City of Oak Park Heights. Regulations for the cost of furnishing and use of water meters shall be established by Council resolution.

C. No person, firm, or corporation, other than the City of Oak Park Heights or its designee, shall install and repair any water meter within the City limits. Every water meter connected to the water system shall be sealed by or under the direction of the City Clerk or City Department of Public Works and no person, firm, or corporation shall break or remove such seal. Whenever any seal attached to a water meter by or under the direction of the City Clerk or City Department of Public Works is found broken, the broken condition of such seal was broken contrary to the terms and provisions in violation of this Ordinance.

D. All water meters connected to the water system shall be accessible to the City Clerk or City Department of Public Works or designee at any reasonable hour of any business day and the refusal of admission by any owner or occupant of any premises wherein a water meter is installed after such owner or occupant has been notified that admission is desired for the purpose of inspecting a water meter installed in said premises shall constitute a violation of this Ordinance.

E. Water meters shall be repaired or replaced from time to time as is necessary to insure accurate measuring of the flow of water. The cost of said repair or replacement shall be borne by the City except that whenever a meter has been damaged due to negligence on the part of persons other than the employees of the City, the owner, occupant, or user of the premises or such other person desiring the use of the water shall reimburse the City for the expense of repairing or replacing any such meter. Upon failure to reimburse the City within a reasonable time and upon demand therefor, the water service and supply to said premises may be shut off or discontinued as determined to be in the best interest of the City.

F. It shall be unlawful for any person to tamper with, alter, by-pass, or in any manner whatsoever interfere with the proper use and functioning of any water meter within the City.

G. If a meter fails to register or accurately measure the water, the charge for water consumed shall be paid for at the established rate based upon past average billings as determined by the City Clerk.

H. Whenever a water user questions the accuracy of the meter, and desires that his meter be tested, he shall pay a fee, the amount of which shall be established from time to time by Council resolution, to have the meter tested. If the meter is accurate within a range of minus three percent (3%) to plus one and one-half percent (1 ½%), no charge will be made for testing and an adjustment on the water bill will be made for the period of time that the meter is assumed to be inaccurate, not to exceed two (2) billing periods.

I. Whenever a water use questions their computed consumption levels, the user must make such request for review within two billing periods otherwise the reading shall be deemed final.

1001.04 Meter Readings.

A. The City Council may provide a system of water meter reading by postcard, meter person, or any other method deemed suitable to the purpose by Council. The Council may also establish billing areas or districts and provide for the reading of meters and billing charges by calendar quarters or monthly or such periodic intervals as the City Council shall determine suitable and necessary from time to time by resolution; provided, however, where meter reading is done by postcard the City Council may establish a penalty for failure to return water meter reading card within the time designated on said card by Council resolution.

B. The City reserves the right to discontinue service to any customer of the water and sanitary sewer system without notice when necessary for repairs, additional connection, or reconnection.

C. The City reserves the right to discontinue service to any customer of water and sanitary sewer system with notice as hereinafter provided for non-payment of charges or bills or for disregard of any rules or regulations in connection with the use or operation of said system. The service of water or sanitary sewer shall not be shut off until notice and an opportunity for a hearing have first been given to the occupant and owner of the premises involved. The notice shall be personally served and shall state that, if

payment is not made before the date stated in the notice, but not less than ten (10) days after the date upon which the notice is given, the water supply to the premises will be shut off. The notice shall also state that the occupant may, before such date, demand a hearing before the City Council, in which case the supply will not be shut off until after the hearing is held. If, as a result of the hearing, the City Council finds that the amount claimed owing is actually due and unpaid and that there is no legal reason why the water supply of the delinquent customer may not be shut off in accordance with this Ordinance, the City may then shut off the supply.

D. Whenever any service has been discontinued for non-payment of charges or bills or for disregard of any rules or regulations in accordance with the procedures set forth above, it shall not be resumed except upon payment of the charges or bills accrued together with interest thereon, at a rate to be determined by Council resolution from time to time or compliance with the rules and regulations previously violated and payment to the City of restoration fee, the amount of which shall be set by the City Council from time to time by resolution.

E. In the event a water or sewer bill, whether incurred prior or subsequent to the passage of this Ordinance, is unpaid after the due date as established by Council resolution from time to time, the bill shall be considered delinquent and the service may be discontinued as provided in (B) above and the City Council may cause the charges noted in such billing to become a lien against the property served by certifying to the County Auditor the amount of said delinquent bill in accordance with the Statutes of the State of Minnesota. Such action is optional and may be subsequent to taking legal action to collect delinquent accounts.

1001.05 Liability for Repairs.

After the initial connection has been made to the curb stop or the sewer lead the applicant, owner, or the occupant or user of such premises shall be liable for all repairs required to any water line or any sanitary or storm sewer lines necessary for connection of the premises to the street main, including any repairs necessary to the curb stop box and any necessary street repairs; it shall be the responsibility of the applicant, owner, occupant or user to maintain the stop box at such height as will insure that it remains at the finished grade of the land or property

A. In the event a water main becomes frozen, the City of Oak Park Heights will be responsible for thawing the same. The property owner shall have the sole responsibility of thawing frozen water service line from its connection to the street main into the premises. All contractors engaged in thawing water lines

must comply with the provisions of Ordinance 302, Contractors Permits. No water customer shall be given a credit on a water bill for allowing water to run to prevent freezing without specific prior authorization from the Council annually.

1001.06 Implied Consent to Rules, Regulations, and Rates.

Every person applying for water or sewer service, every owner of property for which any such application is made, every person accepting water or sewer service, and every owner of property where such service is accepted subsequent to the passage of this Ordinance shall be deemed upon making such application or accepting such service to consent to all rules, regulations, and rates as established by this Ordinance and as may hereafter be set forth and adopted by the City Council by resolution or ordinance.

1001.07 Billing Regulations.

A. The City Council shall have the authority to prescribe by resolution the rates to be charged for water and sewer service to the customer from time to time and may prescribe the date of billing, a discount for payment within a prescribed period, and/or penalty for failure to pay within such period and such further rules and regulations relative to the use and operation of such systems as it may deem necessary from time to time.

B. The owner shall be liable for water supplies to his property whether he is occupying the property or not and any unpaid charges shall be a lien upon the property.

C. Where a water user has multiple connections to the City's water systems at one location, the City shall total the consumption, exempting independently metered irrigation connections, and apply the appropriate utility rates on said total ("location" being defined as one parcel, or grouping of contiguous parcels, serving a common purpose and owned or controlled by a single entity or taxpayer).

1001.08 Emergency Regulations.

A. The City Council may impose emergency regulations pertaining to the conservation of water by resolution of the City Council and by giving notice by publication or by posting in the City Hall and at such public places as the Council may direct.

B. Whenever the City Council determines that a shortage of water supply threatens the City, it may, by resolution, limit the times and hours during

which City water may be used for sprinkling, irrigation, car washing, and other external purposes. After publication of a Notice setting forth the restrictions for use of water for said purposes or two (2) days after mailing a copy of such Notice to each customer, no person shall use or permit water to be used in violation of the resolution and any customer who does so shall be charged such sum as established by resolution for each day of violation and the charge shall be added to the customer's next water bill. Continued violation shall be cause for discontinuance of water service.

1001.09 Leak in Service Line.

Any owner, occupant, or user of a premises who shall discover a leak in a service line to the premises shall notify the City Office within twenty-four (24) hours. Any water wasted due to failure of such person to comply with this regulation shall be estimated by the City Clerk and be charged for against the owner of such premises at the established rate.

1001.10 Installation of Connections.

All connections to the water system and sanitary sewer system shall be performed by a registered installer licensed to do plumbing in the City of Oak Park Heights; except that nothing in this Ordinance shall be construed as to prohibit an individual owner from obtaining a permit to connect to an existing service line located totally within the owner's property and installing such connection by his own labor provided, however, that said construction is conducted under the regulations of this Ordinance and all other City Ordinances and applicable Statues of the State of Minnesota and requirements of the City Engineer and City Plumbing Inspector.

1001.11 City Not Liable.

The City shall not be held liable at any time for any deficiency or failure in the supply of water to the customer whether the same be occasioned by shutting off the water for repairs or connections or for any cause whatever.

1001.12 Right to Enter Land.

The City of Oak Park Heights, by any authorized employee or agent, shall have the right to enter and be admitted to any lands and property in the City at any reasonable hour for the purpose of inspection of materials, plumbing work, and fixtures of all kinds used by or in connection with the water and sewer systems.

1001.13 Private Water not Permitted in City System.

Whenever any premises are connected to the City water system, there shall be maintained a complete physical separation between the City water supply system and the private water supply system so that it is impossible to intentionally or

unintentionally allow any water produced by a private system to be introduced in the supply line from the City system.

1001.14 Storm Water not Permitted in Sanitary Sewer System.

It shall be unlawful for any owner, occupant, or user of any premises to direct into or allow any storm water, surface water, ground water, well water or water from air conditioning systems to drain into the sanitary sewer system of the City of Oak Park Heights. No rain spout, or other form of surface drainage and no foundation drainage or sump pump shall be connected or discharged into any sanitary sewer.

1001.15 Delayed Connection Charge.

Any owner of a residence or commercial building to which water and sewer service is or becomes available shall be sublet to an additional charge as established by Council resolution from time to time upon connection to such service if such connection is not made within the period of time which shall be established by Council resolution after such services become available.

1001.16 Prohibited Wastes into Sanitary Sewer System.

A. Waste Discharge Regulations:

No person, firm, or corporation shall discharge any waste, or cause or allow any waste to be discharged into the sanitary sewer system unless in accordance with the following regulations:

1. Treatment of Prohibited Waste.

Where it is determined that any waste discharged or to be discharged has certain characteristics or elements which are or may be harmful to the structures, processes, or operation of the sanitary sewer system or persons operating it, such discharge shall be discontinued or the waste shall be treated prior to its discharge into the system in a manner which will eliminate such characteristics or elements.

2. Limitations on Discharge.

No person, firm, or corporation shall discharge, or cause or allow to be discharged into the sanitary sewer system any waste containing concentrations in excess of the following:

	Concentration
Chromium (total)	25.0 mg/1
Chromium (hexavalent)	10.0 mg/1
Copper	5.0 mg/1
Cyanide (total)	10.0 mg/1

Cyanide (readily released at 150 degrees F and pH = 4.5)	2.0 mg/1
Iron	50.0 mg/1
Lead	0.5 mg/1
Mercury	None at levels acutely toxic to humans or other plant or animal life
Nickel	10.0 mg/1
Zinc	15.0 mg/1
Temperature (except where higher temperatures are required by law)	not over 150 Deg. F
pH	5.5 - 9.5

3. Exclusion of Wastes.

No person, firm, or corporation shall discharge or cause or allow to be discharged into the sanitary sewer system any waste which contains any of the following:

a. More than one hundred (100) mg/1 of fats, wax, grease, or oils (hexane soluble), whether emulsified or not, or containing substances which may solidify or become viscous at temperatures between 32 degrees and 150 degrees F (0 degree and 65 degrees C) at the point of discharge into the sewer system.

b. Liquids, solids, or gases which by reason of their nature or quantity are or may be sufficient to cause fire or explosion or be injurious in any other way to the sanitary sewer system or to the operation of the system. At no time shall two (2) successive readings on an explosimeter, at the point of discharge into the sewer system, be more than five percent (5%) nor any single reading over ten percent (10%) of the Lower Explosive Limit (L.E.L.).

c. Any noxious or malodorous solids, liquids, or gases, which either singly or by interaction with other wastes, are capable of creating a public nuisance or hazard to like, or are or may be sufficient to prevent entry into a sewer for its maintenance and repair.

d. Any toxic substance, chemical elements, or compounds in quantities sufficient to interfere with the biological processes of efficiency of treatment works, or that will pass through a

treatment works and cause the effluent therefrom or the water into which it is discharged to fail to meet applicable State or Federal Standards.

e. Garbage that has not been ground or comminuted to such a degree that all particles will be carried freely in suspension under flow conditions normally prevailing in public sewers, with no particle greater than one-half inch (½") in any dimension.

f. Radioactive wastes or isotopes of such half-life or concentrations that they are in noncompliance with present or future regulations issued by the appropriate authority having control over their use and which will or may cause damage or hazards to the system or personnel operating it.

g. Solid or viscous wastes which will or may cause obstruction to the flow in a sewer, or other interference with the proper operation of any disposal system, such as grease, uncomminuted garbage, animal guts or tissues, paunch manure, bones, hair hides or fleshings, entrails, whole blood, feathers, ashes, cinders, sand, spent lime, stone or marble dust, metal, glass, straw, shavings, grass clippings, rags, spent grains, spent hops, waste paper, wood, plastic, gas tar, asphalt, residues from refining or processing of fuel or lubricating oil, gasoline, naphtha, and similar substances.

h. Any waste from septic tanks or similar facilities.

I. Any mineral acids, waste acid pickling, or plating liquors from the pickling or plating of iron, steel, brass, copper, or chromium, or any other dissolved or solid substances which will or may endanger health or safety, or attach or corrode any part of the sanitary sewer system.

j. Liquids or vapors having a temperature higher than 150 degrees F immediately prior to discharge into the sewer system.

k. Phenols or other taste- or odor-producing substances in concentrations which will or may cause the effluent from the

treatment works or the water into which it is discharged to fail to meet applicable State or Federal standards.

l. Materials which exert or cause:
   1) Unusually high concentrations of inert suspended solids or of dissolved solids.
   2) Excessive discoloration.
   3) Unusually high volume of flow or concentration of waste exceeding five (5) times the average daily concentration of flow during normal operation.

m. Unusually high concentrations of suspended solids, BOD, COD, or chlorine requirements in such quantities as to constitute a significant load on the treatment works.

n. Any substance which is not amenable to treatment or reduction by the type of sewage treatment processes employed to a degree sufficient to permit the effluent from the treatment works and the water into which it is discharged to meet applicable State and Federal standards.

1001.17 Recitals for Establishing Industrial User Strength Charge.

The Metropolitan Waste Control Commission, a metropolitan commission organized and existing under the laws of the State of Minnesota, hereinafter referred to as the "Commission," in order to receive and retain grants in compliance with the Federal Water Pollution Control Act Amendments of 1972 and regulations thereunder, hereinafter referred to as the "Act," has determined to impose an industrial user sewer strength charge upon users of the Metropolitan Disposal System as defined in Minnesota Statutes, § 473.121, Subdivision 24, to recover operation and maintenance costs of treatment works attributable to the strength of the discharge of industrial waste, such sewer strength charge being in addition to the charge based upon the volume of discharge. In order for the City to pay such costs based upon strength of industrial discharge and allocated to it each year by the Commission, it is hereby found, determined, and declared to be necessary to establish sewer strength charges and a formula for the computation thereof for all industrial users receiving waste treatment services within or served by the City. Furthermore, Minnesota Statutes, §444.075, Subdivision 3, empowers the City to make such sewer charge a charge against the owner, lessee, occupant, or all of them and certify unpaid charges to the County Auditor as a tax lien against the property served.

1001.18 Establishment of Strength Charges.

For the purpose of paying the costs allocated to the City each year by the Commission that are based upon the strength of discharge of all industrial users receiving waste treatment services within or served by the City, there is hereby approved, adopted, and established, in addition to the sewer charge based upon the volume of discharge, a sewer charge upon each person, company, or corporation receiving waste treatment services within or served by the City based upon strength of industrial waste discharged into the sewer system of the City, hereinafter referred to as the "Strength Charge."

1001.19 Establishment of Strength Charge Formula.

For the purpose of computation of the Strength Charge established by Section 1001.18 hereof, there is hereby established, approved, and adopted, in compliance with the act, the same Strength Charge formula designated in Resolution No. 76-172, adopted by the governing body of the Commission on June 15, 1976, such formula being based upon pollution qualities and difficulty of disposal of the sewage produced through an evaluation of pollution qualities and quantities in excess of an annual average base and the proportionate costs of operation and maintenance of waste treatment services provided by the Commission. Said Metropolitan Waste Control Commission Resolution 76-172, adopted June 15, 1976, is hereby made an attachment "A" to this Ordinance.

1001.20 Strength Charge Payment.

It is hereby approved, adopted, and established that the Strength Charge established by Section 1001.18 hereof, shall be paid by each industrial user receiving waste treatment services and subject thereto before the twentieth (20th) day next succeeding the date of billing thereof to such user by or on behalf of the City, and such payment thereof shall be deemed to be delinquent if not so paid to the billing entity before such date. Furthermore, it is hereby established, approved, and adopted that if such payment is not paid before such date an industrial user shall pay interest, compounded monthly, at the rate of two-thirds of one percent (2/3%) per month on the unpaid balance due.

1001.21 Establishment of Tax Lien.

As provided by Minnesota Statutes, § 444.975, Subdivision 3, it is hereby approved, adopted, and established that if payment of the Strength Charge established by Section 1001.18 hereof is not paid before the sixtieth (60th) day next succeeding the date of billing thereof to the industrial user by or on behalf of the City, said delinquent sewer strength charge, plus accrued interest established pursuant to Section 1001.20 hereof, shall be deemed to be a charge against the owner, lessee, and occupant of the property served, and the City or its agent shall certify such unpaid delinquent balance to the County Auditor with taxes against the property served for collection as other taxes are collected; provided, however, that such certification

shall not preclude the City or its agent from recovery of such delinquent sewer strength charge and interest thereon under any other available remedy.

1001.215 Storm Water, Sump Pumps, Etc.

It shall be unlawful for any owner, occupant, or user of any residential or commercial premises to direct into or allow any storm water, surface water, ground water, well water, or water from residential, industrial, or commercial air conditioning systems to drain into the sanitary sewer systems of the City. No rain spout or other form of surface drainage and no foundation drainage or sump pump shall be directly connected or discharged into any sanitary sewer system. Further, no owner, occupant, or user of any residential or commercial premises shall directly pipe or install any conduit for sump pump, pool, foundation drainage or other surface water drainage system through the City's curbing along any City street to facilitate its entry into the City storm water drainage system.

1001.22 Separability of Sections.

In the event any provision of this Ordinance shall be held invalid or unenforceable by any court of competent jurisdiction, such holding shall not invalidate or render unenforceable any other provision hereof.

1001.23 Penalty Provision.

Any person who shall do or commit any act that is forbidden by the provisions of this Ordinance shall be guilty of a misdemeanor and upon conviction thereof shall be punished by a fine not to exceed Seven Hundred Dollars ($700.00) or to be imprisoned in the County Jail for a period not to exceed ninety (90) days, or both.

Amended: Section 1001.02. Passed and adopted December 22, 2009
Added: Section 1001.03 I. Passed and adopted December 22, 2009
Section 1001.07 C. Passed and adopted December 22, 2009

APPENDIX 11: IMPLEMENTATION CHECKLIST

Appendix 11. Implementation Checklist

Water Supply Plan Section	Page	Water Supply Plan Action	Implementation Status/Date
Part 1E Appendix 2	10	Well Level Monitoring Plan for monthly recording of static and pumping water levels in Wells 1 and 2.	Nov 2016
Part 3B, Obj. 1	24	Conduct regular water audits to monitor water pumpage and sales to identify potential water loss. Identify and repair leaks immediately.	Ongoing
Part 3B, Obj. 1 Part 3B, Obj. 2 Part 3E	24 25 36	Update customer meters; provide educational and conservation materials to customers during upgrade to encourage future water savings.	2018+
Part 3B, Obj. 2	25	Infrastructure improvements to prevent water loss through preventative maintenance and proactive replacement of water system infrastructure.	Ongoing
Part 3B, Obj. 3	26	Require immediate repairs when leaks on customer premises detected.	Ongoing
Part 3B, Obj. 3	26	Promote non-residential customers subscribe to Washington County Code Red notification system to receive important water utility updates.	2017
Part 3B, Obj. 4	27	Existing per capita water demand trends are trending downward. Continue to monitor per capita demand.	Ongoing
Part 3B, Obj. 5	27	Monitor and maintain the maximum day demand to average day demand ratio below the DNR target of 2.6.	Ongoing
Part 3B, Obj. 6	28	City of Oak Park Heights water rate structure promotes conservation.	Ongoing
Part 3B, Obj. 7	30	Implement a Stormwater Management Program to protect wellhead protection area. Program is currently in development.	2017
Part 3C	31	Water efficient plumbing fixtures and irrigation rainfall sensors required by existing Federal Law and State Statue, respectively.	Ongoing
Part 3C	31	Critical/Emergency Water Deficiency ordinance in place (Ordinance 1001).	Ongoing
Part 3C	31	Water Restriction Requirements as detailed in Ordinance 1001.	During emergencies
Part 3D Part 3E	32 33	City owned demonstration rain gardens and native/drought tolerant landscaping in public parks along with educational information.	Ongoing
Part 3E	33	Consumer confidence report to include water quality and future water conservation topics for customer education.	Ongoing
Part 3E	33	Water conservation education and water restriction information distributed through social media.	Ongoing
Part 3E	33	Providing water utility and water conservation education during facility tours for customers and general public.	Ongoing
Part 3E	33	General water conservation topics added to City quarterly newsletter.	Ongoing
Part 3E	33	Public services announcements for water conservation and restrictions.	During emergencies
Part 3E	33	Water conservation topics and notification of Water Ordinance 1001 on City website. www.cityofoakparkheights.com	Ongoing
Part 3E	33	The water utility could provide water conservation displays at the annual Party in the Park city-wide event.	Aug 2017
Part 3E	33	Oak Park Heights will supply water conservation brochures and information at City Hall for customers and provide to any resident seeking ways to reduce water bill or to conserve water.	2017
Part 4D	36	Comprehensive planning with neighboring communities to protect the overlapping, vulnerable drinking water supply management areas.	2018+

Appendix B COST ESTIMATES

PROPOSED WATER SYSTEM COST ESTIMATE
CITY OF OAK PARK HEIGHTS

WATER DISTRIBUTION

8 inch	$100 / ft	4,000 ft	$400,000
12 inch	$120 / ft	4,200 ft	$504,000
Total		**8,200 ft**	**$904,000**

WATER SUPPLY

Future 1,000 gpm Groundwater Well	$500,000
Future Well Pumping Facility	$800,000
Total	**$1,300,000**

NOTES

Budget costs are provided for long term planning purposes only.

Water distribution costs do not include detailed street reconstruction costs.

Contingency, administration, legal, and engineering costs are included.

Land acquisition is not included.

City of
Oak Park Heights

Local Surface Water Management Plan

January 2019

Project Number: 193803890

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TABLE OF CONTENTS

Executive Summary ..... **i**
Background i
Relation of 2018 LSWMP to 2008 LSWMP ii
Current Regulatory Setting ii
System Assessment ii
Goals and Policies ii
Stormwater Management Implementation iii
Section 1 - Purpose and Scope **2**
1.1 PURPOSE 2
1.2 SCOPE 2
Section 2 – Physical Setting **4**
2.1 LOCATION AND HISTORY 4
2.2 TOPOGRAPHY 4
2.3 SOILS 5
2.4 GROUNDWATER 6
2.5 CLIMATE 7
2.6 WATER RESOURCES 8
2.7 DRAINAGE SYSTEMS 10
2.8 PLANNING AND DEVELOPMENT 10
Section 3 – Regulatory Setting **12**
3.1 CITY SERVICES 12
3.2 WASHINGTON COUNTY 12
3.3 WASHINGTON CONSERVATION DISTRICT (WCD) 13
3.4 WATERSHED MANAGEMENT ORGANIZATIONS 13
3.5 METROPOLITAN COUNCIL 14
3.6 STATE BOARD OF WATER AND SOIL RESOURCES (BWSR) 14
3.7 MINNESOTA POLLUTION CONTROL AGENCY (MPCA) 15
3.8 MINNESOTA DEPARTMENT OF NATURAL RESOURCES (DNR) 16
3.9 MINNESOTA DEPARTMENT OF HEALTH (MDH) 16
3.10 MINNESOTA ENVIRONMENTAL QUALITY BOARD (EQB) 16
3.11 MINNESOTA DEPARTMENT OF TRANSPORTATION (MNDOT) 16
3.12 U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA) 16
3.13 U.S. ARMY CORP OF ENGINEERS (USACE) 16
3.14 FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) 17
3.16 U.S. GEOLOGICAL SURVEY (USGS) 17
3.17 U.S. FISH AND WILDLIFE SERVICE (USFWS) 18
3.18 NATIONAL PARK SERVICE (NPS) 18
Section 4 – Related Studies, Plans, and Reports **20**
4.1 2008 OAK PARK HEIGHTS LOCAL SURFACE WATER MANAGEMENT PLAN 20
4.2 2017-2026 BROWN'S CREEK WATERSHED MANAGEMENT PLAN 20
4.3 2015-2025 MIDDLE ST. CROIX WATERSHED MANAGEMENT PLAN 20

4.4 2015-2025 VALLEY BRANCH WATERSHED MANAGEMENT PLAN 21
4.5 2004 ST. CROIX BASIN PHOSPHORUS-BASED WATER-QUALITY GOALS 21
4.6 2014-2024 WASHINGTON COUNTY GROUNDWATER PLAN 21
4.7 2012 LAKE ST. CROIX NUTRIENT TMDL 21
4.8 2014 LAKE ST. CROIX DIRECT DISCHARGE STORMWATER RETROFIT ANALYSIS 22
Section 5 – Water Resources Related Agreements 24
5.1 THE BROWN'S CREEK WATERSHED DISTRICT (BCWD) 24
5.2 THE MIDDLE ST. CROIX WATERSHED MANAGEMENT ORGANIZATION (MSCWMO) 24
Section 6 - Current Assessment 26
6.1 HYDROLOGIC MODEL 26
6.2 COMPARISON OF REGULATORY STANDARDS 26
6.3 SUMMARY FINDINGS AND STATEMENT OF ISSUES 31
Section 7 – Goals and Policies 32
7.1 SUMMARY 32
7.2 LAND DEVELOPMENT AND REDEVELOPMENT 32
7.3 RUNOFF RATE 33
7.3 WATER RESOURCE MANAGEMENT 37
7.4 MANAGEMENT OF FLOODPLAINS and SHORELANDS 42
7.5 CITYWIDE PROGRAM ELEMENTS 43
7.5.1 POLLUTION PREVENTION 43
7.6 SUPPORT OF OTHER AGENCIES 45
Section 8 - Implementation and Financial Considerations 48
8.1 OFFICIAL CONTROLS 48
8.2 IMPLEMENTATION PLAN 49
Section 9 - Administration 52
9.1 REVIEW AND ADOPTION PROCESS 52
9.2 PLAN AMENDMENTS AND FUTURE UPDATES 52

List of Tables

Table 2.1 Oak Park Heights Population 4
Table 2.2 Soil Survey Data for Oak Park Heights 6
Table 2.3 Average Monthly Precipitation, 1971-2016 7
Table 2.4 24-Hour Rainfall Depths and Frequency 7
Table 2.5 DNR Public Waters in Oak Park Heights 8
Table 2.6 Impaired Waters in Oak Park Heights 8
Table 8.1 Surface Water Management Related Codes 46
Table 8.2 Implementation Program 48

List of Maps

Map 1 Storm Sewer System Map ..... Appendix A

List of Figures

Figure 2.1 Location Map ..... Page 5
Figure 2.2 USGS Topographic Map ..... Appendix A
Figure 2.3 NRCS Soils Map ..... Appendix A
Figure 2.4 Impaired Waters Map ..... Appendix A
Figure 2.5 NWI Wetland Map ..... Appendix A
Figure 2.6 Existing Land Use Map ..... Appendix A
Figure 2.7 Proposed Land Use Map ..... Appendix A
Figure 3.1 Watershed Jurisdiction Map ..... Appendix A
Figure 3.2 FEMA Floodplain Map ..... Appendix A

List of Appendices

Appendix A Figures
Appendix B Modeling Data
Appendix C Water Resource Related Agreements

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EXECUTIVE SUMMARY

Background

This Local Surface Water Management Plan (LSWMP) will serve as a comprehensive planning document to guide the City of Oak Park Heights in conserving, protecting, and managing its surface water resources. This Plan has been created to meet the requirements detailed in Minnesota Statutes 103B and Minnesota Rules 8410, administered by the Minnesota Board of Water and Soil Resources. This LSWMP is also consistent with the goals and policies of the Metropolitan Council's Water Resources Management Policy Plan, and the three watershed management organizations having jurisdiction within the City: the Brown's Creek Watershed District (BCWD), the Middle St. Croix Watershed Management Organization (MSCWMO), and the Valley Branch Watershed District (VBWD).

This LSWMP is organized into sections that generally follow guidance provided by State statute, rules, and the Metropolitan Council. These sections are described as follows:

- **Section 1** offers an introduction to and purpose of this Plan and includes organizational information on the location of components within this document.
- **Section 2** describes the physical setting of the City.
- **Sections 3 through 5** describe the regulatory agencies having jurisdiction in Oak Park Heights, and past studies and agreements related to surface water resources.
- **Section 6** summarizes the inventories, assessments and modeling completed for this Plan and provides a current assessment of surface water management in Oak Park Heights.
- **Section 7** lists the goals and policies identified to address surface water management needs in the City.
- **Section 8** summarizes current ordinances and capital projects planned to implement the goals and policies listed in Section 7.
- **Section 9** outlines the continued administration of this Plan.

The appendices provide additional detail:

- **Appendix A** includes all figures associated with this Plan.
- **Appendix B** provides data associated with modeling completed in HydroCAD.
- **Appendix C** includes water resources related agreements in which the City has entered.

Relation of 2018 LSWMP to 2008 LSWMP

The preparation of this Plan included a full review of the current surface water system in Oak Park Heights, relying heavily on information from the 2008 Surface Water Management Plan and City input. The intent of this LSWMP update is to bring Oak Park Heights into compliance with current stormwater management regulatory requirements. Previously, LSWMPs served as stand-alone documents to manage surface water resources; now these plans are part of the comprehensive planning cycle and will exist as appendices to Comprehensive Plans.

Current Regulatory Setting

The City has a strong interest in protecting and managing its valuable water and natural resources, recognizing the relationships between resource protection, land use management, development, redevelopment and fiscal responsibility. Sections 3 through 5 of this Plan provide context of the City's regulatory setting; these sections summarize various regulatory agencies, applicable plans, studies, and agreements that influence the City's stormwater management.

System Assessment

Section 6 includes an assessment of the City's current stormwater management system. The physical system was mapped to establish watershed sub-basins and runoff paths. This information was used to create a hydrologic model of the entire City, using HydroCAD modeling software. The modeled sub-basins and system layout are shown on Map 1 attached to this Plan. Overall, the City has effectively managed the conveyance of stormwater runoff. This determination is supported by the hydrologic model completed for this Plan.

In the months and years ahead, the City will face multiple challenges in surface water management. The governing watershed management organizations within the City will continue to implement surface water standards that affect City reconstruction and development projects. The Minnesota Pollution Control Agency (MPCA) will complete local TMDL studies that will lead to challenging implementation projects throughout the City. In addition to regulatory changes, growth in and around the City will put additional pressure on local surface water resources, while the City's aging infrastructure will require continuous rehabilitation and capital investment.

Goals and Policies

The goals and policies outlined in this Plan are grouped by their relationship to the key issues listed below:

- **Section 7.2 - Land Development and Redevelopment –** Goals and policies to prevent adverse impacts to water resources from land disturbance and impervious surfaces.
- **Section 7.3 - Water Resource Management –** Goals and policies for managing Oak Park Heights' wetlands, lakes, streams and groundwater, to preserve the functions and values of these resources.
- **Section 7.4 - Management of Floodplains and Shorelands –** Goals and policies for managing these areas, to preserve the functions and values of these resources.

- **Section 7.5 - Citywide Program Elements –** Goals and policies for managing water resources and drainage systems on a citywide scale, to effectively achieve surface water management goals.
- **Section 7.6 - Support of Other Agencies** – Goals and policies to coordinate local surface water management with the work of watershed management organizations and state agencies.

This Local Surface Water Management Plan will be incorporated into the City's 2018 Comprehensive Plan update and will be applicable until 2028, at which time an updated plan will be required. Periodic amendments may be required to incorporate changes in local practices; changes to the three applicable Watershed Management Plans may require revisions to this Plan.

Stormwater Management Implementation

The Implementation Section (Section 8) of the LSWMP describes the specific activities proposed by the City to address the stormwater management issues presented in Section 6 and implement the policies identified in Section 7. Section 8 provides recommended actions related to the City's official stormwater management controls and a list of system improvement projects and activities, as well as other implementation priorities.

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SECTION 1 - PURPOSE AND SCOPE

1.1 PURPOSE

This Local Surface Water Management Plan will serve as a comprehensive planning document to guide the City of Oak Park Heights in conserving, protecting, and managing its surface water resources. This Plan has been created to meet the requirements detailed in Minnesota Statutes 103B and Minnesota Rules 8410, administered by the Minnesota Board of Water and Soil Resources. This Plan is also consistent with the goals and policies of the Metropolitan Council's 2040 *Water Resources Policy Plan* (Thrive MSP), and the three watershed management organizations having jurisdiction within the City: the Brown's Creek Watershed District, the Middle St. Croix Watershed Management Organization, and the Valley Branch Watershed District. This Plan may be periodically amended to remain current with local practices and policies.

Beyond the regulatory requirements this Plan intends to satisfy, the LSWMP will serve as an update to the 2008 Local Surface Water Management Plan (LSWMP).

1.2 SCOPE

This Plan serves multiple purposes including statutory and rule compliance. Minnesota Statute 103B.235 defines content for Local Surface Water Management Plans. According to the statute's text, each local plan, in degree of detail required in the watershed plan, shall:

(1) describe existing and proposed physical environment and land use;
(2) define drainage areas and the volumes, rates, and paths of stormwater runoff;
(3) identify areas and elevations for stormwater storage adequate to meet performance standards established in the watershed plan;
(4) define water quality and water quality protection methods adequate to meet performance standards established in the watershed plan;
(5) identify regulated areas; and
(6) set forth an implementation program, including a description of official controls, and as appropriate, a capital improvement program.

Minnesota Rules 8410, administered by the Board of Water and Soil Resources, provide more detail on local plan content. Though the BWSR guidance applies specifically to watershed management organizations, this guidance has historically been used to frame expectations for municipal plans. According to Rules 8410, local plans must provide or address:

(1) an executive summary that summarizes the hihglights of the local water plan;
(2) appropriate water resources management-related agreements that have been entered into by the local community must be summarized, including joint powers agreements related to water management that the LGU may be party to between itself and watershed management organizations, adjoining communities or private parties;
(3) the existing and proposed physical environment and land use must be described. Drainage areas and the volumes, rates, and paths of storm water runoff must be defined.

Data may be incorporated by reference as allowed under parts 8410.0600 and 8410.0045, subpart 7; and

(4) an assessment of existing or potential water resource-related problems must be summarized. The problem assessment must be completed for those areas within the corporate limits of the local government unit, and similar to the process under part 8410.0045, subpart 7; and

(5) a local implementation program through the year the local water plan extends must describe nonstructural, programmatic, and structural solutions to problems identified in item D. The program must not jeopardize achievement of the goals of an organization's plan. The implementation components must be prioritized consistent with the principles of part 8410.0045, subpart 1, item A. Local water plans must prioritize the implementation components of an organization plan consistent with the organization priorities set forth under part 8410.0105 only for implementation components that must be facilitated by the local government unit. Local official controls must be enacted within six months of approval of the local water plan by the organization.

The reader will find that Oak Park Heights has structured its LSWMP to provide the information required by 8410 without holding strictly to the outline contained in the rules. Through this document, the City provides signposts identifying where a statutory or rulemaking requirement might be addressed.

The Oak Park Heights LSWMP must address requirements of the Minnesota Pollution Control Agency's Municipal Separate Storm Sewer System (MS4) program. This program is designed to reduce the sediment and pollution that enters groundwater and surface waters to the maximum extent practicable. The MS4 program is regulated through the National Pollutant Discharge Elimination System (NPDES) permits. These NPDES permits require the development of Storm Water Pollution Prevention Programs (SWPPP).

The Oak Park Heights LSWMP must also satisfy Metropolitan Council requirements as contained in their *2040 Water Resources Policy Plan*. These requirements build on those of Minnesota Rules 8410.

Beyond state level requirements and those of Metropolitan Council, this Plan must be consistent with those of the watershed organizations having jurisdiction in the City. Often, watershed districts outline specific content for local plans that go beyond that required by statute and rule.

SECTION 2 – PHYSICAL SETTING

2.1 LOCATION AND HISTORY

The City of Oak Park Heights occupies a scenic location on the bluffs of the St. Croix River in Washington County (Figure 2.1). The Village of Oak Park Heights was originally platted in 1857 and was situated between Stillwater and South Oak Park Heights before South Oak Park Heights was renamed to Bayport. In 1938, the village was replatted and eventually incorporated as a city in 1959. The City is a well-established community that is nearly fully-developed within the St. Croix Basin. In the future, the City may seek to annex lands located immediately west of its most western boundary and south of State Highway 36. Possible expansions of City limits are detailed further in the 2018 Comprehensive Plan update.

Oak Park Heights experienced a surge of development in the early 2000s, particularly commercial development along the Trunk Highway 36 corridor, but its population growth has since slowed. Now considered a developed community within the Twin Cities metropolitan area, the City expects its population to continue growing slowly through 2040, as shown in Table 2.1.

Table 2.1 – Oak Park Heights Population

Year	Population	Households
1990	3,486	1,322
2000	3,777	1,528
2010	4,445	1,911
2020	4,880	2,200
2030	5,300	2,420
2040	5,700	2,600

Sources: Metropolitan Council 2040 Regional Development Framework, City of Oak Park Heights System Statement

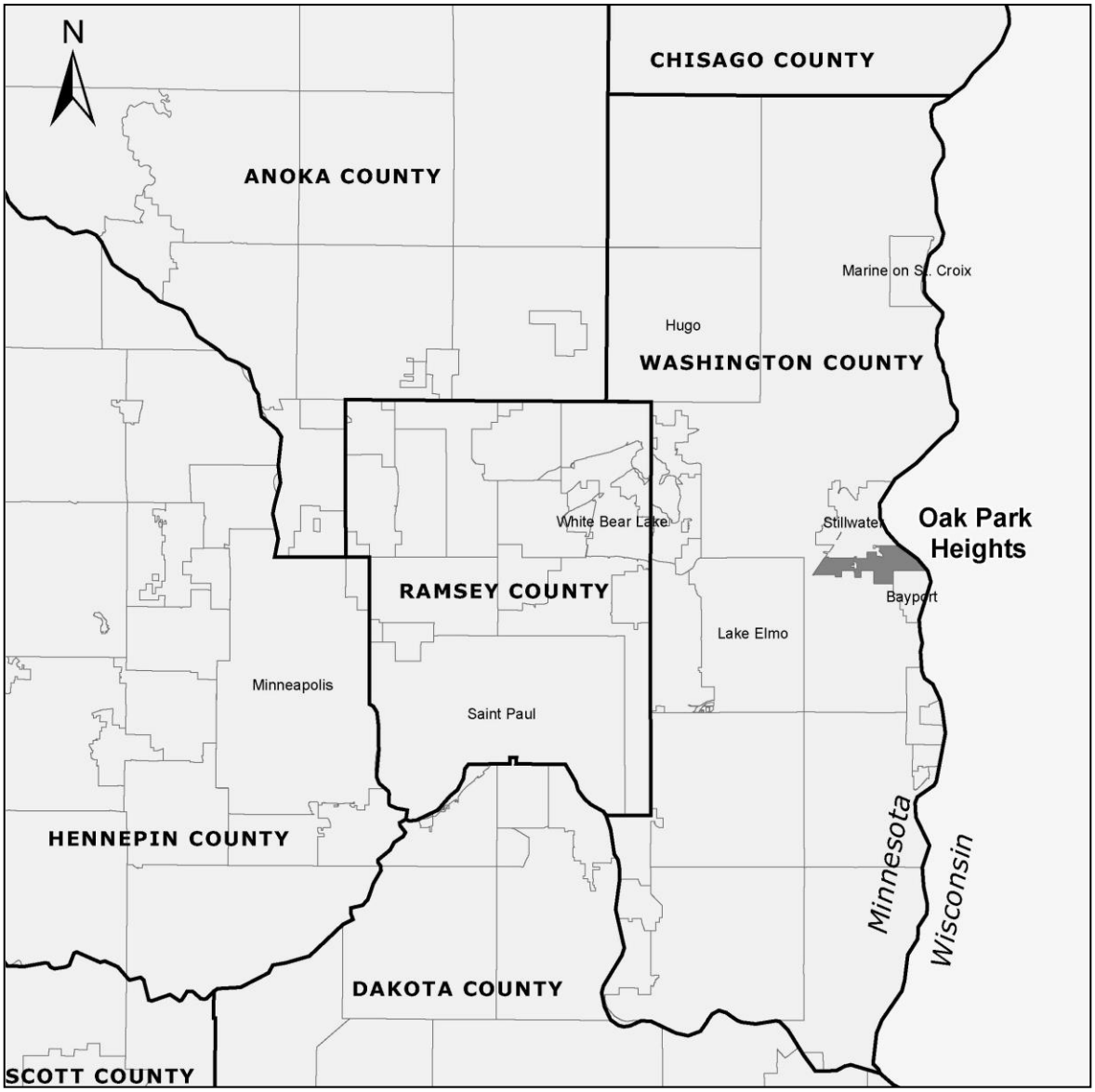
2.2 TOPOGRAPHY

The surficial geology of Oak Park Heights consists of glacial and alluvial (outwash) deposits of the Labradorean Superior Lobe. As the glacier retreated and melted, it left behind areas of outwash and till deposit formations. The entire City west of the St. Croix River bluff line is covered in till and outwash formations. The till formations consist primarily of reddish-brown sandy loam with pebbles, cobbles and boulders. The outwash formations consist primarily of sand, loamy sand, and gravel. The eastern area of the City, adjacent to the St. Croix River, is covered in upper terrace deposits of sand, gravelly sand, and gravel and lower terrace deposits consist of coarse sand and gravel capped by loamy sand. Areas of peat and organic-rich sediment deposits are interspersed within the terrace deposits in the eastern portion of the City. In general, soils in Oak Park Heights have moderate infiltration capacity.

Oak Park Heights has rolling to hilly terrain with some steep and rugged areas. Elevation in the City ranges from approximately 980 feet in the western portion of the City south of Highway 36 to

approximately 675 feet on the eastern border of the City along the St. Croix River. The USGS topographic map for the area is provided in Figure 2.2 (Appendix A).

Figure 2.1 – Location Map



2.3 SOILS

The Soil Conservation Service (SCS) published the *Soil Survey of Washington and Ramsey Counties Minnesota* in 1980. The *Soil Survey* provides mapping and physical properties for soil types found in the area. The *Soil Survey* was added to the Soil Survey Geographic (SSURGO) Database in 2005, providing digital access to the information.

The *Soil Survey* assigns each soil type to a hydrologic soil group, according to the soil's ability to infiltrate water during long-duration storms. The four hydrologic soil groups are: Group A – High Infiltration, Group B – Moderate Infiltration, Group C – Slow Infiltration, and Group D – Very Slow Infiltration. As illustrated in Figure 2.3 (Appendix A), the majority of Oak Park Heights contains Hydrologic Soil Group B soils.

Table 2.2 lists the hydrologic soil group for the primary soils identified within Oak Park Heights. Highly variable soils are characteristic of the glacial moraine formation. Most soils within Oak Park Heights are classified in the Antigo and Santiago-Kingsley soil series, formed in and over loamy glacial till.

Table 2.2 – Soil Survey Data for Oak Park Heights

Soil Series	Drainage Characteristic	Hydrologic Group
Antigo	Well drained	B
Auburndale	Poorly drained	D
Brill	Well drained	B
Burkhardt	Somewhat excessively drained	B
Chetek	Somewhat excessively drained	B
Dorerton	Well drained	B
Emmert	Excessively drained	A
Freeon	Moderately well drained	B
Freer	Poorly drained	C
Kingsley	Well drained	B
Mahtomedi	Excessively drained	A
Markey	Poorly drained	A/D
Poskin	Somewhat poorly drained	C
Rosholt	Well drained	B
Santiago	Well drained	B

2.4 GROUNDWATER

Bedrock in most of Oak Park Heights is covered with a thick layer of glacial till deposits, up to 150 feet in depth. Bedrock layers are exposed on the bluff areas near the St. Croix River. Beneath the

glacial till are four layers of bedrock, from youngest to oldest: St. Peter sandstone, Prairie du Chien dolomite, Jordan sandstone, and the St. Lawrence-Franconia formation. The depth and composition of these layers affect groundwater availability and the potential for contamination. Groundwater protection goals and policies, and a detailed groundwater resource overview are provided in the *2014-2024 Washington County Groundwater Plan*, published by the Washington County Department of Public Health and Environment. The County also publishes an annual Work Plan, summarizing the status of groundwater protection priorities and tasks.

The City obtains drinking water from municipal wells drawing from bedrock aquifers. A discussion of groundwater resources as they relate to water supply is further described in the City's 2018 Comprehensive Plan (Water Resources section) and in the 2016 Wellhead Protection Plan.

2.5 CLIMATE

Climate data for the Twin Cities are published by the National Weather Service (NWS) station at Chanhassen, MN. The NWS is a branch of the National Oceanic and Atmospheric Administration (NOAA). Table 2.3 provides a summary of average precipitation data for the Twin Cities area.

Table 2.3 – Average Monthly Precipitation (inches), 1971-2016

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
0.90	0.84	1.80	2.68	3.47	4.52	3.86	4.16	2.80	2.24	1.71	1.12	30.1

Rainfall frequency estimates are used as design tools in water resources projects. Rainfall frequencies are summarized in the National Oceanographic and Atmospheric Administration's (NOAA) Atlas 14-Point Precipitation Frequency Estimates. Previously, Technical Paper No. 40 Rainfall Frequency Atlas of the United States (NOAA) was used to determine rainfall frequency estimates. The use of Atlas 14 estimates provides an advantage to Technical Paper No. 40, as estimates are based on data from denser networks with longer periods of record, and frequency analyses and new spatial interpolation techniques are used. Table 2.4 lists rainfall frequencies applicable to the City of Oak Park Heights (data is shown for closest station, Stillwater 1 SE).

Table 2.4 – 24-Hour Rainfall Depths and Frequency

Recurrence Interval (yrs)	24-hr Rainfall Depth (in)
1	2.4
2	2.8
5	3.5
10	4.2
25	5.2
50	6.2
100	7.2

2.6 WATER RESOURCES

The City of Oak Park Heights has two significant water resources available for the use and enjoyment of its residents: the St. Croix River and Perro Pond. The following sections provide descriptions of these water resources. Map 1 (Appendix A) shows their locations. The Minnesota Department of Natural Resources (MnDNR) has regulatory jurisdiction over the lakes, wetlands, and watercourses defined as public waters within the State. A list of public waters located within or bordering Oak Park Heights is provided in Table 2.5. Impaired waters within the City's jurisdiction are listed in Table 2.6 and mapped in Figure 2.4 (Appendix A).

Table 2.5 – DNR Public Waters in Oak Park Heights

Type	Name	DNR ID
Lakes	Lake St. Croix	82-1 P
	Perro Pond	82-310 P

Table 2.6 – Impaired Waters in Oak Park Heights

Type	Affected Use	Pollutant	TMDL Target Start	TMDL Target Completion
St. Croix River	Aquatic Consumption	Mercury	Statewide TMDL March 2007	
St. Croix River	Aquatic Consumption	PCB	2006	2021
Lake St. Croix	Aquatic Recreation	Nutrients (Phosphorus)	2008	2012
Unnamed Creek (07030005-612)	Aquatic Recreation	E. coli	2012	2024

Source: Final MPCA 2016 303(d) List and Draft 2018 TMDL List

Oak Park Heights is also within the tributary drainage area of Long Lake in Stillwater. Referring to Map 1, Oak Park Heights "H36" (denoting Highway 36) and "OPH" drainage areas discharge to Long Lake, which the Minnesota Pollution Control Agency (MPCA) lists as impaired due to an excess of nutrients. Long Lake is tributary to Brown's Creek, a protected trout stream, which the MPCA lists as impaired due to low indices of biological integrity for fish and macroinvertebrates. Stressors identified during the TMDL development are high total suspended solids, high temperature, low dissolved oxygen and high copper concentration.

2.6.1 RIVERS AND STREAMS

The St. Croix River was one of the first rivers to be designated a Wild and Scenic River under the National Scenic Rivers Act. The St. Croix Riverway is managed by the National Park Service. The Minnesota DNR and Wisconsin DNR also manage the Riverway from Taylors Falls to the Mississippi River. The purpose of the designation is to conserve and protect the scenic, recreational, historic and cultural resources of the river, and maintain a high standard of

environmental quality within the Riverway. The St. Croix River is also listed by the MPCA as an Outstanding Resource Value Water (ORVW).

The St. Croix Basin Water Resources Planning Team consists of federal and state agency members working cooperatively on management issues within the 7,760 square mile St. Croix River basin. The 2004 report, *St. Croix Basin Phosphorus-Based Water-Quality Goals*, is discussed in Section 4 of this Plan.

A small portion of southeastern Stillwater drains to Perro Pond in the City of Oak Park Heights. The Creek outlets from the southeast bank of Perro Pond through an adjustable control structure and flows approximately 1.8 miles through the City of Bayport to the St. Croix River. In 2005, the Middle St. Croix Watershed Management Organization (MSCWMO) completed a flood control project along Perro Creek through Bayport, as described below in Section 2.6.2. In 2012, Perro Creek was listed as impaired for excess levels of E. coli bacteria by the MPCA (Table 2.6; Figure 2.4, Appendix A).

In 2016 and 2017, the MSCWMO monitored the outfalls from Perro Pond to Lake St. Croix and from Perro Pond at the outfall to Perro Creek and found “TP and TSS concentrations observed leaving Perro Pond were very low and are at acceptable levels for maintaining good water quality (Source: http://mscwmo.org/targeted-monitoring).

2.6.2 LAKES

Lake St. Croix is a natural widening of the St. Croix River comprising the lower 25 river miles of the St. Croix Basin between Stillwater, MN and Prescott, WI. The lake is located along the City’s eastern boundary and is considered a Public Water under the jurisdiction of the MnDNR. The lake is currently listed as impaired for excess nutrients (phosphorus) on Minnesota’s 303 (d) list. A TMDL was completed in 2012 outlining phosphorus reduction goals and strategies for the lake. The 2014 follow-up report, *Lake St. Croix Direct Discharge Stormwater Retrofit Analysis,* provides management recommendations for subwatersheds within Oak Park Heights discharging to the lake and is described in further detail in Section 4.6 of this Plan.

Perro Pond (also called Prison Pond) is considered a Public Water under the jurisdiction of the MnDNR. This lake is located east of the Oak Park Heights Correctional Facility at the bottom of the St. Croix River bluffs. It is a shallow lake, with a surface area of approximately 53 acres and a watershed size of nearly 340 acres.

A State of Minnesota Storm Sewer Project was completed in 2005 to provide a safe outlet for Perro Pond to the St. Croix River. Following completion of the outlet project and other associated storm sewer projects, regular flooding that historically occurred in Bayport and in Oak Park Heights has largely been alleviated. The project was sponsored by the MSCWMO and funding was provided by the State of Minnesota through the 2002 bonding bill.

2.6.3 WETLANDS

According to the National Wetland Inventory (NWI) map, the City contains over 60 wetlands of various sizes and types (Figure 2.5, Appendix A). Larger wetlands are located within the St. Croix

River floodplain with smaller wetlands scattered throughout the western portions of the City due to differences in geology.

The VBWD has classified wetlands within its jurisdiction (see 2015 VBWD Watershed Management Plan).

2.7 DRAINAGE SYSTEMS

The storm drainage system in Oak Park Heights has a history common to many cities across the nation. Up until about thirty years ago, storm runoff was collected and carried in the sanitary sewer system. Diversion structures in the lower watershed routed high flows directly to the river. In the 1970s, the City began constructing new sewers to separate these systems. Due to the age and often inefficient layout of these sewers, the City has replaced many of them during street reconstruction projects. In all cases, the goal of early storm drainage was to remove runoff as quickly as possible. Wetlands were often filled to create usable land.

Beginning in the 1970s, it was clear that urban growth created new demands on traditional drainage systems. As in many cities, Oak Park Heights began incorporating dry detention basins and wet ponds for storage of storm runoff in new developments. Impacts to lakes and other water quality concerns then became the focus, and wet ponds were built specifically to intercept pollutants. Wetlands were often used for this purpose until the Wetland Conservation Act mandated protection of these areas in 1991.

With the evolution of watershed districts, environmental regulations and water resource protection, the design of drainage systems continues to become more complex. Runoff reduction, infiltration, pollutant removal, groundwater recharge and stream protection are a few of the current goals in system design.

Because of this complex history, Oak Park Heights has a widely-varied system of inlets, pipes, tunnels, ponds, channels and streams. A challenge for the City will be maintaining and updating its stormwater system as it is a nearly-developed community. A map of the drainage system was prepared for this study and is shown in Map 1 (Appendix A).

2.8 PLANNING AND DEVELOPMENT

2.8.1 COMPREHENSIVE PLANS

The City prepared this Local Surface Water Management Plan at the same time as its Comprehensive Plan Update. Prior to the current Comprehensive Plan Update, the previous Comprehensive Plan was adopted in 2008.

2.8.2 LAND USE

Figures 2.6 and 2.7 (Appendix A) provide existing and proposed land use data for the City of Oak Park Heights, respectively. The City is almost fully-developed. However, there remain a significant amount of natural resources and environmentally-sensitive areas within the City.

The western area of the City is gently-rolling, with many land-locked depressions. The soils in the area are generally well-drained. Many of the depressions contain ponds and wetlands. Land

cover consists of commercial development along Highway 36, Stillwater Area High School, and single-family residential buildings.

The eastern area of the City is rugged near the St. Croix River bluffs, and low and flat adjacent to the river within the floodplain. Industrial and commercial areas reside along the river. Residential and commercial land uses inhabit the floodplain west of Highway 95 and above the bluff line north of Highway 36 and west of Highway 95. The Oak Park Heights State Correctional Facility occupies a large tract west of the bluff line in the southeastern portion of the City. Many parks and open spaces are also situated within the City. The City maintains five parks and many on and off-street trails.

The most recent and significant land use changes in the City resulted from the development of the St. Croix Crossing Bridge in the northeastern area of the City, which routes Highway 36 to the east across Lake St. Croix. Land use changes include conversion of open space, government facility, and industrial lands to road right-of-way.

Most of the anticipated land use change within the City is from vacant space to commercial development in the western portion of the City, especially along Highway 36, and residential development within the remainder of the City; especially in the older, eastern portion. Commercial land use north of 58th Street North and single-family residential land use south of 58th Street North is ultimately planned.

SECTION 3 – REGULATORY SETTING

3.1 CITY SERVICES

The Oak Park Heights Public Works Department is charged with maintaining the City's infrastructure, including the stormwater system and parks. The Engineering Department is responsible for the supervision of the design, planning, and construction of infrastructure, including stormwater infrastructure. This department also coordinates with watershed districts and other outside agencies in water resource management and conservation. The Engineering Department is also responsible for local administration of the Wetland Conservation Act, however in the portion of the City within the VBWD, the VBWD is the local government unit (LGU) responsible for WCA administration.

The Planning Department manages comprehensive planning and the Building Department administers the zoning code within the City. The building code (City Code Chapter 300), the zoning and land subdivision code (City Code Chapter 400) and the stormwater utility code (City Code Chapter 1600) contain the following regulations related to surface water management and protection:

Ordinance 308 Regulating Water Drainage and the Filling of Land
Ordinance 310 Soil Erosion
Ordinance 401 Zoning Ordinance
Ordinance 402 Land Subdivision
Ordinance 403 Restrictive Soils
Ordinance 404 Stormwater Drainage Regulations
Ordinance 406 Wetland Ordinance
Ordinance 1001 Regulating the Use of Water
Ordinance 1124 Regulating the Sale of Phosphorus Based Fertilizers
Ordinance 1600 Establishment of Storm Sewer Improvement Tax District
Ordinance 1602 Stormwater Drainage Utility

The Zoning and Subdivision regulations are currently being revised in conjunction with development of the updated Comprehensive Plan. The revised regulations will incorporate the goals and policies identified in this local surface water management plan.

In 2016, the City updated its Stormwater Drainage ordinance in response to the MSCWMO watershed plan updates. These changes are discussed in Section 4 of this Plan.

3.2 WASHINGTON COUNTY

Washington County was created in 1849 and is one of Minnesota's nine original counties. The County provides many services within the City of Oak Park Heights, including health services and property records. Other County services are provided in unincorporated areas only. For example, the Land Management Unit administers planning and zoning codes in unincorporated areas.

Drinking water in Washington County is sourced solely from groundwater sources. The County Department of Public Health and Environment manages groundwater monitoring and protection in cooperation with cities and other agencies and published the *2014-2024 Washington County Groundwater Plan*. The County has authority to review and comment on this local surface water management plan.

3.3 WASHINGTON CONSERVATION DISTRICT (WCD)

In the 1930s, Soil and Water Conservation Districts were created in response to national concern over erosion and flooding. These Districts were organized along county boundaries with the purpose of managing and directing conservation programs and assisting landowners in conserving soil and water resources. The Washington Soil and Water Conservation District was established in 1942 through State Statute 103C. In 2002, the District changed its name to Washington Conservation District (WCD).

The WCD provides technical assistance to county residents, local government units, watershed organizations, and other agencies. The WCD assists with the implementation of natural resource management plans, the Wetland Conservation Act, natural resource education, and application of sound natural resource practices. WCD programs are funded through County allocation, grants, contracts with local government units, contracts with watershed organizations, and state and federal cost share.

The WCD is the administrative agent for two of the three watershed management organizations having authority for review and approval of this local surface water management plan.

3.4 WATERSHED MANAGEMENT ORGANIZATIONS

In 1955, the Minnesota State Legislature established the Watershed Act. This act provided the means to create watershed districts, special purpose units of local government with broad authority to regulate land use planning, flood control and conservation issues. There are currently 46 watershed districts in the state.

In 1982, the legislature approved the Metropolitan Surface Water Management Act, Chapter 103B of Minnesota Statutes. This act requires all metro-area local governments to address surface water management through participation in a Watershed Management Organization (WMO). A WMO can be organized as a watershed district, as a Joint Powers Agreement (JPA) among municipalities, or as a function of county government. There are 46 watershed management organizations within the metropolitan area.

The City of Oak Park Heights is divided into multiple drainage basins that flow to three separately managed watersheds. Figure 3.1 (Appendix A) shows the three watershed management organizations with jurisdiction in the City. These agencies each have authority for review and approval of this local surface water management plan.

3.4.1 THE BROWN'S CREEK WATERSHED DISTRICT (BCWD)

The BCWD was formed in 1997 and covers portions of Grant, Hugo, Lake Elmo, Oak Park Heights, Stillwater, Stillwater Township and May Township. The main channel of Brown's Creek flows from the upper watershed through the City of Stillwater to the St. Croix River. Drainage from

Oak Park Heights makes its way to the Long Lake tributary of Brown's Creek, which is diverted to McKusick Lake at the diversion structure. The BCWD administration is provided by the Washington Conservation District. The BCWD covers approximately 310 acres in Oak Park Heights. The BCWD has recently amended (2016) its set of water-resource protection and flood-control rules and implements the rules through its permitting program.

3.4.2 THE MIDDLE ST. CROIX WATERSHED MANAGEMENT ORGANIZATION (MSCWMO)

The MSCWMO is a joint powers agreement WMO composed of ten St. Croix valley communities: Afton, Bayport, Bayport Township, Lakeland, Lakeland Shores, Lake St. Croix Beach, Oak Park Heights, St. Mary's Point, Oak Park Heights, and West Lakeland Township. Administration of the MSCWMO is provided by the Washington Conservation District. Member communities are responsible for implementation of watershed plans and standards. The MSCWMO covers approximately 1,530 acres in Oak Park Heights.

3.4.3 THE VALLEY BRANCH WATERSHED DISTRICT (VBWD)

The VBWD was formed in 1968 and covers portions of 14 communities: Afton, Baytown Township, Grant, Lake Elmo, Mahtomedi, Maplewood, Oak Park Heights, Oakdale, North St. Paul, Pine Springs, West Lakeland Township, White Bear Lake, and Woodbury. The VBWD covers approximately 200 acres in Oak Park Heights.

The VBWD has adopted Rules and implements a project review and permitting program for projects located within its jurisdiction to ensure compliance with its adopted Rules.

3.5 METROPOLITAN COUNCIL

Established by the Minnesota Legislature in 1967, the Metropolitan Council is the regional planning organization for the Twin Cities, seven-county area. The Council manages public transit, housing programs, wastewater collection and treatment, regional parks and regional water resources. Council members are appointed by the Minnesota Governor.

The Metropolitan Council reviews municipal comprehensive plans, including this local surface water management plan. The Council adopted the *Water Resources Policy Plan* in 2015, establishing the expectations to be met in local plans. The Council's goals focus on water conservation and reuse to promote sustainability throughout the region.

3.6 STATE BOARD OF WATER AND SOIL RESOURCES (BWSR)

The Minnesota Board of Water and Soil Resources (BWSR) works through local government agencies to implement Minnesota's water and soil conservation policies. The BWSR is the administrative agency for soil and water conservation districts, watershed districts, watershed management organizations and county water managers. The BWSR is responsible for implementation of the Metropolitan Surface Water Management Act and the Wetland Conservation Act. Staff members are located in nine field offices throughout the state.[7]

First established in 1937 as the State Soil Conservation Committee, the agency became part of the University of Minnesota in the 1950s, transferred to the Department of Natural Resources in 1971, then transferred to the Department of Agriculture in 1982. In 1987, the State Legislature established the current Board of Water and Soil Resources. The Board consists of twenty

members, appointed by the governor to four-year terms. Multiple state and local agencies are represented on the Board. In 1992, the BWSR adopted rules (8410), establishing the required content for local surface water management plans.

The City is the Local Government Unit (LGU) for the Wetland Conservation Act within the MSCWMO jurisdiction. The City will continue to administer Wetland Conservation Act permits.

3.7 MINNESOTA POLLUTION CONTROL AGENCY (MPCA)

The MPCA is the state's lead environmental protection agency. Created by the State Legislature in 1967, the MPCA is responsible for monitoring environmental quality and enforcing environmental regulations to protect the land, air, and water.

The MPCA is the permitting authority in Minnesota for the National Pollutant Discharge Elimination System (NPDES), the federal program administered by the Environmental Protection Agency to address polluted stormwater runoff. As of June 2017, the MPCA issued coverage to the City of Oak Park Heights under the NPDES General Permit for MS4 system. Oak Park Heights has developed a stormwater pollution prevention program (SWPPP) to address six minimum control measures:

1) public education,
2) public involvement,
3) illicit discharge detection and elimination,
4) construction site runoff control,
5) post-construction runoff control, and
6) pollution prevention in municipal operations.

The MS4 must identify best management practices (BMPs) and measurable goals associated with each minimum control measure. An annual report on the implementation of the SWPPP must be submitted each year. Additionally, if the MS4 discharges to an impaired water, the permit holder must address the TMDL load allocations once the TMDL is in place. Because the SWPPP is reviewed and updated as necessary on an annual basis, a copy of the SWPPP is not included in this LSWMP as it would eventually become outdated.

In addition to the NPDES program, the MPCA is required to publish a list of impaired waters; lakes and streams in the state that are not meeting federal water quality standards. For each water body on the list, the MPCA is required to conduct a study to determine the allowable Total Maximum Daily Load (TMDL) for each pollutant that exceeds the standards. The 2016 MPCA list of impaired waters identifies 2,660 TMDL reports needed for 1,808 lakes, rivers and streams in the state. Local governments are required to incorporate completed TMDL studies into their Local Water Plans and review their SWPPPs to determine if additional BMPs are needed to comply with the TMDL waste load allocation. Impaired waters in Oak Park Heights are summarized in Table 2.6 in Section 2.6 of this plan.

In response to these multiple regulatory activities, the MPCA published and maintains the *Minnesota Stormwater Manual* in an interactive wiki format periodically updated, providing

stormwater management tools and guidance. The Manual presents a unified statewide approach to stormwater practices.

3.8 MINNESOTA DEPARTMENT OF NATURAL RESOURCES (DNR)

Originally created in 1931 as the Department of Conservation, the DNR has regulatory authority over the natural resources of the state. DNR divisions specialize in waters, forestry, fish and wildlife, parks and recreation, land and minerals, and related services. The DNR administers programs in lake management, shoreland management, dam safety, floodplain management, wild and scenic rivers, the Public Waters Inventory (PWI), and permitting of development activity within public waters.

3.9 MINNESOTA DEPARTMENT OF HEALTH (MDH)

The MDH manages programs to protect the public health, including implementation of the Safe Drinking Water Act. The MDH has regulatory authority for monitoring water supply facilities such as water wells, surface water intakes, water treatment, and water distribution systems. The MDH also is responsible for the development and implementation of the wellhead protection program.

3.10 MINNESOTA ENVIRONMENTAL QUALITY BOARD (EQB)

The EQB is comprised of five citizen members and the heads of nine state agencies that play an important role in Minnesota's environment and development. The EQB develops policy, creates long-range plans and reviews proposed projects that may significantly influence Minnesota's environment.

3.11 MINNESOTA DEPARTMENT OF TRANSPORTATION (MNDOT)

Within the City, MnDOT administers several state highway systems. MnDOT approval is required for any construction activity within state rights-of-way. MnDOT also administers a substantial amount of funding for transportation projects completed in the City. Anticipated activities of MnDOT are periodically published in their State Transportation Improvement Plan (STIP).

3.12 U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)

The EPA develops and enforces the regulations that implement environmental laws enacted by Congress; however, the MPCA bears responsibility for implementing many of the resulting programs within Minnesota. The NPDES program and the Impaired Waters List are both the result of the Clean Water Act, administered by the EPA.

3.13 U.S. ARMY CORP OF ENGINEERS (USACE)

The USACE enforces Section 10 of the Rivers and Harbors Act of 1899, prohibiting obstructions or alterations of navigable waters, including the St. Croix River.

Under Section 404 of the Clean Water Act, including subsequent modifications, the EPA and the USACE regulate the placement of fill into all wetlands of the U.S. In 1993, there was a modification of the definition of "discharge of dredged material" to include incidental discharges associated with excavation. This modification meant that any excavation done within a wetland required the applicant to go through Section 404 permitting procedures. In 1998, however, this

decision was modified so that excavation in wetlands is now regulated by the USACE only when it is associated with a fill action.

3.14 FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA)

FEMA manages federal disaster mitigation and relief programs, including the National Flood Insurance Program (NFIP). This program includes floodplain management and flood hazard mapping. A Flood Insurance Study (FIS) for the City of Oak Park Heights was published by FEMA in 1981. The purpose of the study was to investigate the existence and severity of flood hazards in the City and to aid in the administration of the National Flood Insurance Act of 1968 and Flood Disaster Protection Act of 1973. In 2010, FEMA published an updated FIS for Washington County that contains flood profiles for major waterbodies in the county.

The Flood Insurance Study focuses on flood-prone areas within the City adjacent to the St. Croix River. Limited detailed hydrologic and hydraulic methods were used to determine the St. Croix River's base (100-yr) flood elevation of 692 feet above mean sea level within the corporate boundaries of the City. The most recent flood profile for the St. Croix River published in the 2010 Washington County FIS indicates the base flood elevation has risen to 692.5 feet above mean sea level.

A Flood Insurance Rate Map (FIRM) was the principal result of the Flood Insurance Study. This map contains the official delineation of flood insurance zones and base flood elevation lines. The Washington County FIRM was updated by FEMA in February 2010. A portion of the City adjacent to the St. Croix River was classified as flood insurance Zone AE. Flood insurance Zone AE is defined as a special flood hazard area inundated by the 100-yr flood, determined by limited detailed methods, and with base flood elevations shown. A small portion of the City adjacent to the St. Croix River is classified as flood insurance Zone B, which is defined as area inundated by 0.2% annual chance flooding. The remainder of the City was classified as flood insurance Zone C. Flood insurance Zone C is defined as an area of minimal flooding. Flood insurance zones are mapped in Figure 3.2 (Appendix A).

3.15 NATURAL RESOURCES CONSERVATION SERVICE (NRCS)

The Natural Resources Conservation Service (NRCS) is a division of the U.S. Department of Agriculture. Formerly named the Soil Conservation Service (SCS), the NRCS provides technical advice and engineering design services to local conservation districts across the nation. The *Soil Survey of Washington and Ramsey Counties Minnesota* was published by the Soil Conservation Service in 1980. The SCS also developed hydrologic calculation methods that are widely used in water resources design.

3.16 U.S. GEOLOGICAL SURVEY (USGS)

The USGS provides mapping and scientific study of the nation's landscape and natural resources. USGS maps provide the basis for many local resource management efforts.

3.17 U.S. FISH AND WILDLIFE SERVICE (USFWS)

The USFWS works to conserve and protect the nation's fish, wildlife, plants and habitat. The USFWS developed the National Wetlands Inventory (NWI) beginning in 1974, to support federal, state and local wetland management work.

3.18 NATIONAL PARK SERVICE (NPS)

The NPS protects and manages the nation's park lands, including the St. Croix National Scenic Riverway. NPS manages the upper St. Croix River, beginning at the north city limits of Oak Park Heights. The main office for the Riverway is located in St. Croix Falls, Wisconsin.

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SECTION 4 – RELATED STUDIES, PLANS, AND REPORTS

4.1 2008 OAK PARK HEIGHTS LOCAL SURFACE WATER MANAGEMENT PLAN

The City's 2008 Local Surface Water Management Plan serves as the basis for this LSWMP. The 2008 LSWMP identifies, from a regional perspective, the stormwater quantity and quality improvements within the City to address local and regional flooding issues, water quality improvement, infrastructure management, stormwater planning, etc. for future development, redevelopment, and capital improvement projects within the City.

To meet current stormwater management regulatory requirements, the City must update this 2008 LSWMP to be in compliance with the various state, regional, and local agencies with jurisdiction in the City. The scope of this LSWMP includes updates to portions of the 2008 LSWMP including:

- Discussions regarding the current regulatory setting in which the LSWMP is being prepared
- Assessment of City's stormwater management system, identifying issues and possible corrective actions
- The City's stormwater management goals and policies
- Implementation of the City's stormwater management system
- Coordination between the LSWMP and the Water Management Plans of the three WMOs with jurisdiction in Oak Park Heights

The intent of this LSWMP update is to bring Oak Park Heights into compliance with current stormwater management regulatory requirements; this Plan will supersede the 2008 LSWMP.

4.2 2017-2026 BROWN'S CREEK WATERSHED MANAGEMENT PLAN

The Brown's Creek Watershed District *Fourth Generation Watershed Management Plan* was adopted in 2016. The plan provides a summary of the water and natural resources within the district and identifies several issue areas. These include management of stormwater runoff, erosion and sediment, wetland, lakes, streams, floodplains, groundwater, public education, land conservation and protection of the trout stream habitat areas within Brown's Creek. The Plan identifies goals, policies and implementation actions targeting these issues.

4.3 2015-2025 MIDDLE ST. CROIX WATERSHED MANAGEMENT PLAN

The Middle St. Croix Watershed Management Organization *Watershed Management Plan* was completed in September 2015. The Plan provides an inventory and assessment of water and natural resources and identifies several key issues. These include stormwater runoff, erosion control, public education and wetland management. The Plan identifies goals, policies and implementation actions targeting these issues, and establishes regulatory standards to be enforced. Member communities are to refer projects to the MSCWMO for full review when project review trigger activities listed in Section 7.1.1 of the 2015-2025 MSCWMO Watershed Management Plan are proposed. The MSCWMO elected not to issue development permits. Instead, member communities are responsible for implementation and enforcement of watershed management standards within the MSCWMO boundaries.

4.4 2015-2025 VALLEY BRANCH WATERSHED MANAGEMENT PLAN

The Valley Branch Watershed District *Watershed Management Plan* was completed in 2015. The Plan includes goals, policies and strategies for protection of water and natural resources within the district. This Plan also identifies strategies to protect groundwater, wetlands and streams. Incorporated into the plan are 36 separate, individual watershed management plans. The City of Oak Park Heights is included in the Cloverdale Lake and McDonald Lake Watershed Management Plans.

4.5 2004 ST. CROIX BASIN PHOSPHORUS-BASED WATER-QUALITY GOALS

The St. Croix Basin Water Resources Planning Team consists of state and federal agency members working cooperatively on management issues within the 7,760 square mile St. Croix River basin. The 2004 report, *St. Croix Basin Phosphorus-Based Water-Quality Goals*, provides recommendations for a 20 percent reduction in phosphorous loads throughout the basin. Impacts of past land use changes were assessed through an analysis of river bed core samples. The phosphorous reduction target represents a return to nutrient, algae and water-clarity conditions that existed prior to the start of significant population growth in the 1950s. The Planning Team continues to work with local agencies to incorporate the recommended goal into policies and programs.

4.6 2014-2024 WASHINGTON COUNTY GROUNDWATER PLAN

Groundwater provides all the drinking water for Washington County residents. Groundwater also contributes to the high quality of many lakes, wetlands and streams in the area. The *2014-2024 Washington County Groundwater Plan* outlines a coordinated interagency effort to protect groundwater resources.

The Plan was prepared by the Washington County Department of Public Health and Environment, in cooperation with cities and other local agencies. Chapter 4 discusses the interaction of groundwater and surface water, and sets goals and policies related to surface water management. The 2003 study, *Integrating Groundwater & Surface Water Management - Northern Washington County*, provides data to support management strategies and policies for protecting lakes, wetlands, streams, and water supplies that are dependent on groundwater resources. In terms of surface water management, the Plan focuses on runoff volume reduction to increase groundwater recharge.

In 2007, Washington County prepared its first annual Groundwater Plan “Work Plan.” Intended to be updated annually, the 2007 Work Plan identifies ongoing and new activities related to the management of the County’s groundwater resources including goals and policies on groundwater/surface water interaction.

4.7 2012 LAKE ST. CROIX NUTRIENT TMDL

The Lake St. Croix Nutrient TMDL and Implementation Plan were approved by the US EPA in August 2012. The TMDL study addresses a nutrient impairment in Lake St. Croix caused by elevated phosphorus levels. The goal of this TMDL is to quantify the pollutant reductions needed to meet State water quality standards for nutrients. The lake is a natural widening of the St. Croix River bounded by the Stillwater Lift Bridge to the north and confluence with the Mississippi River

in Prescott, WI, to the south. Available data indicate that water quality in the St. Croix River is generally good when compared to other large Midwestern rivers. However, Lake St. Croix was listed as impaired for aquatic recreation in 2008 based on Minnesota's numeric translators for phosphorus in the North Central Hardwood Forests (NCHF) ecoregion.

To meet Minnesota State standards under average precipitation conditions, waste load and load allocations indicate that nutrient load reductions of 123 metric tons/yr (roughly a 27 percent reduction) must be achieved. To achieve phosphorus load reductions, further regulation of MS4 and wastewater treatment point sources, agricultural nutrient management and additional BMPs to address nonpoint sources of phosphorus, are recommended measures.

4.8 2014 LAKE ST. CROIX DIRECT DISCHARGE STORMWATER RETROFIT ANALYSIS

The *2014 Lake St. Croix Direct Discharge Stormwater Retrofit Analysis* prioritized stormwater BMP retrofit projects based on BMP performance and cost effectiveness. Nine catchments that discharge directly to Lake St. Croix were analyzed, including eastern portions of Oak Park Heights. For each catchment, stormwater practice options were compared, and site-specific data were used. Pollutant loading to the location, installation feasibility and maintenance were all considered in this analysis.

Subwatershed analysis identified targeted practices that are expected to reduce annual TP loading to Lake St. Croix by 78.3 pounds per year. The report ranked the subwatersheds residing in Oak Park Heights (SD-14 and SD-30) as fifth and sixth out of the eleven catchment areas analyzed based on the anticipated cost per pound of phosphorus reduction. The BMPs recommended in these areas included bio infiltration, biofiltration with coarse sediment pretreatment, and gully stabilization.

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SECTION 5 – WATER RESOURCES RELATED AGREEMENTS

5.1 THE BROWN'S CREEK WATERSHED DISTRICT (BCWD)

5.1.1 REVISED COOPERATIVE AGREEMENT FOR THE TROUT STREAM MITIGATION PROJECT

In a cooperative agreement with the BCWD in 2000, the City of Stillwater agreed to construct and maintain the McKusick Lake Diversion Structure identified in the City of Stillwater's 1997 Alternative Urban Area Review. The agreement was revised in 2004 to include areas of the City of Oak Park Heights. Refer to Appendix C for more information.

5.1.2 KERN CENTER POND COOPERATIVE AGREEMENT

The BCWD and the City of Oak Park Heights signed a cooperative agreement in 2004, concerning the design, operation, maintenance and monitoring of the Kern Center Pond. A copy of this agreement is included in Appendix C.

5.1.3 COOPERATIVE AGREEMENT FOR THE NORELL POND RETROFIT PROJECT

In 2015, the BCWD and City signed a cooperative agreement concerning the design, operation, maintenance and monitoring of Norell Pond. Refer to Appendix C for more information.

5.2 THE MIDDLE ST. CROIX WATERSHED MANAGEMENT ORGANIZATION (MSCWMO)

5.2.1 JOINT POWERS AGREEMENT

The *Joint Powers Agreement to Protect and Manage the Middle St. Croix Watershed* was executed by the ten-member communities (including Oak Park Heights) in February 2006. This agreement establishes the authority and responsibilities of the MSCWMO Board. The City of Oak Park Heights appoints one manager and one alternate to the ten-member MSCWMO Board.

In addition to meeting State requirements, the purpose of this agreement is to: 1) cooperatively institute programs to conserve soil and water resources through implementation of practices that preserve and use natural storage areas, 2) reduce excessive runoff volumes, 3) prevent erosion and sedimentation, 4) promote groundwater recharge, and 5) improve water quality and prevent flooding. A copy of the joint powers agreement is provided in Appendix C.

5.2.2 PERRO POND OUTLET STRUCTURE OPERATION AND MAINTENANCE

The operation and maintenance of the Perro Pond outlet structure is conducted by the City of Bayport, Minnesota through an agreement between the MSCWMO and City. Funding for operation and maintenance is provided by the MSCWMO. Annual costs are divided among member communities of the MSCWMO based on the percentage of area in each community contributing to the watershed.

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SECTION 6 - CURRENT ASSESSMENT

This section summarizes the assessment of the City's current stormwater management system. The assessment includes past, present, and future stormwater management issues identified by the City, the three watershed districts that have jurisdiction within the City, and other state and federal agencies.

6.1 HYDROLOGIC MODEL

The preparation of this plan included a full review of the current surface water system in Oak Park Heights. The physical system was mapped to establish watershed drainage areas and runoff paths. Drainage area boundaries, pond information, curve numbers, and times of concentration within the jurisdictional boundaries of the Brown's Creek Watershed District were taken from the XP-SWMM model created for the BCWD's 2004 Hydrologic and Hydraulic study. For areas not represented in the BCWD model, information from the City's 2020 land use map, ten-foot contour topography and record drawings were used to calculate the necessary hydrologic parameters. Special attention was given to areas affected by the construction of the St. Croix Crossings Bridge, completed in 2017. Record plans from the project were used to define new storm sewer piping and ponds in these areas. Together, this information was used to create a hydrologic model of the entire City, for use in future watershed planning, using HydroCAD.

The modeled subwatersheds and ponds and system layout are shown on Map 1 attached to this plan. Drainage area sizes and rates and volumes of runoff are listed in Appendix B. Pond information, including discharge rates, storage volumes, elevations, and outlet characteristics is also listed in Appendix B.

The level of detail provided in the model is consistent with planning level estimates of runoff volumes and rates. The model establishes a framework that can be used as a starting point for more refined analyses within individual sub-basins. Overall, the City has effectively managed the conveyance of stormwater runoff. This determination is supported by the hydrologic model completed for this plan.

6.2 COMPARISON OF REGULATORY STANDARDS

Land-disturbing activities within Oak Park Heights is subject to review and approval from one of the three watershed management organization having jurisdiction within the City (Figure 3.1, Appendix A). Each of the three organizations has established rules or standards governing stormwater management and protection of natural resources. Currently these rules vary in content between agencies and may be more restrictive than City standards. Chapter 7 provides a comparison of current WMO standards and City codes. To determine which of the three watershed districts a parcel lies within, reference Figure 3.1 (Appendix A).

6.2.1 THE BROWN'S CREEK WATERSHED DISTRICT (BCWD) RULES

The Brown's Creek Watershed District adopted revised rules in January 2018 in response to recommendations made in the 2015 Brown's Creek Watershed Management Plan. A significant

revision clarified and updated the requirements of the District's permit program regarding stormwater management, erosion control, buffers, shoreline and streambank alteration, stream and lake crossings, and floodplain alterations. Low-impact development, better site design, and on-site infiltration of runoff are recommended to offset the adverse impacts created by additional impervious surfaces. The *2014-2024 Washington County Groundwater Plan* also recognizes the groundwater recharge benefits of runoff volume reduction via infiltration.

Any person undertaking an activity for which a BCWD permit is required to submit an application to the watershed district, which will be reviewed by the watershed for consistency with their rules. Project proposers should be aware that a BCWD permit cannot be issued until the applicant has obtained preliminary plat approval, when required, through the City of Oak Park Heights. Under its current rules, the BCWD applies its stormwater management policies and performance standards to activities as described in Rule 2.2 of its Watershed Management Plan.

In its review of applications, the BCWD imposes performance standards for rate control, runoff volume management (no increase in volume versus the pre-settlement condition), annual allowable phosphorus loading, wetland protection, floodplain protection, and bounce and duration of inundation for wetlands and lakes. The BCWD rules can be accessed at www.bcwd.org.

6.2.2 THE MIDDLE ST. CROIX WATERSHED MANAGEMENT ORGANIZATION (MSCWMO) STANDARDS

The MSCWMO has elected not to issue development permits. Instead, the City is responsible for implementation and enforcement of watershed management standards within the MSCWMO boundaries. To be consistent with the MSCWMO Watershed Plan, the City must establish this enforcement authority in the City Code.

Any person undertaking an activity within the MSCWMO will have their project referred to the watershed by Oak Park Heights for project review. The MSCWMO does not apply specific rules to projects, but rather reviews projects based on the policies and performance standards contained in Section 7 of the MSCWMO Watershed Management Plan. Project proposers should be aware that an Oak Park Heights permit cannot be issued until the applicant has met the policies and performance standards contained in the MSCWMO plan. Oak Park Heights can submit any project for MSCWMO review, however variances and building permits cannot be granted to projects until this review has occurred for the following project descriptions:

1. Any project undertaking grading, filling, or other land alteration activities which involve movement of 100 cubic yards of earth or removal of vegetation on greater than 10,000 square feet of land.
2. Any project that creates or fully reconstructs 6,000 square feet or more of impervious surface.
3. All major subdivisions or minor subdivisions that are part of a common plan of development. Major subdivisions are defined as subdivisions with four or more lots.
4. Any project with wetland impacts, grading within public waters, grading within buffers or within 40-feet of the bluff line.
5. Development projects that impact two or more of the member communities.

6. New or redevelopment projects within the St. Croix Riverway that require a building permit that add 500 square feet of additional impervious surface.
7. Any project requiring variance from the current local impervious surface zoning requirements for the property.

In its review of applications, the MSCWMO applies performance standards for rate control, runoff volume management, water quality, erosion and sediment control, and wetland protection. The MSCWMO performance standards can be accessed at www.mscwmo.org.

6.2.3 THE VALLEY BRANCH WATERSHED DISTRICT (VBWD) RULES

The Valley Branch Watershed District adopted revised rules in December 2013. The rules were an update and revision from the VBWD's 2007 rules. The 2015 VBWD Watershed Management Plan describes the implementation of the VBWD Rules and Regulations (2013, as amended), which specify the requirements and performance standards that must be met by projects requiring a VBWD permit.

Any person undertaking an activity for which a VBWD permit is required must submit an application to the watershed district, which will be reviewed by the watershed for consistency with their rules. General activities which require a VBWD permit include:

1. Land alterations, such as grading or filling (including re-development projects), which disturb, remove or cover surface vegetation or other surfaces of one acre or more;
2. All projects which create a new and/or fully-reconstructed impervious surface area of 6,000 square feet or more;
3. All work within the waters and floodplain of the VBWD;
4. All projects which result in a discharge of municipal or industrial water or wastewater to a surface water drainage system;
5. All subdivisions, plats, developments, and lot line modifications;
6. All projects which result in lake, stream, wetland, or pond augmentation;
7. All projects which impact a wetland. Note: the Valley Branch Watershed District is the Local Governmental Unit (LGU) responsible for administering the Wetland Conservation Act (WCA) within the VBWD, except the LGU responsible for administering the WCA on state land is the agency with responsibility for the land.

In its review of applications, the VBWD imposes performance standards for rate control, runoff volume management (soil dependent and watershed dependent), water quality when volume management facilities are not feasible, erosion and sediment control requirements, wetland regulation, floodplain management, and groundwater management. The VBWD rules can be accessed at www.vbwd.org.

6.2.4 WETLAND MANAGEMENT

The City is the Local Government Unit (LGU) for the Wetland Conservation Act within the MSCWMO and the BCWD jurisdictions and will continue to administer WCA permits. The VBWD is the LGU for the WCA within the area of Oak Park Heights in its jurisdiction, which only includes wetlands near Stillwater Area High School and along Neil Avenue North. These regulations

generally focus on the prevention or mitigation of wetland fill, while watershed standards focus on wetland buffers and stormwater impacts. As discussed previously, wetland classification systems and management standards vary among the watersheds, and the City is required to enforce the MSCWMO wetland management standards within that watershed. The BCWD and the VBWD enforce their rules through approval of watershed permits.

6.2.5 GROUNDWATER MANAGEMENT

The 2015-2025 VBWD Watershed Management Plan identifies groundwater resource protection as a priority issue, citing risks to human health and environmental health from pollutant loading. Figure 3-10 of the VBWD Plan shows that the portion of Oak Park Heights within the VBWD includes a portion of the City's wellhead protection area and has a water table with high sensitivity to pollution.

As stated in the 2015-2025 VBWD Watershed Management Plan, the VBWD is most concerned with VBWD surface water that becomes groundwater (i.e. groundwater recharge), groundwater that becomes surface water (i.e. groundwater discharge) or groundwater extraction in the VBGWD. The VBWD seeks to prevent negative impacts to groundwater-dependent resources through permit review, community plan review, and education efforts.

6.2.6 TMDLS

Three waterbodies within the City of Oak Park Heights are currently identified on the state list of Impaired Waters: St. Croix River, Lake St. Croix, and Perro Creek. In addition, two other waterbodies in adjacent communities receiving discharge from Oak Park Heights are currently identified on the state list of Impaired Waters: Long Lake and Lily Lake. The list of Impaired Waters is known as the 303(d) list from the applicable section of the Federal Clean Water Act, these waters are ones that do not currently meet their designated use due to the impact of a pollutant or stressor. If monitoring and assessment indicate that a waterbody is impaired by one or more pollutants, the waterbody is placed on the list. At some point, a strategy will be developed to lead to the attainment of the applicable water quality standard. The process of developing this strategy is commonly known as the Total Maximum Daily Load (TMDL) process and involves the following phases:

1. Assessment and listing
2. TMDL study
3. Implementation plan development and implementation
4. Monitoring of the effectiveness of implementation efforts

Responsibility for implementing the requirements of the Federal Clean Water Act falls to the U.S. Environmental Protection Agency. In Minnesota, the EPA delegates much of the program responsibility to the Minnesota Pollution Control Agency (MPCA). Information on the MPCA program can be obtained at the following web address: http://www.pca.state.mn.us/water/tmdl/index.html.

The absence of a waterbody from the 303(d) list does not necessarily mean the waterbody is meeting its designated uses. It may be that it has either not yet been sampled or there are not enough data to make an impairment determination.

The City of Oak Park Heights will work with the watershed districts to address waste load allocations assigned to the City. For example, drainage to Long Lake within the BCWD has a TSS and thermal load reduction goal of 0% meaning that there is no net increase from the conditions at the time of the TMDL Implementation Plan.

6.2.7 CONSISTENCY

As noted above, the City is responsible for implementation and enforcement of watershed management standards within the MSCWMO boundaries. The City is also committed to facilitating BCWD and VBWD permits. The BCWD and the VBWD will continue to exercise their current regulatory, permitting and enforcement authority within their respective Oak Park Heights' jurisdiction.

In 2016, the City amended *Ordinance 404 – Storm Water Drainage Regulations,* to achieve consistency with the updated 2015 MSCWMO Watershed Management Plan. The amended ordinance updates requirements for stormwater management plan items related to best management practices and detention basin calculations, and includes a new section detailing alternative treatment options for restrictive sites. A section requiring adherence to additional design standards at the state and WMO levels is also included.

The following list identifies City Code updates that are needed to achieve the required consistency among local agencies:

The MSCWMO standards apply to all projects within the Middle St. Croix watershed that receive a City building permit. City Ordinance 404 will be updated to implement this requirement, with explicit identification of the size and type of permitted activities that will be required to meet watershed standards. Specifically, projects that require a City building permit within the MSCWMO will be required to meet the MSCWMO standards if an additional impervious surface of 1,000 square feet or more is created.

1. **City Ordinance 402** will be updated to incorporate the MSCWMO's requirements concerning bluff line setbacks and steep slope restrictions.
2. **City Ordinance 404** will be updated to match or include the MSCWMO's preferred methods of stormwater management for all projects, citywide.
3. **City Ordinance 404** will be updated to include the MSCWMO's standards for low floor elevations and flood protection. Specifically, the freeboard requirement for landlocked basins will be included.
4. **City Ordinance 404** will be updated to include the MSCWMO's standards and criteria for stormwater runoff rate control.
5. **City Ordinance 404** will be updated to add the MSCWMO's infiltration standards within the Middle St. Croix watershed.
6. **City Ordinance 404** will be updated to remove the water body classification criteria for water quality treatment requirements. Classification is not necessary for the City when it contains only two waterbodies. Specifically, the strictest water quality requirement will apply citywide.

7. **City Ordinance 406**, specifying wetland requirements, will be updated to specify stormwater bounce, length of inundation and buffer widths, consistent with the applicable watershed. The BCWD rules, the VBWD rules and the MSCWMO standards may be adopted by reference. The City will enforce the applicable standard through administration of WCA permits. The Code will also require that a wetland assessment be provided for any wetland that has not already been inventoried.

6.3 SUMMARY FINDINGS AND STATEMENT OF ISSUES

In the months and years ahead, the City will face multiple challenges in surface water management. The governing WMOs within the City will continue to implement surface water standards that impact City reconstruction and development projects. The MPCA will complete local TMDL studies that will lead to challenging implementation projects throughout the City. Growth in and around the City will put additional pressure on local surface water resources, while the aging infrastructure will require significant reconstruction and capital investment.

Surface water management issues within the City are primarily defined by the requirements of current or pending programs. The goals and policies outlined in this plan are grouped by their relationship to the key issues listed below:

- **Section 7.2 – Land Development and Redevelopment –** Goals and policies to prevent flooding and adverse impacts to water resources from land disturbance and impervious surfaces.
- **Section 7.3 – Water Resource Management –** Goals and policies for managing Oak Park Heights' wetlands, lakes, streams and groundwater, to preserve the functions and values of these resources.
- **Section 7.4 – Management of Floodplains and Shorelands –** Goals and policies for managing these areas, to preserve the functions and values of these resources.
- **Section 7.5 – Citywide Program Elements –** Goals and policies for managing water resources and drainage systems on a citywide scale, to effectively achieve surface water management goals.

Section 7.6 – Support of Other Agencies – Goals and policies to coordinate local surface water management with the work of watershed management organizations and state agencies.

SECTION 7 – GOALS AND POLICIES

7.1 SUMMARY

The City has a strong interest in protecting and managing its valuable water and natural resources, recognizing the relationships between resource protection, land use management, development, redevelopment and fiscal responsibility.

This section outlines the goals and policies specific to surface water management in Oak Park Heights. Goals and policies are grouped by their relationship to the key issues listed below:

- **Section 7.2 – Land Development and Redevelopment**
- **Section 7.3 – Water Resource Management**
- **Section 7.4 – Management of Floodplains and Shorelands**
- **Section 7.5 – Citywide Program Elements**
- **Section 7.6 – Support of Other Agencies**

The goals and policies listed below are consistent with the NPDES MS4 General Permit and the City of Oak Park Heights' SWPPP. These goals are also in alignment with those identified by the WMOs in the WMPs based on the most recent available watershed district rules and watershed management plans, at the time of the development of this LSWMP. The most recent versions are:

- **The Valley Branch Watershed District:** Rules Effective December 2013
- **The Brown's Creek Watershed District:** Rules Effective January 2018
- **The Middle St. Croix Watershed Management Organization:** 2015-2015 Watershed Management Plan
- **City of Oak Park Heights:** City Code

7.2 LAND DEVELOPMENT AND REDEVELOPMENT

Overall Goal: Manage land disturbance and increased impervious surfaces to prevent flooding and adverse impacts to water resources.

Overall Policy: The City will manage storm water and prioritize use of stormwater BMPs for volume reduction, followed by prioritizing filtration, and finally by prioritizing runoff rate according to local ordinance, watershed rules, and state requirements.

Overall Policy: The City will look for opportunities to retrofit runoff management on redevelopment and reconstruction projects to reduce the impacts of prior land use changes.

Overall Policy: The City will amend its official controls to provide a mechanism for applying Middle St. Croix Watershed District rules and standards.

Overall Policy: The City's permitting process for land and wetland alteration work is as follows:

- **Within the Valley Branch Watershed District**, the watershed will continue to enforce its permitting authority according to its rules.
- **Within the Brown's Creek Watershed District**, the watershed will continue to enforce its permitting authority according to its rules.
- **Within the Middle St. Croix Watershed Management Organization** areas, the watershed will continue in its project review role described above and the City of Oak Park Heights will enforce the watershed policies and performance standards through its own project approval process.

7.3 RUNOFF RATE

Goal: Control the rate of stormwater runoff from development to reduce downstream flooding and erosion.

Policy: The City will revise the stormwater management practices within the Stormwater Drainage Regulations Ordinance so that the peak rate of runoff from regulated land development does not exceed the following limits:

- **Within the Valley Branch Watershed District:** pre-development for 2, 10, and 100-year, 24-hr rainfall events, or 100-year 10-day snow melt using NOAA Atlas 14 precipitation frequency data.
- **Within the Brown's Creek Watershed District:** pre-settlement for 2, 10 and 100-year, 24-hr storms.
- **Within the Middle St. Croix Watershed Management Organization areas:** pre-development for 2, 10 and 100-year, 24-hr storms using NOAA Atlas 14 precipitation frequency data. Existing downstream capacity must not exceed existing conditions.

Policy: The City will endeavor to remain consistent with current rate control regulations of local and state agencies having jurisdiction within the City and will periodically review and update the Stormwater Drainage Regulations Ordinance to keep it current with agency standards or regional practices.

Policy: The City will consider proposed full-development conditions and potential redevelopment uses when analyzing its stormwater management systems.

Policy: The City will seek emergency overflows from stormwater ponds and wetlands so that in the event these storage areas are full, or their outlets plugged, excess stormwater has another conveyance route.

Policy: The City's design events will be 24-hour duration with MSE Type 3 distribution. These events will be used for evaluating rate control. In cases of landlocked basins, analysis shall also include runoff events outlined by the WMO or WD with jurisdiction at the project location. WMO or WD rules should be consulted for specific guidance on application of their methods. For landlocked areas, the 100-year flood level will be the higher obtained by application of either the City or WMO or WD method. The following are the limits of runoff volume in cases of landlocked basins:

- **Within the Brown's Creek Watershed District:** pre-settlement for a 5-year storm.
- **Within the Middle St. Croix Watershed Management Organization areas:** pre-development for a 10-year storm.

Policy: The City will update its Stormwater Drainage Regulations Ordinance to include standards and criteria for stormwater runoff rate control based on those of the Middle St. Croix Watershed District (MSCWD) to be applied in areas under MSCWD jurisdiction.

7.2.2 RUNOFF VOLUME

Goal: Reduce pollutant loads and impacts to water bodies and encourage groundwater recharge, by reducing the volume of stormwater runoff from development, redevelopment, and existing areas.

Policy: The City will apply volume control standards that are consistent with current regulations of local and state agencies having jurisdiction within the City and will review and update the Stormwater Drainage Regulations Ordinance when changes occur in agency standards or regional practices. The following are the runoff volume limits for each of the local agencies having jurisdiction in all or parts of Oak Park Heights:

- **Within the Valley Branch Watershed District:** See Page 20 of VBWD Rules (December 2013).
- **Within the Brown's Creek Watershed District:** pre-settlement volume for a 2-year, 24-hr storm.
- **Other areas within the City of Oak Park Heights:** per City Ordinance 404.02.2, all volume control for water quality and quantity shall conform to the current version of the Minnesota Stormwater Manual.

Policy: The City will seek to minimize the area of impervious surfaces within development and redevelopment.

Policy: The City will encourage the use of infiltration systems, where practical, feasible and affordable, taking into consideration site limitations such as soil conditions, depth to groundwater, safety, snow removal, and depth to bedrock. Infiltration systems will be designed with proper maintenance access and maintenance declarations shall be provided on privately owned systems. For guidance determining the suitability of infiltration as a stormwater management practice given site specific conditions, please refer to the MPCA Construction Stormwater General Permit and MPCA Minimal Impact Design (MIDS) standards.

Policy: The City will incorporate the Middle St. Croix Watershed District's infiltration standard for those projects within their jurisdiction unless restrictions arise where infiltration is not feasible or advised. The MSCWMO Board will evaluate the validity of hardship restrictions during the watershed's project review process.

Policy: The City will minimize impervious surfaces, where feasible, when reconstructing streets and other municipally-owned paved surfaces.

Policy: The Minnesota Stormwater Manual and applicable watershed rules should be consulted to determine design infiltration rates for infiltration facilities.

Policy: Per the MS4 Permit, new development and redevelopment projects with land disturbances of greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale, within the permittee's jurisdiction and that discharge to the City's MS4, must follow the Post-Construction Stormwater Management requirements of Part III D.5 of the MS4 Permit. Refer to the MS4 Permit for further information.

7.2.3 FLOOD PREVENTION

Goal: Provide adequate storage and conveyance of runoff to protect the public safety and minimize property damage.

Policy: The City will enforce the standards within the Land Subdivision Ordinance to ensure that adequate drainage facilities and easements are provided with land development.

Policy: The City will update its Stormwater Drainage Regulations Ordinance to incorporate standards for low-floor elevations adjacent to stormwater ponds, wetlands, lakes and floodplains. Until this ordinance update is complete, the standard shall be that the lowest ground elevation adjacent to a home or building shall be two feet higher than the calculated 100-year high water level for basins with outlets and for landlocked basins the higher of the following:

1. Five feet above the single event 100-year event high water level.
2. Two feet above the back to back 100-year event high water level.
3. Two feet above the 7.2-inch runoff event high water level.
4. Except in areas under the VBWD jurisdiction where the low floor elevation will be set two feet above the calculated 100-year flood level as determined by methods outlined in the VBWD rules.
5. Except in areas under the MSCWMO project review jurisdiction where low floor elevations must be a minimum of two feet above the single event 100-year event for both landlocked and outletted basins.

This policy is applied based on the standard that leads to the highest allowable low floor elevation for a particular building style.

Policy: The City will periodically review its flood control standards so that they remain consistent with current regional practices and will periodically review and update the Stormwater Drainage Regulations Ordinance in response to identified changes in regional policies.

Policy: Wet ponds shall be designed to provide storage and allow for infiltration of storm water. City ordinance requires that ponds are designed per Minnesota Stormwater Manual recommendations. This defines different types of waterbodies with different storage requirements. Type I/Ia waterbodies require dead storage equivalent to runoff from a 2.5" 24-hour event. Type II waterbodies require dead storage equivalent to runoff from a 2" 24-hour event. Type III waterbodies require dead storage equivalent to runoff from a 1.5" 24 hour event. Type IV waterbodies must be designed with practical measures needed to maintain function and character. In the BCWD, wet ponds must be designed per the MnDOT Erosion Control Handbook II and MPCA *Protecting Water Quality in Urban Areas Manual* in addition to the Minnesota Stormwater Manual Recommendations.

7.2.4 NUTRIENT AND SEDIMENT LOADING

Goal: Reduce the nutrient and sediment loads discharged from land development. Facilitate implementation of nutrient and sediment load reductions by the watershed districts with jurisdiction within Oak Park Heights.

Policy: The City will enforce the stormwater management practices within the Stormwater Drainage Regulations Ordinance to ensure that suitable water quality treatment practices are incorporated into regulated land development, where practical, feasible and affordable.

Policy: The City will enforce the stormwater management practices within the Stormwater Drainage Regulations Ordinance so that untreated stormwater from new development does not discharge to wetlands and protected water courses. The City will endeavor to eliminate or modify direct discharges from existing areas as opportunities arise.

Policy: The City will periodically review its water quality treatment standards so that they remain consistent with the current regulations of local and state agencies having jurisdiction within the City and will periodically review and update the Stormwater Drainage Regulations Ordinance when changes occur in agency standards or regional practices.

Policy: The City recognizes the goal of the St. Croix River Basin Planning Team to reduce phosphorus loading to the St. Croix River, and will encourage implementation of strategies developed by the Team. Within its own projects and authority, the City will seek opportunities to retrofit water quality treatment to existing areas to participate in regional efforts to reduce phosphorus loadings to the St. Croix River by 20 percent over current conditions.

Policy: The City will coordinate development review activities with the WMOs.

Policy: Under the City's MS4 permit, the City will work towards load reduction for TSS and thermal loads to Brown's Creek, where practical, feasible and affordable.

Policy: The City will seek to incorporate the Middle St. Croix Watershed District's water quality standards for those projects within their jurisdiction.

Policy: The City will modify its Stormwater Drainage Regulations Ordinance to provide a minimum standard of water quality treatment to all wetlands.

Policy: The following annual phosphorous loading standards apply:

- **Within the Valley Branch Watershed District:** Where infiltration is infeasible, 75% of the annual total phosphorus load leaving the site must be removed.
- **Within the Brown's Creek Watershed District:** No increase from predevelopment levels.
- **Within the Middle St. Croix Watershed Management Organization areas:** Where infiltration is infeasible, 75% of the annual total phosphorus load leaving the site must be removed.

7.2.5 EROSION AND SEDIMENT CONTROL

Goal: Prevent sediment from construction sites from entering the City's surface water resources.

Policy: The City will develop new erosion and sediment control ordinance provisions to be consistent with the standards and rules of its three watershed districts as well as to be consistent with the requirements of the NPDES Construction Stormwater Permit.

Policy: The City will enforce the Soil Erosion Ordinance for new development on soils with potential for erosion and sedimentation.

Policy: According to the MSCWMO standards, construction is prohibited on slopes greater than 12 percent. Land alteration activities and structures are also prohibited within 40 feet of bluff lines.

Policy: The City will implement, update and enforce its Soil Erosion Ordinance as outlined in the NPDES, MS4 permit.

Overall Goal: Protect the City's wetlands, lakes, streams and groundwater to preserve the functions and values of these resources for future generations.

Overall Policy: The City will protect water resources through implementation or through supporting implementation of the Wetland Conservation Act, buffer standards, groundwater protection rules, and TMDL studies, and watershed district rules and regulations.

7.3 WATER RESOURCE MANAGEMENT

Overall Goal: Protect the City's wetlands, lakes, streams and groundwater to preserve the functions and values of these resources for future generations.

Overall Policy: The City will protect water resources through implementation or through supporting implementation of the Wetland Conservation Act, buffer standards, groundwater protection rules and TMDL studies, and watershed district rules and regulations.

7.3.1 WETLAND MANAGEMENT

Goal: Protect and preserve wetlands to maintain and/or enhance their functions and values.

Policy: The City will continue to administer Wetland Conservation Act (WCA) responsibilities within its non-Valley Branch Watershed District areas. As local governmental unit for WCA in these areas, Oak Park Heights will enforce the provisions of this act in cooperation with the MSCWMO, the BCWD, the U.S. Army Corps of Engineers, and the Washington Conservation District – all of whom may comment and advise on applications and permits. The VBWD administers WCA responsibilities within their jurisdiction as well.

Policy: The City will apply the applicable Watershed Management Organization (WMO) policies and performance standards for wetlands within each separate WMO jurisdiction. The City will update its Wetland Ordinance with the most recent watershed and city requirements for buffers and other wetland protection and management standards. The following are the limits for wetland bounce in each of the WMO and WD jurisdictions:

- **Within the Valley Branch Watershed District:** In Manage 1 wetlands, bounce cannot exceed pre-development bounce plus 0.5 feet. In Manage 2 wetlands, bounce cannot exceed pre-development bounce plus 2 feet.
- **Within the Brown's Creek Watershed District:** In Preserve wetlands, bounce cannot exceed predevelopment bounce. In Manage 1 wetlands, bounce cannot exceed pre-development bounce plus 0.5 feet. In Manage 2 wetlands, bounce cannot exceed pre-development bounce plus 1.0 feet. In Manage 3 wetlands, there is no limit for wetland bounce.
- **Within the Middle St. Croix Watershed Management Organization areas:** In highly susceptible wetlands, bounce cannot exceed existing levels. In moderately susceptible wetlands, bounce cannot exceed existing bounce plus 0.5 to 1.0 feet. In least susceptible wetlands, there is no limit to wetland bounce.

Policy: Limits for the inundation period of wetlands are defined by the WMO jurisdictions within Oak Park Heights. Inundation is defined as the time period that water levels in the wetland are above the outlet elevation following a storm event. To determine wetland inundation, 1-year, 2-year, 10-year, and 100-year, 24-hr events are considered. The limits in each jurisdiction for each storm event are as follows:

- **Within the Valley Branch Watershed District:**
    - Inundation time (IT) for 1-year and/or 2-year events:
        - In Preserve Wetlands, IT not to exceed (NTE) the existing time.
        - In Manage 1 wetlands, IT NTE existing time plus 1 day.
        - In Manage 2 wetlands, IT NTE the existing time plus 5 days.
    - Inundation period for 10-year or 100-year events:
        - In Preserve Wetlands, IT NTE the existing time.
        - In Manage 1 wetlands, IT NTE the existing time plus 7 days.
        - In Manage 2 wetlands, IT NTE the existing time plus 14 days.
- **Within the Brown's Creek Watershed District:**

- Inundation period for 1-year and/or 2-year events:
  - In Preserve Wetlands, IT NTE the existing time.
  - In Manage 1 wetlands, IT NTE the existing time plus 1 day.
  - In Manage 2 wetlands, IT NTE the existing time plus 2 days.
  - In Manage 3 wetlands, IT NTE the existing time plus 7 days.
- Inundation period for 10-year or 100-year events:
  - In Preserve Wetlands, IT NTE the existing time.
  - In Manage 1 wetlands, IT NTE the existing time plus 2 days.
  - In Manage 2 wetlands, IT NTE the existing time plus 14 days.
  - In Manage 3 wetlands, IT NTE the existing time plus 21 days.

- **Within the Middle St. Croix Watershed Management Organization areas:**
  - Inundation period for 1-year and/or 2-year events:
    - In highly susceptible Wetlands, inundation should be avoided but IT NTE the existing time.
    - In moderately susceptible wetlands, IT NTE plus 1 to 2 days.
    - In least susceptible wetlands, IT NTE the existing time plus 7 days.

Policy: The City requires that, prior to development activities or public projects, a wetland delineation must be completed, including a field delineation and report detailing the findings of the delineation and a wetland function and values assessment for all on-site wetlands using the Minnesota Routine Assessment Methodology.

Policy: The City will create and maintain natural buffer zones around ponds and wetlands. Buffer areas should not be mowed or fertilized, except that harvesting of vegetation may be performed to reduce nutrient inputs, or to remove invasive or noxious weeds. However, buffers shall be left unmowed within delineated wetland edges, ordinary high-water elevations, or floodplain areas of all wetlands, lakes and streams. Buffer zones are defined as the following:

- **Within the Valley Branch Watershed District:** Preserve, 100 feet; Manage 1, 75 feet average; Manage 2, 50 feet; Manage 3, 25 feet; DNR Protected Lake, 35 feet; Storm Water Ponds, 10 feet minimum. Additionally, buffers for Valley Creek shall be 100 feet, and buffers for Raleigh Creek and intermittent streams shall have a 50-ft average with a 25-foot minimum.
- **Within the Brown's Creek Watershed District:** Preserve, 100 feet; Manage 1, 75 feet; Manage 2, 50 feet; Manage 3, 25 feet; Lakes, 75 feet; Groundwater Dependent Resources, 100 feet. Additionally, the buffers extend to include wetlands or lakes with mapped natural communities, wetlands or lakes with steep slopes, and wetlands and lakes in the 100-year floodplain. Stream buffers are also explicitly defined for the BCWD and are as follows:
  - **Streamside Zone:** 25 feet (50 feet in groundwater-dependent natural resource areas)
  - **Middle Zone:** 25 to 50 feet (100 feet in GDNR areas). The middle zone must also be extended to include streams with mapped natural communities, streams with steep slopes, and streams with a 100-year floodplain.
  - **Outer Zone:** Middle zone to building setback per shoreland ordinance.

- **Within the Middle St. Croix Watershed Management Organization areas:** A Preserve, 60 feet plus 20 feet of building setback; B Maintain, 30 feet plus 20 feet of building setback; C Manage, no buffer.

Policy: The City requires that all runoff from impervious surfaces be pre-treated prior to discharge to wetlands. Basin tributaries to wetlands must protect the wetland from filling due to waterborne silt and sand. Development within the Middle St. Croix Watershed Management Organization area requires water quality treatment prior to discharge to a wetland. The Valley Branch Watershed District also places the following runoff volume restrictions into wetlands:

- In **Preserve Wetlands**, entering runoff volume cannot change more than 10%.
- In **Manage 1 Wetlands**, entering runoff volume cannot change more than 10%.
- In **Manage 2 Wetlands**, entering runoff volume cannot change more than 25%.

Policy: The City does not allow excavation or other disturbances in wetlands unless it is for a permitted use outlined in Ordinance 406.090.A. Additionally, excavation or other disturbances shall not reduce existing storage volume within the Valley Branch Watershed District. Within the VBWD, excavations are not allowed in type 7 or type 8 wetlands, and permits are required for excavations in type 3, type 4 and type 5 wetlands.

7.3.2 GROUNDWATER RECHARGE AND PROTECTION

Goal: Protect groundwater resources and groundwater dependent resources.

Policy: The City will require pretreatment for infiltration practices based on their location within the groundwater management zones identified in the Washington County study, *Integrating Groundwater & Surface Water Management – Northern Washington County, 2003*. The City will develop or update land use regulations to protect groundwater resources based on completed studies and rankings of groundwater recharge areas. The following standards apply to pretreatment of infiltration:

- **Within the Valley Branch Watershed District:** For an area of two acres or less and with 0.7 acres or more of impervious surface, a minimum of 50% of the in-flow volume from impervious surfaces must be pre-treated prior to entering the infiltration feature. For areas greater than 2 acres or areas with 0.7 acres or more of impervious surface, 100% of the in-flow volume from impervious surfaces must be pre-treated prior to entering the infiltration feature and be designed to remove at least 25% of in-flow sediment loads.
- **Within the Brown's Creek Watershed District:** long-term removal of more than 50% of sediment loads.
  - **Within the Middle St. Croix Watershed Management Organization areas:** long-term removal of more than 50% of sediment loads..

Policy: Infiltration separation must follow the following standards:

- **Within the Valley Branch Watershed District:** Greater than 3 feet from seasonally high groundwater, bedrock, or other impeding layer.

- **Within Brown's Creek Watershed District:** Greater than 3 feet from seasonally high groundwater, bedrock, or other impeding layer in groundwater-dependent natural resource areas.
- **Within Middle St. Croix Watershed Management Organization areas:** Greater than 3 feet from seasonally high groundwater, bedrock, or other impeding layer.

Goal: Promote groundwater recharge and stream baseflow protection.

Policy: The City will implement infiltration according to watershed district standards and state standards as reflected in the NPDES Construction Stormwater Permit and other state regulation. Watershed districts outline the quantity of infiltration as follows:

- **Within the Valley Branch Watershed District:** 1.1" from new impervious areas, 1.1" from redevelopment impervious areas, and the greater of 0.55" from all new and redeveloped impervious areas or a 1.1" of the net increase of impervious areas for linear projects.
- **Within the Brown's Creek Watershed District:** 2-year runoff volume if feasible in the contributing area to a groundwater dependent natural resource.
- **Within the Middle St. Croix Watershed Management Organization areas:** 1.1" from new impervious areas, 1.1" from redevelopment impervious areas, and the greater of 0.55" from all new and redeveloped impervious areas or a 1.1" of the net increase of impervious areas for linear projects.

Policy: The following are the required depths for biofiltration, infiltration, and permanent detention ponds:

- **Within the Valley Branch Watershed District:** Biofiltration pond depth is limited to a maximum of 1.5' above ground with vegetation. All volume control facilities must be completely drawn down within 48 hours.
- **Within the Middle St. Croix Watershed Management Organization areas:** Biofiltration pond depth is limited to a maximum of 1.5' above ground with vegetation. Infiltration ponds are limited to a maximum of 4.0' above ground with vegetation. All volume control devices must be completely drawn down within 48 hours.
- **City of Oak Park Heights:** Permanent detention ponds must maintain a depth between 4 feet and 10 feet.

Policy: The following are soil classifications based on the design infiltration rates:

- **Within the Valley Branch Watershed District:** Type A soils, 0.8 to 1.63 inches/hour; Type B soils, 0.3 to 0.6 inches/hour; Type C soils 0.2 inches/hour; Type D soils, less than 0.2 inches/hour.
- **Within Brown's Creek Watershed District:** Type A soils, 0.8 inches/hour; Type B soils, 0.3 inches/hour; Type C soils 0.2 inches/hour; Type D soils, 0 inches/hour. In areas with Type D soils, infiltration is not feasible.

Policy: The following are Curve Numbers (CN) for the four soil classifications to be used in calculating the quantity of stormwater run-off:

- **Within the Valley Branch Watershed District:** The CN for existing agricultural areas are less than or equal to the CN for developed areas.
- **Within Brown's Creek Watershed District:** The CN must increase to the next hydrologic soil group for disturbed pervious areas. The pre-settlement CN for each soil type is as follows:
    - Type A Soils CN = 30
    - Type B Soils CN = 57
    - Type C Soils CN = 70
    - Type D Soils CN = 77
- **Within the Middle St. Croix Watershed Management Organization areas:** The predevelopment cropland CN for each soil type is as follows:
    - Type A Soils CN = 56
    - Type B Soils CN = 70
    - Type C Soils CN = 79
    - Type D Soils CN = 83

Policy: The City of Oak Park Heights recognizes and supports Washington County efforts to protect groundwater through their Washington County Groundwater Plan: "The Washington County Groundwater Plan provides a county-wide framework for the protection and conservation of groundwater resources. The Groundwater Plan "ownership" and implementation falls to every community, watershed organization and state agency with a vested interest in protecting Washington County's groundwater resources."

7.4 MANAGEMENT OF FLOODPLAINS and SHORELANDS

Overall Goal: Manage the City's floodplains, shorelands and natural areas to preserve the functions and values of these resources for future generations.

Overall Policy: The City will manage these areas through implementation of local zoning codes and agency regulations.

7.4.1 FLOODPLAIN MANAGEMENT

Goal: Control development in flood prone areas to protect the public safety and minimize property damage.

Policy: The City will regulate land development within the River Impact District to ensure that floodplain capacity and flood elevations are not adversely impacted by development, and that new structures are protected from damage.

Policy: The City will update the River Impact District Ordinance as required by FEMA and the Minnesota DNR, or as needed, to ensure adequate protection for structures and eligibility for flood insurance programs.

Policy: The City will ensure consistency with the BCWD's goal of ensuring no net loss of flood storage capacity within the watershed.

7.4.2 SHORELAND MANAGEMENT

Goal: Conserve and protect the scenic, historical and cultural resources of the river valley and maintain a high standard of environmental quality consistent with Minnesota DNR Standards and Criteria for the Lower St. Croix National Scenic Riverway.

Policy: The City will regulate land development within the River Impact District to minimize impacts as specified in the Stormwater Drainage Regulations Ordinance and required by Minnesota Rules.

Policy: Bluff land and Shoreland development is regulated by the following agencies:

- **Within Brown's Creek Watershed District:** A permit is required for disturbance below the ordinary high-water level (OHWL). According to Rule 5.2, "No person may disturb the natural shoreline or streambank partially or wholly below the OHWL of a waterbody, without first securing a permit from the District and posting a surety."
- **Within the Middle St. Croix Watershed Management Organization areas:** Land alteration is prohibited within 40' of the bluff line. The structure set back is also 40' from the bluff line. Construction is prohibited on slopes of 12% or more.

7.5 CITYWIDE PROGRAM ELEMENTS

Overall Goal: Manage water resources and drainage systems on a citywide scale.

Overall Policy: The citywide surface water management program will include monitoring and maintenance of drainage systems, targeted pollution prevention, public education, system reconstruction projects and equitable collection of supporting funds.

7.5.1 POLLUTION PREVENTION

Goal: Detect and address urban pollutants discharged to storm sewers.

Policy: The City will address pollutant sources through enforcement of codes and public education.

Policy: The City will actively implement the NPDES Stormwater Pollution Prevention Plan as stated in the most current version of the MS4 permit.

Policy: The City will complete employee training in the operation, maintenance and inspection of stormwater facilities, as included in the SWPPP.

Policy: The City will monitor stormwater system facilities for pollutants as outlined in the City's SWPPP.

Policy: Illicit connections and discharges to the City of Oak Park Heights' Municipal Separate Storm Sewer System (MS4) are prohibited.

7.5.2 MONITORING AND MAINTENANCE

Goal: Maintain the function and effectiveness of stormwater management structures through monitoring and maintenance.

Policy: The City will inspect and monitor the construction and installation of all new stormwater facilities and require that such facilities be surveyed to create as-built drawings.

Policy: The following maintenance schedules will be followed by Oak Park Heights:

- Street sweeping and sweeping of public parking lots.
- Inspection of stormwater infrastructure.
- Cleaning of stormwater infrastructure including catch basins, pipes, outlet and inlet structures.
- Pond sediment removal in conformance with current Minnesota Pollution Control Agency requirements for the disposal of dredging materials.

7.5.3 PUBLIC EDUCATION

Goal: Inform and educate residents about stormwater pollution, the effects of urban runoff and the need to protect natural resources.

Policy: The City will encourage landowners to reduce nutrient and sediment loading to water bodies. The City will encourage residents and landowners to practice environmental friendly lawn care and to encourage the use of native plantings or natural landscapes, where practical.

Policy: The City will cooperate with the Washington Conservation District and local watersheds in their educational efforts.

Policy: The City will support public education and outreach activities through participation in the East Metro Water Resource Education Program.

7.5.4 FUNDING

Goal: Secure adequate funding to support implementation of the surface water management plan.

Policy: The City will fund implementation of the plan with revenue from the stormwater utility. The City will periodically review utility rates to ensure that funding is adequate, and fees are equitably distributed.

Policy: The City will cost effectively manage the plan to balance surface water goals with available resources.

Policy: The City will seek grant funds or other resources to assist with special projects or implementation of plan goals.

7.6 SUPPORT OF OTHER AGENCIES

Overall Goal: Coordinate local surface water management with the work of watershed management organizations and state agencies.

Overall Policy: The City will cooperate and collaborate with the local water management organizations in their efforts to achieve common goals in the City.

Policy: The City recognizes the goal of the St. Croix River Basin Planning Team to reduce phosphorus loading to the St. Croix River, and will cooperate with strategies developed by the Team to meet this goal.

Policy: Where practical, feasible and affordable, the City will work with agencies to collaboratively track, inspect and maintain water quality features to ensure they provide their designated benefit.

Goal: Facilitate WMO review of development projects and enforcement of watershed standards.

Policy: The City will coordinate development review activities with the WMOs. WMO permits are required in addition to building permits. Proposers of projects must contact the applicable WMO to determine whether a WMO project review and/or permit is required. The following is a list of projects requiring review and/ or permitting by the local agencies:

- **Within the Valley Branch Watershed District:** A Watershed Permit is required for:
  - Land disturbances greater than 1 acre
  - All residential subdivisions
  - Any development with additional impervious area of 6,000 SF or more
  - Projects with surface water impacts to wetlands, waters, floodplains, or discharge to surface waters
  - Watershed rules apply to all permitted projects.
- **Within Brown's Creek Watershed District:** A Watershed Permit is required for (see Rule 2.2 of the BCWD Watershed Management Plan for more information):
  - Subdivision of four or more lots
  - Development or redevelopment creating impervious surface that, aggregated with existing impervious surface on the site, equals 10,000 square feet or more or creating impervious surface on the site, equals 5,000 square feet or more on a site within the surface water contributing area of a groundwater-dependent natural resource. For redevelopment:
    - If the proposed activity will disturb less than 50 percent of existing impervious surface, the criteria of subsection 2.4.1 will apply to all impervious surface and disturbed areas on the project site.
    - If the proposed activity will disturb less than 50 percent of existing impervious surface, the criteria will apply only to reconstructed and net additional impervious surface, and all disturbed areas on the project site.

- Linear projects that create one or more acres of new and/or reconstructed impervious surfaces or that create 5,000 square feet or more of new and/or reconstructed impervious surface within the surface water contributing area of a groundwater-dependent natural resource. The larger of the following is required:
    - 100 percent of the required volume per the BCWD Rules 2.4.1b from the net impervious surface; or
    - 50 percent of the required volume per the BCWD Rules 2.4.1b from all new and reconstructed impervious surfaces.

- **Within the Middle St. Croix Watershed Management Organization areas:** A Watershed Review is required for:

    - Land disturbances of 10,000 SF or more than 100 CY of earth moved
    - Residential subdivisions of 4 or more lots
    - Redevelopment of 5+ acres where 1+ acres, or 5% of the site is impervious
    - Any development with additional impervious area of 6,000 SF or more
    - Projects with surface water impacts due to grading within public waters, wetlands, or wetland buffers
    - Projects in the St. Croix Riverway requiring building permits and adding more than 500 SF of impervious area
    - Development affecting two or more member communities
    - Projects requiring a variance from zoning requirements
    - Grading within 40' of the bluff line
    - The MSCWMO standards apply to all projects requiring a City grading permit, building permit, code variance, or that trigger the MSCWMO review process. The requirements set forth apply to projects changing runoff quantity and not to pavement resurfacing projects.
    - The City of Oak Park Heights has the regulatory authority over projects within the MSCWMO as the MSCWMO standards have been incorporated into City ordinances.

Goal: Cooperate with other organizations to complete management plans and studies for water resources in Oak Park Heights.

Policy: The City will work with local watershed management organizations, Washington County, and others when appropriate and as resources are available to participate in resource management plans or studies that benefit water and natural resources.

Goal: Cooperate with other organizations working to protect groundwater resources.

Policy: The City will cooperate with the County and water management organizations to implement the recommendations of the Washington County Groundwater Plan, to protect groundwater quality by reducing the potential for transport of stormwater pollutants into the groundwater and maintaining the functions of groundwater recharge areas.

Policy: The City will support well-sealing programs developed by Washington County and the Minnesota Department of Health.

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SECTION 8 - IMPLEMENTATION AND FINANCIAL CONSIDERATIONS

8.1 OFFICIAL CONTROLS

Codes and ordinances (official controls) are necessary tools that support the implementation of this Local Surface Water Management Plan. Many of the stated goals and policies specifically reference City codes that exist or that will need to be created. The City's MS4 permit includes a summary of ordinances required to comply with NPDES requirements.

After adoption of this Local Surface Water Management Plan, the Land Subdivision, Stormwater Drainage, and Wetland Ordinances (Sections 402, 404 and 406 of the City Code, respectively), will need to be updated to achieve consistency with local watershed plans. Per State statute, this implementation step must be completed within 180 days after adoption of this plan.

Over time, codes must be updated to remain consistent with goals, policies and practices. The City will submit proposed surface water management related code revisions to the WMOs for review and comment. Table 8.1 lists the status of City codes related to surface water management. All code sections are available for online viewing on the City's website.

Minnesota Rules 8410 require a LSWMP to clearly define the responsibilities of the local government unit from that of a watershed management organization for carrying out implementation items. The City will continue to review projects within the City boundary and enforce their rules. Additional watershed management organization rules may exist; in those cases, the watershed management organizations will be responsible for enforcing their own rules.

Table 8.1 – Surface Water Management Related Codes

Code Section	Description	Status
308	Regulating Water Drainage and Filling of Land	Update as needed
310	Soil Erosion	Update as needed
401	Zoning Ordinance	Update as needed
402	Land Subdivision	Update after adoption of this plan (see Section 6.2.6)
403	Restrictive Soils	Update as needed
404	Stormwater Drainage Regulations	Update after adoption of this plan (see Section 6.2.6)
406	Wetland Ordinance	Update after adoption of this plan (see Section 6.2.6)
1001	Regulating the Use of Water	Update as needed
1124	Regulating the Sale of Phosphorus Based Fertilizers	Update as needed
1600	Establishment of Storm Sewer Improvement Tax District	Update as needed
1602	Stormwater Drainage Utility	Update as needed

8.2 IMPLEMENTATION PLAN

8.2.1 IMPLEMENTATION PROGRAM

Table 8.1 provides an estimate of additional budget items to maintain Oak Park Heights stormwater management system. In 2017, the City became an NPDES Phase II Stormwater Permit Holder, necessitating additional review for some items (Activities #1, 2, 3 in Table 8.1). In the previous LSWMP, Activity #1 did not pertain to Oak Park Heights because the City was not a permittee. Activity #2 previously included ordinance review and routine updates, as discussed earlier in this Local Surface Water Management Plan. However, beginning in 2017, when the City became an MS4 City, activity #2 included additional review for ordinance updates pertaining to the MS4 permit. Activity #3 also relates to the MS4 permit. Activity #4 is the regular operation and maintenance of Oak Park Heights' system. This cost is expected to increase as the City's stormwater infrastructure ages.

The City of Oak Park Heights conducts various activities related to surface water quality. These activities and their costs, if known, include:

- **Street Sweeping:** Oak Park Heights sweeps its streets and public parking lots two times per year at a minimum. Fall street sweeping occurs twice in certain neighborhoods with a dense cover of mature trees. Costs for street sweeping are approximately $10,000. The City contracts with a private vendor for this service.
- **Infrastructure Inspections:** Most stormwater infrastructure inspections occur on an as needed basis. However, the Village area is inspected on an annual basis regardless.
- **General Maintenance:** Example maintenance activities for 2008 included jetting of storm sewer pipe and removal of ditch vegetation in the Village area. In 2009, Oak Park Heights worked with the Minnesota Department of Transportation (MnDOT) to raise and waterproof sanitary manholes and clean ditches along Trunk Highway 36.
- **Sediment Removal:** In 2007, the City of Oak Park Heights cleaned sediment from one pond. In 2008 another pond was cleaned, and some drainage swale improvements were made in conjunction with the Minnesota Department of Natural Resources and the Middle St. Croix Watershed Management Organization. The City sets aside $25,000 per year for street sweeping, pond maintenance, storm sewer and catch basin cleaning, and ditch and swale maintenance.
- **Road Deicing:** Oak Park Heights contracts its road deicing and plowing to a private vendor. Road deicing occurs in response to specific complaints and safety issues. Deicing material used on City parking lots is stored inside on pallets.
- **Spill Containment:** The City contracts with the Bayport Fire Department for spill containment and clean-up. The City maintains its own supply of booms, towels, and absorbent materials to quickly respond to spills until the Bayport Fire Department can arrive on scene.

Table 8.2 – Implementation Program

Activity #	Activity Description	Funding Source	Annual Budget Impact[1]			
			Current	2020	2030	2040
1	Annual NPDES Permit and SWPPP Updates[2]	Stormwater Utility	$5,000	$5,000	$5,000	$5,000
2	Updates and Modifications to Ordinance and Official Controls[2]		$10,000	$2,000	$2,000	$2,000
3	Regular SWPPP Driven Maintenance and Inspection Activities[2]		$10,000	$10,000	$10,000	$10,000
4	General Maintenance of Ponds, Storm Sewer, and Culverts (All Existing Development and Future Development)[3]		$29,000	$48,000	$51,000	$55,000
Total Annual Cost			**$54,000**	**$65,000**	**$68,000**	**$72,000**

[1] Costs given in 2018 dollars; not adjusted for inflation. Current and projected costs for Items 1, 2 and 3 are based on estimated household counts. Cost per household for each activity is based on guidance provided by EPA and other state and federal regulatory agencies.
[2] The City became a regulated MS4 community in 2017.
[3] Activity #4 quantifies an estimate of existing obligations for current development plus increases due to future development.

8.2.2 FUNDING

Implementation of the proposed studies, programs, and improvements identified in this plan will affect City finances. The City's Stormwater Utility is the primary funding source for the studies, programs and improvements identified in this Plan. As stated in Section 7.5.4, the City will periodically review utility rates to ensure that funding is adequate in the future.

Below is a listing of other sources of revenue that the City will attempt to utilize:

- **Grant Money:** Grant money possibly secured from various agencies. This could include Washington County, MnDOT, the MPCA, the DNR and others.
- **Special Assessments:** Special assessments for local improvements performed under authority of Minnesota Statutes Chapter 429.
- **Special Tax Districts:** Revenue generated by Watershed Management Special Tax Districts provided for under Minnesota Statutes Chapter 473.882.
- **Project Funds:** Project funds could be obtained from watershed district levies as provided for in Minnesota Statutes Chapter 103D.905 for those projects being completed by or in cooperation with one of the three Watershed Management Organizations with jurisdiction in Oak Park Heights.
- **Other Sources:** Other sources potentially including tax increment financing, tax abatement, state aid and others.

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SECTION 9 - ADMINISTRATION

9.1 REVIEW AND ADOPTION PROCESS

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

‘After consideration but before adoption by the governing body, each local government unit shall submit its water management plan to the watershed management organization[s] for review for consistency with the watershed plan. The organization[s] shall have 60 days to complete its review.’

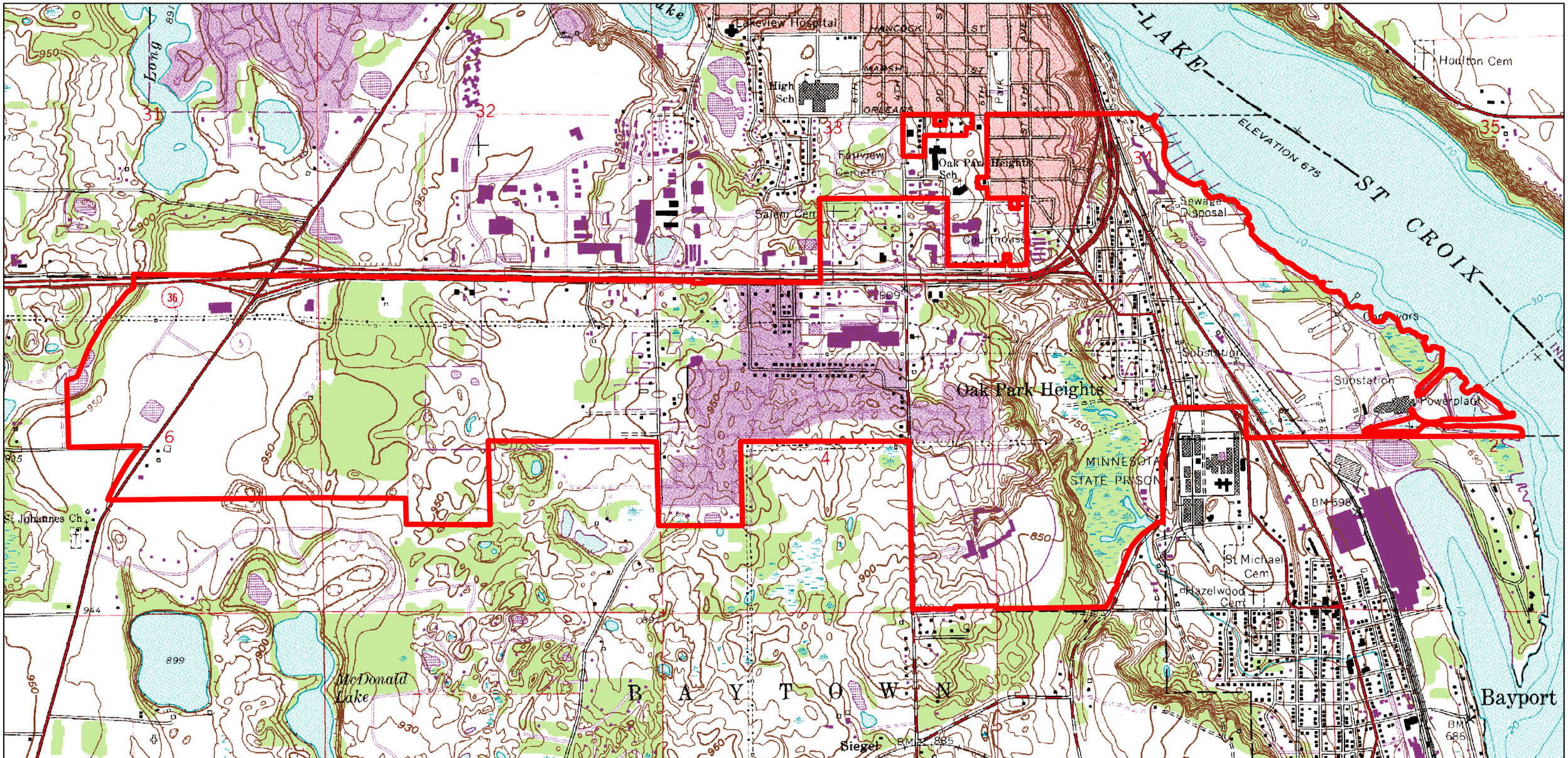
‘Concurrently with its submission of its local water management plan to the watershed management organization, each local government unit shall submit its water management plan to the Metropolitan Council for review and comment. The council shall have 45 days to review and comment upon the local plan. The council’s 45-day review period shall run concurrently with the 60-day review period by the watershed management organization. The Metropolitan Council shall submit its comments to the watershed management organization and shall send a copy of its comments to the local government unit.’

‘After approval of the local plan by the watershed management organization[s], the local government unit shall adopt and implement its plan within 120 days and shall amend its official controls accordingly within 180 days.’

9.2 PLAN AMENDMENTS AND FUTURE UPDATES

This Local Surface Water Management Plan will be incorporated into the City’s 2018 Comprehensive Plan update and will be applicable until 2028, at which time an updated plan will be required. Periodic amendments may be required to incorporate changes in local practices. In particular, changes to the three applicable Watershed Management Plans may require revisions to this plan. Plan amendments will be incorporated by following the review and adoption steps outlined above. The current schedule has the Valley Branch Watershed District updating its plan by 2025 and the Middle St. Croix Watershed Management Organization by 2024. Oak Park Heights will next update its Surface Water Management in 2028, when the City’s Comprehensive Plan is updated.

Appendix A
Figures



City of Oak Park Heights

2040 Comprehensive Plan

Figure 2.2

USGS TOPOGRAPHIC MAP

Stantec

1,500 0 1,500 Feet

January 2018

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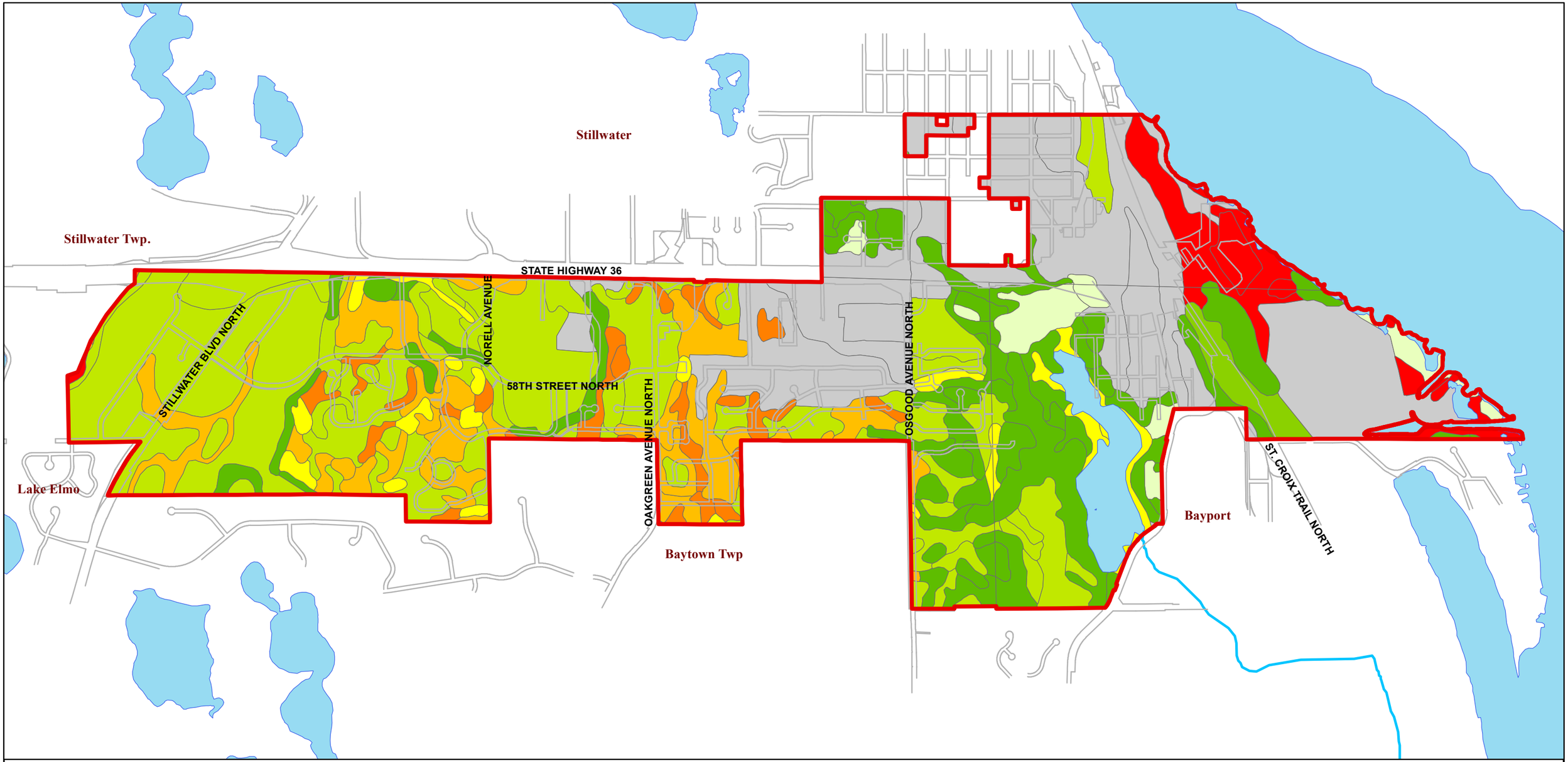

City of Oak Park Heights

2040 Comprehensive Plan

Figure 2.3

NRCS SOILS MAP

City Boundary
ROW
Water

HSG

A
A/D
B
B/D
C
C/D
Wet
Urban
No Data

Stantec

1,500 0 1,500 Feet

January 2018

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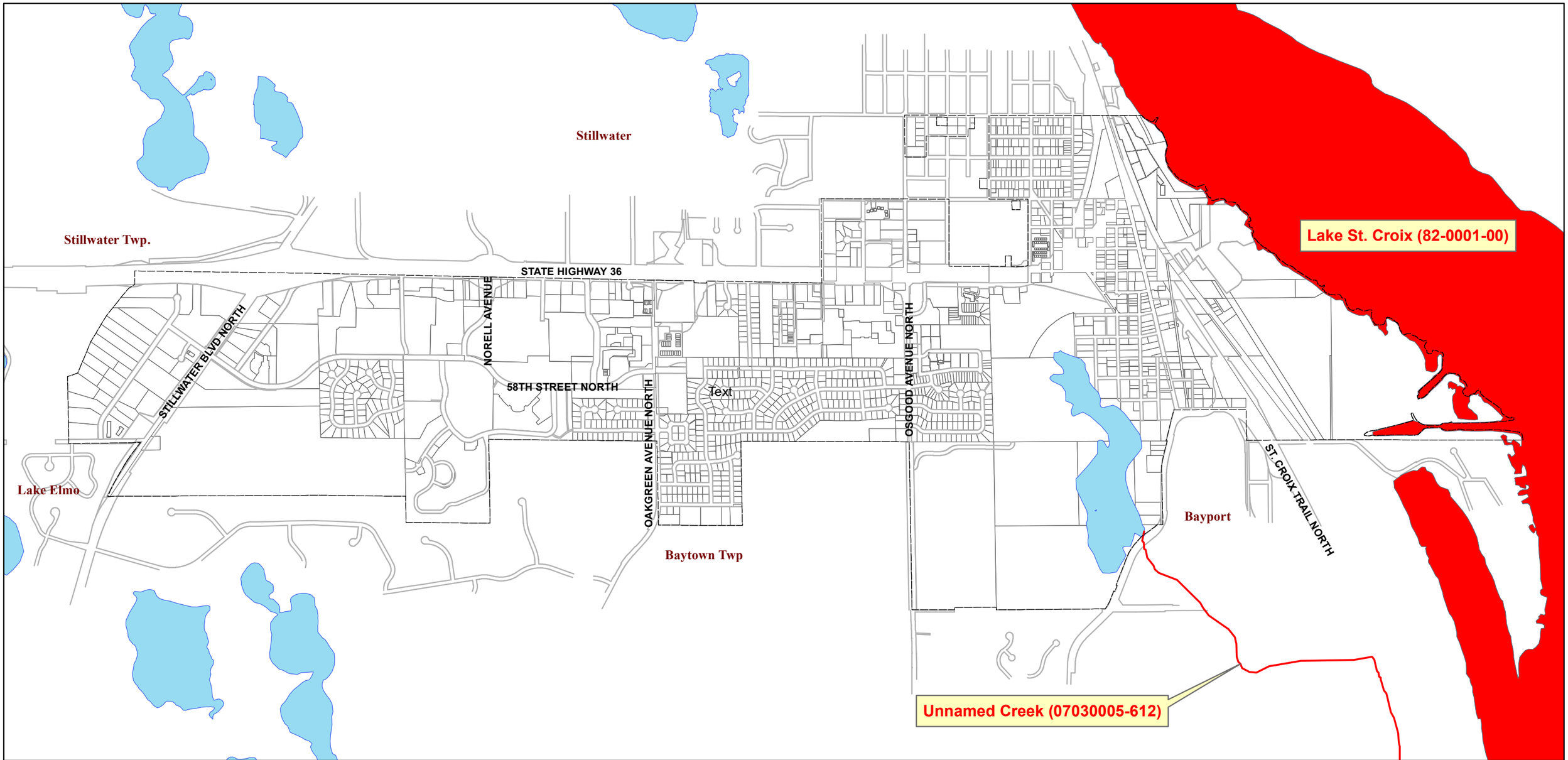

City of Oak Park Heights
2040 Comprehensive Plan

Figure 2.4
IMPAIRED WATERS MAP

LEGEND
- City Boundary
- Parcels
- ROW
- Impaired Waters

Stantec

N W E S

1,500 0 1,500 Feet

January 2018
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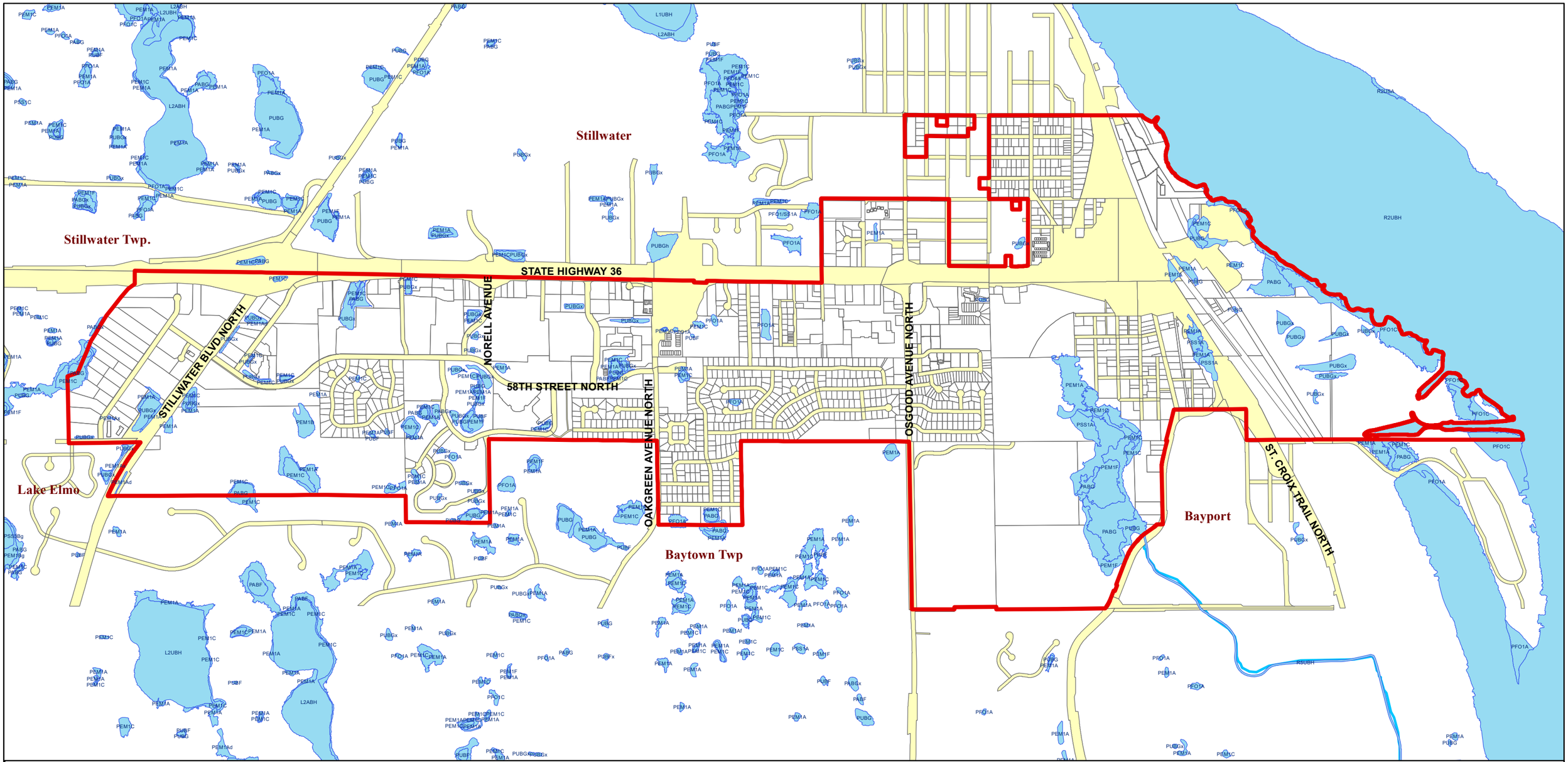

City of Oak Park Heights

2040 Comprehensive Plan

Figure 2.5

NWI WETLAND MAP

LEGEND

- City Boundary
- NWI Wetlands
- Parcels

Stantec

N W E S

1,500 0 1,500 Feet

January 2018

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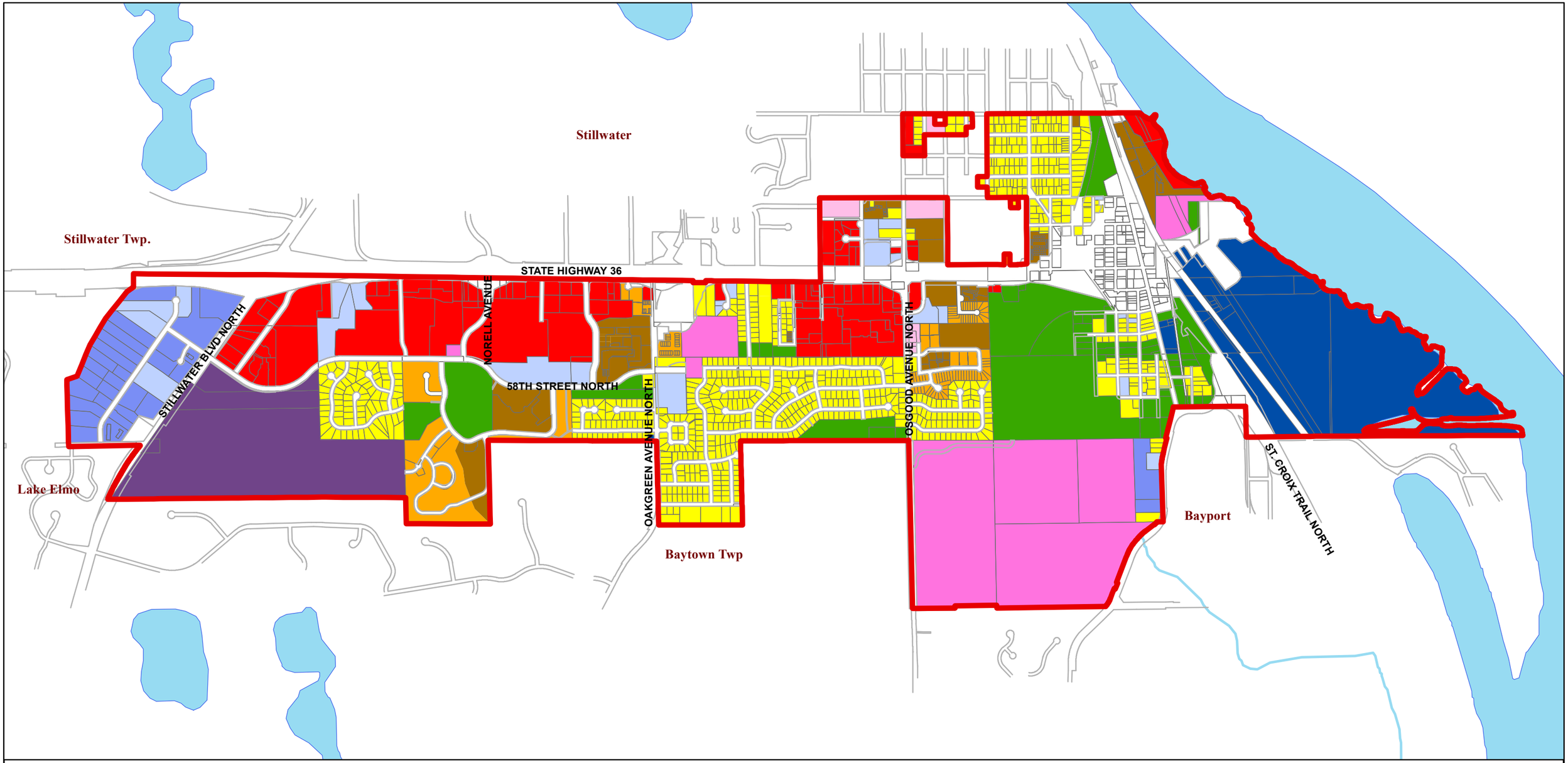

City of Oak Park Heights

2040 Comprehensive Plan

Figure 2.6

EXISTING LAND USE MAP

City Limits
Parcels
Water
ROW

Land Use

Vacant
Low Density Residential
Medium Density Residential
High Density Residential
Quasi-Public Facilities
School Facilities
Government Facilities
Commercial
Industrial
Highway Business/Warehouse
Park Facilities/Open Space
Right-of-Way

Stantec

N W E S

1,500 0 1,500 Feet

January 2018

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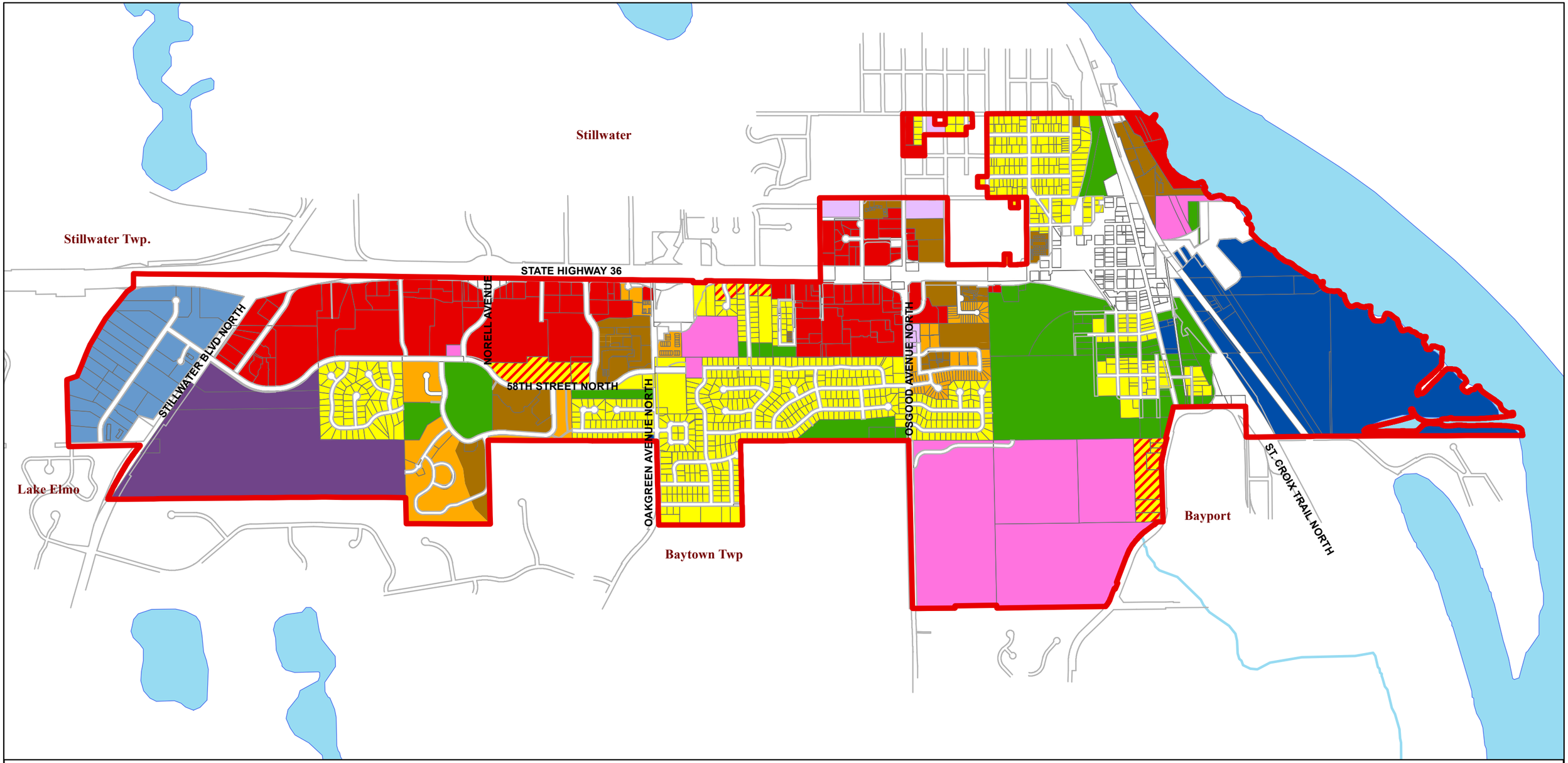

City of Oak Park Heights

2040 Comprehensive Plan

Figure 2.7

PROPOSED LAND USE MAP

City Limits
ROW
Parcels
Water

Land Use

Low Density Residential
Medium Density Residential
High Density Residential
Business/Residential Transitional
Quasi-Public Facilities
School Facilities
Government Facilities
Commercial
Industrial
Highway Business/Warehouse
Park Facilities/Open Space
Right-of-Way
Open Water

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N W E S

1,500 0 1,500 Feet

January 2018

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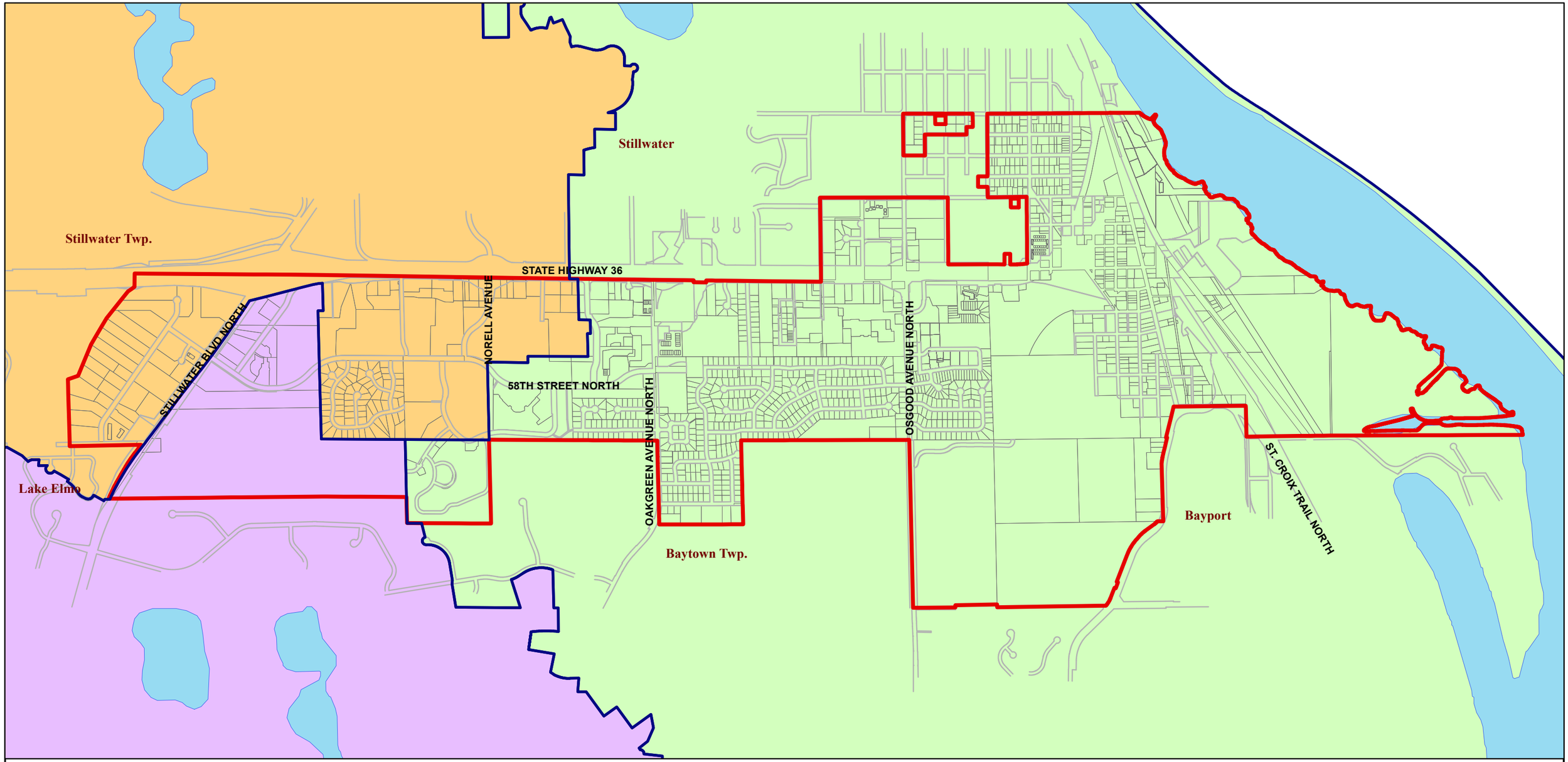

City of Oak Park Heights

2040 Comprehensive Plan

Figure 3.1

WATERSHED JURISDICTION MAP

City Limits	**Watersheds**
Parcels	MSCWMO
ROW	RCWD
Water	VBWD

Stantec

N W E S

1,500 0 1,500 Feet

April 2018

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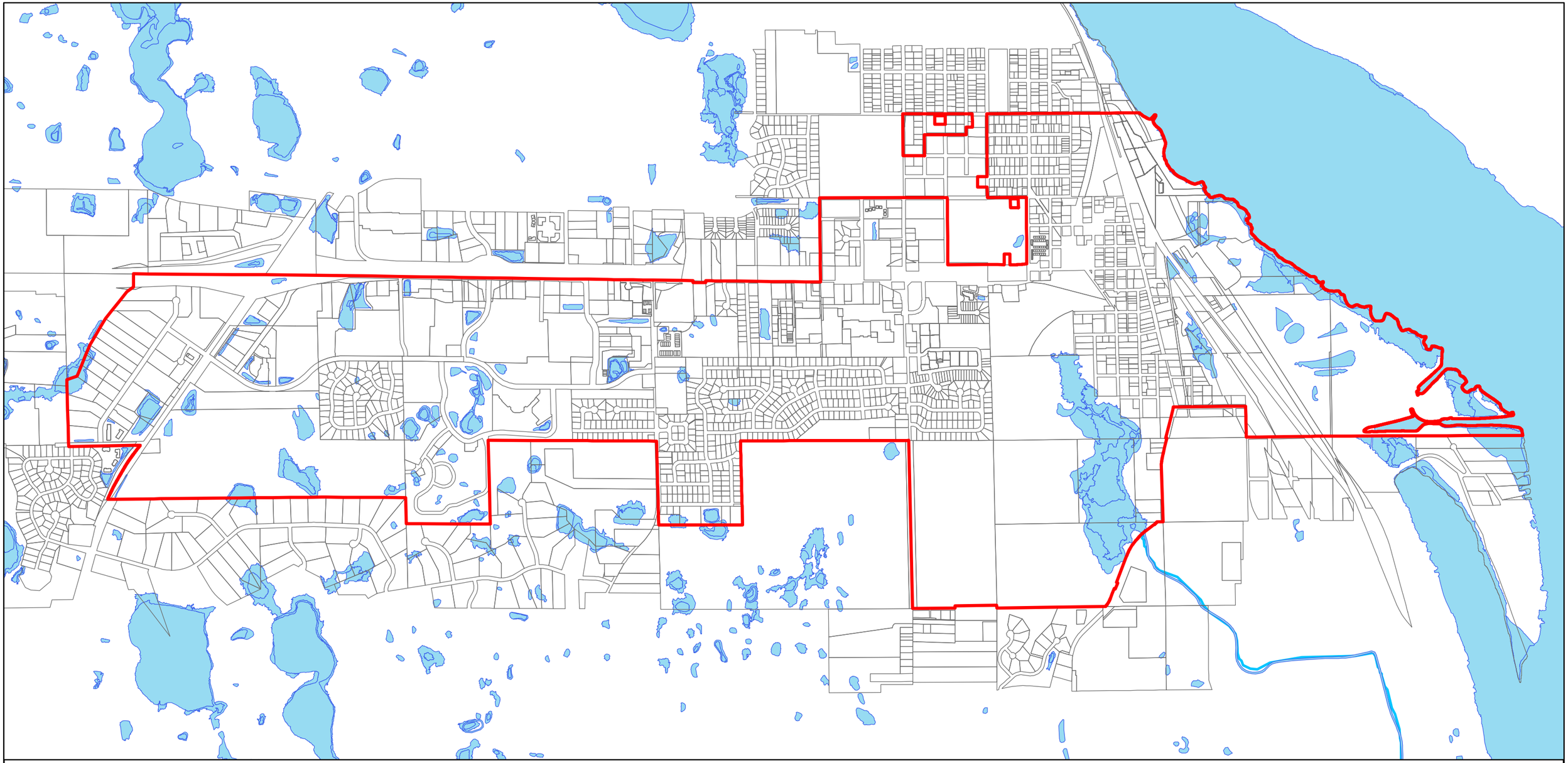

City of Oak Park Heights

2040 Comprehensive Plan

Figure 2.2

CITY ZONING MAP

LEGEND

- City Limits
- Parcels
- NWI Wetlands

Stantec

N
W E
S

1,500 0 1,500 Feet

January 2018

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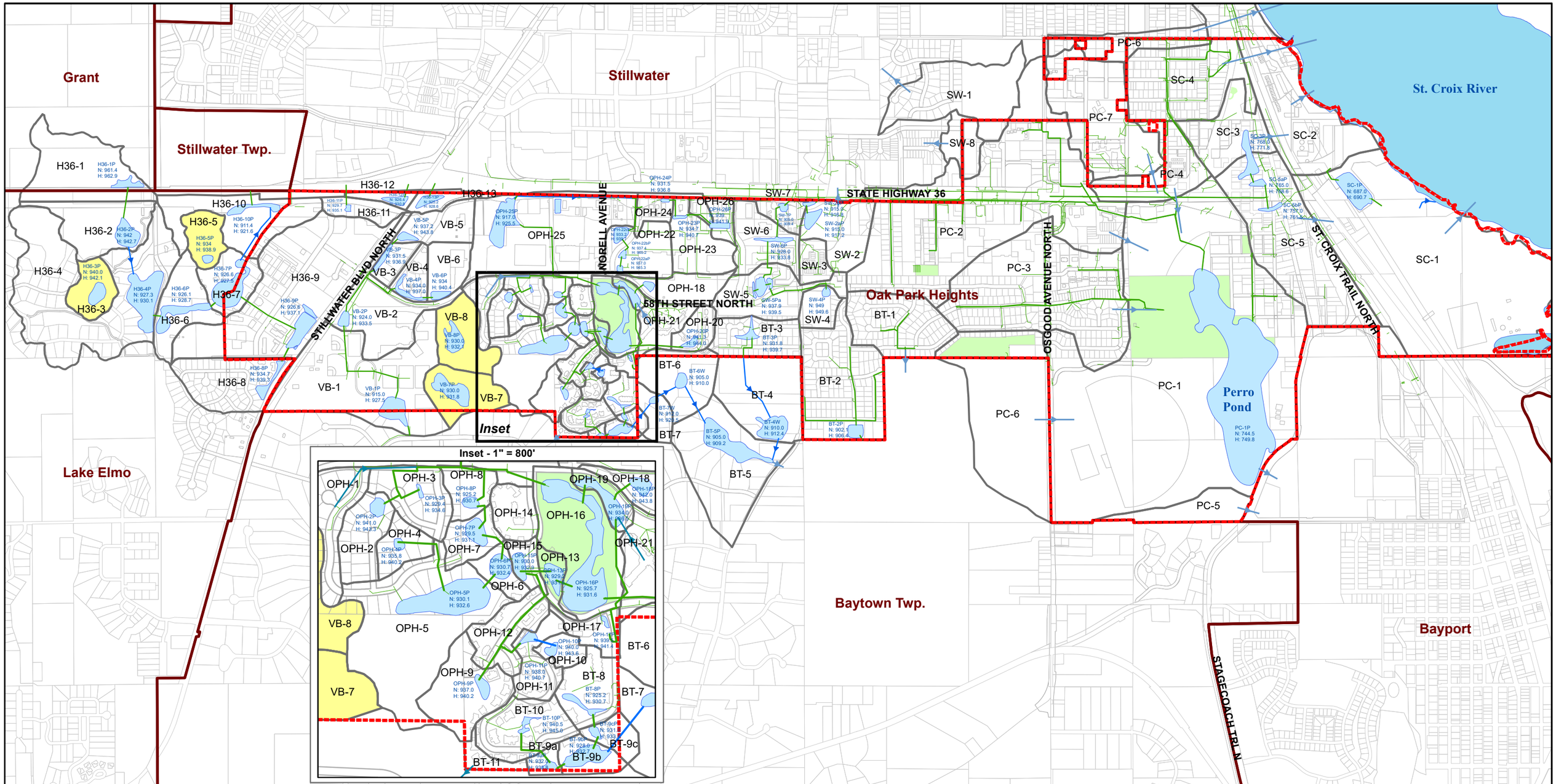

City of Oak Park Heights
2040 Comprehensive Plan

MAP 1

STORM SEWER SYSTEM MAP

- Oak Park Heights Boundary
- Municipal Boundaries
- Parcels
- Parks
- Drainage Boundaries
- Land Locked Basins
- Existing Ponds
- Existing Storm Pipe
- Existing Surface Conveyance
- Drainage Routing

N

0 1,500 3,000 Feet

1:18,000 (At original document size of 11x17)
1 inch = 1,500 feet

Stantec

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Revised: 2018-05-02 By: ANEMITZ
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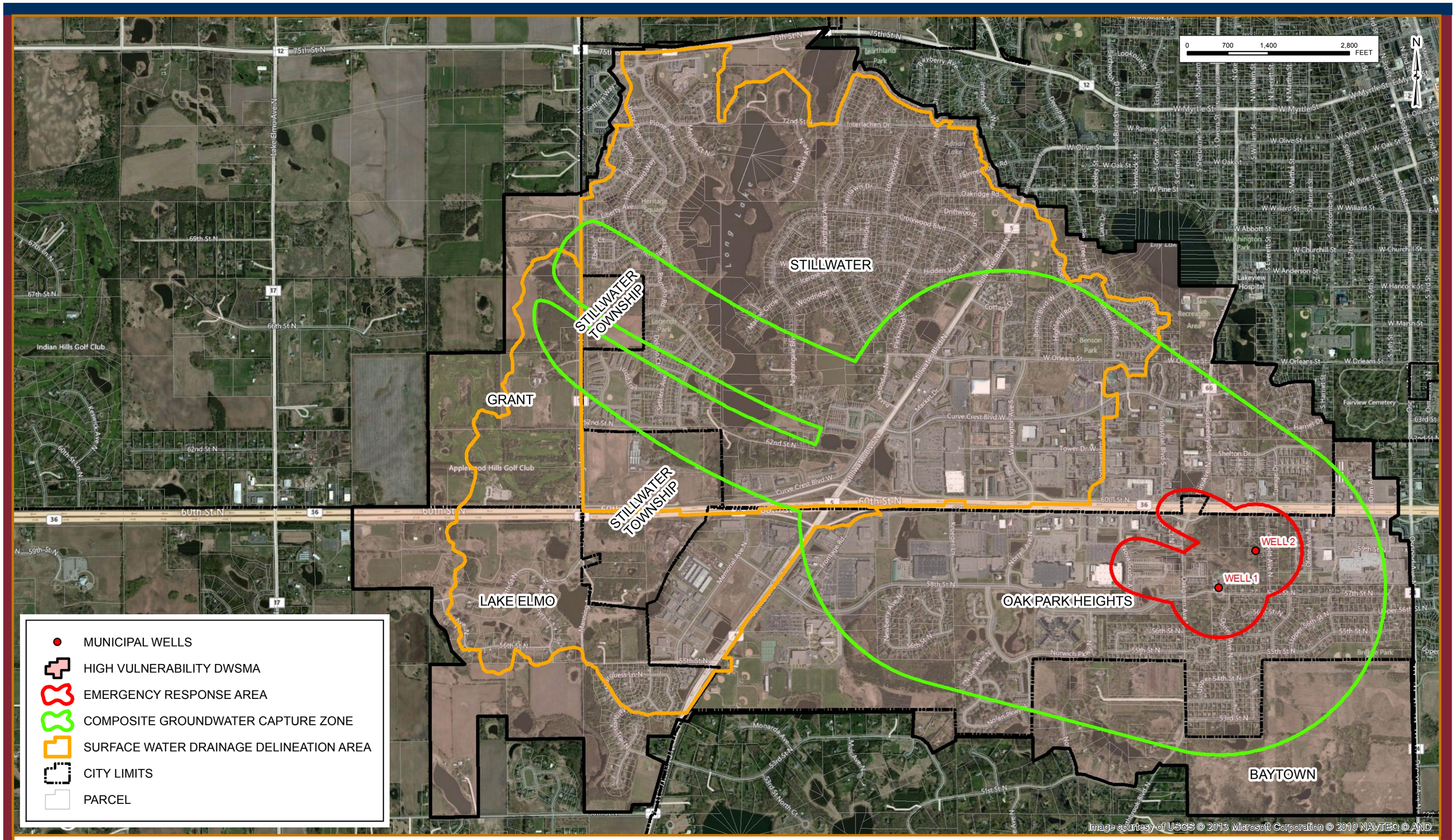

- MUNICIPAL WELLS
- HIGH VULNERABILITY DWSMA
- EMERGENCY RESPONSE AREA
- COMPOSITE GROUNDWATER CAPTURE ZONE
- SURFACE WATER DRAINAGE DELINEATION AREA
- CITY LIMITS
- PARCEL

Stantec Consulting
2335 Highway 36 W
Saint Paul, MN 55113
tel 651.636.4600

AUGUST 2013

MAP 2 - DRINKING WATER SUPPLY MANAGEMENT AREA

CITY OF OAK PARK HEIGHTS, MINNESOTA

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Appendix B
Modeling Data

Pond	Drains To	Peak Discharge Rate (cfs)			NWL	HWL	Pond Area (ac) @ NWL	Storage Volume (ac-ft)			Modeled Primary Outlet		Overflow Elevation	Comments
		2-yr	10-yr	100-yr				2-yr	10-yr	100-yr	Diameter	Length		
Perro Creek														
PC-1P	Perro Creek	16.2	24.9	28.4	744.5	749.8	29.35	45.2	97.6	255.9	18"	100'	-	Perro Pond discharge controlled by weir @ 744.5
St. Croix														
SC-1P	St. Croix River	7.9	10.8	60.7	687.0	690.7	2.64	12.4	15.2	20.2	60"	189'	693.0'	Overflow to St.Croix River
SC-3P	SC-5aP	2.1	6.5	13.2	768.0	771.8	1.33	6.7	7.8	11.2	18"	135'	-	
SC-5aP	SC-5bP	2.6	6.9	15.6	765.0	768.6	0.65	3.1	3.7	5.3	18"	400'	-	
SC-5bP	St. Croix River	9.9	54.0	136.2	757.0	761.5	0.50	2.4	3.0	4.3	48"	1500'	-	
Stillwater														
SW-2aP	SW-2bP	11.9	11.9	11.9	915.0	917.2	2.24	8.9	9.9	13.4	2 x 15"	102'	-	Connected by equilizer pipes to SW-2Pb
SW-2bP	Stillwater	0.4	1.9	5.6	915.0	916.8	0.44	1.5	1.7	2.2	15"	228'	-	Outlets to Northwest Quad Pond
SW-4P	SW-5Pc	0.0	0.0	1.3	949.0	949.6	0.82	0.3	0.8	1.6	12"	950'	-	
SW-5cP	SW-5Pb	0.2	3.4	19.2	937.8	939.0	0.48	0.7	0.8	1.4	-	-	937.8	No pipe outlet. Overflows to SW-5Pb @ 937.8.
SW-5aP	SW-5Pb	1.0	23.0	54.9	937.9	939.5	0.07	0.1	0.1	0.2	-	-	937.9	No pipe outlet. Overflows to SW-5Pb @ 937.9.
SW-5bP	SW-6P	1.2	4.6	5.8	935.5	939.0	1.00	0.5	1.4	4.4	15"	879'	-	
SW-6P	SW-7P	1.5	2.4	7.9	928.0	933.8	4.40	5.8	8.5	11.7	8"	293'	933.5	
SW-7P	Stillwater	3.4	4.2	6.2	905.0	909.4	0.36	0.6	1.1	3.6	12"	100'	-	Outlets to Stillwater via culvert across TH 36.
Oak Park Heights														
OPH-2P	OPH-25P	2.3	3.9	19.7	941.0	943.3	0.08	0.1	0.3	0.6	12"	160'	942.6	
OPH-3P	OPH-25P	10.2	18.5	21.8	929.4	934.6	0.01	0.0	0.1	0.4	24"	653'	-	
OPH-4P	OPH-5P	3.1	7.5	9.9	935.8	940.2	0.05	0.0	0.1	0.3	18"	722'	-	
OPH-5P	OPH-6P	2.2	7.8	26.5	930.1	932.6	1.06	1.9	2.7	5.1	-	-	930.1	No pipe outlet. Overflows to OPH-5P via EOF @ 930.1.
OPH-6P	OPH-7P	0.6 0.1*	1.7 1.9*	4.2 10.9*	930.7	932.4	1.25	6.3	6.9	8.5	18" 24"	35' 248'	933.1	Primary outlet & overflow routed to OPH-15P. Secondary pipe outlet (248', 24" RCP) routed to OPH-6P @ 930.7.
OPH-7P	OPH-8P	0.2	1.9	10.3	929.5	931.1	0.50	1.8	2.0	2.7	24"	33'	-	
OPH-8P	OPH-25P	0.7	2.9	6.9	925.2	930.7	0.05	0.0	0.1	1.4	15"	468'	-	
OPH-9P	OPH-15P	1.9	3.1	4.0	937.0	940.2	0.15	0.2	0.5	1.7	12"	208'	941.9	
OPH-10P	OPH-11P	0.0	0.0	1.3	940.0	943.6	0.02	0.2	0.4	0.6	-	-	943.5	
OPH-11P	OPH-15P	1.7	5.6	11.7	938.0	940.7	0.24	1.0	1.2	1.6	18"	152'	-	
OPH-15P	OPH-13P	6.1	16.0	29.1	930.0	932.9	0.46	0.8	1.2	1.7	42"	149'	-	
OPH-13P	OPH-16P	4.9	13.8	24.9	929.2	931.6	0.50	2.2	2.4	3.0	36"	42'	933.2	Overflow to OPH-16P
OPH-17P	OPH-19P	1.3	3.2	9.8	939.5	941.4	0.20	0.2	0.3	0.6	18"	1,116'	941.3	
OPH-18P	OPH-19P	0.3	1.8	8.6	942.0	943.8	0.83	4.1	4.4	5.5	18"	180'	-	
OPH-19P	OPH16P	10.7	19.6	34.0	934.0	937.3	0.21	0.7	1.4	3.1	30"	80'	-	
OPH-20P	OPH-16P	4.8	10.6	19.6	941.3	944.0	0.46	1.9	2.2	2.9	24"	825'	-	
OPH-16P	OPH-25P	3.8	5.6	7.8	925.7	931.6	0.56	4.7	10.1	24.9	12"	47'	-	
OPH-26P	OPH-23P	0.4	0.5	2.3	939.0	941.9	3.70	4.4	5.0	6.0	24"	419'	-	
OPH-23P	OPH-24P	2.5	9.4	28.2	934.7	940.6	0.04	0.1	0.1	1.0	18"	300'	940.0	
OPH-22aP	OPH-22bP	8.8	11.9	16.4	937.0	945.3	0.16	1.1	1.6	2.9	18"	152'	-	
OPH-22bP	OPH-24cP	8.2	12.3	17.8	937.4	940.2	0.28	1.2	1.5	1.9	30"	205'	-	
OPH-22cP	OPH-25P	4.1	5.5	21.6	933.2	939.7	0.79	3.4	5.6	8.1	15"	585'	-	
OPH-24P	OPH-25P	12.6	20.0	55.4	931.5	936.8	0.03	0.1	0.2	0.4	24"	164'	936.4	
OPH-25P	Stillwater	6.4	11.6	119.7	917.0	925.7	3.08	17.0	31.2	46.7	24"	342'	923.5	Outlets to Stillwater via culvert across TH 36.

Pond	Drains To	Peak Discharge Rate (cfs)			NWL	HWL	Pond Area (ac) @ NWL	Storage Volume (ac-ft)			Modeled Primary Outlet		Overflow Elevation	Comments
		2-yr	10-yr	100-yr				2-yr	10-yr	100-yr	Diameter	Length		
Valley Branch														
VB-8P	-	-	-	-	~930.0	932.1	2.00	0.5	1.6	4.9	-	-	-	VB-8P is a land locked wetland. NWL estimated from aerial photography and 10' cont
VB-7P	-	-	-	-	~930.0	931.8	2.58	0.4	1.3	4.4	-	-	-	VB-7P is a land locked wetland. NWL estimated from aerial photography and 10' cont
VB-5P	VB-3P	3.2	5.5	30.6	937.2	943.8	0.39	1.7	2.8	4.8	12"	30'	943.1	Overflow to VB-3P
VB-3P	VB-2P	4.8	7.1	10.7	931.5	936.9	0.45	0.8	1.4	4.0	15"	102'	-	
VB-6P	VB-4P	14.1	17.6	27.1	934.0	940.4	0.46	1.3	2.1	4.3	24"	120'	-	
VB-4P	VB-2P	3.4	16.8	50.3	934.0	937.0	0.86	2.0	2.7	3.3	12"	1,206'	936.20	Overflow to VB-2P
VB-2P	VB-1P	23.9	45.5	47.9	924.0	933.5	0.62	2.0	3.3	11.1	36"	1,920'	-	
VB-1P	Cloverdale Lake	9.0	10.9	13.9	915.0	927.5	5.70	27.2	40.0	71.6	21"	1,915'	-	Discharges south via storm sewer to Cloverdale Lake.
Highway 36														
H36-1P	H36-2P	18.9	45.8	117.6	961.4	962.9	0.10	0.2	0.2	0.4	24"	250'	962.0	Overflow to LL6
H36-2P	H36-4P	7.5	18.3	52.0	942.0	942.7	3.37	0.5	0.9	1.8	-	-	942.0	No pipe outlet. Overflows to H36-4P via surface conveyance @ 942.0.
H36-4P	H36-6P	1.1	3.1	82.3	927.3	930.1	6.83	27.2	33.9	41.5	15"	60'	929.5	Overflows across Manning Avenue
H36-6P	H36-7P	0.7	3.7	58.1	926.1	928.7	2.62	7.5	8.5	14.3	15"	50'	927.2	Washout in dike
H36-8P	H36-9P	23.3	57.1	117.8	934.7	939.3	0.01	0.6	0.8	0.9	24"	50'	938.5	Overflow to H36-9P
H36-9P	H36-7P	4.2	7.3	15.9	926.6	937.1	2.82	20.4	29.8	53.6	42"	1,000'	937.0	Pond outlet is controlled by 12" pipe which drains to the 42" trunk pipe noted as the primary outlet.
H36-7P	H36-10P	4.5	11.0	68.1	926.6	927.5	4.96	12.9	13.4	15.8	-	-	926.9	Drains via surface conveyance to H36-10P.
H36-10P	Stillwater	13.1	30.4	69.7	911.4	921.6	0.02	0.1	0.3	5.6	30"	383'	-	Discharges north via storm sewer to Stillwater.
H36-11P	Stillwater	16.8	28.8	45.2	929.7	935.1	0.01	0.0	0.0	0.3	30"	120'	938.0	Discharges via pipe across TH 36 to Stillwater.
H36-12P	Stillwater	9.5	13.7	21.5	926.4	930.8	0.05	0.1	0.2	0.4	24"	170'	-	Pond located at TH 36/TH 5 interchange cloverleaf. Drains north across TH 36.
H36-13P	Stillwater	4.5	5.4	7.0	925.2	928.6	0.31	1.0	1.4	2.2	15"	210'	-	Pond located at TH 36/TH 5 interchange cloverleaf. Drains north across TH 36.
H36-3P	-	-	-		~940.0	942.1	1.38	0.7	1.6	4.2	-	-	-	Land locked. NWL estimated from aerial photography and 10' contours.
H36-5P	-	-	-		~934.0	938.9	0.36	0.3	0.9	2.8	-	-	-	Land locked. NWL estimated from aerial photography and 10' contours.
Bayport Township														
BT-2P	Bayport Twp.	1.8	5.7	13.5	902.1	906.4	2.5	2.8	5.5	13.6	18"	84'	907.0	Drains via storm sewer to Bayport Township.
BT-3P	N.BT-4	3.3	4.0	18.9	931.8	939.7	0.1	0.6	1.6	3.8	12"	463'	939.0	Currently drains via storm sewer to Bayport Township. Proposed trunk connection (12", 990') to proposed pond BT-4P from N.BT-4
BT-4W	BT-5P	3.5	6.6	15.5	910.0	912.4	0.59	1.5	6.7	7.4	24"	40'	912.5	
BT-7W	BT-6W	0.0	0.0	0.0	~912.0	920.5	0.09	0.6	1.3	3.0	-	-	924.0	Existing wetland, drains via surface conveyance to BT-6W
BT-6W	BT-5P	-	-	-	~905.0	910.0	1.0	1.6	3.5	8.7	-	-	929.00	Existing wetland, landlocked
BT-8P	BT-9Pc	1.7	3.8	9.1	940.0	941.2	0.05	0.2	0.4	1.0	30"	24'	-	
BT-9cP	BT-9Pb	1.3	2.9	5.8	931.0	933.9	0.19	0.1	0.2	0.6	12"	55'	-	
BT-10P	BT-9Pa	11.7	16.0	22.0	940.5	945.0	0.12	0.4	0.6	1.3	21"	355'	945.5	
BT-9aP	BT-9Pb	8.0	12.6	20.0	932.0	933.8	0.15	0.4	0.6	0.9	36"	40'	-	
BT-9bP	BT-5P	-	-	-	~928.0	932.7	1.2	2.2	4.0	7.8	-	-	934.0	Landlocked - overflow to BT-7W
BT-5P	Bayport Twp.	-	-	-	905.0	909.2	6.6	5.5	12.7	32.6	-	-	915.0	Unnamed natural pond/wetland discharges to Bayport Township. No pipe outlet, natural overflow @ ~915.0.

* Peak discharge from secondary outlet
# Interim HWL @ 931.4

Appendix C
Water Resource Related Agreements

RECEIVED
JAN 2 6 2004
WASHINGTON CO

REVISED COOPERATIVE AGREEMENT

For a Project to Manage Stormwater and Protect Water Quality in the Brown's Creek Watershed, Washington County, Minnesota

The parties to this Revised Cooperative Agreement ("Revised Cooperative Agreement") are the City of Stillwater, a Home Rule City of the Third Class, existing under the constitution and laws of Minnesota ("Stillwater"), the City of Oak Park Heights, a statutory city ("Oak Park Heights") and Brown's Creek Watershed District ("BCWD"), a watershed district created pursuant to Minn. Stat. §103D.

Recitals and Statement of Purpose

WHEREAS Brown's Creek is a unique and important natural resource and a designated trout stream located within the Twin Cities metropolitan area, the ecological health and habitat viability of which depend on the maintenance of water quality, water temperature, and stable flow character.

WHEREAS, Stillwater conducted an Alternative Urban Areawide Review (AUAR) for areas proposed to be annexed by Stillwater between now and the year 2020 and produced a Report (May 1997) and Final Report (December 16, 1997) (together, the "AUAR Reports") reviewing impacts to water resources from development in the annexation area consistent with the Stillwater comprehensive plan and proposing means of mitigating those impacts.

WHEREAS, the implementation and use of regional measures to manage stormwater may serve to allow properties within the drainage area to meet the requirements of BCWD rules, the AUAR, and Stillwater and Oak Park Heights ordinances in a more cost-effective way than managing stormwater on an individual site basis.

WHEREAS, the parties desire to implement measures recommended in the AUAR to protect Brown's Creek and its tributaries and acknowledge that their ability to do so requires that each party satisfactorily and promptly perform its obligations and cooperate with the other party on those tasks. As used in this Revised Agreement, the Regional Treatment System that will be designed, constructed, owned and maintained by Stillwater is described as the Brown's Creek Trout Stream Mitigation Project ("TSMP").

WHEREAS, on August 7, 2003, Stillwater and Oak Park Heights have reached an agreement establishing terms on which land within Oak Park Heights may drain to the TSMP, entitled "Memorandum of Understanding Between The City of Oak Park Heights and The City of Stillwater With Regard to Storm Water Management Issues Within the City of Oak Park Heights' Central Business District and adjoining lands, Lying South of Trunk Highway 36, West of Oakgreen Avenue and East of Trunk Highway 5" ("Stillwater/Oak Park Heights MOU") and Stillwater and the BCWD have determined the TSMP as designed will manage surface water flows from the areas described in this Revised Agreement so as to protect Brown's Creek, its tributaries and the other water resources within the watershed.

NOW, THEREFORE, the parties enter into this Revised Agreement to document their understanding as to the scope of their undertaking; reaffirm the commitment of each party as to the responsibilities and tasks to be undertaken by each party; establish procedures for performing these tasks and responsibilities; and facilitate communication and cooperation among the parties to ensure successful completion of the undertaking.

AGREEMENT

1. General Responsibilities and Performance Guidelines

1.1 A Work Plan describing the tasks and schedule anticipated in performance of the TSMP is incorporated in this Revised Agreement by reference (Exhibit "A"). Consistent with its obligations under this Revised Agreement, Stillwater will retain final authority as to the manner in which it implements the responsibilities assigned to it but will provide the BCWD and Oak Park Heights the opportunity for review and comment with regard to the design, construction, operation and maintenance of the TSMP by timely providing any documents that another party requests and will cooperate with each other party in good faith to achieve goals of this Revised Agreement.

1.2 With respect to compliance with paragraph 2.4.1(b) of the BCWD Rules, the TSMP, within the area subject to the terms of this Revised Agreement, constitutes a regional facility pursuant to paragraph 2.7.4(c) of those rules.

1.3 The area of Stillwater that is subject to this Revised Agreement is limited to Phase I, Phase II, Phase III, and Phase IV as described in the Orderly Annexation Agreement between the City of Stillwater and Town of Stillwater dated August 16, 1996. Areas not described in this section, and areas that become

part of the City in the future by reasons of annexation or other expansion, are not subject to the exception unless this Revised Agreement is amended to include those areas. The orderly annexation area is described in Exhibit "B," Phase I on Exhibit "C," Phase II on Exhibit "D," and Phase III on Exhibit "E." Phase IV is that part of the orderly annexation area (Exhibit "B") not shown on Exhibit "C," "D" or "E."

1.4 Also subject to this Revised Agreement is that part of Oak Park Heights labeled on Exhibit F as "Remaining Parcels in the BCWD to be Developed Subject to the Revised Cooperative Agreement." Oak Park Heights recognizes that a portion of this area lies within the BCWD hydrological boundary but currently outside the BCWD legal boundary, and therefore that development of this portion may be subject to the stormwater management review of another watershed management organization.

1.5 All designs, written materials, technical data, research or any other work in progress concerning implementation of the TSMP must be available for review and copying by the other party, except to the degree limited by law.

1.6 Review and comment as provided for in this Revised Agreement means distribution of the documents or materials in question to each other party for a 30-day opportunity to review and comment. This period shall begin on the later of (a) the other party's receipt of documents under paragraph 1.1; or (b) the other party's receipt of documents pursuant to a request under paragraph 1.4 made within 15 business days of the Administrator's initial receipt under paragraph 1.1. Stillwater will in its discretion ensure that review occurs at a time when any comments may be meaningfully considered and implemented by Stillwater. The parties agree to consider all timely comments fully and to modify documents or materials to the extent feasible.

1.7 In the event of conflict between the terms of the Stillwater/Oak Park Heights MOU and this Revised Agreement, the Stillwater/Oak Park Heights MOU, specifying the terms by which land within Oak Park Heights may drain to the improvements described at paragraph 2.1 of this Revised Agreement, shall supersede the terms of this Revised Agreement as to the rights and obligations of Stillwater and Oak Park Heights with respect to each other. Nothing in the Stillwater/Oak Park Heights MOU shall affect the rights and obligations of the BCWD as set forth in this Revised Agreement, nor shall Stillwater deny any lands credited by the BCWD under paragraph 4.1 of this Revised Agreement the use of the improvements to the extent contemplated in the plans for development of those lands incorporated into a BCWD permit.

1.8 This Revised Agreement shall apply to land within Oak Park Heights, and to the rights and obligations of Oak Park Heights, effective retroactive to August 7, 2003.

2. Structural Improvements

2.1 Stillwater will prepare plans and specifications for the construction, operation and maintenance of the proposed improvements and distribute them for review and comment in accordance with paragraph 1.5.

2.2 Stillwater will be responsible for selecting the contractor or contractors to perform the construction of the improvements, negotiating construction contracts and supervising project construction. It will be responsible for obtaining any governmental permits and conducting any environmental reviews necessary for the construction, operation and maintenance of the improvements, and for acquiring any property or access rights needed to design, construct, operate and maintain the improvements.

2.3 Stillwater will take all reasonable and feasible measures to minimize impacts on Long Lake and Brown's Creek that are caused by development that takes place before and following complete construction and operation of the TSMP and all elements thereof.

3. Responsibility for Costs.

3.1 Stillwater will be responsible for all project costs for the design, construction and maintenance of the TSMP. Nothing in this section will limit the right of Stillwater to seek contributing funds from any entity other than BCWD that contributes flows to the TSMP on any basis allowed by law.

3.2 Stillwater and BCWD will exercise reasonable efforts to secure outside means of funding for activities under section 2. The parties will assist and cooperate in these efforts.

4. Application of BCWD Rules to Areas Affected by the Improvements.

4.1 It is the intent of the parties that the improvements constructed pursuant to this Revised Agreement constitute a regional facility for managing stormwater flow volume within the area described at Paragraphs 1.3 and 1.4 of this Revised Agreement. Therefore, pursuant to Paragraph 2.7.4(c) of the BCWD

rules, development within the area described in this Revised Agreement is deemed to be in compliance with the standard at Paragraph 2.4.1(b) of the rules.

4.2 Stillwater will cooperate with the BCWD on any monitoring the BCWD may undertake with respect to TSMP performance and water resource conditions, and will provide a location for a BCWD monitoring facility as identified jointly by the parties. This shall not obligate Stillwater to pay the cost of any such monitoring, except as may be specified in the monitoring plan referenced in paragraph 5.1 of this Revised Agreement.

4.3 Nothing in this Revised Agreement affects the authority or responsibility of the BCWD to revise paragraph 2.4.1(b) of its rules as appropriate. In the event a revision of paragraph 2.4.1(b) should impose a stricter standard than presently applicable to the Orderly Annexation Area as described in Paragraph 1.3 of this Revised Agreement, or the area of Oak Park Heights described in Paragraph 1.4 of this Revised Agreement, any permit applicant subsequent to adoption of the revised standard would be required to meet that standard, after consultation and agreement of the municipalities within the drainage area of the Regional Treatment System or TSMP as defined in Paragraphs 1.3 and 1.4 of this Revised Agreement. An applicant within the area described in Paragraphs 1.3 and 1.4 of this Revised Agreement will receive compliance credit for that degree of volume control that the TSMP is providing, but also shall be required to provide for such additional volume control as is necessary to meet the standard. A revised standard would operate only as to applications considered after adoption of the revision, and would not operate retroactively to any existing development.

5. Monitoring Plan

5.1 The parties, with the participation of other interested governmental bodies, jointly will develop and implement a monitoring plan ("Monitoring Plan") that will identify specific sampling procedures, analytic methods, detection limits, and quality assurance and quality control procedures to facilitate the accurate measurement of baseline data and any water quality or quantity impacts within the Long Lake drainage area and areas downstream. The specific monitoring activities for which each party is responsible will be identified in the Monitoring Plan.

6. Remedies.

6.1 In the event that periodic sampling or analysis done by BCWD or the Monitoring Plan reveals that the TSMP or any associated improvements are not functioning to meet BCWD volume control standards, the BCWD will meet and confer with Stillwater and Oak Park Heights to determine appropriate curative action.

6.2 In the event the parties cannot agree on an appropriate curative action, BCWD may send a notice to Stillwater and Oak Park Heights entitled "Notice to Cure," describing the curative action necessary. The notice must allow Stillwater six (6) months to cure.

6.3 If curative action is not taken, or for any other dispute between the parties arising under this Revised Agreement, the parties agree to mediation for a minimum of ninety (90) days before seeking redress in the District Court of Washington County, Minnesota. Mediation shall be conducted pursuant to procedures, and with a mediator, agreed on by the parties. The 90-day period shall commence on the written request of either party for mediation under this paragraph.

7. Indemnification

7.1 Stillwater agrees to defend, indemnify and hold harmless the BCWD against claims including those made by third parties that arise out of the design, construction or maintenance of the TSMP, whether during construction of the system or after its completion.

8. Notice.

8.1 Notices to the parties to this Revised Agreement shall be given by hand delivery or first-class mail addressed to an elected or appointed representative of a party or a person as the party may designate. Documents required to be provided pursuant to paragraph 2.1 must be addressed to the BCWD Administrator at the BCWD's designated address and to the City Administrator, Oak Park Heights, unless otherwise specified by either party in writing.

9. Amendments.

9.1 This Revised Agreement may be amended only by agreement of the parties in writing.

10. Effect and Binding Nature.

10.1 This Revised Agreement replaces and supersedes the August 18, 2000 Cooperative Agreement executed by Stillwater and the RCWD as of the date on which this Revised Agreement has been fully executed by all parties.

10.2 This Revised Agreement will be binding on the parties and their respective successors, whether by merger, consolidation or transfer of authority to another government agency, to the fullest extent permitted by law.

11. Termination.

11.1 This Revised Agreement shall remain in effect in perpetuity. Any party may withdraw its participation under this Revised Agreement on two (2) years' written notice to the other parties. Before termination is finalized, the parties shall meet in good faith to attempt to resolve the reasons for the noticed withdrawal.

IN WITNESS WHEREOF, the parties hereto have executed this Revised Cooperative Agreement.

CITY OF STILLWATER

1·20·04
Date

By: _____
Jay L. Kimble, Mayor

1·20·04
Date

And: _____
Diane F. Ward, City Clerk

CITY OF OAK PARK HEIGHTS

_____
Date

By: _____
David Beaudet, Mayor

1-22-04
Date

And: _____
Eric Johnson, City Administrator

BROWN'S CREEK WATERSHED DISTRICT

12/30/03
Date

By: Craig F Leiser
Craig Leiser, President

EXHIBIT "A"

Work Plan for TSMP

Item	7/1/2000 Status	Estimated Completion Date
Trout Stream Realignment – Oak Glen Segment	Completed Spring 2000	Completed
McKusick Downstream Conveyance Improvement	Out for bid	Fall 2002
McKusick Lake Diversion Construction	Partially Complete	Fall 2003
Long Lake Outlet Control	Conceptual Design	2005
Long Lake Conveyance System Improvements	Partially Complete	2007

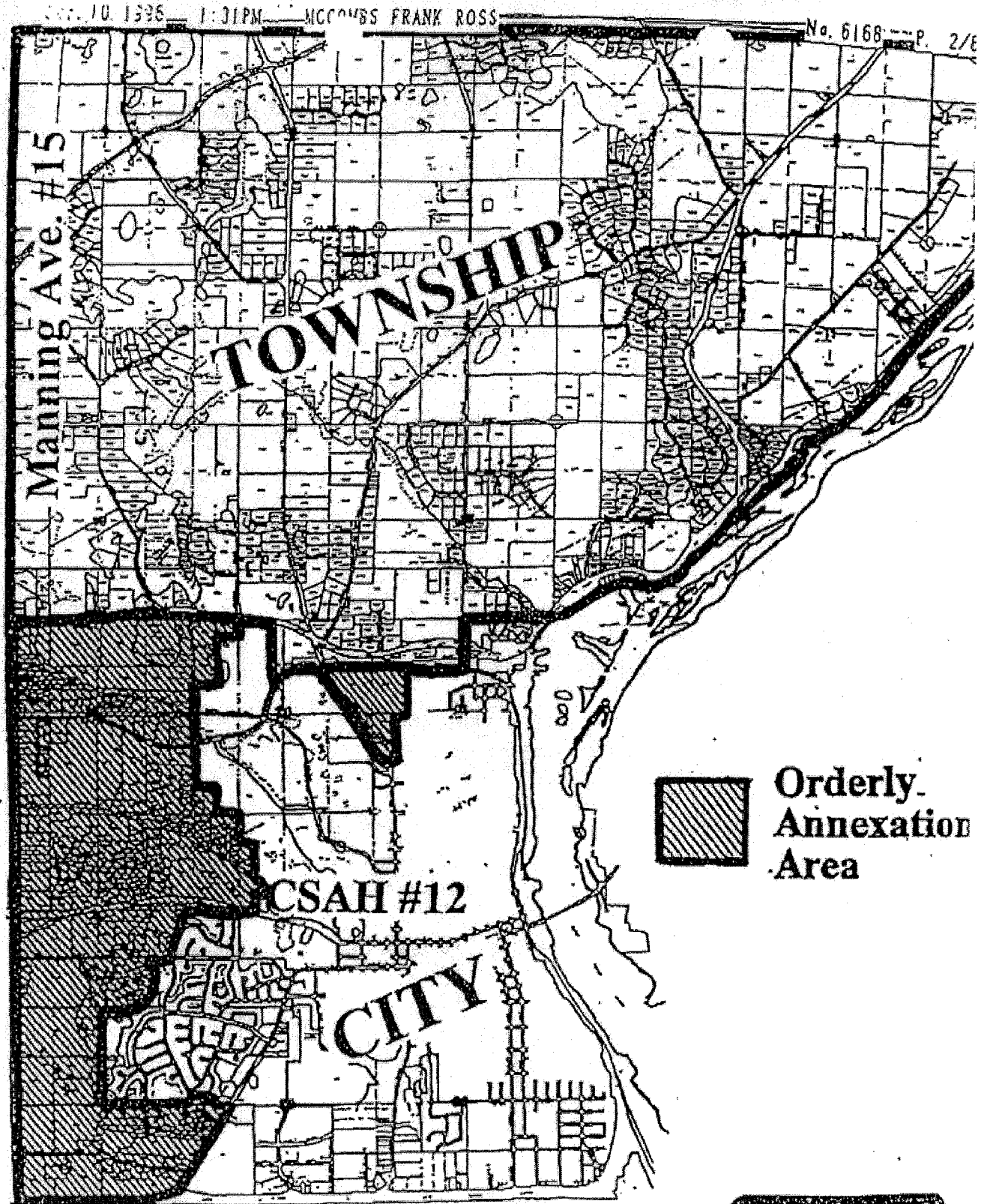


EXHIBIT
B

McCombs Frank Roos Associates, Inc.
15050 23rd Ave. N.
Plymouth, MN. 55447
Engineers

CITY & TOWNSHIP
OF STILLWATER
ORDERLY ANNEXATION

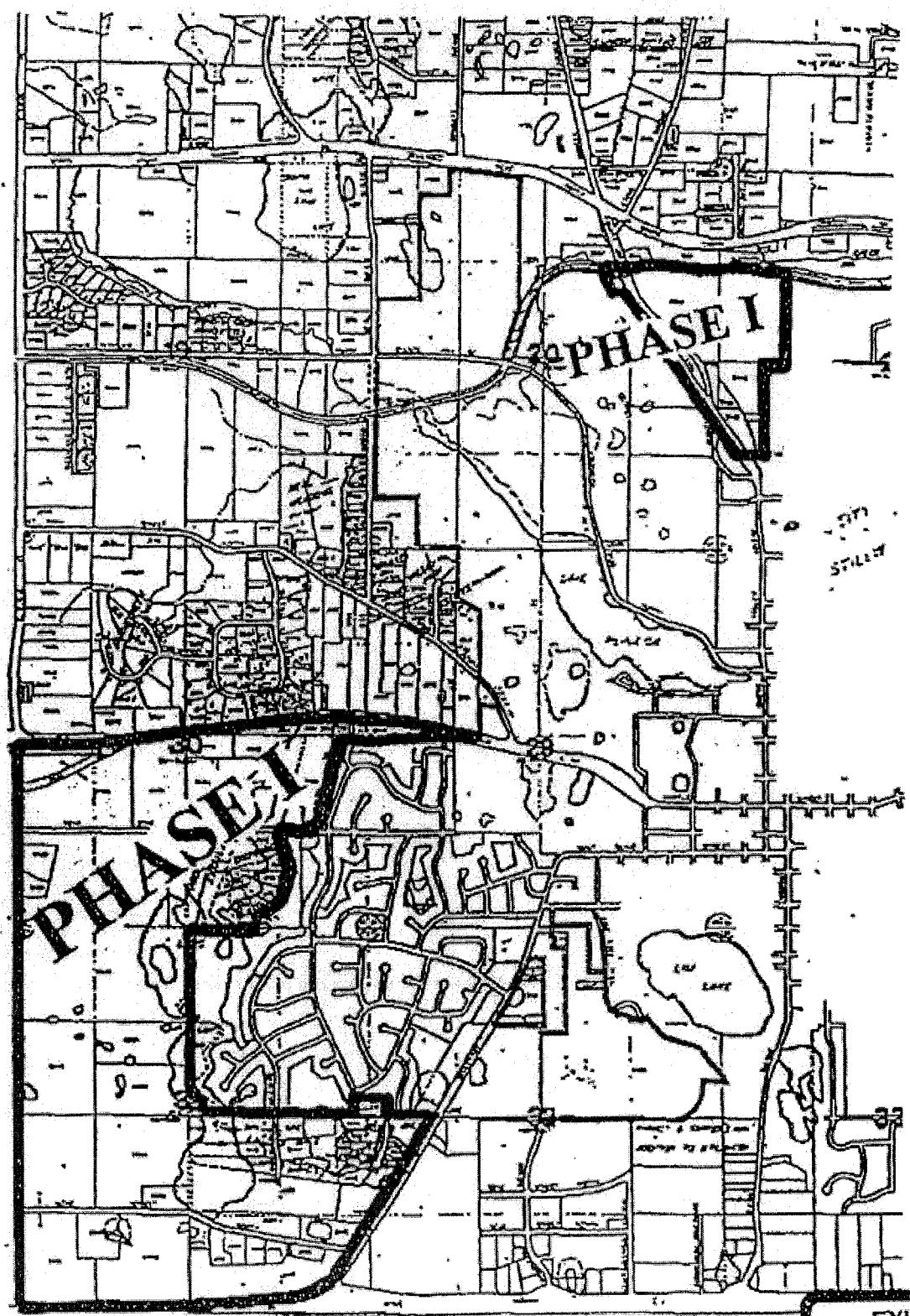
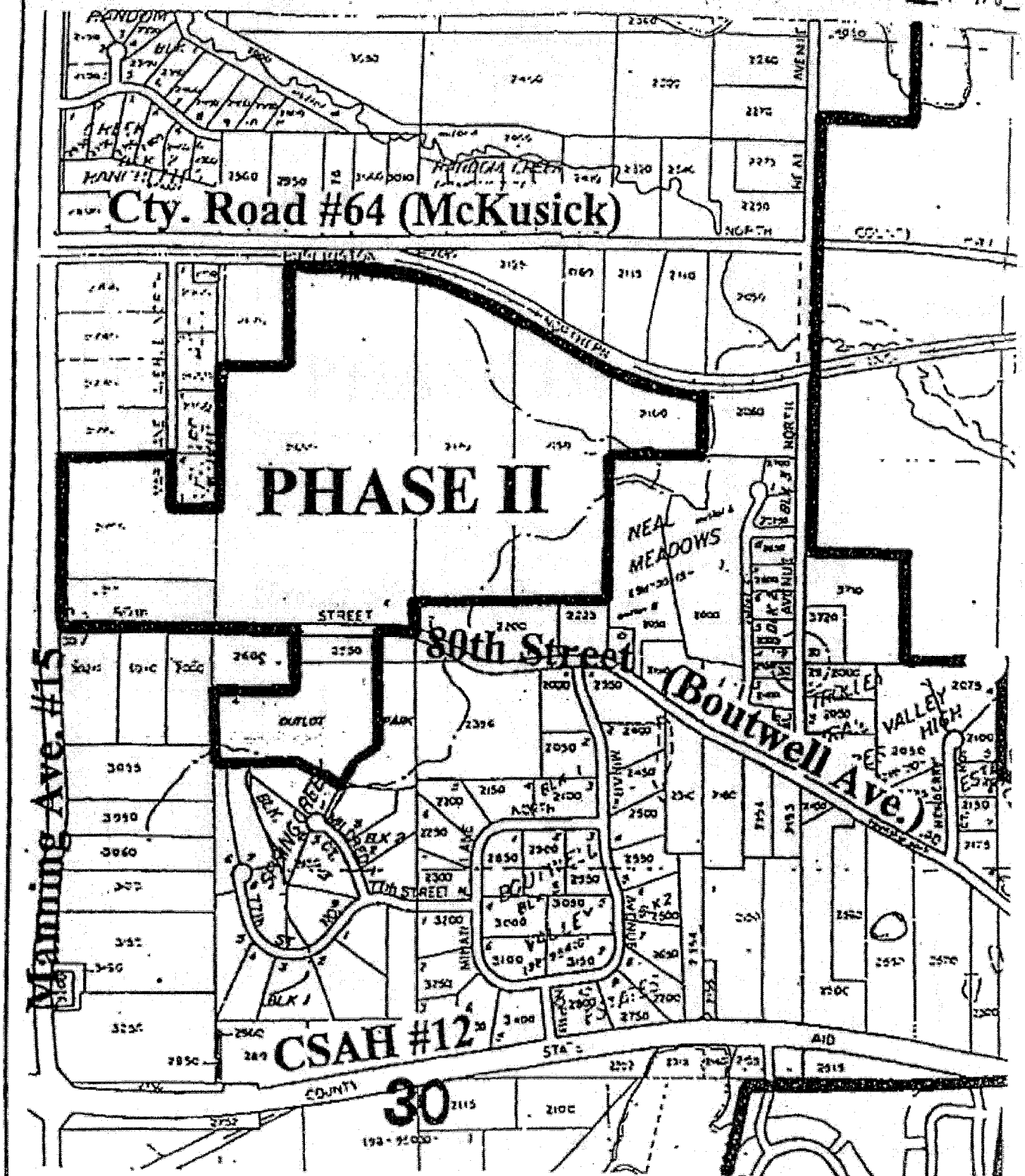


EXHIBIT
C

McCombs Frank Ross Associates, Inc.

CITY & TOWNSHIP


Cty. Road #64 (McKusick)
PHASE II
80th Street
(Boutwell Ave.)
Manning Ave. #15
CSAH #12
30
NEAL MEADOWS
VALLEY HIGH
STREET
NORTH
COUNTY
STATE
AID
EXHIBIT
D

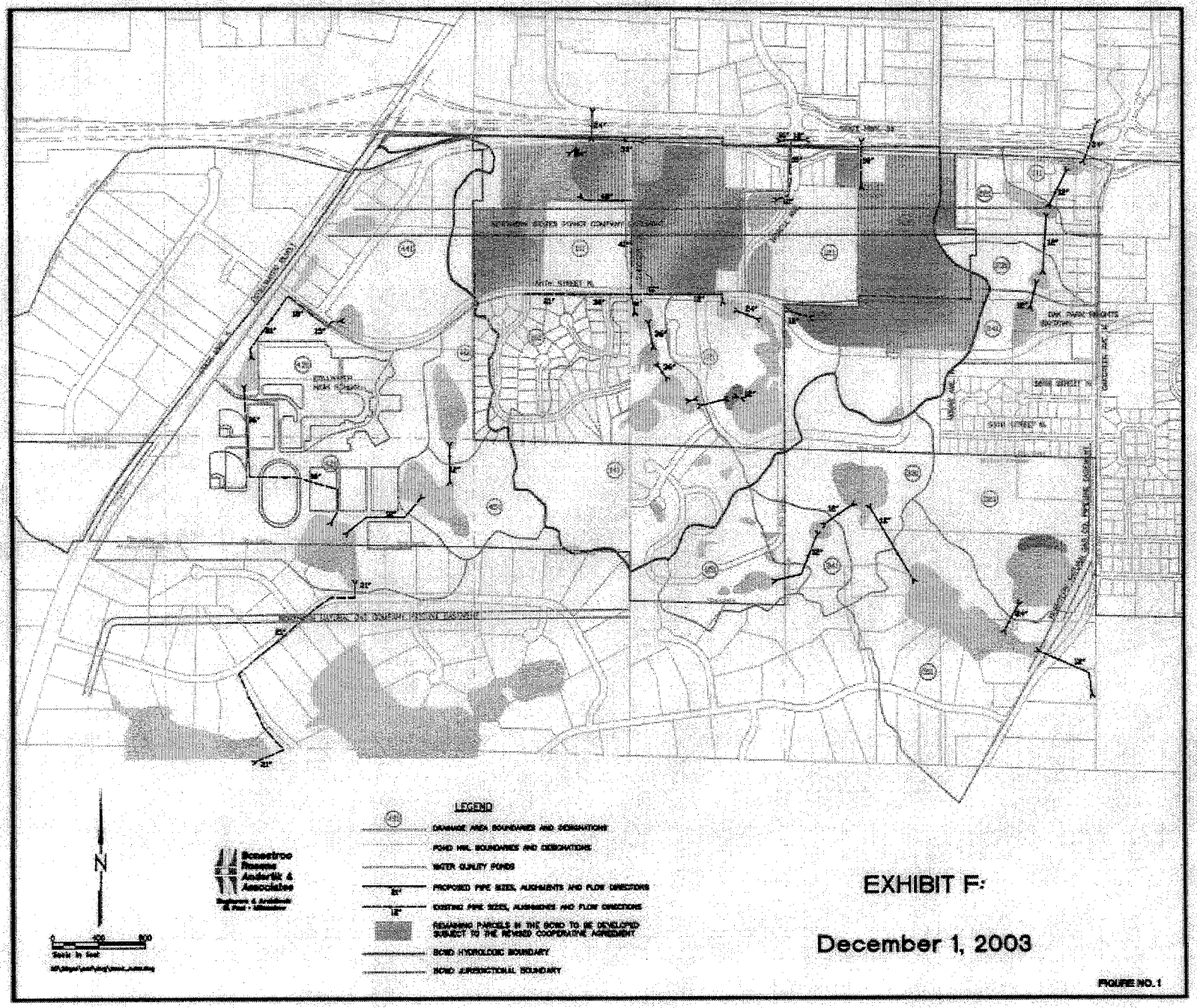


EXHIBIT F:

December 1, 2003

FIGURE NO. 1

COOPERATIVE AGREEMENT
Between the Brown's Creek Watershed District
and the City of Oak Park Heights

Kern Center Pond, Oak Park Heights

This Agreement is made by and between the Brown's Creek Watershed District ("BCWD"), a watershed district with powers pursuant to Minnesota Statutes Chapters 103B and 103D, and the City of Oak Park Heights (hereinafter referred to as "City"), a political subdivision of the State of Minnesota.

Recitals and Statement of Purpose

WHEREAS the BCWD has an approved Watershed Management Plan that identifies regional stormwater detention as a priority need for reducing stormwater flow rates, localized flooding and water quality degradation within the watershed and establishes a program for the demonstration of infiltration and related stormwater management practices;

WHEREAS the Kern Center Pond ("Pond") is a regional ponding facility constructed and maintained by the City for stormwater management;

WHEREAS Pond redesign, including the incorporation of regional infiltration, will further the purposes and goals of the BCWD and provide a useful site to educate and inform interested persons about innovative stormwater management concepts and water resource matters generally;

WHEREAS the City and the BCWD wish to collaborate in a redesign of the Pond for the purpose of regional infiltration, and the City agrees to assume responsibility for construction and maintenance, as defined in the "Kern Center Commercial Area Drainage Facility Operation and Maintenance Plan" (together, the "Project");

WHEREAS BCWD Rule 2.7.4 allows for regional stormwater management in place of site-based management if pursuant to a cooperative agreement with the BCWD, and the City would like to invoke this rule through regional management for the Kern Center Drainage Area, as shown in Exhibit B, which comprises 92.1 acres draining to the Pond (of which 17.7 +/- acres lies within the City of Lake Elmo);

WHEREAS the parties acknowledge that their ability to achieve Project objectives depends on each party satisfactorily and promptly performing its individual obligations and working cooperatively with the other party;

WHEREAS the Project will be funded in part through a Local Water Planning Challenge Grant of the Minnesota Board of Water and Soil Resources, and the grant agreement imposes certain requirements on the BCWD, the Local Governmental Unit and Fiscal Agent, referred to as "Grantee" in said grant;

THEREFORE the parties enter into this agreement to document their understanding of the scope of and responsibilities for the Project and facilitate communication and cooperation to ensure successful completion of the Project.

Agreement

1. The design plans have been prepared and signed by the BCWD Engineer and provided in both electronic and hard copy to the City's Engineer. The specifications based on the design plans have been prepared by the City's engineering consultant. These design plans, dated 11/03/04, are attached as **Exhibit A** to this agreement and incorporated herein.

2. The final bid documents have been prepared and signed by the City's Engineer. The City shall construct or provide for construction in accordance with **Exhibit A**. The City shall acquire all property rights and permits as needed, including a BCWD permit as applicable. The BCWD shall waive any administrative or permit fees to the City associated with the Project. Bid preparation and evaluation, contract administration and construction management shall be the City's responsibility, subject to grant reimbursement if applicable. At the City's request, the BCWD shall assist the City in the cost-effective disposition of excavated materials.

3. The BCWD shall be given notice of pre-construction and construction meetings and shall be permitted access to the site and to Project documents in order to perform construction observation. Notwithstanding, it shall be the responsibility of the City to ensure that construction conforms to **Exhibit A**. When construction is completed, the City shall provide the BCWD as-built drawings certified by a professional engineer. The BCWD shall bear its own costs for its activity under this paragraph.

4. On a written determination by the BCWD that the construction is complete in accordance with the final plans and specifications and the terms of the BCWD permit, the provisions of BCWD Rules, paragraph 2.7.4(c), shall be deemed to be met for all parcels within the Kern Center Drainage Area, which area is bounded as shown in **Exhibit B**, attached hereto and incorporated herein. Notwithstanding, paragraph 2.7.4 shall be deemed to apply to a proposed activity only if:

(a) At the time land disturbance for an activity described at BCWD Rule paragraph 2.2 occurs, the Pond is being maintained in accordance with the

operation and maintenance plan, **Exhibit C**, attached hereto and incorporated herein; and

(b) The proponent of such an activity has established, and the BCWD in writing has confirmed, that the hard surface created by the activity falls within the 74.4 acres of hard surface within the Kern Center Commercial Area to which the City has allocated Pond capacity.

Compliance with paragraph 2.7.4(c) under this paragraph does not apply to any land presently within the City of Lake Elmo, which is not a party to this agreement and shall not receive any exemption under BCWD rules relating to development.

5. Water level, discharge and water quality monitoring, at the expense of the BCWD, shall be performed in accordance with the monitoring plan, **Exhibit D**, attached hereto and incorporated herein. Each party may do other monitoring as it wishes.

6. The BCWD shall develop materials to inform interested persons about the Project and related water resource matters. The cost to prepare and install signage and other information structures shall be the responsibility of the BCWD. The BCWD shall maintain these structures at its expense. Any materials or other publicity regarding the Project shall identify the State, the City and the BCWD as sponsoring bodies. Placement of any such structures shall be subject to the approval of the City. The City and the BCWD will cooperate to determine the location of signage and information structures.

7. The City shall be responsible for the removal of accumulated sediments according to the terms of **Exhibit C**, "Routine Maintenance," subject to paragraph 12(a), below.

8. Each party shall bear the cost of those actions for which it is responsible under this agreement, except as explicitly stated otherwise herein.

9. Any communications specified herein shall be addressed as follows:

TO THE BCWD:	TO THE CITY:
Karen Kill, Administrator Brown's Creek Watershed District 1380 West Frontage Road, Highway 36 Stillwater, MN 55082	Eric Johnson, Administrator City of Oak Park Heights P.O. Box 2007 Oak Park Heights, MN 55082

10. The City shall provide a copy of this agreement to its contractor. By entering into this agreement and acting pursuant hereto, the BCWD is assuming no duty of care with respect to the contractor or any other third party, and nothing herein shall create any right

of action by the contractor or any other third party against the BCWD. Nothing herein shall be construed as a waiver of any immunity otherwise possessed by the City or the BCWD with respect to any third party or each other.

11. Neither the BCWD nor the City shall be deemed to be an agent or representative of the other in performing any action under this agreement. This agreement is not intended as and shall not be construed as a joint powers agreement under Minnesota Statutes section 471.59. The allocation of rights in materials and intellectual property under this Project shall conform to the grant agreement.

12. The City and the BCWD recognize certain risks inherent in the construction of the proposed facilities, and intend to address those risks cooperatively, should they occur, as follows:

(a) The BCWD assumes no liability to the City related to the design other than that liability, if any, derivative of a failure of the BCWD engineer to exercise a professional standard of care in preparing the design. If the Pond fails to demonstrate performance per **Exhibit C**, the City and the BCWD will consult on corrective measures. The City's obligation for removal of accumulated sediments under paragraph 7, above, will not commence until performance has been demonstrated, but the BCWD will not otherwise be compelled to take corrective action. The City assumes no liability for the design of the project as prepared by the BCWD consulting engineer.

(b) The City shall manage the construction contract to avoid a deviation from the plans and specifications that may affect the volume control performance of the Pond. If circumstances arise that may result in an unforeseeable construction cost increase or delay, the parties will consult on how to proceed. Neither party will be liable to the other for any project cost increase resulting from such circumstances except as agreed to following consultation. The City, in its discretion, will be responsible to manage the contract to avoid or minimize contract cost increases in the event that such circumstances arise.

(c) If after the City's maintenance obligation has commenced the Pond fails to perform effectively per **Exhibit C**, the City and the BCWD will consult on corrective measures. The City will not otherwise be compelled to take corrective action beyond the maintenance specified in **Exhibit C**.

(d) If in the future the City and the BCWD agree that the Pond has ceased to provide meaningful volume control and that measures will not be taken to restore meaningful control, this agreement will be amended to relieve the City of its maintenance obligation for removal of accumulated sediments under paragraph 7,

above. This would not affect any City obligation deriving from a source other than this agreement to maintain the Pond for water quality or other purposes.

13. This agreement shall take effect on full execution and expire five years thereafter, except that paragraphs 4 through 12 shall survive expiration. The agreement may be amended only in writing signed by both parties.

IN WITNESS WHEREOF, the parties have executed this Cooperative Agreement.

BROWN'S CREEK WATERSHED DISTRICT

By: _____
President

Date: Nov. 30, 2004

APPROVED AS TO FORM
AND EXECUTION

By _____
Smith Parker, P.L.L.P.

CITY OF OAK PARK HEIGHTS

By: _____
Mayor

Date: Dec 12, 2004

APPROVED AS TO FORM
AND EXECUTION

By _____
Eckberg, Lammers, Briggs, Wolff &
Viellng, P.L.L.P.
City Attorney

Appendix B

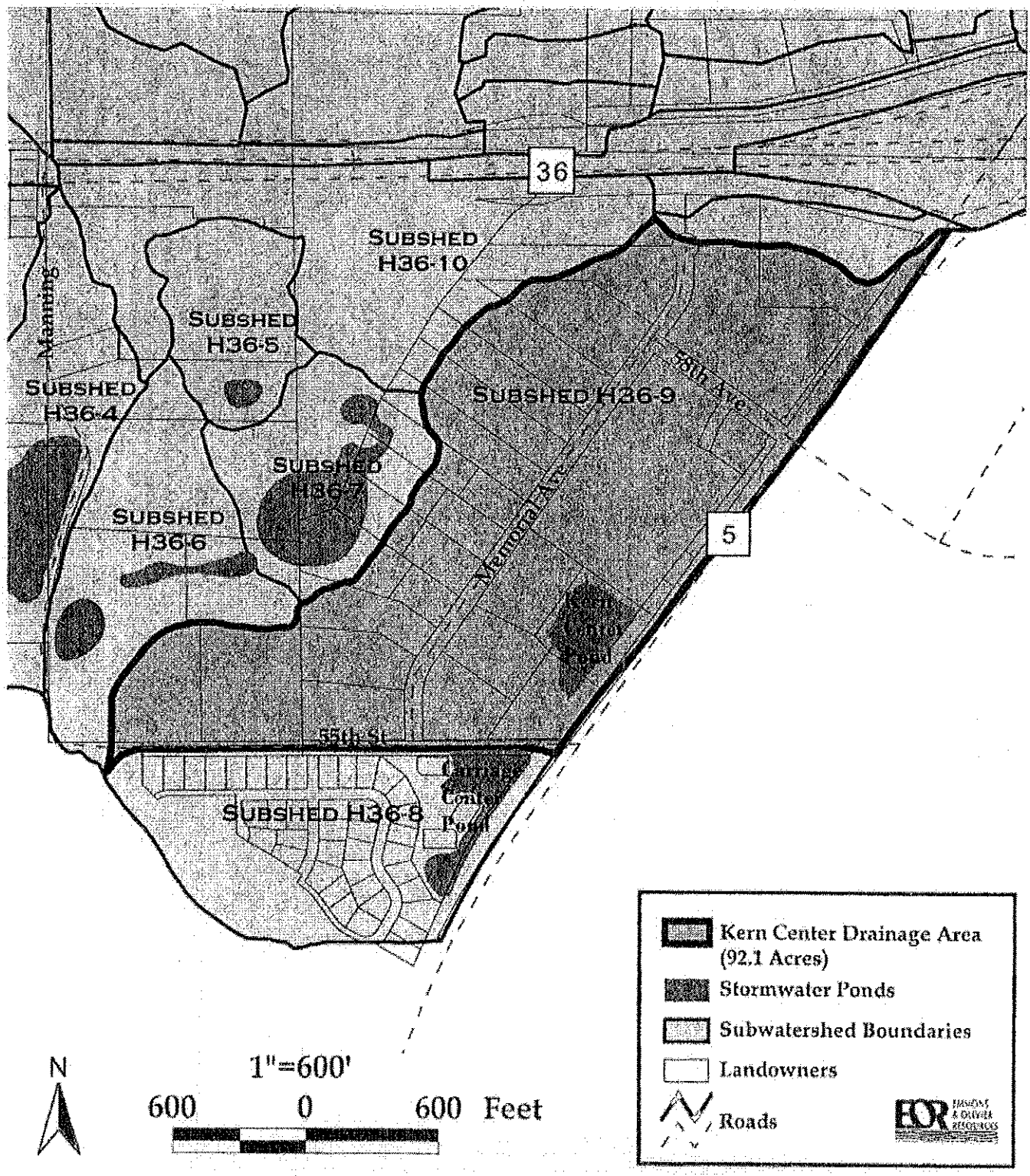

36
SUBSHED H36-10
SUBSHED H36-5
SUBSHED H36-4
SUBSHED H36-9
SUBSHED H36-7
SUBSHED H36-6
SUBSHED H36-8
Manning
58th Ave
Memorial Ave
5
55th St
Kern Center Pond
Carriage Center Pond
Kern Center Drainage Area (92.1 Acres)
Stormwater Ponds
Subwatershed Boundaries
Landowners
Roads
N
1"=600'
600 0 600 Feet

EXHIBIT C

Kern Center Commercial Area Drainage Facility
Operation and Maintenance Plan

Purpose

The overall objective of this Operation and Maintenance (O&M) Plan is to ensure the successful long-term operation of the Kern Center infiltration basin (Basin) that has been designed as part of the storm water plan for the Kern Center Commercial Area in the City of Oak Park Heights (City).

The purpose of the O&M Plan is to identify the tasks that will be needed for operation and maintenance of this facility, and standards for evaluating successful operation and maintenance. The City of Oak Park Heights will be responsible for financing and carrying out these tasks. The Brown's Creek Watershed District (BCWD) will be responsible for monitoring the infiltration basin, at its expense.

Background

The Basin for the Kern Center Commercial Area is designed to retain and infiltrate storm water runoff generated on the approximately 74 acres of commercial area that drains to the basin. The site is located within the City and Brown's Creek Watershed District.

Basin Performance Targets and Monitoring

The BCWD has determined that the Kern Center Basin has been designed to provide the additional 6.8 acre-feet of retention/infiltration required to accommodate existing and future development, up to 80 percent imperviousness, within its drainage area, while meeting the BCWD's volume control requirements. The requirements will be achieved by expanding the pond to approximately 3.6 acres, and by managing the pond at a new normal water level (NWL) that is on average 1.5 to 2 feet below the invert of the existing 12-inch orifice outlet. The BCWD estimates that given the soil types identified during the geotechnical investigation, the 1.5 to 2 feet of storage below the invert will infiltrate within a 3 to 4 day period after a storm event.

The BCWD will develop a monitoring plan that will evaluate the infiltration capacity of the basin over time. Under the monitoring plan, the BCWD will monitor pond performance for at least one year, at which time performance will be evaluated, taking annual precipitation into account. The BCWD will continue to monitor performance thereafter at a frequency and for a period it finds appropriate. For each year in which monitoring is performed, an annual monitoring report summarizing the monitoring activities completed and findings for the Kern Center Basin will be submitted to the City of Oak Park Heights.

Construction Inspection

The City will bear responsibility for inspection of the Basin construction and working with the contractor to assure that the Basin is constructed according to the plans. The BCWD will participate in on-site inspection, and will identify any concerns regarding construction-related issues to the City during construction or the warranty period. The BCWD will have no authority to direct the contractor.

Basin Performance Warranty Period

After construction is completed, the BCWD will monitor the performance of the Basin for a period of time deemed adequate by the City engineer and BCWD engineer, given precipitation patterns, plant rooting and other relevant factors, to calibrate actual performance in relation to the design target. The BCWD will report to the City on the function of the Basin during this time, identify actual performance in comparison to the target infiltration rate, and identify any other issues related to performance of the Basin. The BCWD and the City will discuss the outcomes of the monitoring, and determine whether the Basin is functioning successfully, whether changes are needed to achieve the target infiltration rate, or the target rate needs to be modified.

Vegetation Establishment Period

The City and BCWD will monitor vegetation establishment during the first year after construction is completed. Maintenance during the first year will be included in the construction contract, and will be completed by the contractor.

The City will provide in the contract that maintenance requirements and evaluation of native seeding at the Basin will conform to *Guidelines for Restoring & Managing Native Wetland Vegetation* (Minnesota DOT and Minnesota BWSR) and *MN/DOT Seeding Manual 2003.*

The City will provide in the contract that tree and shrub plantings will be monitored as well and that those that die or are in poor condition within one year after planting will be replaced by the contractor at his/her expense, and a second 1-year establishment period will begin.

Maintenance Period

The Maintenance Period for the Basin will begin after construction is completed, and after the BCWD and City agree that the design is functioning successfully in meeting the target infiltration rate identified for the Basin.

Routine Maintenance

The City will complete the following routine maintenance activities at its expense:

1. Annual inspection

The City will complete an annual inspection of the Basin to identify maintenance issues.

2. Removal of accumulated sediments

The City will remove accumulated sediments from the smaller "forebay" cells at the north and southeast sides of the large basin when the depth of sediment reaches half the depth of the basin. Sediment will be removed with light equipment that will be operated from outside the basin to the degree possible to minimize compaction and damage to plantings.

3. Vegetation maintenance

Maintenance of plantings will include the following:

a. Seeded areas—Maintenance will conform to *Guidelines for Restoring & Managing Native Wetland Vegetation* (Minnesota DOT and Minnesota BWSR) and *MN/DOT Seeding Manual 2003*. This maintenance typically includes mowing 2-3 times per season, and spot spraying weeds as needed. When sufficient litter is available, a controlled burn may replace mowing at the City's discretion.

b. Trees and shrubs – Trees and shrubs will be inspected annually. Pruning or replacement may be completed for dead or diseased plants.

c. The City will use no fertilizer near the Basin. Herbicide application will be limited to spot spraying of noxious weeds with herbicides approved for use near water bodies.

4. Erosion Control

If areas of erosion are identified within the site, the City will use appropriate methods such as fabric, seeding, plantings, or structural methods if necessary to stabilize these areas.

5. Best Management Practices

The City will encourage landowners in the drainage area to the Basin to control sediment and pollutants that may affect the operation of the Basin, including the following:

a. Use the minimum amount of sand and salt needed to maintain hard surfaces in the winter months

b. Sweep hard surfaces as early as possible in the spring

Additional Maintenance

The following criteria indicate the need to perform additional maintenance activities:

1. The Basin is no longer returning to a normal water level that is 1.5 to 2 feet below the invert elevation of the 12-inch orifice between storm events during a normal precipitation year, indicating that the available storage in the system has been reduced.

2. The time that it takes the Basin to reach its normal water level (1.5 to 2 feet below invert elevation) after a rainfall event is longer than a 3 to 4 day period, unless another rainfall event occurs during this period.

If the BCWD monitoring finds either or both of the conditions identified above, it will notify the City, and provide the results of the monitoring to the City. The BCWD and City will discuss the findings of the monitoring, and determine the actions to be taken, the responsibility for those actions, and time frame for completion of the actions.

JOINT POWERS AGREEMENT
TO PROTECT AND MANAGE
THE MIDDLE ST CROIX WATERSHED

THIS AGREEMENT, made and entered into as of the date of execution, by and between the local governmental units within the Middle St. Croix Watershed Management Organization each party realizes that the success or failure of the Middle St. Croix Water Management Organization created by this agreement is dependent upon the desire of' each member community to cooperate in the exercise of Joint Power to solve a common problem. Each party to this agreement pledges its cooperation to meet the requirements of the Metropolitan Surface Water Management Act (Minn. Stat. l03B.201 to l03B.255).

WITNESSTH:

WHEREAS, the cities and townships located within the Middle St. Croix Watershed have authority pursuant to Minn. Stat. 471.59 to jointly and/or cooperatively by agreement, exercise any powers common to the contracting parties; and,

WHEREAS, the parties are desirous of jointly and cooperatively developing a Watershed Management Plan for the Watershed and instituting programs to conserve soil and water resources through implementation of practices that preserve and use natural storage areas, control excessive volumes and rates of run-off, effectively reduce or prevent erosion and sedimentation, promote groundwater recharge, improve water quality and prevent flooding in order to protect and manage the natural and artificial water conveying systems of the Middle St. Croix Watershed.

NOW, THEREFORE, the parties to this agreement do mutually agree as follows:

ARTICLE I

General Purpose

1.1 It is the general purpose of the parties to this Agreement to establish an organization to jointly and cooperatively develop a Watershed Management Plan and program to preserve and use natural or created water storage and retention systems in order to:

a. Protect, preserve and use natural service and groundwater storage and retention systems;
b. Minimize public capital expenditures to correct flooding and water quality problems;
c. Identify and plan for means to effectively protect and improve surface and groundwater quality;
d. Establish more uniform local policies and official controls for surface and

groundwater management;

e. Prevent erosion of soil into surface water systems;
f. Promote groundwater recharge;
g. Protect and enhance fish and wildlife habitat arid water recreational facilities; and,
h. Secure the other benefits associated with the proper management of surface and groundwater.

1.2 The boundaries of the Middle St. Croix Water Management Organization (hereinafter referred to as MSCWMO) are set forth in Exhibit I attached hereto and incorporated by reference herein and shall be hereinafter referred to as the "Watershed". In general, the plan may include projects that accomplish the following:

a. Preserve and use natural *or created* water storage and retention systems in order to reduce to the greatest practical extent the public capital expenditures necessary to control excessive volumes and rates of run-off;
b. Protect and improve existing water quality in lakes and streams through proper land use and appropriate conservation practices;
c. Prevent flooding and erosion by implementing flood plain management and erosion control systems;
d. Protect and enhance fish and wildlife habitat and water recreational facilities by reducing pollutant loads to lakes, streams, and wetlands;
e. Undertake needed programs to promote groundwater recharge and protection;
f. Provide a mechanism for the review of local land and water management plans;
g. Provide a forum for resolution of future intergovernmental disputes relating to the management and protection of the Watershed;
h. Provide cooperation on a united basis on behalf of all units of government within the Watershed and with all other levels of government to facilitate natural resource protection and water management in the Watershed.
i. Provide means for review of development projects to ensure compliance with MSCWMO Watershed Management Plan requirements.

ARTICLE II

Definitions

2.1 For the purposes of this agreement, the terms shall have the meanings as defined in this Article.

a. "MSCWMO" The organization created by this agreement, the full name of which is the Middle St. Croix Water Management Organization (MSCWMO). It shall be a public agency of its members.
b. "Board" The Joint Powers Board consisting of one Manager from each of the local governmental units that is a party to this agreement, which shall be the governing body of the MSCWMO.

c. “Council” Means the governmental body of a local governmental unit that is a member of this MSCWMO.
d. “Local Governmental Unit” Means that City, Township, or other political subdivision cited in Minn. Stat. 473.852. Subd. 7.
e. “Manager” Is the person appointed to the Joint Powers Board by each Council or in the Manager’s absence, the Alternate Manager.
f. “Middle St. Croix Watershed” or “Watershed” Unless otherwise stated, means that area described and set forth within the map depicted in Exhibit I attached hereto and incorporated by reference herein.
g. “Groundwater” Is the water found in the interconnected pores found beneath the water table.

ARTICLE III

Board of Managers

3.1 The governing body of the Joint Powers Board shall be its board. Each council shall be entitled to appoint one Manager on the Board and one Alternate who may sit when the Manager is not in attendance and said Manager or Alternate shall be called a Manager.

3.2 Each Manager and Alternate shall be appointed for a three (3) year term and shall serve at the pleasure of the Council appointing such Manager, and such Manager or Alternate may be removed by the Council at any time for just cause in accordance with Minnesota Statutes 103B.227. Subd. 3: and Minnesota Rules Chapter 8410.0040.

3.3 Vacancies. A vacancy on the Joint Powers Board shall be filled by the Council whose membership position on the Joint Powers Board is vacant. The vacant position shall be filled in accordance with the requirements as set forth within Minn. Stat. §103B.227 (1995).

3.4 Compensation and Expenses. The Joint Powers Board Manager shall not be entitled to compensation or reimbursement for expenses incurred in attending meetings except to the extent the Council might determine to compensate or reimburse the expenses of the member it appoints in which case the obligation to make such payment shall be that of the individual Council and not of the MSCWMO.

3.5 Officers. The Joint Powers Board shall elect from its membership a Chairperson, Vice Chairperson, Secretary, and Treasurer and further officers as may be necessary to reasonably carry out the purposes of this agreement. All such officers shall hold office for a term of 2 years or until their successors have been duly elected by the members of the Joint Powers Board. Any such officer may only serve while a Manager of the Joint Powers Board. Vacancies in office shall be filled by the membership of the Joint Powers Board by election for the remainder of the unexpired term of such office.

Duties of Officers

1. *Chair - Presides over meetings, assists with preparation of agenda, maintains and presents annual calendar of specific responsibilities.*

2. *Vice Chair - In the absence of the Chair, fulfills all duties of the Chair.*
3. *Secretary - Meeting minutes, prepare agendas, maintain membership list.*
4. *Treasurer - Maintains checkbook, financial reports at meetings, prepares budgets and billing statements, assists with yearly financial audit.*

3.6 Quorum. One half of the members of the Board shall constitute a quorum.

3.7 Meetings. The regular meeting date of the Joint Powers Board shall be established by resolution of the Joint Powers Board and may be changed from time to time. Special meetings shall be held at the call of the Chair or by any member giving not less than seventy-two (72) hours written notice of the time, place and purpose of such meeting delivered or mailed to the residence of each Joint Powers Board manager and to the City Clerk for each member local government unit. All meetings of the Joint Powers Board are subject to Minn. Stat. Chapter 13D (The Minnesota Open Meeting Law), *and shall be governed by Robert's Rules of Order, Newly Revised 10th Edition* or later. Member local government units will be notified of meeting dates, times, and locations.

3.8 MSCWMO Joint Powers Board Office. The office of the MSCWMO shall be at: Washington Conservation District. 1380 West Frontage Road, Highway 36. Stillwater, Minnesota 55082. The Joint Powers Board will designate the official bulletin board by official resolution.

All notices to the MSCWMO or its Joint Powers Board shall be delivered or served at said office. The designated office of the MSCWMO may be changed from time to time upon an affirmative vote from a majority of its Managers at a regularly held meeting or special meeting called for that purpose.

3.9 Alternate Managers. One Alternate Manager to the Joint Powers Board shall be appointed by each party to this agreement. Alternate Managers may attend any meeting of the Joint Powers Board and in the absence of the appointed Manager have the right to vote on the behalf of the member local governmental unit that the Alternate represents. If a Joint Powers Board Manager is also an officer of the Joint Powers Board, the Alternate shall not be entitled to serve in the place of such officer when the officer is absent.

3. 10 Voting. Any action taken by the Board shall be by majority vote unless otherwise stated herein or required by law. Amendments to the annual operating budgets require a two-thirds (2/3) majority of all of the 10 managers of the Joint Powers Board.

Actions taken by the Joint Powers Board to order projects or to assess member local governmental units for improvements shall require a two-thirds (2/3) majority vote of all 10 members of the Joint Powers Board; all other matters will carry by a simple majority of those present as provided in 3.6.

ARTICLE IV

Joint Powers Board Powers and Duties

4.1 Joint Powers Board. The Joint Powers Board shall have the powers and duties set

forth within this article.

4.2 Rules and Regulations. The Joint Powers Board may prescribe and promulgate such rules from time to time, as it deems necessary to carry out its duties and the purpose of this agreement and to collect such fees as are reasonably necessary to cover the expenses of administration, permitting, and enforcement of such rules.

4.3 Watershed Management Plan. As required by law, the Joint Powers Board shall prepare and adopt a Watershed Management Plan as required by law.

4.4 Local Water Management Plan. After consideration, but before adoption by its governing body, each member local governmental unit shall submit its Local Water Management Plan to the Joint Powers Board for review of its consistency with the Watershed Management Plan of the Middle St. Croix Water Management Organization. Each member local governmental unit may also adopt, by resolution, the Middle St. Croix Watershed Management Plan, as its own local plan. The Joint Powers Board shall approve or disapprove each Local Water Management Plan or parts thereof. The Joint Powers Board shall have sixty (60) days to complete its review. If the Joint Powers Board fails to complete its review within the prescribed time period, unless an extension is agreed to by the member local governmental unit submitting the plan, the proposed plan shall be deemed approved.

4.5 Information and Data, The Joint Powers Board may acquire and record such information and data within the Watershed as it deems necessary to accomplish its purpose as set forth herein. Such information or data as collected, shall be fully available for all member local governmental units of the MSCWMO and the public. Nothing herein is intended to authorize or require a disclosure of data in violation of the Minnesota Data Privacy Act, Minnesota Statutes, Chapter 13.

4.6 Claims. As provided within Minn. Stat. §103B.211 Subd. 1, the MSCWMO through its agents and employees may enter upon land within or without the Watershed to make surveys and/or investigations to accomplish the purposes of the watershed management plan. The MSCWMO shall be liable for actual damages resulting from entry but every person who claims damages shall serve the Chairman or Secretary of the Joint Powers Board with a Notice of Claim as required by Minn. Stat. 466.05.

4.7 Contracts. The MSCWMO may make such contracts and enter into such agreements as necessary to fulfill its obligations under this agreement. Such contract or agreements shall be in accordance with the Municipal Contracting Law as set forth within Minn. Stat. §471.345 et seq.

4.8 Employment and Professional Services. The MSCWMO may obtain such professional services and/or contract for services and may also utilize existing staff of the local governmental units to the extent that the local governmental units consent thereto. The MSCWMO may also employ such other persons as it deems necessary. If staff services of a member local governmental unit are utilized, such services shall not reduce the financial commitment of the member local governmental unit to the operating fund of the Joint Powers Board unless the Joint Powers Board so authorizes the same by a majority vote of the Joint

Powers Board of Managers in such cases as where the utilization of staff services are to be substantial.

4.9 The Joint Powers Board will appoint citizen and technical advisory committees as it deems necessary and/or as required by law.

4.10 The Joint Powers Board will also establish and provide for a newsletter or other communication in the manner prescribed within Minn. Stat. §103B.227 Subd. 4.

4. 11 The Joint Powers Board shall be authorized to fund projects by use of an ad valorem tax authorized under Minn. Stat. §lO3B.241 in addition to the cost of preparing plans to implement same. MSCWMO and its member local governmental units may accumulate the proceeds of levies as an alternative to issuing bonds to finance improvements.

4.12 Pursuant to the authority of Minn. Stat. §103B.211, this Water Management Organization shall have the authority of a watershed district under Section 103D.911 to adopt a budget, and to decide the total amount necessary to be raised from ad valorem tax levies to meet the budget and further the authority of watershed districts under Section 103D.915 to certify its budget with the auditor of Washington County; and the authority of a watershed district under Section 103D.901 to file approved assessment statements with each affected county and finally have the other powers necessary to exercise the authority under clauses 1 - 3 of Minn. Stat. §103B.211 Subd.1 including the power to enter into contracts for the performance of functions with government units or persons.

4.13 The Joint Powers Board shall be authorized to fund projects in accordance with Minn. Stat. §103B.251.

4.14 The Joint Powers Board shall fulfill all responsibilities imposed by law on watershed management organizations under Minn. Stat. §103B.201 - 103B.255, including future amendments thereto (the "Act") and shall have all powers and authority that the Act allows for watershed management organizations except as explicitly modified, restricted, or withheld in this Agreement.

ARTICLE V

Annual Budget/Administrative Funding

5.1 Method of Operation. The Joint Powers Board may collect and receive money and services subject to the provisions of this agreement from the member local governmental units and from any other sources approved by the Joint Powers Board and it may incur expenses and make expenditures and disbursements necessary and incidental to the effectuation of the purposes of this agreement. Funds may be expended by the Joint Powers Board in accordance with procedures established herein. Orders, checks, and drafts shall be signed by both the Chairperson or Vice-Chairperson and the Treasurer. Other legal instruments shall be executed on behalf of the Joint Powers Board by the Chairperson or Vice-Chairperson and the Secretary.

5.2 On or before August 1 of each year, the Joint Powers Board shall prepare an annual

work program relating to implementation of the Watershed Management Plan and other watershed issues.

5.3 Operating Funds. On or before August 1 of each year, the Joint Powers Board shall prepare an operating budget for the following year for the purpose of providing funds to operate the Joint Powers Board's business.

5.4 Notwithstanding the provisions of Article of IV of this agreement, the annual administrative expenses shall be budgeted and borne by each voting member local governmental unit in the following manner:

a) 40 percent shall be borne based upon the total acreage of each member local governmental unit based as a percentage of the acreage of the entire Middle St. Croix Watershed;
b) Twenty percent shall be borne by each member local governmental unit based upon the tax capacity of the particular community's area of the watershed as a percentage of the tax capacity of the entire Middle St. Croix Watershed. *To determine the tax capacity portion of each community in the watershed to use in the formula described here, the total tax capacity of the particular community is multiplied by the percentage of the acreage that community has within the Middle St. Croix Watershed*;
c) Forty percent shall be borne by each member local governmental unit based upon population of particular community's area of the watershed as a percentage of the total population of the entire Middle St. Croix Watershed. *To determine the population portion of each community in the watershed to use in the formula described here, the total population of the particular community is multiplied by the percentage of the acreage that community has within the Middle St. Croix Watershed.*

The budget shall be adopted by the Joint Powers Board upon a two-thirds (2/3) majority vote of all 10 members of the Joint Powers Board. After approval, the Secretary shall certify the adopted budget to each member local governmental unit on or before September 1 of each year, together with a statement showing the amounts due from each period. Each member local governmental unit shall pay over to the Joint Powers Board the amount owing, in two (2) equal installments, the first on or before January 1, and the second on or before July 1, in accordance with the tax year for which the amount due is being paid.

5.5 Annual Accounts. By May 1 of each year, the Joint Powers Board shall make and file a full and complete financial report, an activity report, and an audit report to each member local governmental unit and to the State Board of Water and Soil Resources, in accordance with Minnesota Rules. Chapter 8410.0150.

ARTICLE VI

Works of Improvement

6.1 Initiation of Improvement Projects. Works of improvement for the protection and management of the Middle St. Croix Watershed including but not limited to improvements to property, land acquisition, easements, or rights-of-way may be initiated by recommendation of the MSCWMO or petition to the Joint Powers Board by the Council of one or more member

local government units. In either case, the MSCWMO shall conduct a study to determine first, whether or not such proposed improvements are consistent with the adopted MSCWMO Watershed Management Plan and will result in a benefit to the Watershed in part or in whole, and second, whether or not the proposed improvement is feasible and as to whether it should be best made as proposed or in connection with some other improvement. Finally, the MSCWMO shall determine the estimated cost of the improvement as recommended.

For projects that will be funded by ad valorem tax levies, the Joint Powers Board shall follow procedures specified by law.

For projects that will be funded in whole or in part by assessments against member local government units, the MSCWMO shall follow the following procedures: Upon concluding such determination, the MSCWMO may make a recommendation of the improvement to the Council of the member local governmental unit that the MSCWMO determines will be directly benefited thereby. The recommendation of the MSCWMO shall include a description of the proposed improvement together with its estimated costs and all engineering or staff reports related thereto and an allocation of costs among benefited member local government units. The recommendation shall also specify whether the improvement will be constructed by the MSCWMO or a member local government unit. In the event the original proposal for the improvement was submitted by all the local governmental units that are specifically and directly benefited by the proposed improvement, such a recommendation from the MSCWMO to the Council(s) shall not be required. Upon the submission of such a recommendation, if required above, to the Council, each such Council to whom the MSCWMO submitted the recommendation shall respond in writing within ninety (90) days of the date of receipt of the recommendation. In the event a Council does not respond within ninety (90) days of the date of receipt the recommendation of the MSCWMO, the Council shall be deemed to have consented to the improvement.

In the event the Council of any local government unit directly benefited by any proposed improvement timely objects to same, such proposed improvement may only be ordered by the Joint Powers Board after conducting a public hearing on the improvement and then only on an affirmative vote of two-thirds (2/3) of the Managers. Such public hearings shall be noticed and conducted in the manner established and set forth in Minnesota Statute 103D.741.

6.2 Local Improvements. When works of improvement are initiated by the Council of a party or parties, said party or parties shall submit a petition to the MSCWMO setting forth the description of the proposed work and the improvement, the benefits to be realized by said improvements, its total estimated cost and a statement of its feasibility. The MSCWMO shall review and make recommendations on the proposed improvement and the compliance with the adopted MSCWMO Watershed Management Plan in accordance with the provisions of this agreement all to be submitted back to the particular Council within sixty (60) days of the date of receipt of the original proposal. In the event the MSCWMO does not respond to the particular Council within sixty (60) days of the date of receipt of the proposal for improvement, the MSCWMO shall be deemed to have consented to such proposal for improvement unless an

extension of time has been granted by the Council.

In reviewing the proposal of the member local governmental unit for improvement projects, the MSCWMO shall determine whether or not the same is consistent with the adopted MSCWMO Watershed Management Plan. In the event the MSCWMO determines the proposed improvements by the member local governmental unit to be inconsistent with the approved MSCWMO Watershed Management Plan, the MSCWMO shall so notify the member local governmental unit in the time prescribed above and in such case the member local governmental unit shall not proceed with the proposed improvement. Review and approval by the MSCWMO shall not be required for local projects that are identified in local surface water management plans previously approved by the MSCWMO.

6.3. Tax District. Each member local governmental unit may establish a watershed management tax district for the portion of its corporate boundaries that lie within the Watershed for the purposes of paying the cost of the planning required to develop a Watershed Management Plan, or implement capital improvement projects. The tax district shall be established pursuant to the provisions of Minnesota Statutes Section 103B.245. Neither the provisions of this agreement or the establishment of a tax district shall prevent the member local governmental units from electing to finance capital improvements by other means, such as establishing a storm water utility.

6.4 Binding Arbitration. Any member local government unit that is aggrieved by the determination of the Joint Powers Board as to the allocation of the costs of an improvement shall have 60 days after receipt of the recommendation of the Joint Powers Board referred to in Section 6.1 to appeal such recommendation. The appeal shall be in writing and shall be addressed to the Joint Powers Board asking for arbitration. The determination of the appeal shall be referred to a Board of Arbitration. The Board of Arbitration shall consist of three persons; one to be appointed by the Joint Powers Board; one to be appointed by the appealing local government unit; and the third to be appointed by the two so selected. In the event the two persons so selected do not appoint the third person within 15 days after their appointment, the Chief Judge of the Washington County district court shall have jurisdiction to appoint, upon application of either or both of the two earlier selected, the third person to the Board of Arbitration. The third person selected shall not be a resident of any member governmental unit. The arbitrators' expenses and fees, together with other expenses, not including counsel fees, incurred in the conduct of the arbitration shall be divided equally between the MSCWMO and the appealing member. Arbitration shall be conducted in accordance with Minnesota Statutes, Chapter 572.

ARTICLE VII

Miscellaneous Provisions

7.1 Insurance. The Joint Powers Board may contract for or purchase such insurance as the it deems reasonable.

7.2 The Joint Powers Board shall not have the power to levy a special assessment on any privately or publicly owned land. The Joint Powers Board shall have the power to require any member local government unit to contribute to costs allocated or assessed according to the other provisions of this agreement.

7.3 The Joint Powers Board shall not have the power to issue certificates, bonds or warrants.

7.4 The MSCWMO shall not have the power of eminent domain and shall not own any interest in real property. (All interests in land shall be held in the name of the member local government unit wherein said lands are located).

7.5 The MSCWMO has the ability to charge fees to member local government units to cover the cost of reviews of projects within the member local government unit boundaries and applied for and/or initiated by the member communities to ensure projects are meeting the performance standards in the Watershed Management Plan.

7.6 The MSCWMO has the authority to establish and maintain a wetland enhancement and replacement fund from funds collected from developers constructing projects having impacts on wetlands subject to the limitations of the law.

ARTICLE VIII

Duration

8.1 Each member local governmental unit agrees to be bound by the terms of this agreement until such time as it is dissolved.

8.2 This agreement may be terminated by dissolution pursuant to the procedures set forth below or by the unanimous consent of the parties of this agreement.

8.3 Dissolution. Any member local governmental unit may petition the board to dissolve the agreement. Upon thirty (30) days notice in writing of each member local governmental unit, the board shall hold a hearing and upon a favorable vote by three-fourths (3/4) of all the eligible votes of the then existing Board of Managers, the Board may by resolution, recommend that the Joint Powers Board be dissolved. Notice of such recommendation shall be sent to Washington County and the Board of Water and Soil Resources as a notice of intent to dissolve, and no dissolution shall be effective until at least 90 days following such notice. Said resolution shall be submitted to each member local governmental unit and if ratified by three-fourths (3/4) of the member local governmental units within ninety (90) days, said board shall dissolve the MSCWMO allowing a reasonable time to complete work in progress and to dispose of personal property owned by the Joint Powers Board and/or the MSCWMO, if any. Upon dissolution of the Joint Powers Board and/or the MSCWMO, all property of the Joint Powers Board and/or the MSCWMO shall be sold and the proceeds thereof together with monies on hand shall be distributed to the member local governmental units of the Joint Powers Board. Such distribution of the Joint Powers Board and/or the MSCWMO assets shall be made in proportion to total contribution of the Joint Powers Board required by the last annual budget.

ARTICLE IX

Effective Date

This agreement shall be in full force and effect upon the filing of the certified copy of the Resolution approving said agreement by each member local governmental unit.

ARTICLE X

Amendment

The Joint Powers Board and/or the Councils of the member local governmental units may recommend changes and amendments to this agreement. Such recommendation shall be forwarded in writing, to all of the Councils of the member local governmental units. Amendments shall be adopted by three-fourths (3/4) vote of the Councils of the member local governmental units within ninety (90) days of the referral. However, any amendment which changes the method of approval for improvements or the financing of the Joint Powers Board must be unanimously approved.

IN WITNESS WHEREOF, the parties hereto have executed this agreement as of the date of complete execution of the parties.

CITY OF AFTON

SEAL

Dated: 1-26-06

By: _____
Mayor

ATTEST: _____
City Clerk

CITY OF BAYPORT

SEAL

Dated: 2/7/06

By: _____
Mayor

ATTEST: _____
City Clerk

TOWN OF BAYTOWN

SEAL

Dated: 2-6-06

By: _____
Chairperson

ATTEST: Constance M. Fredhave
Town Clerk

SEAL

Dated: 1/30/06

CITY OF LAKELAND

By: Robert W. Craggs

Mayor

ATTEST:

Chris Woodbury

City Clerk

SEAL

Dated: 2/5/06

CITY OF LAKELAND SHORES

By: Randy Kay

Mayor

ATTEST:

Cindy Edward

City Clerk

SEAL

Dated: 2/7/06

CITY OF LAKE ST. CROIX BEACH

By: Laurel March

Mayor

ATTEST:

Cindy J Reiter

City Clerk

SEAL

Dated: 1-24-06

CITY OF LAKE ST. CROIX BEACH

By: _____
Mayor

ATTEST:

_____
City Clerk

SEAL

Dated: 2/7/06

CITY OF ST. MARY'S POINT

By: _____
Mayor

ATTEST:

_____
City Clerk

SEAL

Dated: 2.7.06

CITY OF STILLWATER

By: _____
Mayor

ATTEST:

_____
City Clerk

SEAL

Dated: 2-3-06

CITY OF OAK PARK HEIGHTS

By: _____
Mayor

ATTEST: _____
City Clerk

SEAL

Dated: 2-7-06

TOWN OF WEST LAKELAND

By: John McPherson
Chairperson

ATTEST: Susan Asunsa
Town Clerk

COOPERATIVE AGREEMENT
Between the Brown's Creek Watershed District
and the City of Oak Park Heights

Kern Center Pond, Oak Park Heights

This Agreement is made by and between the Brown's Creek Watershed District ("BCWD"), a watershed district with powers pursuant to Minnesota Statutes Chapters 103B and 103D, and the City of Oak Park Heights (hereinafter referred to as "City"), a political subdivision of the State of Minnesota.

Recitals and Statement of Purpose

WHEREAS the BCWD has an approved Watershed Management Plan that identifies regional stormwater detention as a priority need for reducing stormwater flow rates, localized flooding and water quality degradation within the watershed and establishes a program for the demonstration of infiltration and related stormwater management practices;

WHEREAS the Kern Center Pond ("Pond") is a regional ponding facility constructed and maintained by the City for stormwater management;

WHEREAS Pond redesign, including the incorporation of regional infiltration, will further the purposes and goals of the BCWD and provide a useful site to educate and inform interested persons about innovative stormwater management concepts and water resource matters generally;

WHEREAS the City and the BCWD wish to collaborate in a redesign of the Pond for the purpose of regional infiltration, and the City agrees to assume responsibility for construction and maintenance, as defined in the "Kern Center Commercial Area Drainage Facility Operation and Maintenance Plan" (together, the "Project");

WHEREAS BCWD Rule 2.7.4 allows for regional stormwater management in place of site-based management if pursuant to a cooperative agreement with the BCWD, and the City would like to invoke this rule through regional management for the Kern Center Drainage Area, as shown in Exhibit B, which comprises 92.1 acres draining to the Pond (of which 17.7 +/- acres lies within the City of Lake Elmo);

WHEREAS the parties acknowledge that their ability to achieve Project objectives depends on each party satisfactorily and promptly performing its individual obligations and working cooperatively with the other party;

WHEREAS the Project will be funded in part through a Local Water Planning Challenge Grant of the Minnesota Board of Water and Soil Resources, and the grant agreement imposes certain requirements on the BCWD, the Local Governmental Unit and Fiscal Agent, referred to as "Grantee" in said grant;

THEREFORE the parties enter into this agreement to document their understanding of the scope of and responsibilities for the Project and facilitate communication and cooperation to ensure successful completion of the Project.

Agreement

1. The design plans have been prepared and signed by the BCWD Engineer and provided in both electronic and hard copy to the City's Engineer. The specifications based on the design plans have been prepared by the City's engineering consultant. These design plans, dated 11/03/04, are attached as **Exhibit A** to this agreement and incorporated herein.

2. The final bid documents have been prepared and signed by the City's Engineer. The City shall construct or provide for construction in accordance with **Exhibit A**. The City shall acquire all property rights and permits as needed, including a BCWD permit as applicable. The BCWD shall waive any administrative or permit fees to the City associated with the Project. Bid preparation and evaluation, contract administration and construction management shall be the City's responsibility, subject to grant reimbursement if applicable. At the City's request, the BCWD shall assist the City in the cost-effective disposition of excavated materials.

3. The BCWD shall be given notice of pre-construction and construction meetings and shall be permitted access to the site and to Project documents in order to perform construction observation. Notwithstanding, it shall be the responsibility of the City to ensure that construction conforms to **Exhibit A**. When construction is completed, the City shall provide the BCWD as-built drawings certified by a professional engineer. The BCWD shall bear its own costs for its activity under this paragraph.

4. On a written determination by the BCWD that the construction is complete in accordance with the final plans and specifications and the terms of the BCWD permit, the provisions of BCWD Rules, paragraph 2.7.4(c), shall be deemed to be met for all parcels within the Kern Center Drainage Area, which area is bounded as shown in **Exhibit B**, attached hereto and incorporated herein. Notwithstanding, paragraph 2.7.4 shall be deemed to apply to a proposed activity only if:

(a) At the time land disturbance for an activity described at BCWD Rule paragraph 2.2 occurs, the Pond is being maintained in accordance with the

operation and maintenance plan, **Exhibit C**, attached hereto and incorporated herein; and

(b) The proponent of such an activity has established, and the BCWD in writing has confirmed, that the hard surface created by the activity falls within the 74.4 acres of hard surface within the Kern Center Commercial Area to which the City has allocated Pond capacity.

Compliance with paragraph 2.7.4(c) under this paragraph does not apply to any land presently within the City of Lake Elmo, which is not a party to this agreement and shall not receive any exemption under BCWD rules relating to development.

5. Water level, discharge and water quality monitoring, at the expense of the BCWD, shall be performed in accordance with the monitoring plan, **Exhibit D**, attached hereto and incorporated herein. Each party may do other monitoring as it wishes.

6. The BCWD shall develop materials to inform interested persons about the Project and related water resource matters. The cost to prepare and install signage and other information structures shall be the responsibility of the BCWD. The BCWD shall maintain these structures at its expense. Any materials or other publicity regarding the Project shall identify the State, the City and the BCWD as sponsoring bodies. Placement of any such structures shall be subject to the approval of the City. The City and the BCWD will cooperate to determine the location of signage and information structures.

7. The City shall be responsible for the removal of accumulated sediments according to the terms of **Exhibit C**, "Routine Maintenance," subject to paragraph 12(a), below.

8. Each party shall bear the cost of those actions for which it is responsible under this agreement, except as explicitly stated otherwise herein.

9. Any communications specified herein shall be addressed as follows:

TO THE BCWD:	TO THE CITY:
Karen Kill, Administrator Brown's Creek Watershed District 1380 West Frontage Road, Highway 36 Stillwater, MN 55082	Eric Johnson, Administrator City of Oak Park Heights P.O. Box 2007 Oak Park Heights, MN 55082

10. The City shall provide a copy of this agreement to its contractor. By entering into this agreement and acting pursuant hereto, the BCWD is assuming no duty of care with respect to the contractor or any other third party, and nothing herein shall create any right

of action by the contractor or any other third party against the BCWD. Nothing herein shall be construed as a waiver of any immunity otherwise possessed by the City or the BCWD with respect to any third party or each other.

11. Neither the BCWD nor the City shall be deemed to be an agent or representative of the other in performing any action under this agreement. This agreement is not intended as and shall not be construed as a joint powers agreement under Minnesota Statutes section 471.59. The allocation of rights in materials and intellectual property under this Project shall conform to the grant agreement.

12. The City and the BCWD recognize certain risks inherent in the construction of the proposed facilities, and intend to address those risks cooperatively, should they occur, as follows:

(a) The BCWD assumes no liability to the City related to the design other than that liability, if any, derivative of a failure of the BCWD engineer to exercise a professional standard of care in preparing the design. If the Pond fails to demonstrate performance per **Exhibit C**, the City and the BCWD will consult on corrective measures. The City's obligation for removal of accumulated sediments under paragraph 7, above, will not commence until performance has been demonstrated, but the BCWD will not otherwise be compelled to take corrective action. The City assumes no liability for the design of the project as prepared by the BCWD consulting engineer.

(b) The City shall manage the construction contract to avoid a deviation from the plans and specifications that may affect the volume control performance of the Pond. If circumstances arise that may result in an unforeseeable construction cost increase or delay, the parties will consult on how to proceed. Neither party will be liable to the other for any project cost increase resulting from such circumstances except as agreed to following consultation. The City, in its discretion, will be responsible to manage the contract to avoid or minimize contract cost increases in the event that such circumstances arise.

(c) If after the City's maintenance obligation has commenced the Pond fails to perform effectively per **Exhibit C**, the City and the BCWD will consult on corrective measures. The City will not otherwise be compelled to take corrective action beyond the maintenance specified in **Exhibit C**.

(d) If in the future the City and the BCWD agree that the Pond has ceased to provide meaningful volume control and that measures will not be taken to restore meaningful control, this agreement will be amended to relieve the City of its maintenance obligation for removal of accumulated sediments under paragraph 7,

above. This would not affect any City obligation deriving from a source other than this agreement to maintain the Pond for water quality or other purposes.

13. This agreement shall take effect on full execution and expire five years thereafter, except that paragraphs 4 through 12 shall survive expiration. The agreement may be amended only in writing signed by both parties.

IN WITNESS WHEREOF, the parties have executed this Cooperative Agreement.

BROWN'S CREEK WATERSHED DISTRICT

By: _____
President

Date: Nov. 30, 2004

APPROVED AS TO FORM
AND EXECUTION

By _____
Smith Parker, P.L.L.P.

CITY OF OAK PARK HEIGHTS

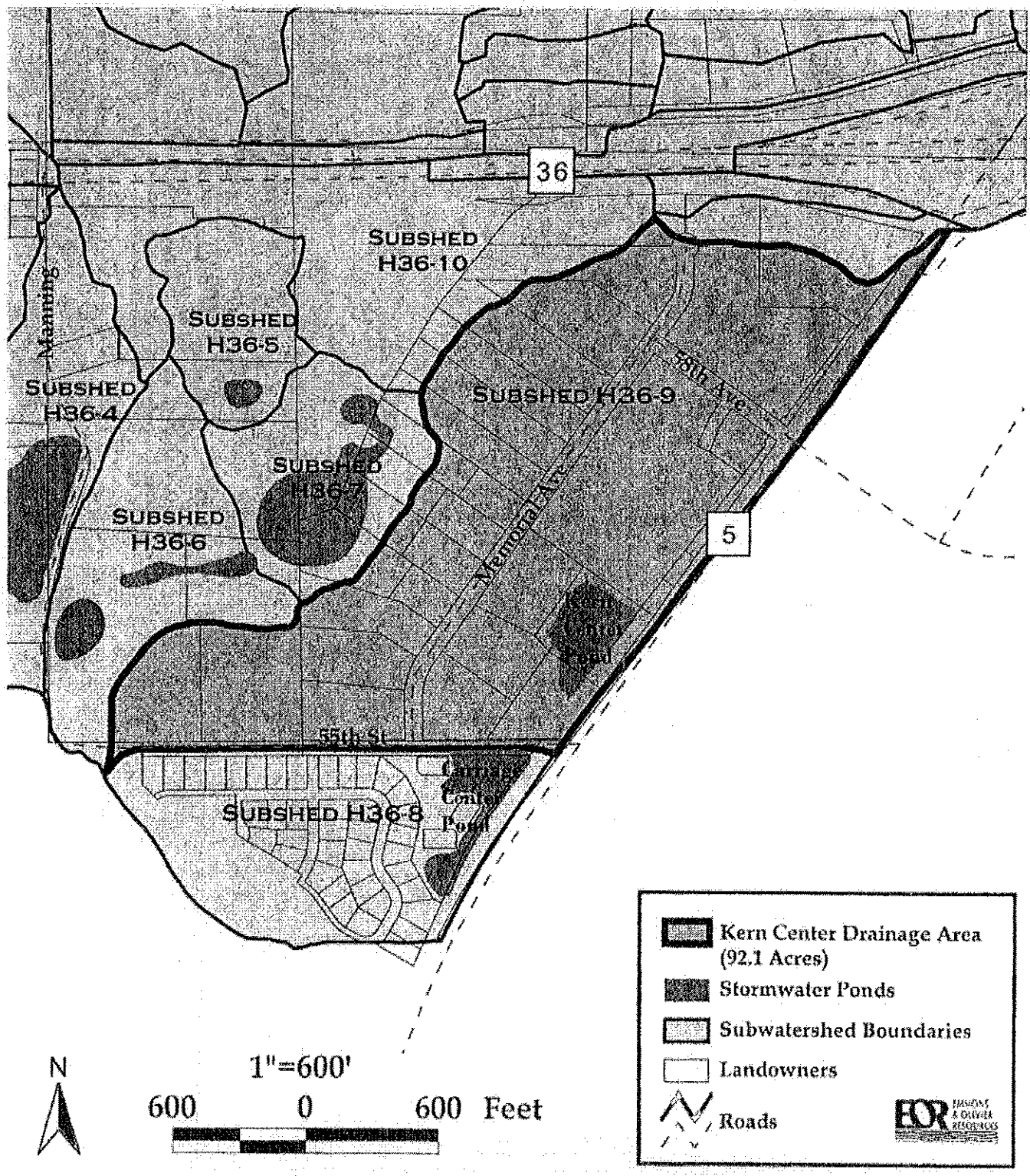
By: _____
Mayor

Date: Dec 12, 2004

APPROVED AS TO FORM
AND EXECUTION

By _____
Eckberg, Lammers, Briggs, Wolff &
Viellng, P.L.L.P.
City Attorney

Appendix B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SUBSHED H36-8
Manning
58th Ave
Memorial Ave
5
55th St
Kern Center Pond
Carriage Center Pond
Kern Center Drainage Area (92.1 Acres)
Stormwater Ponds
Subwatershed Boundaries
Landowners
Roads
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1"=600'
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EXHIBIT C

Kern Center Commercial Area Drainage Facility
Operation and Maintenance Plan

Purpose

The overall objective of this Operation and Maintenance (O&M) Plan is to ensure the successful long-term operation of the Kern Center infiltration basin (Basin) that has been designed as part of the storm water plan for the Kern Center Commercial Area in the City of Oak Park Heights (City).

The purpose of the O&M Plan is to identify the tasks that will be needed for operation and maintenance of this facility, and standards for evaluating successful operation and maintenance. The City of Oak Park Heights will be responsible for financing and carrying out these tasks. The Brown's Creek Watershed District (BCWD) will be responsible for monitoring the infiltration basin, at its expense.

Background

The Basin for the Kern Center Commercial Area is designed to retain and infiltrate storm water runoff generated on the approximately 74 acres of commercial area that drains to the basin. The site is located within the City and Brown's Creek Watershed District.

Basin Performance Targets and Monitoring

The BCWD has determined that the Kern Center Basin has been designed to provide the additional 6.8 acre-feet of retention/infiltration required to accommodate existing and future development, up to 80 percent imperviousness, within its drainage area, while meeting the BCWD's volume control requirements. The requirements will be achieved by expanding the pond to approximately 3.6 acres, and by managing the pond at a new normal water level (NWL) that is on average 1.5 to 2 feet below the invert of the existing 12-inch orifice outlet. The BCWD estimates that given the soil types identified during the geotechnical investigation, the 1.5 to 2 feet of storage below the invert will infiltrate within a 3 to 4 day period after a storm event.

The BCWD will develop a monitoring plan that will evaluate the infiltration capacity of the basin over time. Under the monitoring plan, the BCWD will monitor pond performance for at least one year, at which time performance will be evaluated, taking annual precipitation into account. The BCWD will continue to monitor performance thereafter at a frequency and for a period it finds appropriate. For each year in which monitoring is performed, an annual monitoring report summarizing the monitoring activities completed and findings for the Kern Center Basin will be submitted to the City of Oak Park Heights.

Construction Inspection

The City will bear responsibility for inspection of the Basin construction and working with the contractor to assure that the Basin is constructed according to the plans. The BCWD will participate in on-site inspection, and will identify any concerns regarding construction-related issues to the City during construction or the warranty period. The BCWD will have no authority to direct the contractor.

Basin Performance Warranty Period

After construction is completed, the BCWD will monitor the performance of the Basin for a period of time deemed adequate by the City engineer and BCWD engineer, given precipitation patterns, plant rooting and other relevant factors, to calibrate actual performance in relation to the design target. The BCWD will report to the City on the function of the Basin during this time, identify actual performance in comparison to the target infiltration rate, and identify any other issues related to performance of the Basin. The BCWD and the City will discuss the outcomes of the monitoring, and determine whether the Basin is functioning successfully, whether changes are needed to achieve the target infiltration rate, or the target rate needs to be modified.

Vegetation Establishment Period

The City and BCWD will monitor vegetation establishment during the first year after construction is completed. Maintenance during the first year will be included in the construction contract, and will be completed by the contractor.

The City will provide in the contract that maintenance requirements and evaluation of native seeding at the Basin will conform to *Guidelines for Restoring & Managing Native Wetland Vegetation* (Minnesota DOT and Minnesota BWSR) and *MN/DOT Seeding Manual 2003.*

The City will provide in the contract that tree and shrub plantings will be monitored as well and that those that die or are in poor condition within one year after planting will be replaced by the contractor at his/her expense, and a second 1-year establishment period will begin.

Maintenance Period

The Maintenance Period for the Basin will begin after construction is completed, and after the BCWD and City agree that the design is functioning successfully in meeting the target infiltration rate identified for the Basin.

Routine Maintenance

The City will complete the following routine maintenance activities at its expense:

1. Annual inspection

The City will complete an annual inspection of the Basin to identify maintenance issues.

2. Removal of accumulated sediments

The City will remove accumulated sediments from the smaller "forebay" cells at the north and southeast sides of the large basin when the depth of sediment reaches half the depth of the basin. Sediment will be removed with light equipment that will be operated from outside the basin to the degree possible to minimize compaction and damage to plantings.

3. Vegetation maintenance

Maintenance of plantings will include the following:

a. Seeded areas—Maintenance will conform to *Guidelines for Restoring & Managing Native Wetland Vegetation* (Minnesota DOT and Minnesota BWSR) and *MN/DOT Seeding Manual 2003*. This maintenance typically includes mowing 2-3 times per season, and spot spraying weeds as needed. When sufficient litter is available, a controlled burn may replace mowing at the City's discretion.

b. Trees and shrubs – Trees and shrubs will be inspected annually. Pruning or replacement may be completed for dead or diseased plants.

c. The City will use no fertilizer near the Basin. Herbicide application will be limited to spot spraying of noxious weeds with herbicides approved for use near water bodies.

4. Erosion Control

If areas of erosion are identified within the site, the City will use appropriate methods such as fabric, seeding, plantings, or structural methods if necessary to stabilize these areas.

5. Best Management Practices

The City will encourage landowners in the drainage area to the Basin to control sediment and pollutants that may affect the operation of the Basin, including the following:

a. Use the minimum amount of sand and salt needed to maintain hard surfaces in the winter months

b. Sweep hard surfaces as early as possible in the spring

Additional Maintenance

The following criteria indicate the need to perform additional maintenance activities:

1. The Basin is no longer returning to a normal water level that is 1.5 to 2 feet below the invert elevation of the 12-inch orifice between storm events during a normal precipitation year, indicating that the available storage in the system has been reduced.

2. The time that it takes the Basin to reach its normal water level (1.5 to 2 feet below invert elevation) after a rainfall event is longer than a 3 to 4 day period, unless another rainfall event occurs during this period.

If the BCWD monitoring finds either or both of the conditions identified above, it will notify the City, and provide the results of the monitoring to the City. The BCWD and City will discuss the findings of the monitoring, and determine the actions to be taken, the responsibility for those actions, and time frame for completion of the actions.

JOINT POWERS AGREEMENT
TO PROTECT AND MANAGE
THE MIDDLE ST CROIX WATERSHED

THIS AGREEMENT, made and entered into as of the date of execution, by and between the local governmental units within the Middle St. Croix Watershed Management Organization each party realizes that the success or failure of the Middle St. Croix Water Management Organization created by this agreement is dependent upon the desire of' each member community to cooperate in the exercise of Joint Power to solve a common problem. Each party to this agreement pledges its cooperation to meet the requirements of the Metropolitan Surface Water Management Act (Minn. Stat. l03B.201 to l03B.255).

WITNESSTH:

WHEREAS, the cities and townships located within the Middle St. Croix Watershed have authority pursuant to Minn. Stat. 471.59 to jointly and/or cooperatively by agreement, exercise any powers common to the contracting parties; and,

WHEREAS, the parties are desirous of jointly and cooperatively developing a Watershed Management Plan for the Watershed and instituting programs to conserve soil and water resources through implementation of practices that preserve and use natural storage areas, control excessive volumes and rates of run-off, effectively reduce or prevent erosion and sedimentation, promote groundwater recharge, improve water quality and prevent flooding in order to protect and manage the natural and artificial water conveying systems of the Middle St. Croix Watershed.

NOW, THEREFORE, the parties to this agreement do mutually agree as follows:

ARTICLE I

General Purpose

1.1 It is the general purpose of the parties to this Agreement to establish an organization to jointly and cooperatively develop a Watershed Management Plan and program to preserve and use natural or created water storage and retention systems in order to:

a. Protect, preserve and use natural service and groundwater storage and retention systems;
b. Minimize public capital expenditures to correct flooding and water quality problems;
c. Identify and plan for means to effectively protect and improve surface and groundwater quality;
d. Establish more uniform local policies and official controls for surface and

groundwater management;

e. Prevent erosion of soil into surface water systems;
f. Promote groundwater recharge;
g. Protect and enhance fish and wildlife habitat arid water recreational facilities; and,
h. Secure the other benefits associated with the proper management of surface and groundwater.

1.2 The boundaries of the Middle St. Croix Water Management Organization (hereinafter referred to as MSCWMO) are set forth in Exhibit I attached hereto and incorporated by reference herein and shall be hereinafter referred to as the "Watershed". In general, the plan may include projects that accomplish the following:

a. Preserve and use natural *or created* water storage and retention systems in order to reduce to the greatest practical extent the public capital expenditures necessary to control excessive volumes and rates of run-off;
b. Protect and improve existing water quality in lakes and streams through proper land use and appropriate conservation practices;
c. Prevent flooding and erosion by implementing flood plain management and erosion control systems;
d. Protect and enhance fish and wildlife habitat and water recreational facilities by reducing pollutant loads to lakes, streams, and wetlands;
e. Undertake needed programs to promote groundwater recharge and protection;
f. Provide a mechanism for the review of local land and water management plans;
g. Provide a forum for resolution of future intergovernmental disputes relating to the management and protection of the Watershed;
h. Provide cooperation on a united basis on behalf of all units of government within the Watershed and with all other levels of government to facilitate natural resource protection and water management in the Watershed.
i. Provide means for review of development projects to ensure compliance with MSCWMO Watershed Management Plan requirements.

ARTICLE II

Definitions

2.1 For the purposes of this agreement, the terms shall have the meanings as defined in this Article.

a. "MSCWMO" The organization created by this agreement, the full name of which is the Middle St. Croix Water Management Organization (MSCWMO). It shall be a public agency of its members.
b. "Board" The Joint Powers Board consisting of one Manager from each of the local governmental units that is a party to this agreement, which shall be the governing body of the MSCWMO.

c. “Council” Means the governmental body of a local governmental unit that is a member of this MSCWMO.
d. “Local Governmental Unit” Means that City, Township, or other political subdivision cited in Minn. Stat. 473.852. Subd. 7.
e. “Manager” Is the person appointed to the Joint Powers Board by each Council or in the Manager’s absence, the Alternate Manager.
f. “Middle St. Croix Watershed” or “Watershed” Unless otherwise stated, means that area described and set forth within the map depicted in Exhibit I attached hereto and incorporated by reference herein.
g. “Groundwater” Is the water found in the interconnected pores found beneath the water table.

ARTICLE III

Board of Managers

3.1 The governing body of the Joint Powers Board shall be its board. Each council shall be entitled to appoint one Manager on the Board and one Alternate who may sit when the Manager is not in attendance and said Manager or Alternate shall be called a Manager.

3.2 Each Manager and Alternate shall be appointed for a three (3) year term and shall serve at the pleasure of the Council appointing such Manager, and such Manager or Alternate may be removed by the Council at any time for just cause in accordance with Minnesota Statutes 103B.227. Subd. 3: and Minnesota Rules Chapter 8410.0040.

3.3 Vacancies. A vacancy on the Joint Powers Board shall be filled by the Council whose membership position on the Joint Powers Board is vacant. The vacant position shall be filled in accordance with the requirements as set forth within Minn. Stat. §103B.227 (1995).

3.4 Compensation and Expenses. The Joint Powers Board Manager shall not be entitled to compensation or reimbursement for expenses incurred in attending meetings except to the extent the Council might determine to compensate or reimburse the expenses of the member it appoints in which case the obligation to make such payment shall be that of the individual Council and not of the MSCWMO.

3.5 Officers. The Joint Powers Board shall elect from its membership a Chairperson, Vice Chairperson, Secretary, and Treasurer and further officers as may be necessary to reasonably carry out the purposes of this agreement. All such officers shall hold office for a term of 2 years or until their successors have been duly elected by the members of the Joint Powers Board. Any such officer may only serve while a Manager of the Joint Powers Board. Vacancies in office shall be filled by the membership of the Joint Powers Board by election for the remainder of the unexpired term of such office.

Duties of Officers

1. *Chair - Presides over meetings, assists with preparation of agenda, maintains and presents annual calendar of specific responsibilities.*

2. *Vice Chair - In the absence of the Chair, fulfills all duties of the Chair.*
3. *Secretary - Meeting minutes, prepare agendas, maintain membership list.*
4. *Treasurer - Maintains checkbook, financial reports at meetings, prepares budgets and billing statements, assists with yearly financial audit.*

3.6 Quorum. One half of the members of the Board shall constitute a quorum.

3.7 Meetings. The regular meeting date of the Joint Powers Board shall be established by resolution of the Joint Powers Board and may be changed from time to time. Special meetings shall be held at the call of the Chair or by any member giving not less than seventy-two (72) hours written notice of the time, place and purpose of such meeting delivered or mailed to the residence of each Joint Powers Board manager and to the City Clerk for each member local government unit. All meetings of the Joint Powers Board are subject to Minn. Stat. Chapter 13D (The Minnesota Open Meeting Law), *and shall be governed by Robert's Rules of Order, Newly Revised 10th Edition* or later. Member local government units will be notified of meeting dates, times, and locations.

3.8 MSCWMO Joint Powers Board Office. The office of the MSCWMO shall be at: Washington Conservation District. 1380 West Frontage Road, Highway 36. Stillwater, Minnesota 55082. The Joint Powers Board will designate the official bulletin board by official resolution.

All notices to the MSCWMO or its Joint Powers Board shall be delivered or served at said office. The designated office of the MSCWMO may be changed from time to time upon an affirmative vote from a majority of its Managers at a regularly held meeting or special meeting called for that purpose.

3.9 Alternate Managers. One Alternate Manager to the Joint Powers Board shall be appointed by each party to this agreement. Alternate Managers may attend any meeting of the Joint Powers Board and in the absence of the appointed Manager have the right to vote on the behalf of the member local governmental unit that the Alternate represents. If a Joint Powers Board Manager is also an officer of the Joint Powers Board, the Alternate shall not be entitled to serve in the place of such officer when the officer is absent.

3. 10 Voting. Any action taken by the Board shall be by majority vote unless otherwise stated herein or required by law. Amendments to the annual operating budgets require a two-thirds (2/3) majority of all of the 10 managers of the Joint Powers Board.

Actions taken by the Joint Powers Board to order projects or to assess member local governmental units for improvements shall require a two-thirds (2/3) majority vote of all 10 members of the Joint Powers Board; all other matters will carry by a simple majority of those present as provided in 3.6.

ARTICLE IV

Joint Powers Board Powers and Duties

4.1 Joint Powers Board. The Joint Powers Board shall have the powers and duties set

forth within this article.

4.2 Rules and Regulations. The Joint Powers Board may prescribe and promulgate such rules from time to time, as it deems necessary to carry out its duties and the purpose of this agreement and to collect such fees as are reasonably necessary to cover the expenses of administration, permitting, and enforcement of such rules.

4.3 Watershed Management Plan. As required by law, the Joint Powers Board shall prepare and adopt a Watershed Management Plan as required by law.

4.4 Local Water Management Plan. After consideration, but before adoption by its governing body, each member local governmental unit shall submit its Local Water Management Plan to the Joint Powers Board for review of its consistency with the Watershed Management Plan of the Middle St. Croix Water Management Organization. Each member local governmental unit may also adopt, by resolution, the Middle St. Croix Watershed Management Plan, as its own local plan. The Joint Powers Board shall approve or disapprove each Local Water Management Plan or parts thereof. The Joint Powers Board shall have sixty (60) days to complete its review. If the Joint Powers Board fails to complete its review within the prescribed time period, unless an extension is agreed to by the member local governmental unit submitting the plan, the proposed plan shall be deemed approved.

4.5 Information and Data, The Joint Powers Board may acquire and record such information and data within the Watershed as it deems necessary to accomplish its purpose as set forth herein. Such information or data as collected, shall be fully available for all member local governmental units of the MSCWMO and the public. Nothing herein is intended to authorize or require a disclosure of data in violation of the Minnesota Data Privacy Act, Minnesota Statutes, Chapter 13.

4.6 Claims. As provided within Minn. Stat. §103B.211 Subd. 1, the MSCWMO through its agents and employees may enter upon land within or without the Watershed to make surveys and/or investigations to accomplish the purposes of the watershed management plan. The MSCWMO shall be liable for actual damages resulting from entry but every person who claims damages shall serve the Chairman or Secretary of the Joint Powers Board with a Notice of Claim as required by Minn. Stat. 466.05.

4.7 Contracts. The MSCWMO may make such contracts and enter into such agreements as necessary to fulfill its obligations under this agreement. Such contract or agreements shall be in accordance with the Municipal Contracting Law as set forth within Minn. Stat. §471.345 et seq.

4.8 Employment and Professional Services. The MSCWMO may obtain such professional services and/or contract for services and may also utilize existing staff of the local governmental units to the extent that the local governmental units consent thereto. The MSCWMO may also employ such other persons as it deems necessary. If staff services of a member local governmental unit are utilized, such services shall not reduce the financial commitment of the member local governmental unit to the operating fund of the Joint Powers Board unless the Joint Powers Board so authorizes the same by a majority vote of the Joint

Powers Board of Managers in such cases as where the utilization of staff services are to be substantial.

4.9 The Joint Powers Board will appoint citizen and technical advisory committees as it deems necessary and/or as required by law.

4.10 The Joint Powers Board will also establish and provide for a newsletter or other communication in the manner prescribed within Minn. Stat. §103B.227 Subd. 4.

4. 11 The Joint Powers Board shall be authorized to fund projects by use of an ad valorem tax authorized under Minn. Stat. §lO3B.241 in addition to the cost of preparing plans to implement same. MSCWMO and its member local governmental units may accumulate the proceeds of levies as an alternative to issuing bonds to finance improvements.

4.12 Pursuant to the authority of Minn. Stat. §103B.211, this Water Management Organization shall have the authority of a watershed district under Section 103D.911 to adopt a budget, and to decide the total amount necessary to be raised from ad valorem tax levies to meet the budget and further the authority of watershed districts under Section 103D.915 to certify its budget with the auditor of Washington County; and the authority of a watershed district under Section 103D.901 to file approved assessment statements with each affected county and finally have the other powers necessary to exercise the authority under clauses 1 - 3 of Minn. Stat. §103B.211 Subd.1 including the power to enter into contracts for the performance of functions with government units or persons.

4.13 The Joint Powers Board shall be authorized to fund projects in accordance with Minn. Stat. §103B.251.

4.14 The Joint Powers Board shall fulfill all responsibilities imposed by law on watershed management organizations under Minn. Stat. §103B.201 - 103B.255, including future amendments thereto (the "Act") and shall have all powers and authority that the Act allows for watershed management organizations except as explicitly modified, restricted, or withheld in this Agreement.

ARTICLE V

Annual Budget/Administrative Funding

5.1 Method of Operation. The Joint Powers Board may collect and receive money and services subject to the provisions of this agreement from the member local governmental units and from any other sources approved by the Joint Powers Board and it may incur expenses and make expenditures and disbursements necessary and incidental to the effectuation of the purposes of this agreement. Funds may be expended by the Joint Powers Board in accordance with procedures established herein. Orders, checks, and drafts shall be signed by both the Chairperson or Vice-Chairperson and the Treasurer. Other legal instruments shall be executed on behalf of the Joint Powers Board by the Chairperson or Vice-Chairperson and the Secretary.

5.2 On or before August 1 of each year, the Joint Powers Board shall prepare an annual

work program relating to implementation of the Watershed Management Plan and other watershed issues.

5.3 Operating Funds. On or before August 1 of each year, the Joint Powers Board shall prepare an operating budget for the following year for the purpose of providing funds to operate the Joint Powers Board's business.

5.4 Notwithstanding the provisions of Article of IV of this agreement, the annual administrative expenses shall be budgeted and borne by each voting member local governmental unit in the following manner:

a) 40 percent shall be borne based upon the total acreage of each member local governmental unit based as a percentage of the acreage of the entire Middle St. Croix Watershed;
b) Twenty percent shall be borne by each member local governmental unit based upon the tax capacity of the particular community's area of the watershed as a percentage of the tax capacity of the entire Middle St. Croix Watershed. *To determine the tax capacity portion of each community in the watershed to use in the formula described here, the total tax capacity of the particular community is multiplied by the percentage of the acreage that community has within the Middle St. Croix Watershed*;
c) Forty percent shall be borne by each member local governmental unit based upon population of particular community's area of the watershed as a percentage of the total population of the entire Middle St. Croix Watershed. *To determine the population portion of each community in the watershed to use in the formula described here, the total population of the particular community is multiplied by the percentage of the acreage that community has within the Middle St. Croix Watershed.*

The budget shall be adopted by the Joint Powers Board upon a two-thirds (2/3) majority vote of all 10 members of the Joint Powers Board. After approval, the Secretary shall certify the adopted budget to each member local governmental unit on or before September 1 of each year, together with a statement showing the amounts due from each period. Each member local governmental unit shall pay over to the Joint Powers Board the amount owing, in two (2) equal installments, the first on or before January 1, and the second on or before July 1, in accordance with the tax year for which the amount due is being paid.

5.5 Annual Accounts. By May 1 of each year, the Joint Powers Board shall make and file a full and complete financial report, an activity report, and an audit report to each member local governmental unit and to the State Board of Water and Soil Resources, in accordance with Minnesota Rules. Chapter 8410.0150.

ARTICLE VI

Works of Improvement

6.1 Initiation of Improvement Projects. Works of improvement for the protection and management of the Middle St. Croix Watershed including but not limited to improvements to property, land acquisition, easements, or rights-of-way may be initiated by recommendation of the MSCWMO or petition to the Joint Powers Board by the Council of one or more member

local government units. In either case, the MSCWMO shall conduct a study to determine first, whether or not such proposed improvements are consistent with the adopted MSCWMO Watershed Management Plan and will result in a benefit to the Watershed in part or in whole, and second, whether or not the proposed improvement is feasible and as to whether it should be best made as proposed or in connection with some other improvement. Finally, the MSCWMO shall determine the estimated cost of the improvement as recommended.

For projects that will be funded by ad valorem tax levies, the Joint Powers Board shall follow procedures specified by law.

For projects that will be funded in whole or in part by assessments against member local government units, the MSCWMO shall follow the following procedures: Upon concluding such determination, the MSCWMO may make a recommendation of the improvement to the Council of the member local governmental unit that the MSCWMO determines will be directly benefited thereby. The recommendation of the MSCWMO shall include a description of the proposed improvement together with its estimated costs and all engineering or staff reports related thereto and an allocation of costs among benefited member local government units. The recommendation shall also specify whether the improvement will be constructed by the MSCWMO or a member local government unit. In the event the original proposal for the improvement was submitted by all the local governmental units that are specifically and directly benefited by the proposed improvement, such a recommendation from the MSCWMO to the Council(s) shall not be required. Upon the submission of such a recommendation, if required above, to the Council, each such Council to whom the MSCWMO submitted the recommendation shall respond in writing within ninety (90) days of the date of receipt of the recommendation. In the event a Council does not respond within ninety (90) days of the date of receipt the recommendation of the MSCWMO, the Council shall be deemed to have consented to the improvement.

In the event the Council of any local government unit directly benefited by any proposed improvement timely objects to same, such proposed improvement may only be ordered by the Joint Powers Board after conducting a public hearing on the improvement and then only on an affirmative vote of two-thirds (2/3) of the Managers. Such public hearings shall be noticed and conducted in the manner established and set forth in Minnesota Statute 103D.741.

6.2 Local Improvements. When works of improvement are initiated by the Council of a party or parties, said party or parties shall submit a petition to the MSCWMO setting forth the description of the proposed work and the improvement, the benefits to be realized by said improvements, its total estimated cost and a statement of its feasibility. The MSCWMO shall review and make recommendations on the proposed improvement and the compliance with the adopted MSCWMO Watershed Management Plan in accordance with the provisions of this agreement all to be submitted back to the particular Council within sixty (60) days of the date of receipt of the original proposal. In the event the MSCWMO does not respond to the particular Council within sixty (60) days of the date of receipt of the proposal for improvement, the MSCWMO shall be deemed to have consented to such proposal for improvement unless an

extension of time has been granted by the Council.

In reviewing the proposal of the member local governmental unit for improvement projects, the MSCWMO shall determine whether or not the same is consistent with the adopted MSCWMO Watershed Management Plan. In the event the MSCWMO determines the proposed improvements by the member local governmental unit to be inconsistent with the approved MSCWMO Watershed Management Plan, the MSCWMO shall so notify the member local governmental unit in the time prescribed above and in such case the member local governmental unit shall not proceed with the proposed improvement. Review and approval by the MSCWMO shall not be required for local projects that are identified in local surface water management plans previously approved by the MSCWMO.

6.3. Tax District. Each member local governmental unit may establish a watershed management tax district for the portion of its corporate boundaries that lie within the Watershed for the purposes of paying the cost of the planning required to develop a Watershed Management Plan, or implement capital improvement projects. The tax district shall be established pursuant to the provisions of Minnesota Statutes Section 103B.245. Neither the provisions of this agreement or the establishment of a tax district shall prevent the member local governmental units from electing to finance capital improvements by other means, such as establishing a storm water utility.

6.4 Binding Arbitration. Any member local government unit that is aggrieved by the determination of the Joint Powers Board as to the allocation of the costs of an improvement shall have 60 days after receipt of the recommendation of the Joint Powers Board referred to in Section 6.1 to appeal such recommendation. The appeal shall be in writing and shall be addressed to the Joint Powers Board asking for arbitration. The determination of the appeal shall be referred to a Board of Arbitration. The Board of Arbitration shall consist of three persons; one to be appointed by the Joint Powers Board; one to be appointed by the appealing local government unit; and the third to be appointed by the two so selected. In the event the two persons so selected do not appoint the third person within 15 days after their appointment, the Chief Judge of the Washington County district court shall have jurisdiction to appoint, upon application of either or both of the two earlier selected, the third person to the Board of Arbitration. The third person selected shall not be a resident of any member governmental unit. The arbitrators' expenses and fees, together with other expenses, not including counsel fees, incurred in the conduct of the arbitration shall be divided equally between the MSCWMO and the appealing member. Arbitration shall be conducted in accordance with Minnesota Statutes, Chapter 572.

ARTICLE VII

Miscellaneous Provisions

7.1 Insurance. The Joint Powers Board may contract for or purchase such insurance as the it deems reasonable.

7.2 The Joint Powers Board shall not have the power to levy a special assessment on any privately or publicly owned land. The Joint Powers Board shall have the power to require any member local government unit to contribute to costs allocated or assessed according to the other provisions of this agreement.

7.3 The Joint Powers Board shall not have the power to issue certificates, bonds or warrants.

7.4 The MSCWMO shall not have the power of eminent domain and shall not own any interest in real property. (All interests in land shall be held in the name of the member local government unit wherein said lands are located).

7.5 The MSCWMO has the ability to charge fees to member local government units to cover the cost of reviews of projects within the member local government unit boundaries and applied for and/or initiated by the member communities to ensure projects are meeting the performance standards in the Watershed Management Plan.

7.6 The MSCWMO has the authority to establish and maintain a wetland enhancement and replacement fund from funds collected from developers constructing projects having impacts on wetlands subject to the limitations of the law.

ARTICLE VIII

Duration

8.1 Each member local governmental unit agrees to be bound by the terms of this agreement until such time as it is dissolved.

8.2 This agreement may be terminated by dissolution pursuant to the procedures set forth below or by the unanimous consent of the parties of this agreement.

8.3 Dissolution. Any member local governmental unit may petition the board to dissolve the agreement. Upon thirty (30) days notice in writing of each member local governmental unit, the board shall hold a hearing and upon a favorable vote by three-fourths (3/4) of all the eligible votes of the then existing Board of Managers, the Board may by resolution, recommend that the Joint Powers Board be dissolved. Notice of such recommendation shall be sent to Washington County and the Board of Water and Soil Resources as a notice of intent to dissolve, and no dissolution shall be effective until at least 90 days following such notice. Said resolution shall be submitted to each member local governmental unit and if ratified by three-fourths (3/4) of the member local governmental units within ninety (90) days, said board shall dissolve the MSCWMO allowing a reasonable time to complete work in progress and to dispose of personal property owned by the Joint Powers Board and/or the MSCWMO, if any. Upon dissolution of the Joint Powers Board and/or the MSCWMO, all property of the Joint Powers Board and/or the MSCWMO shall be sold and the proceeds thereof together with monies on hand shall be distributed to the member local governmental units of the Joint Powers Board. Such distribution of the Joint Powers Board and/or the MSCWMO assets shall be made in proportion to total contribution of the Joint Powers Board required by the last annual budget.

ARTICLE IX

Effective Date

This agreement shall be in full force and effect upon the filing of the certified copy of the Resolution approving said agreement by each member local governmental unit.

ARTICLE X

Amendment

The Joint Powers Board and/or the Councils of the member local governmental units may recommend changes and amendments to this agreement. Such recommendation shall be forwarded in writing, to all of the Councils of the member local governmental units. Amendments shall be adopted by three-fourths (3/4) vote of the Councils of the member local governmental units within ninety (90) days of the referral. However, any amendment which changes the method of approval for improvements or the financing of the Joint Powers Board must be unanimously approved.

IN WITNESS WHEREOF, the parties hereto have executed this agreement as of the date of complete execution of the parties.

CITY OF AFTON

SEAL

Dated: 1-26-06

By: _____
Mayor

ATTEST: _____
City Clerk

CITY OF BAYPORT

SEAL

Dated: 2/7/06

By: _____
Mayor

ATTEST: _____
City Clerk

TOWN OF BAYTOWN

SEAL

Dated: 2-6-06

By: _____
Chairperson

ATTEST: Constance M. Fredhave
Town Clerk

SEAL

Dated: 1/30/06

CITY OF LAKELAND

By: Robert W. Craggs

Mayor

ATTEST:

Chris Woodbury

City Clerk

SEAL

Dated: 2/5/06

CITY OF LAKELAND SHORES

By: Randy Kay

Mayor

ATTEST:

Cindy Edward

City Clerk

SEAL

Dated: 2/7/06

CITY OF LAKE ST. CROIX BEACH

By: Laurel March

Mayor

ATTEST:

Cindy J Reiter

City Clerk

SEAL

Dated: 1-24-06

CITY OF LAKE ST. CROIX BEACH

By: _____
Mayor

ATTEST:

_____
City Clerk

SEAL

Dated: 2/7/06

CITY OF ST. MARY'S POINT

By: _____
Mayor

ATTEST:

_____
City Clerk

SEAL

Dated: 2.7.06

CITY OF STILLWATER

By: _____
Mayor

ATTEST:

_____
City Clerk

SEAL

Dated: 2-3-06

CITY OF OAK PARK HEIGHTS

By: _____
Mayor

ATTEST: _____
City Clerk

SEAL

Dated: 2-7-06

TOWN OF WEST LAKELAND

By: John McPherson
Chairperson

ATTEST: Susan Asunsa
Town Clerk

Appendix B
Modeling Data

Appendix C
Water Resource Related Agreements