

# Appendix A - Development Staging

**Figure 1:  
New Development or Infill Opportunities**

0 0.5 1 Miles

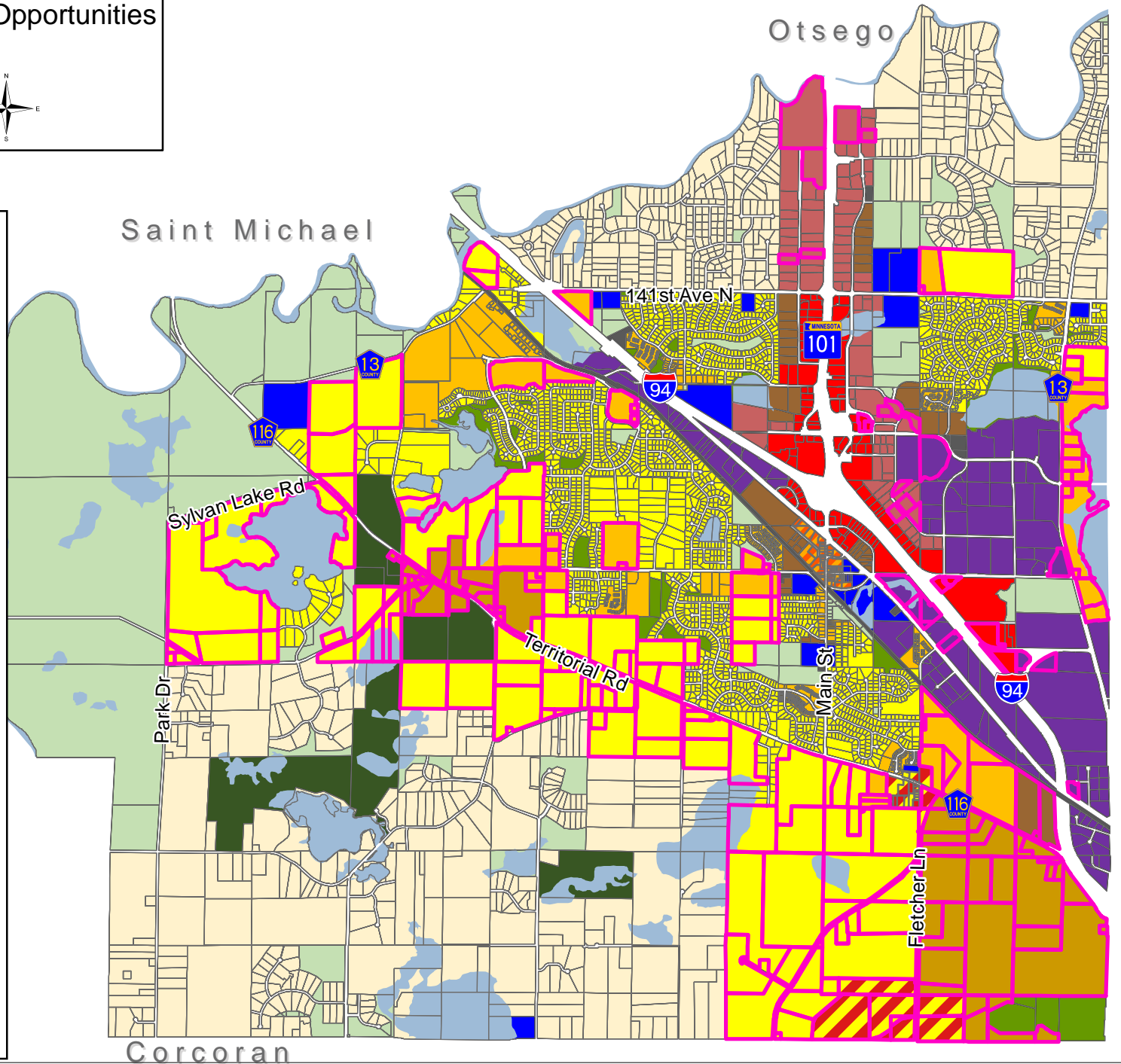
City of Rogers, Minnesota  
Comprehensive Plan Update  
Date: 19 January 20



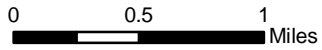
**Legend**

**Development Analysis**

-  New Development or Infill Opportunities
-  Rural Residential - 0.10 to 2 unit per acre
-  Low Density Residential - 2 to 6 units per acre
-  Medium Density Residential - 6 to 11 units per acre
-  High Density Residential - 11 to 60 units per acre
-  Mixed Residential - 4 to 15 units per acre
-  Commercial
-  Mixed Use Regional - 8 to 60 units per acre
-  Mixed Use Neighborhood - 3 to 6 units per acre
-  Mixed Use Downtown - 8 to 40 units per acre
-  Industry
-  Institutional
-  Park & Open Space
-  Protected Resources
-  Agriculture Preserve
-  Utility/Railroad



**Figure 2:  
Redevelopment Opportunities**



















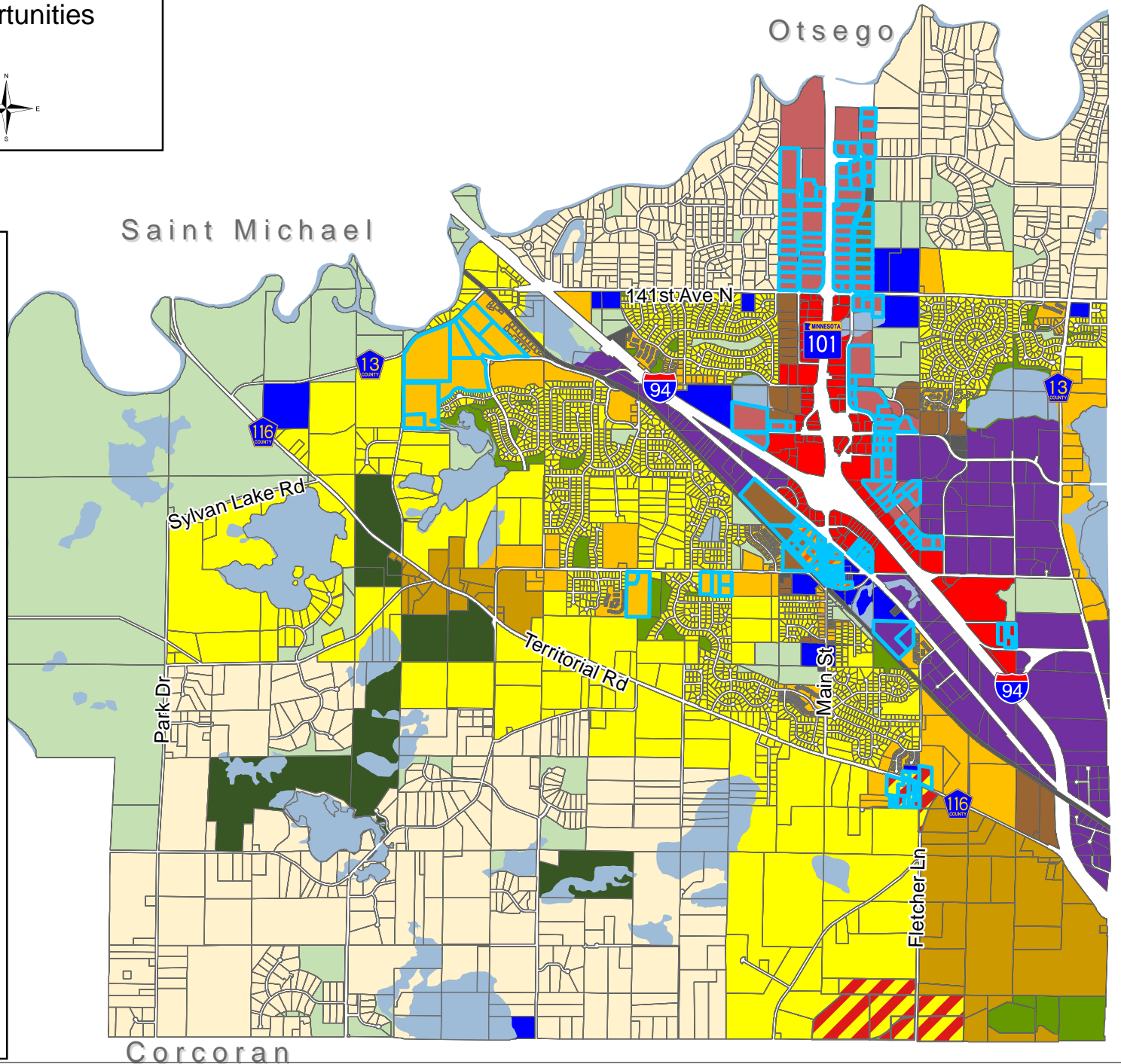
City of Rogers, Minnesota  
Comprehensive Plan Update  
Date: 19 January 20



**Legend**

**Development Analysis**

-  Redevelopment Opportunities
-  Rural Residential - 0.10 to 2 unit per acre
-  Low Density Residential - 2 to 6 units per acre
-  Medium Density Residential - 6 to 11 units per acre
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-  Mixed Use Downtown - 8 to 40 units per acre
-  Industry
-  Institutional
-  Park & Open Space
-  Protected Resources
-  Agriculture Preserve
-  Utility/Railroad



**Figure 3:  
Utility Service Extensions**

0 0.5 1 Miles

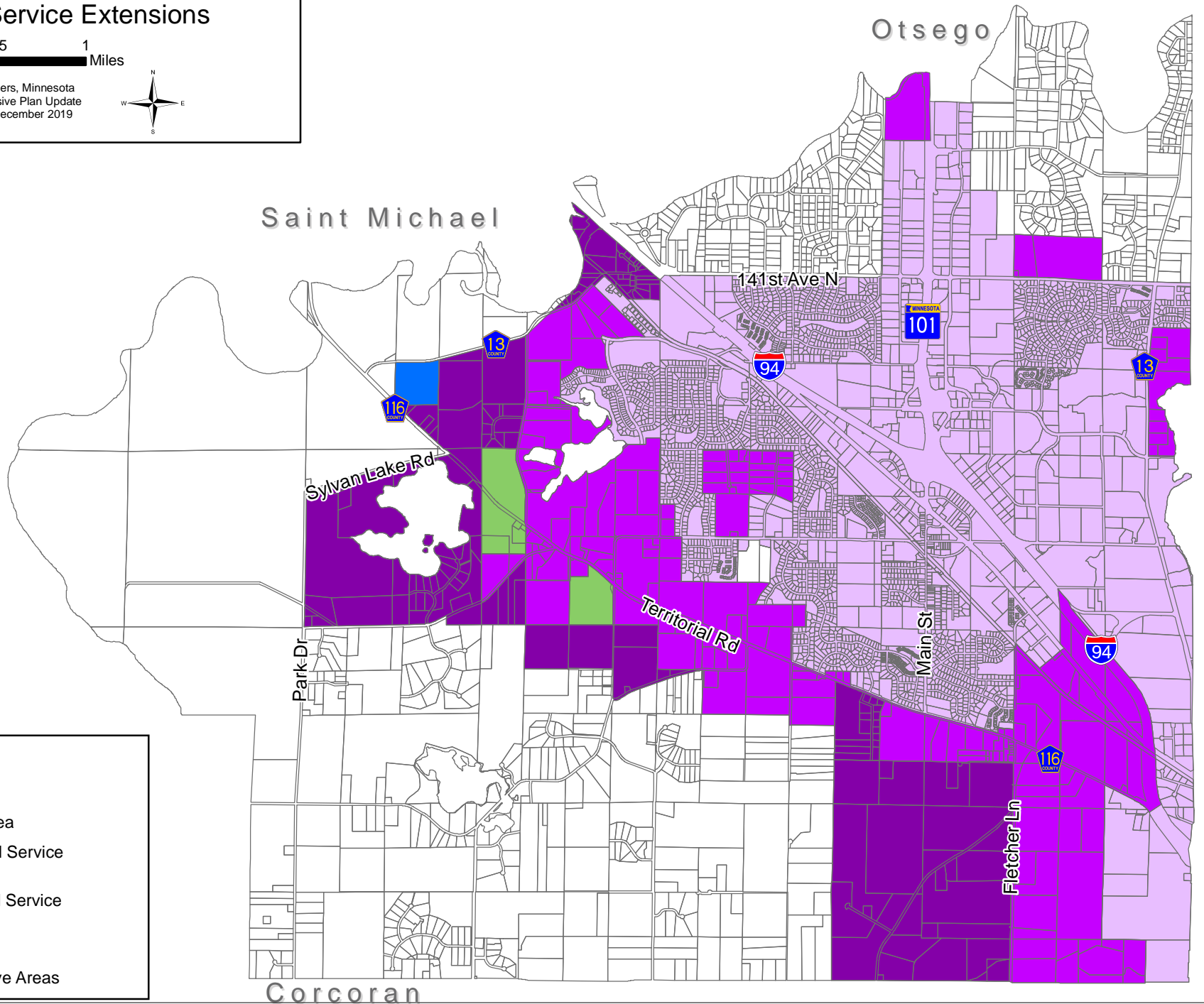
City of Rogers, Minnesota  
Comprehensive Plan Update  
Date: 05 December 2019



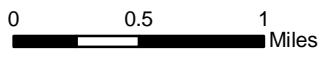
**Legend**

**Utility Service Areas**

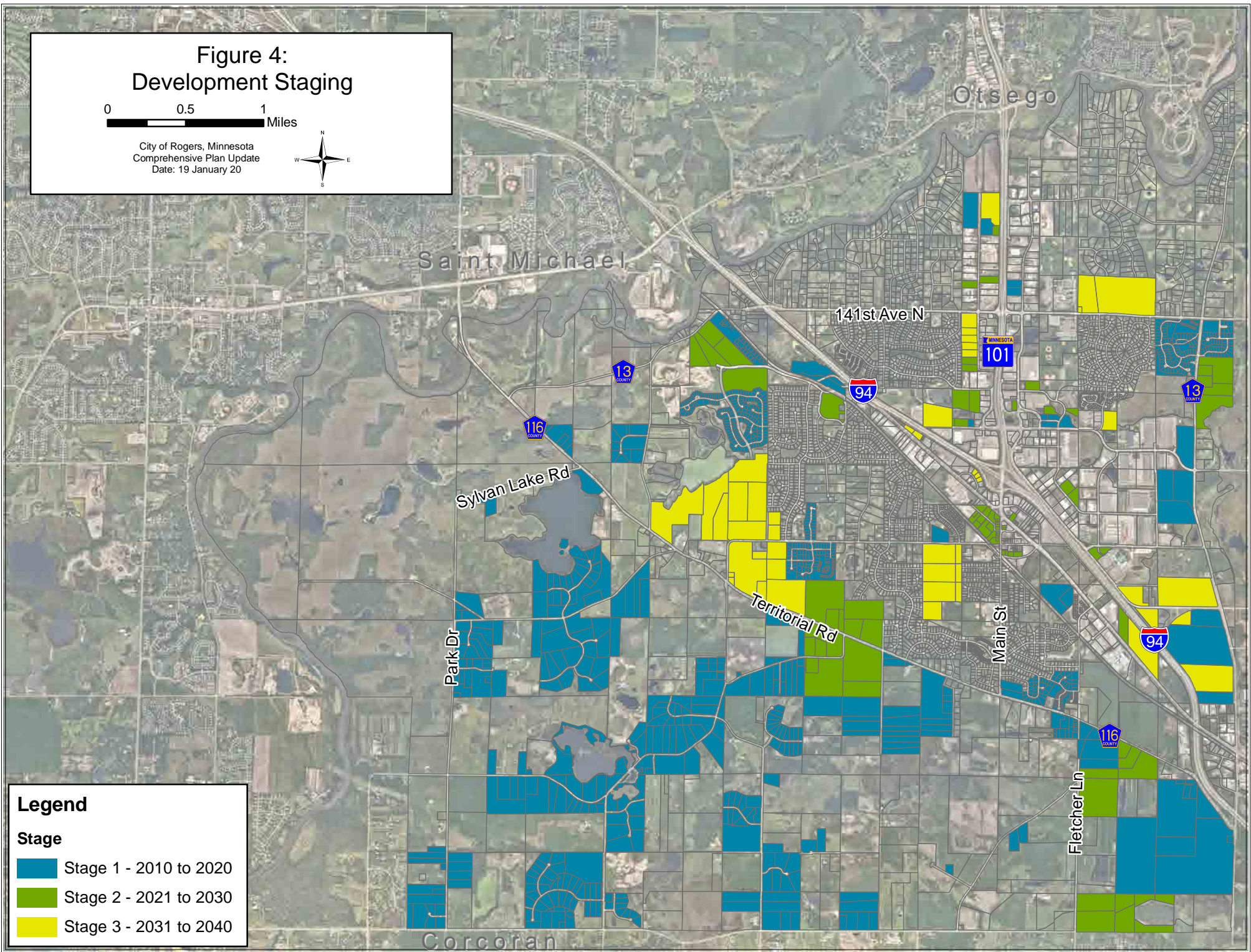
-  Existing Service Area
-  2020-2030 Planned Service Extensions
-  2030-2040 Planned Service Extensions
-  MCES Facility
-  Agricultural Preserve Areas



**Figure 4:  
Development Staging**



City of Rogers, Minnesota  
Comprehensive Plan Update  
Date: 19 January 20



**Legend**

- Stage**
- Stage 1 - 2010 to 2020
  - Stage 2 - 2021 to 2030
  - Stage 3 - 2031 to 2040

# **Appendix B - City of Rogers 2018 Surface Water Management Plan**



# City of Rogers 2018

## SURFACE WATER MANAGEMENT PLAN





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# SECTION 1

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## 1. EXECUTIVE SUMMARY

### 1.1 Local Surface Water Management Plan Purposes

This Local Surface Water Management Plan (Plan) serves as a comprehensive planning document to guide the City of Rogers in conserving, protecting, and managing its surface water resources. The City will use the SWMP as a guide to reach goals related to water quality, volume reduction and flood management. The plan meets the requirements of Minnesota Statutes 103B.235, Minnesota Rules 8410, the Elm Creek Watershed Management Commissions' Third Generation Watershed Management Plan and Minnesota Statute 103B.01. The purposes of the water management programs are to:

- Protect, preserve, and use natural surface and groundwater storage and retention systems;
- Minimize public capital expenditures needed to correct flooding and water quality problems;
- Identify and plan for means to effectively protect and improve surface and groundwater quality;
- Establish more uniform local policies and official controls for surface and groundwater management;
- Prevent erosion of soil into surface water systems;
- Promote groundwater recharge, where beneficial
- Protect and enhance fish and wildlife habitat and water recreational facilities; and
- Secure the other benefits associated with the proper management of surface and groundwater.

The Rogers Surface Water Management Plan addresses these purposes.

### 1.2 Executive Summary

The Rogers Surface Water Management Plan is divided into six sections:

- *Section 1.0 Executive Summary* provides background information and summarizes the plan contents.

- **Section 2.0 Land and Water Resource Inventory** presents information about the topography, geology, groundwater, soils, land use, public utilities, surface waters, hydrologic system data, and the drainage system.
- **Section 3.0 Agency Cooperation** outlines other governmental controls and programs that affect stormwater management.
- **Section 4.0 Assessment of Problems and Issues** presents the City's water management related problems and issues.
- **Section 5.0 Goals and Policies** outlines the City's goals and policies pertaining to water management.
- **Section 6.0 Implementation Program** presents the implementation program for the City of Rogers, which includes defining responsibilities, prioritizing, and listing the program elements.
- **Section 7.0 Administration** outlines the continued administration of this plan with respect to plan updates and amendments.

To implement this Plan, a coordinated water resource management approach must be used. This approach must utilize various City and watershed management organization personnel having jurisdiction within the City. Listed below is the contact information for personnel and organizations having responsibilities for administering and implementing portions of this Plan:

**City of Rogers**

John Seifert  
 22350 South Diamond Lake Road  
 Rogers, MN 55374  
 763-428-8580 – [jseifert@rogersmn.gov](mailto:jseifert@rogersmn.gov)

**Elm Creek Watershed Management Commission**

Judie Anderson  
 3235 Fernbrook Lane  
 Plymouth, MN 55447  
 763-553-1144 – [judie@jass.biz](mailto:judie@jass.biz)

**Metropolitan Council**

Judy Sventek  
 390 N Robert Street  
 St. Paul, MN 55101  
 651-602-1000 – [judy.sventek@metc.state.mn.us](mailto:judy.sventek@metc.state.mn.us)

## Section 2

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### 2. LAND AND WATER RESOURCE INVENTORY

#### 2.1 Physical Setting

##### *2.1.1 Topography and Geology*

Rogers (**Figure 1**) and the surrounding area has a moderately flat topographic relief, with elevations ranging from approximately 850 to 1030 feet above mean sea level. Within the City of Rogers, there are three major drainage basins directing flows to the Crow River, North Fork Rush Creek, and Diamond Lake. **Figure 2** highlights major drainage areas in Rogers. The Crow River Watershed drains the largest portion of Rogers (10,203 acres) and contains Sylvan Lake, Cowley Lake, and Fox Creek. North Fork Rush Creek drains largely the southern area of Rogers (5,036 acres) and contains Henry Lake. The Diamond Lake watershed mainly drains the industrial and commercial areas of east Rogers (1,556 acres).

Geology in the Rogers area is formed by material of three different broad geologic types that were deposited over different geologic ages. The upper geologic type is the surficial loamy glacial till and outwash of the Des Moines Lobe and Grantsburg Sublobe. The till is comprised of loam and a few beds and lenses of stratified sediment or till. Isolated areas of Rogers have postglacial organic deposits containing peat and organic rich sediment. Outwash deposits of two glacial lobes, and floodplain alluvium deposits, are along the Crow River. The outwash sediments consist of sand, loamy sand, and gravel, overlaid by loess that is less than four feet thick. In contact between the till and outwash deposits there are small areas of a sandy till composed of loam to sandy loam over sand and gravel deposits.

The sedimentary bedrock formations in southeastern Minnesota were formed by several periods of Early Paleozoic marine deposition. Layers of sediments were deposited by the transgression and regression of an inland sea during the Late Cambrian to Middle Ordovician time. The general dip of the sedimentary bedrock is toward Minneapolis, which is near the center of the Twin Cities Basin. This dip has caused the bedrock in the northern and western ends of Hennepin County to be elevated, and consequently, the St. Peter Sandstone, Prairie-du-Chien Group and the Jordan Sandstone were eroded prior to the deposition of glacial sediments.

Depth to bedrock within Rogers south of Interstate Highway I-94 on Highway 101 is 100 to 150 feet. Depth to bedrock within the rest of the City averages 150 feet but varies from 50 to 250 feet. The bedrock located north of I-94 in Rogers is at depths of 301 to 350 feet.

The first bedrock encountered in Rogers is the St. Lawrence Formation, which is underlain by the Franconia Formation. The St. Lawrence Formation consists of dolomitic siltstone and shale. The Franconia Formation is a dolomitic sandstone with glauconite.

Uppermost bedrock in the bedrock valleys in the Rogers area expose the Ironton and Galesville Sandstones and the Eau Claire Formation. The Ironton and Galesville Sandstones are a fine- to coarse-grained and silty quartzose sandstone underlain by fine- to medium-grained sandstone and interbedded shale. The Eau Claire Formation is composed of siltstone and shale with minor amounts of sandstone and glauconite. The Mount Simon and Hinckley Sandstones, located below the Eau Claire Formation, are composed of quartzose sandstone and varying amounts of siltstone and shale. The middle part of the formation(s) consists of medium- to coarse-grained, quartzose, silty, and poorly-sorted sandstone.

### 2.1.2 Climate and Precipitation

Climate within the Rogers area is described as humid continental with moderate precipitation, wide daily temperature variations, warm humid summers, and cold winters. The average annual temperature is 44 degrees Fahrenheit, with extremes ranging from 112 degrees F to -37 degrees F. The total average annual precipitation averages around 30 inches. Temperature and precipitation data for the Rogers and the surrounding metropolitan area is shown in Table 1.

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean Daily Temperature (°F)	15.6	20.8	32.8	47.5	59.1	68.8	73.8	71.2	62.0	48.9	33.7	19.7	46.2
Average Precipitation (in.)	0.9	0.8	1.9	2.7	3.4	4.3	4.0	4.3	3.1	2.4	1.8	1.2	30.6
Average Snowfall (in.)	12.2	7.7	10.3	2.4	0.1	0.0	0.0	0.0	0.0	0.6	9.3	11.9	54.4

Table 1 Average Monthly Climate Data, Minneapolis/St. Paul, 1981-2010. Minnesota Climatology Working Group.

Rainfall frequency estimates have been recently updated through NOAA Atlas 14 in 2013. Projects proposed in Rogers are required to use the updated rainfall frequency data provided by NOAA Atlas 14. Since the last update the storm sizes have increased which all new stormwater infrastructure will have to take into account. A 24-hr 25 year storm event is now estimated at 5.29 inches, as opposed previous data which estimated the same sized storm at 4.7 inches. A few example storm sizes from NOAA Atlas 14 have been chosen for Table 2.

Recurrence Interval (Yrs)	24-hr Rainfall Depth (in)
1	2.47
2	2.86
10	4.26
25	5.29
50	6.17
100	7.12

Table 2 NOAA Atlas 14 Volume 8 Version 2. Rogers, MN 55374

### 2.1.3 Soils

There are three major soil associations within the boundaries of Rogers. The soil association within Rogers and the surrounding area, is the Cordova-Hayden-Nessel Association. This soil association is a moderately fine- and medium-textured soil of a deep, friable, loamy glacial till. It is located on nearly level to gently undulating terrain. The area near the Crow River has the Hubbard-Anoka soils that are coarse-textured soils underlain by sand, on undulating to rolling terrain. The third association is the Hayden-Cordova-Peaty muck, which comprises the rest of the City. These soils are medium- to moderately fine-textured soils of glacial till and level organic soil, these occur on level to rolling terrain.

Because of its multitude of wetlands, Rogers has many soils with little or no infiltration capacity. Hydrologic Soil Groups characterize diverse soils by similar infiltration capacity. Group A soils have the highest infiltration capacity while Group D have the lowest. Generally, infiltration is not an appropriate practice on Hydrologic Soil Group C and D soils.

Group A – These soils have high infiltration rates even when thoroughly wetted. Based on the Minnesota Stormwater Manual, published by the Minnesota Pollution Control Agency (MPCA), the infiltration rates range from 0.8 to 1.63 inches per hour. These soils consist chiefly of deep, well drained to excessively drained sands and gravel. Group A soils have a high rate of water transmission, therefore resulting in a low runoff potential.

Group B – These soils have moderate infiltration rates ranging from 0.3 to 0.45 inches per hour when thoroughly wetted. Group B soils consist of deep moderately well to well drained soils with moderately fine to moderately coarse textures.

Group C – These soils have slow infiltration rates 0.2 inches per hour when thoroughly wetted. Group C have moderately fine to fine texture.

Group D – These soils have very slow infiltration rates ranging from 0 to 0.06 inches per hour when thoroughly wetted. Group D soils are typically clay soils with high swelling potential, soils with high permanent water table, soils with a clay layer at or near the surface, or shallow soils over nearly impervious material.

**Figure 3** provides hydrologic soil groupings for soils in Rogers. There are pockets of Group A soils in the north and western portions of Rogers. These areas have shown a great ability to infiltrate stormwater and most projects that require stormwater treatment in those areas are able to infiltrate almost 100 percent of runoff. Additional information on Rogers' soils can be obtained from the Hennepin County Soil Survey.

### *2.1.4 Land Use*

The City's land use practices include agricultural, residential, commercial, industrial, and private and public open spaces. Most of the City's more urbanized developments occur near the intersection of Interstate 94 and Trunk Highway 101. Development has quickly radiated out from this focal point of transportation and access to City utilities in the last 30 years. Areas outside of this main developed area are subject to agricultural and large lot rural residential properties which have necessary wells and septic systems. The current land use of the city is provided in **Figure 4**. Large areas of agricultural properties are still thriving in Rogers and will be subject to most of the future development of the City. The Rogers 2040 land use plan shown in **Figure 5**, and highlights just how much the city anticipates growth in the next 20 years. Within in this planning continuum it is possible for nearly 2000 acres of agricultural land use to be changed to residential, commercial, and industrial land uses. Another large land use/cover percentage in the City of Rogers is the abundance of wetlands. Wetlands will be an integral part of Rogers future development to help preserve the rural and natural qualities of the community.

Land use data is an important factor for estimating surface water runoff. The hard or impervious surface areas associated with each land use greatly affect the amount of runoff generated from an area. Future land use projections indicate those areas that may be available for water resource enhancement and where improvements should be a priority. Significant changes in land use can increase runoff due to added impervious surfaces. However, changes in land use also allow for the construction of stormwater BMPs. Additionally, Rogers is suburban edge community but still maintain a rural community feel with large land areas still in agricultural row crop production. Agricultural row crop land uses generate relatively high total suspended solids loads and nutrient runoff. Development of agricultural land will result in a net reduction in the total suspended solids loads through construction of BMPs to meet local regulations for treatment.

## **2.2 Water Resources Data**

### *2.2.1 Wetlands*

**Figure 6** shows the wetlands located in the City of Rogers. Currently there is no formal wetland inventory with higher level data of function, class, or buffer requirement status. Most of the wetlands that are within the Rogers boundaries were part of former Hassan Township. Wetland management will continue to be an integral function for the City's Stormwater Management Plan.

**Figure 7** shows larger wetlands and lakes from the National Wetland Inventory over which the Minnesota Department of Natural Resources has jurisdiction. Minnesota protects all wetlands through its Wetland Conservation Act. The wetlands and lakes under MnDNR jurisdiction have an added level of protection.

There is an estimated 3,260 acres of lakes and wetlands in Rogers which is nearly 20% of the overall land cover within the City. Managing and protecting this major water quality asset will be an ongoing focus as Rogers continues to develop.

### 2.2.2 Major Bodies of Water

There are several large bodies of water within the City of Rogers, including, Cowley Lake, Grass Lake, Henry Lake, and Sylvan Lake. There are also several DNR Public Water Wetlands within the City. A full list of the Public Water Inventory in Rogers can be seen below in Table 3. None of the lakes within the City of Rogers are used for surface water appropriations. The City of Rogers has adopted a Shoreland Ordinance in order to better control development around Public Waters.

Water Body Name	MnDNR Protected Waters Inventory ID#	Classification
Cowley	27-169P	Public Water Basin
Grass	27-135P	Public Water Basin
Henry	27-175P	Public Water Basin
Prairie	27-177P	Public Water Basin
South Twin	27-339P	Public Water Basin
Sylvan	27-171P	Public Water Basin
Tiltons	27-173W	Public Water Wetland
Unnamed	27-170P	Public Water Basin
Unnamed	27-167W	Public Water Wetland
Unnamed	27-288W	Public Water Wetland
Unnamed	27-342P	Public Water Basin
Unnamed	27-291W	Public Water Wetland
Unnamed	27-344P	Public Water Basin
Unnamed	27-297W	Public Water Wetland
Unnamed	27-286W	Public Water Wetland
Unnamed	27-343P	Public Water Basin
Unnamed	27-340P	Public Water Basin
Unnamed	27-301W	Public Water Wetland
Unnamed	27-292W	Public Water Wetland
Unnamed	27-300W	Public Water Wetland
Unnamed	27-341P	Public Water Basin
Unnamed	27-303W	Public Water Wetland
Unnamed	27-293W	Public Water Wetland
Unnamed	27-284W	Public Water Wetland
Unnamed	27-294W	Public Water Wetland
Unnamed	27-305W	Public Water Wetland
Unnamed	27-302W	Public Water Wetland
Unnamed	27-290W	Public Water Wetland
Unnamed	27-296W	Public Water Wetland
Unnamed	27-295W	Public Water Wetland
Unnamed	27-289W	Public Water Wetland
Unnamed	27-306W	Public Water Wetland
Whiteford	27-172W	Public Water Wetland

Table 3 MNDNR Public Water Inventory List in Rogers, MN



### *2.2.3 Water Courses*

The City of Rogers has three main streams within the City boundaries, the largest being the Crow River. The Crow River flows in a general southwest to northeast direction and forms the western and northern boundary of the City. The City is generally protected from flood events from the Crow River but there are areas that do see periods of inundation during high water flows. Unnamed Stream which is known locally as Fox Creek flows in a northwesterly direction and drains 4,000 acres of Rogers to the Crow River. Fox Creek also receives water during high flow from Sylvan and Cowley Lakes. The North Fork Rush Creek drains the southern portion of Rogers. A number of reaches of North Fork Rush Creek are designated as a county ditch.

The City of Rogers also has several county ditches that drain the south part of the City. The ditches located in the City are #6, #12, and #21. **Figure 2** shows the main water courses and county ditches that drain the City of Rogers.

### *2.2.4 Monitored Water Quality and Quantity Data*

The City will continue to support monitoring of surface waters within its jurisdictional boundaries and outside these boundaries for waters to which the City discharges. Data will be obtained through cooperation and coordination with other various agencies, including the Minnesota Pollution Control Agency, cities adjacent to Rogers, the Metropolitan Council, the Minnesota Department of Natural Resources, the Elm Creek Watershed Management Commission, and Three Rivers Park District.

Water quality information can be found from the watershed management organizations having jurisdiction within the City, Metropolitan Council, and the Minnesota Pollution Control Agency on the following websites:

Elm Creek Watershed Management Commission monitoring information can be found at:  
<http://elmcreekwatershed.org/pages/WaterQualityOverview/>

Program (CAMP), can be found at:  
<http://www.metrocouncil.org/Wastewater-Water/Services/Water-Quality-Management>

### 2.2.5 Impaired Waters

The Minnesota Pollution Control Agency (MPCA) is required to publish a list of impaired waters; these are 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. Impaired waters in Rogers, or those receiving discharge from Rogers, are summarized in Table 4.

Waterbody/Watercourse	Year added to List	Affected Use	Pollutant/Stressor	TMDL Status
Cowley Lake	2010	Aquatic Recreation	Excess Nutrients	Complete
Sylvan Lake	2016	Aquatic Recreation	Excess Nutrients	Complete
Henry Lake	2008	Aquatic Recreation	Excess Nutrients	Complete
Rush Creek	2010	Aquatic Recreation/Aquatic Life	Dissolved Oxygen, E.coli, FishesBio, InvertBio	Complete
Diamond Lake*	2006	Aquatic Recreation	Excess Nutrients	Complete
Crow River*	2010	Aquatic Recreation/Aquatic Life	FishesBio, InvertBio, Excess Nutrients	Complete
Diamond Creek*	2010	Aquatic Recreation/Aquatic Life	E.coli, Dissolved Oxygen, FishesBio, InvertBio	Complete

Table 4 Impaired Waters in the City of Rogers

Local governments will be required to incorporate completed TMDL studies into their surface water management plans and are required to incorporate any appropriate TMDL implementation activities within their Stormwater Pollution Prevention Program within 18 months of the approved date. A more detailed discussion on the status of the TMDLs can be found in Section 5.

### 2.2.6 Groundwater Appropriations

The City of Rogers updated their Wellhead Protection Plan in October, 2014 and it is effective until 2024. The entire City is within either a low vulnerability or very low vulnerability Drinking Water Supply Management Area (DWSMA). The DWSMA vulnerability is determined using geologic, soils and groundwater chemistry information. The designation indicates that the aquifer is covered by at least 50 feet of clay material.

The City will be required to incorporate the requirements of the Wellhead Protection Plan into their Stormwater Pollution Prevention Program (SWPPP) for areas located within vulnerable source water protection areas (NPDES MS4 General Permit). Vulnerable Source Water Protection areas are those areas susceptible to contamination of the water supply from activities

at the land surface and are based on the following three components: geologic sensitivity, well construction maintenance and use, and water chemistry and isotopic composition. The MDH has identified vulnerable source water protection areas and currently no areas within the City of Rogers are identified as such.

Regardless of vulnerable source water protection areas being located within Rogers they will incorporate the guidance developed by the MDH on evaluating proposed stormwater infiltration projects in vulnerable source water protection areas and also the guidance located within the Minnesota Stormwater Manual on designing infiltration BMPs while protecting groundwater. This will be of a particular concern in areas where infiltration is being considered in soils suitable for rapid infiltration adjacent to municipal and private wells.

Protection of the aquifers described above is crucial in maintaining Rogers' long term water supply. Achieving this will require cooperation with the Minnesota Department of Health (MDH) in developing their Wellhead Protection Plan. The goal of protecting Rogers water supply wells are to:

- Reduce the use of costly treatment facilities
- Avoid the drilling of new wells
- Avoid the need to clean up contaminated groundwater
- Wellhead protection is a means of protecting public water supply wells by preventing contaminants from entering the area that contributes water to the well or well field over a period of time.

## **2.3 Natural Resources Data**

### *2.3.1 Water-based Recreation Areas*

The City of Rogers have very few water-based recreational areas. Cowley, Henry, and Sylvan have no public access to the lakes. Future park plans will include public access to Cowley and Sylvan but at this time there is no access. Crow-Hassan Park Preserve offers views of the Crow River but limited access.

### *2.3.2 MLCCS and MCBS*

The Minnesota Land Cover Classification System, or MLCCS, categorizes land cover rather than previously discussed land use. The MLCCS provides City staff the opportunity to integrate natural area preservation into land planning, land use, and zoning decisions. Agriculture is the predominate land cover in Rogers with 28%. Agricultural land cover will be the primary land cover that changes in the next 10 years through private development.

The Minnesota County Biological Survey (MCBS) began in 1987 as a systematic survey of rare biological features on a county-by-county basis. In the City of Rogers there are three different kinds of rare biological areas. A portion of City owned property known as Henry's Woods was identified by the study as an old growth Maple-Basswood Forest. This forest is now protected through a conservation easement and will be protected in perpetuity for future generations.

Another biological significant area of Rogers is located in the Crow Hassan Park Reserve. Located within the park are three different biological significant areas, maple-basswood forest, oak forest mesic forest, and lowland hardwood forest. These areas are protected through Three Rivers Park District.

## **2.4 Water Resources Related Agreements**

This section summarizes those water resources related agreements the City of Rogers has established with other entities.

### *2.4.1 Elm Creek WMC Joint Powers Agreement*

The ECWMC was formed in 1973 as a joint powers organization by the cities of Champlin, Corcoran, Dayton, Maple Grove, Medina, Plymouth and the Hennepin Conservation District, under the authority conferred to the member parties through Minnesota Statutes Sections 471.59 and 103B.211. Former Hassan Township entered the JPA in 1980, and the City of Rogers entered in 1983.

## **2.5 Land Cover**

The land cover in the City of Rogers is provided and summarized in **Figure 8**. The City of Rogers is approximately 16,800 acres, of which 4,476 acres are called out as developed, and 4,914 acres are considered in agricultural production. The City also has a large number of acres that are undeveloped or either wetland or open water. Nearly 20 percent of Rogers is either wetland vegetation, wetland open water, or open water. Combined with forested areas, herbaceous and shrubland areas, roughly 44 percent of Rogers is in a land cover class with minimal negative impact on stormwater quality.

# SECTION 3

## 3.0 AGENCY COOPERATION

There are a number of local, State, and Federal agencies that have rules and regulations related to local water management. The City recognizes the roles of these other agencies and will cooperate, coordinate, and when possible partner with these agencies. This section describes the City’s current surface water management program and practices and identifies the agencies and organizations having roles in the City’s management of these resources.

### 3.1 City of Rogers

<b>Official Control</b>	<b>Responsibility</b>	<b>Mechanism</b>
Stormwater Management	City, WMO	Chapter 117 Article II
Erosion Control and Sediment	City, WMO, PCA	Chapter 117 117-6
Shoreland	City, WMO, MnDNR	Chapter 109 Article II
Floodplain	City, WMO, MnDNR	Section 125-226 Floodplain overlay district
Wetlands	City as LGU, MnDNR, USACE, and Technical Advisory Panel (TEP) Members, BWSR	Chapter 109 Article III Public Water Rules (MnDNR)Section 404 of the Clean Water Act (USACE) WCA (TEP Members)
Illicit Discharge	City	Chapter 46-116 - 192
Grading and Drainage	City, WMO	Chapter 117 Article II, Chapter 117 117-6

### 3.2 Hennepin County

The County provides many services within the City of Rogers, including health services and property and vital records. Hennepin County was the first county to begin groundwater planning in 1988, with authority delegated to the Hennepin Conservation District. That groundwater plan received state approval in March 1994. Although the county has not formally adopted the plan, the county is proceeding with implementation of many aspects of the plan. In addition, the County’s Department of Environmental Services provides education, outreach, and funding to individuals and organizations. These programs include the Hennepin County River Watch and the Wetland Health Evaluation Program.

Hennepin County Department of Environmental Services provides technical assistance to county residents, local government units, watershed organizations, and other agencies. They have assisted local governments with implementation of natural resource management plans, the Wetland

Conservation Act, natural resource education, and application of sound natural resource practices. Their programs are funded through County allocation, grants, and contracts with local government units, contracts with watershed organizations, and state and federal cost share. Within the City of Rogers, the Department of Environmental Services provides administration and technical services, including project review, for the Elm Creek Watershed Management Commission. <http://www.hennepin.us/>

### **3.3 Three Rivers Park District**

Three Rivers Park District provides technical assistance when needed through the Elm Creek Watershed and also helps monitor water quality in Rogers. This partnership looks to increase during this planning continuum to increase the water quality data available to Rogers. Three Rivers Park District also owns, operates, and maintains Crow Hassan Park Preserve within Rogers.

### **3.4 Elm Creek Watershed Management Commission**

ECWMC was formed in 1973 and covers portions of Champlin, Corcoran, Dayton, Maple Grove, Medina and Plymouth. The City of Rogers joined the Joint Powers Agreement in 1983. ECWMC administration is provided by the Hennepin Conservation District. The entire City of Rogers is encompassed in ECWMC and is the only WMO that the City is currently a member. ECWMC adopted their Third Generation Watershed Management Plan on October 14, 2015. The Third Generation Plan can be accessed from their website.

<http://www.elmcreekwatershed.org>

The Commission requires a plan review to be completed by the local permitting authority for development or redevelopment if any part of the development is within a 100-year floodplain or upland flood storage area and/or the project changes the timing, storage, or carrying capacity of any tributaries of the 100-year floodplain. ECWMC thresholds require local permitting through Rogers for the following project descriptions:

- Any land development or site development that disturbs more than 1 acre
- Linear projects that result in a net increase in impervious surfaces of one acre or more

When a project plan transcends municipal boundaries a Commission review is required. Additionally, ECWMC requires Rogers to review permit plans involving the alteration of waterways, culvert or bridge installations or replacements in waterways. This would be in addition to any state or federal permits that might pertain to these activities.

### **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 updated the Water Resources Management Policy Plan in 2015, establishing the expectations to be met in local plans. As part of the updated Minnesota Rules Chapter 8410 adopted July of 2015, all local water management plans must be updated prior to December 31, 2018. The Council’s goals focus on water quality standards and pollution control, “to reduce the effects of nonpoint source pollution on the region’s wetlands, lakes, streams and rivers.”

### **3.6 State Board of Soil and Water Resources (BWSR)**

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. BWSR is responsible for implementation of the Metropolitan Surface Water Management Act and the Wetland Conservation Act. Staff members are located in eight field offices throughout the state.

First established in 1937 as the State Soil Conservation Committee, the agency became part of the University of Minnesota in the 1950’s, transferred to the Minnesota 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 17 members, appointed by the governor to four-year terms. Multiple state and local agencies are represented on the Board.

In 1992, BWSR adopted rules (8410), establishing the required content for local surface water management plans. These rules were updated July 2015.

### **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 regulates Rogers’ management of wastewater, stormwater and solid waste.

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. Rogers’ most recent application for NPDES coverage was submitted in June 2017. To obtain coverage, the City was required to develop a Stormwater Pollution Prevention Program (SWPPP) to address the following six minimum control measures:

- Public Education

- Public Involvement
- Illicit Discharge Detection and Elimination
- Construction Site Runoff Control
- Post-construction Runoff Control
- Pollution Prevention in Municipal Operations

### **3.8 Minnesota Department of Natural Resources (MnDNR)**

Originally created in 1931 as the Department of Conservation, the MnDNR has regulatory authority over the natural resources of the state. MnDNR divisions specialize in waters, forestry, fish and wildlife, parks and recreation, land and minerals, and related services. The Division of Waters 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 ten 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, Mn/DOT administers state highway systems. Mn/DOT approval is required for any construction activity within state right-of-ways. Mn/DOT also administers a substantial amount of funding for transportation projects completed in the City. Anticipated activities of Mn/DOT 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 Corps of Engineers (USACE)**

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. FEMA published the initial Flood Insurance Rate Map (FIRM) for Rogers in 1980. The effective FIRM was updated for Hennepin County, including Rogers, in 2016.

### **3.15 Natural Resource 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 1977. The SCS also developed hydrologic calculation methods that are widely used in water resources design.

### **3.16 U.S. Geological Survey**

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 Minnesota Geological Survey (MNGS)**

MNGS maps the geologic resources of the state of Minnesota as well as maintains the database of all wells drilled in Minnesota.

### **3.18 U.S. Fish and Wildlife Service**

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.

### 3.19 NPDES Permitting Process

The MPCA has designated the City of Rogers as an NPDES Phase II MS4 community (MN Rules 7090). The permit application outlined Rogers' Stormwater Pollution Prevention Plan (SWPPP) to address six minimum control measures:

- Public Education
- Public Involvement
- Illicit Discharge Detection and Elimination
- Construction Site Runoff Control
- Post-construction Runoff Control
- Pollution Prevention in Municipal Operations

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

Many of the goals and policies discussed in this local surface water management plan are directly related to requirements listed in the NPDES program. As a result, the implementation section of this plan references items listed in the City's SWPPP.

As a requirement of the TMDL the City will be evaluating all TMDL requirements and updating their NPDES SWPPP to include the applicable implementation activities.

### 3.20 Comparison of Regulatory Standards

Developing property within Rogers is subject to review and approval from Elm Creek watershed management organization covering the City (**Figure 9**). The Elm Creek Watershed Organization 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 or less restrictive than City standards. When standards diverge, Rogers emphasizes that the stricter standards apply.

The Elm Creek Watershed Management Commission has developed standards based on the goals and policies in their watershed management plan. These standards overlap Rogers' in some respect and cover ground not covered by Rogers in other respects. Ultimately, it is not the goal of Rogers' Local Surface Water Management Plan that watershed and Rogers regulatory programs be identical. Rather it is the goal of this plan that the regulatory programs be compatible and that it be understood that if one entity's regulations are silent on a subject the others may not be and that project proposers should take care to ensure that all overlying standards are considered.



# SECTION 4

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## Assessment of Issues

### 4.1 Stormwater Management System Assessment

Previous sections of this Local Surface Water Management Plan (LSWMP) provide background on the physical and regulatory forces shaping surface water management in Rogers. This section describes problems and challenges of specific waters, neighborhoods or programs identified by the City, watershed districts and others. Minnesota Statutes and Rules and Metropolitan Council guidance documents require "issues and corrective actions" or "problems and corrective actions" as elements of Local Surface Water Management Plans. The intent of this section is to serve the same purpose as this issue and identification requirement, but to also provide a broader assessment of the challenges facing Rogers. The assessment includes stormwater management issues, current and future, identified by the City, Elm Creek Watershed Management Commission, and other state and federal agencies.

### 4.2 Total Maximum Daily Loads (TMDLs)

A Total Maximum Daily Load (TMDL) is the maximum amount of a pollutant that is allowed to discharge to an impaired water body. The process of developing this standard is commonly known as the TMDL process and involves the following phases:

- Assessment and listing as an impaired water (MPCA 303(d) list)
- TMDL Study
- Implementation plan development and implementation
- Monitoring of the effectiveness of implementation efforts

Table 4 in Section 2 identifies seven impaired waterbodies either within the City of Rogers or in adjacent communities receiving discharge from Rogers. Currently, two TMDL studies have been approved that designate wasteload allocations to the City. A link to each TMDL study is listed below. Table 4.1 lists Rogers' allowed wasteload allocations and required yearly reductions. A detailed description of the relevant corrective actions for TMDL requirements is found in Section 4.3

Regarding the City's role in future TMDLs and TMDL Implementation Plans, the City recognizes that the responsibility for completion and implementation of the TMDL studies lies with the primary stakeholders contributing to the impairment. The City intends to cooperate with the watersheds in the development of the TMDL studies, acknowledging that the watersheds will take the lead on these studies. It is the intention of the City to fully implement the items and actions identified in existing and future TMDL Implementation Plans and designate adequate funding for those efforts. Section 4.3 addresses these TMDL issues by providing corrective actions for the City.

<b>Impaired Waterbody</b>	<b>Relevant TMDL Report</b>	<b>Wasteload Phosphorus Allocation (lbs/year)</b>	<b>Required Load Reduction (lbs/year)</b>	<b>Related Corrective Action in Section 4.3</b>
Cowley Lake	Elm Creek Watershed TMDL	56.5	236.4	1
Sylvan Lake	Elm Creek Watershed TMDL	11.0	36.1	2
Henry Lake	Elm Creek Watershed TMDL	-	-	3
Diamond Lake	Elm Creek Watershed TMDL	320.3	889.2	8, 10

### 4.3 Summary of Issues and Corrective Actions

An assessment of existing and potential water resource issues have been identified based on current information available to the City and include those listed in the Elm Creek Watershed Management Plan. Possible corrective actions have been identified and are listed in the Implementation Plan (Section 7). Locations for each corrective action are labeled and prioritized in Figure xx.

1. Cowley Lake TMDL

Addressing the Cowley Lake TMDL will require the cooperation of surrounding landowners to implement structural and non-structural BMPs. The City would like to complete a subwatershed assessment of the area to target cost-effective and potential successful BMPs. Additional monitoring of water quality and vegetation will also be necessary to prepare strategies and implementation plans to help improve the water quality of Cowley Lake. As the Cowley Lake watershed develops implementation of strict erosion control and water quality standards will play a significant role in improving water quality.

2. Sylvan Lake TMDL

3. Henry Lake TMDL

Currently one subwatershed assessment has been completed partially in the City of Rogers and was completed in 2018. The Rush Creek Headwaters Subwatershed Assessment Report included the Henry Lake Subwatershed which provided a detailed look at issues and potential solutions for the Henry Lake impairments. Two major issues are factored into the cause of the Henry Lake impairment the first being the dominant agricultural land use and second being the number of homes with septic systems that could possibly be failing. As the Henry Lake Subwatershed is outside of the urban service area and it is unlikely that the homes in the area will be connected to City services in the immediate future, the focus on this area will be the implementation of structural and non-structural best management practices. The

Rush Creek Headwaters Subwatershed Assessment identified several wetland restorations, grass waterways, and alternative tile intakes to be the primary BMPs implemented to help improve the impairment.

The Elm Creek Watershed TMDL has identified an extremely high TP load for a relatively small watershed. Additional monitoring off Henry Lake will be completed along with sediment cores to determine if more of the TP load is internal rather than from runoff sources.

4. Fox Creek Stream Stabilization

Several reaches of Fox Creek have been identified for stream stabilization. Historically, Fox Creek was a drainage ditch heavily influenced by farm field tiles and agricultural practices. In the last 20 years the land use surrounding the creek has increased intensity and the additional flows has caused the stream banks to begin eroding. The City will coordinate with Elm Creek WMC on streambank restoration projects and identify potential pond retrofits to increase storage capacity upstream.

5. Downtown Rogers Redevelopment

Much of the Downtown Rogers area was developed before stormwater standards existed and there is increasing redevelopment pressures will require stormwater upgrades and retrofits. The City will perform a stormwater study to identify possibly regional stormwater options for the downtown area to maximize efficient land use.

6. Hassan Elementary Infiltration Pond

The City has identified opportunities for increased infiltration near the Hassan Elementary School. Currently there is an existing infiltration pond that is functioning properly and can be expanded to infiltrate high flows from Fox Creek and treat stormwater before it enters the Crow River.

7. CSAH 81 Wetland Restoration

The CSAH 81 Wetland has increasingly degraded through years of neglect. Stormwater currently enters the wetland complex through a small ditch connected to the I-94 right of way and is largely untreated. The wetland flows southeast through an undersized culvert underneath CSAH 81 causing water to back up into the I-94 ditch. Water eventually outlets the wetland through a culvert underneath the BNSF railroad which causes flashing and bank erosion in the headwaters of Fox Creek. Through vegetation management and structural improvements the CSAH 81 wetland could function as a high quality wetland. There are also opportunities to increase the acreage of the wetland through modifications of outlet structures.

8. Henry's Woods Streambanks

Henry's Woods is one of the last uncut maple/basswood forest stands in Hennepin County and is protected through a conservation easement. There is a small creek that flows through the forest which has been influenced by surrounding development and has caused significant streambank erosion adding phosphorus and sediment to Grass Lake and Diamond Lake. Implementation of stricter development standards and streambank restoration may be necessary to improve conditions.

#### 9. Sod Field Wetland Restoration Investigation

The sod fields in Rogers currently occupy over 80 acres of lowland floodplain area that is mechanically pumped to keep fields dry enough for sod production. The City will be investigating the future options for restoration once sod production is complete. The area has been targeted for possibly wetland restoration projects and have the opportunity to support possible floodplain mitigation alleviating downstream flood impacts.

#### 10. Territorial Wetland Restoration

The area of the Territorial Wetland Restoration has been historically farmed successfully since the installation of a tile during the 1920's. A previously successful wetland restoration project has been implemented to the north of this area through breaking of tile and flooding lowland agricultural fields. A similar approach would be taken with this project with the goals of increasing the vegetation biodiversity, natural habitat, and decrease downstream flooding impacts.

#### 11. Industrial Park Stormwater Reuse

The Rogers Industrial Park is treated through a regional ponding system that was previously approved by Elm Creek Watershed. With limited opportunities within the industrial park to expand ponds, stormwater reuse has been identified as a possible solution to improve the water quality leaving the park.

#### 12. Implement Strategies and BMPs identified in Rush Creek Headwaters SWA

The Elm Creek Watershed and the City of Corcoran completed a subwatershed assessment which include portions of Rogers in 2018. The Subwatershed assessment identified potential problem areas within the headwaters of Rush Creek as well as BMPs that would help solve the issues. A large list of BMPs were created for subwatersheds located in Rogers and the City intends to use that assessment to address some of the problems.

### **4.4 Elm Creek Watershed Management Commission (EMWMC)**

The 2015 Elm Creek Watershed Management Commission Third Generation Management Plan has identified the following priorities:

- Providing cost share to Cities to implement projects to achieve WRAPS goals
- Use WRAPS results to establish priority areas and complete subwatershed assessments to determine BMPs
- Develop a model manure management ordinance
- Complete a pilot project for targeted fertilizer application
- Continue to participate in education and outreach activities

Each of these priorities impacts the City of Rogers. Specifically, the Third Generation Plan requires developments that meet the thresholds to comply with the ECWMC Rules and Standards regarding water

quality, rate control and volume management. The City of Rogers has included policies for rate control and volume management within this SWMP that are as stringent or more stringent than ECWMC.

The ECWMC requires that Rogers be responsible for maintenance of stormwater ponds constructed as a part of new development. Rogers already fulfills this obligation by implementing their MS4 Stormwater Pollution Prevention Program (SWPPP). This is also reflected as a policy in Section 6 of this plan.

The Elm Creek Watershed TMDL and WRAPS Reports were prepared as part of a “watershed approach” to address the waterbodies still listed as impaired and their corresponding TMDLs. This report looks to support local working groups and jointly develop protection and restoration strategies to be implemented throughout the watershed.



# SECTION 5

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## 5. GOALS AND POLICIES

### 5.1 Summary

The primary goal of Rogers' SWMP is to provide a framework for effective surface water management and to bring the City into statutory compliance. This includes guiding redevelopment activities and identifying and implementing retrofits to the existing system. These retrofits consist of both projects and programs. Additionally, the plan provides clear guidance on how Rogers intends to manage surface water in terms of both quantity and quality.

The goals and policies described in this section are intended to incorporate the foundation of several regional, state, and federally mandated programs. They are not meant to replace or alter the regional, state and federally mandated programs, rules and regulations, but to serve as an enhancement and provide some general policy guidelines. The goals address the management strategies of Elm Creek Watershed Management Organization, consistent with the objectives set forth in the State Wetland Conservation Act (WCA) and the Federal Nationwide Urban Runoff Program (NURP) Cooperation, collaboration, and partnering results in projects that are less likely to conflict with the goals of the affected entities, are better able to meet long-term goals, and are generally more cost-effective.

In addition to the goals and policies contained in this section, the City will annually review and update its Storm Water Pollution Prevention Plan (SWPPP) to effectively manage its stormwater system and be in conformance with the NPDES MS4 Program.

This section outlines the goals and policies specific to surface water management in Rogers. Goals and policies are grouped by their relationship to the key issues listed below:

1. Section 5.2 - Land Development, Redevelopment, and City Projects
2. Section 5.3 - Water Resource Management
3. Section 5.4 - Management of Floodplains, Shorelands, and Natural Areas
4. Section 5.5 - Citywide Program Elements
5. Section 5.6 - Support of Other Agencies

### 5.2 Land Development, Redevelopment, and City Projects

#### Goal

*Manage land disturbance and increased impervious surfaces to prevent flooding and adverse impacts to water resources.*

#### Policies

- The City will facilitate management of the rate of runoff, volume of runoff, nutrient loads and sediment loads from land development projects, through local codes, watershed standards and agency regulations.

- Rogers will consider redevelopment and linear projects as an opportunity to retrofit non-degradation to previously developed areas and infrastructure.
- Rogers will amend or modify its ordinances and/or engineer standards to facilitate stormwater quantity and quality performance measures identified in its Local Surface Water Management Plan.
- Rogers will consider water quality retrofits on existing City properties as a means of providing treatment to currently developed areas without treatment.
- Rogers will reference the following documents as guidance for Best Management Practices in the City: The Minnesota Pollution Control Agency's Protecting Water Quality in Urban Areas and its Minnesota Stormwater Manual, and the Metropolitan Council's Minnesota Urban Small Sites BMP Manual.

### **5.2.1 Runoff volume management**

#### **Goal**

*Reduce pollutant loads and impacts to water bodies and encourage groundwater recharge by reducing the volume of stormwater runoff from development.*

#### **Policies**

- Any site that requires an NPDES construction site permit will be required to implement permanent volume management such that existing runoff volumes are maintained. Sites that do not require an NPDES construction site permit shall maintain existing runoff volumes to the extent practical.
- Rogers' preferred water quality strategy is to reduce the volume of its runoff through infiltration or reuse projects. If volume control is not feasible due to site conditions, alternatives to achieve relevant volume control goals will be accepted. Volume control calculations will be consistent with Rogers' Engineering Guidelines.
- Redevelopment and linear projects will implement runoff volume management practices for net new impervious surfaces. Redevelopment and linear projects will consider whether additional runoff volume management practices might feasibly be incorporated for existing impervious surfaces also.
- Where feasible, the City will encourage infiltration of the 2-year rainfall event.
- The City will require development and redevelopment to comply with ECWMC Water Management Plan total phosphorus requirements in compliance with nondegradation.
- The City will implement infiltration BMPs in redevelopment and improvement areas when feasible.

### **5.2.2 Runoff Rate Management**

#### **Goal**

*Control the rate of stormwater runoff from development to reduce downstream flooding and erosion to protect water resources.*

#### **Policies**

- Future peak rates of discharge from new development and redevelopment will not exceed existing peak rates of discharge for the 1-yr or 2-yr, 10-yr and 100-yr, 24-hr NRCS Type II, 24-hour storm events using Atlas 14 rainfall values.
- New storm sewers and open channels shall be designed using the Rational Method or other technical method approved by the City.
- The City will base all drainage system analyses and designs on proposed full development land use patterns.
- Where development occurs upstream of a known flood-prone area, the City may seek additional rate control as a means to mitigate flooding.
- When off-site regional ponding is available and this off-site ponding accomplishes the rate control requirement, then the rate control requirement can be waived for a particular site.
- New storm sewer systems shall be designed using the following guidelines:
  - New lateral storm sewer systems shall be designed to accommodate discharge rates for the 10-yr critical storm event using Atlas 14 rainfall values. Trunk storm sewer should be designed as a minimum to carry 100-year pond discharge in addition to the 10-year design flow. New storm sewer systems shall be designed to match the inside top elevation of adjacent pipes. The maximum velocity shall not exceed 10 feet per second, except when entering a pond, where the maximum velocity shall be limited to 6 feet per second.

### **5.2.3 Flood Prevention**

#### **Goal**

*Provide adequate storage and conveyance of runoff to protect the public safety and minimize property damage.*

#### **Policies**

- Building low floor elevations within the City of Rogers shall be required to be at least 2 feet above the emergency overflow elevation. In areas where this separation is not or cannot be provided, additional analysis is required showing that the 100-year back-to-back storm event does not affect adjacent homes.
- Flood storage for those landlocked depressions with no outlet present must accommodate the volume generated by back-to-back 100-yr, 24-hr storm events or the 100-yr, 10-day snowmelt event, whichever generates the higher calculated HWL.
- The City will encourage, to the extent practicable, implementation of Low Impact Development techniques and mitigation of stormwater runoff volume within development and redevelopment areas draining to landlocked depressions.
- The City shall require that rate control structures and stormwater drainage ways are included in a drainage or utility easement.
- The City will require compensatory storage for any filling in the 1% (100-year) floodplain at a 1:1 ratio.

### **5.2.4 Nutrient and Sediment Loading**

#### **Goal**

*Reduce the nutrient and sediment loads over current conditions.*

### **Policies**

- Rogers' minimum standard is water quality treatment that meets the requirements of the NPDES construction site permit. Under no circumstances shall overall treatment fall below the requirements of this permit.
- Any site that requires a NPDES construction site permit will be required to reduce phosphorus and total suspended solid loadings over current conditions. The water quality control standard shall be considered satisfied if the volume control standards has been satisfied. If volume control is infeasible due to site constraints, a 20% reduction in phosphorus loading over existing conditions will be required for redevelopment projects. In cases where existing land cover is natural, the maintenance of existing loading rates is acceptable if the minimum requirements identified in the policy above are met.
- Rogers will institute a standard practice of evaluating all development, redevelopment, and linear projects for opportunities to retrofit water quality treatment to areas without significant existing treatment.
- The City will enforce their stormwater management practices to ensure that direct discharge of untreated stormwater runoff to water bodies is prohibited where feasible.
- The City will require outlet skimming in all water quality ponds. Skimming shall occur for up to the 10-year, 24-hour event. The City shall not allow the use of submerged pipes to provide skimming.

## **5.2.5 Erosion and Sediment Control**

### **Goal**

*Prevent sediment from construction sites from entering the City's surface water resources*

### **Policies**

- The City will enforce the Erosion and Sediment Control Ordinance as outlined in its NPDES permit.
- The City will require that all land disturbing activities of one acre or more obtain an NPDES construction stormwater permit from the MPCA.
- The City will require that erosion and sediment control conform to the standard practices contained in the Minnesota Stormwater Manual, MPCA BMP Handbook, and Met Council's Minnesota Urban Small Sites BMP Manual.
- The City will require that all erosion and sediment control measures specified in erosion control plans are installed prior to land disturbance, and removed after 75% of the vegetation has been established to prevent soil failure under erosive conditions after construction.
- The City will encourage preservation of natural vegetation to the greatest extent practical.
- The City will require that the time that construction areas remain exposed is minimized by phasing construction activities and establishing temporary and permanent vegetation.
- The City will require that sediment discharge is prevented by protecting existing storm drain inlets and conveyance systems, stockpiling soil in protected areas and constructing permanent sediment forebays upstream of basins and water bodies.

- The City will periodically review its Construction Site Storm Water Runoff Control Ordinance to maintain conformance with the NPDES construction permit, the City's MS4 permit, guidance from Metropolitan Council and the requirements of the watershed management organizations.

### **5.3 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.*

#### **Policies**

- The City will protect water resources through implementation of the Wetland Conservation Act, groundwater protection rules and TMDL studies.
- The City will look to retrofit rate control, water quality treatment, and runoff volume reduction upstream of existing water bodies, as these opportunities arise. Rogers considers Low Impact Development techniques as the preferred means of retrofitting water quality treatment and runoff volume reduction.
- The City will adopt a manure control ordinance outlined by the Elm Creek Watershed.

#### **5.3.1 Wetland Management**

#### **Goal**

*Protect and preserve wetlands to maintain or improve their function and value*

#### **Policies**

- The City will continue to administer WCA responsibilities within the City to ensure no net loss of wetland functions and values.
- The City will administer their WCA responsibilities using technically trained staff. At a minimum the trained staff will be certified by the Minnesota Wetland Delineator Certification Program and/or a comparable program.
- The City will encourage natural buffer zones around ponds and wetlands. Buffer areas are not to be mowed or fertilized, except that harvesting of vegetation may be performed to reduce nutrient inputs.
- The City will work collaboratively with the Elm Creek Watershed Management Commission in the application of City and Commission policies and performance standards for wetlands.
- The City will identify and implement opportunities to enhance the functions and values of degraded wetlands within the City, as a part of park projects, infrastructure projects, or other projects.
- The City will conduct a City Wetland Inventory and Assessment and implement the results into future water resource management plans and future planning documents.
- The City will require 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.

- The City requires through its wetland ordinance that future development proposals include natural buffer zones around wetlands and streams. Buffer areas should not be mowed or fertilized, except that harvesting of vegetation may be performed to reduce nutrient inputs.
- The City requires that runoff be pre-treated prior to discharge to wetlands. Wetlands may not be considered as treatment areas for the purposes of meeting Rogers' stormwater management standards. Direct roof runoff that is discharged to a wetland without pretreatment will be reviewed by the City.

### **5.3.2 Lake Management**

#### **Goal**

*Manage lakes to improve water quality and protect resource values.*

#### **Policies**

- The City will begin implementing the TMDL Implementation Plans listed in Section 2. Through its annual reporting, the City will report progress toward meeting this phosphorus load reduction.
- The City will require that runoff be pre-treated prior to discharge to lakes.
- The City will cooperate with the Three Rivers Park District and Elm Creek Watershed to identify possible activities to improve water quality in impaired waterbodies.

### **5.3.3 Stream Management**

#### **Goal**

*Improve water quality, provide wildlife habitat and protect the resource value of streams*

#### **Policies**

- The City will manage stream watersheds to strive to meet existing conditions as much as feasible.
- The City will cooperate with the ECWMC to remove deadfall from creeks within the City.
- The City will identify eroding stream areas, prioritize stabilization projects, and identify funding sources for project implementation.
- The City will require a 50 foot buffer for Rush Creek.

### **5.3.4 TMDL Implementation**

#### **Goal**

*Address target pollutants identified in TMDL studies to improve the quality of impaired waters.*

#### **Policies**

- The City will implement the pollutant reduction strategies identified in the SWPPP.
- The City will incorporate completed TMDL studies and relevant implementation projects.
- The City will use the findings of the TMDL studies to guide development review.
- The City will consider Low Impact Development techniques as the primary means of meeting load reductions identified in TMDL implementation plans.

### **5.3.5 Groundwater Recharge and Protection**

#### **Goal**

*Protect groundwater resources and groundwater dependent resources.*

#### **Policies**

- The City will cooperate with Hennepin County, MDH, and other state and federal agencies to identify areas of groundwater resources critical to protect.
- The City will continue to implement its Wellhead Protection Plan
- The City will use the guidance developed in the Minnesota Stormwater Manual for locating infiltration BMPs in vulnerable Wellhead Protection Areas.

### **5.4 Management of Floodplains, Shorelands, and Natural Areas**

#### **Overall Goal**

*Manage the City's floodplains, shorelands and natural areas to preserve the functions and values of these resources for future generations.*

#### **Policy**

- The City will manage these areas through implementation of local zoning codes and agency regulations.

#### **5.4.1 Floodplain Management**

#### **Goal**

*Control Development in flood prone areas to protect the public safety and minimize property damage.*

#### **Policies**

- The City will regulate land development within the Floodplain District to ensure that floodplain capacity and flood elevations are not adversely impacted by development, and that new structures are protected from damage.
- The City will update the Floodplain Management Ordinance, City Code 826.74 as required by FEMA and the MnDNR, or as needed, to ensure adequate protection for structures and eligibility for flood insurance programs.
- The City will require a 1:1 ratio for floodplain fill.

#### **5.4.2 Shoreland Management**

#### **Goal**

*Conserve and protect the scenic, historical and cultural resources of the waterbodies within the City and maintain a high standard of environmental quality.*

#### **Policies**

- The City will regulate land development within the Shoreland Overlay District to minimize impacts as specified in the City Code 125.226.

- The City will continue to enforce the water quality policies and standards to help improve water quality of surface waters.

### 5.4.3 Natural Area Management

#### Goal

*Protect and enhance natural areas within the City to provide wildlife habitat and water resource benefits.*

#### Policies

- The City will review land use and development decisions with the intent to preserve natural resources, connect environmental corridors and provide buffers for streams, wetlands and lakes. Existing MLCCS coverage and other data sources will guide decisions regarding natural area preservation.
- The City will support programs to maintain and restore the resource value of natural areas.
- The City will continue to implement its Open Space Plan
- The City will coordinate conservation efforts with other agencies, such as watersheds, Hennepin County, and Three Rivers Park.

### 5.5 City Wide Program Elements

#### Overall Goal

*Manage water resources and drainage systems on a citywide scale*

#### Overall Policies

- The city wide 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.
- The City will actively implement the NPDES Stormwater Pollution Prevention Plan as stated in the MS4 permit.

#### 5.5.1 Pollution Prevention

#### Goal

*Detect and address urban pollutants discharged to storm sewers.*

#### Policies

- The City will address pollutant sources through enforcement of codes and public education.
- The City will develop and maintain an effective spill response plan
- The City will continue to develop and update their storm sewer system on an annual basis
- The City will complete employee training in the operation, maintenance and inspection of stormwater facilities, as included in the SWPPP.
- The City will monitor storm sewer outfalls for pollutants as outlined in the City's NPDES permit.



## 5.5.2 Monitoring and Maintenance

### Goal

*Maintain the function and effectiveness of stormwater management structures through monitoring and maintenance.*

#### Policies

- 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
- The City will continue to conduct annual street sweeping of City owned streets. Road sections will be swept at least once annually and ideally twice a year

### Goal

*Ensure the long term operation and maintenance of stormwater management BMPs.*

#### Policies

- The City will require that all ponds be returned to their original design capacity prior to acceptance by the City and that an as-built design be submitted to verify that the pond meets the original design capacity.
- The City will require developers to provide a minimum one-year guarantee that stormwater management facilities are properly installed, maintained and functioning.
- The City will require that an operation and maintenance plan for the proposed stormwater management BMPs be submitted for all development and redevelopment projects.
- The City will develop a maintenance plan consistent with the requirements of the NPDES MS4 Permit.

## 5.5.3 Public Education

### Goal

*Inform and educate residents about stormwater pollution, the effects of urban runoff and the need to protect natural resources.*

#### Policies

- The City will implement a public education and outreach program as identified in the City's NPDES permit.
- The City will develop and maintain a public education program for landowners to promote reduction of 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.
- The City will coordinate public education work with Elm Creek Watershed Management Commission
- The City will promote citizen and volunteer efforts to protect, restore and enhance local water and natural resources.

- The City will use available opportunities through its public meetings, website, City newsletter, Comprehensive Plan, or interpretive elements at parks and open space sites to inform its residents about the value of local water resources, the effects of stormwater runoff, and opportunities for stewardship of water and natural resources.

#### **5.5.4 Funding**

##### **Goal**

*Secure adequate funding to support implementation of the surface water management plan.*

##### **Policies**

- The City will cost effectively manage the plan to balance surface water goals with available resources.
- The City will seek grant funds or other resources to assist with special projects or implementation of plan goals.
- The City will utilize the Stormwater Utility Fund to pay for stormwater management projects and implementation activities.

#### **5.6 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 maintain and improve water quality in the city.

##### **Goal**

*Facilitate WMO review of development projects and enforcement of watershed standards.*

##### **Policy**

- Rogers will coordinate development review activities with the watershed organizations with jurisdictions overlapping that of the City.

##### **Goal**

*Cooperate with other organizations to complete and implement management plans and studies for water resources in Rogers.*

##### **Policy**

- The City will work with local watershed management organizations, Hennepin County, and others when appropriate and as resources are available to participate in resource management plans or studies that benefit water and natural resources.
- The City will work with the local watershed management organizations to jointly implement the LSWMP.

**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 Hennepin 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.
- The City will support well-sealing programs developed by Hennepin County and the Minnesota Department of Health.

# SECTION 6

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## 6. IMPLEMENTATION PROGRAM

### 6.1 Overview

The City has developed an implementation program to address issues identified earlier in this Local Surface Water Management Plan. This program reflects the needs and concerns of many stakeholders including the City Council, City Staff, citizens, Elm Creek Watershed Management Organization, and funding capabilities. The City estimated total costs, identified possible funding sources, and developed an approximate schedule to complete the implementation activities. Yearly assessments on the Surface Water Management Plan will likely adjust priority and timing of projects to make the best use of available local funding, meet MS4 Permit requirements, address existing water resource management problems, and prevent future problems from occurring.

### 6.2 10-Year Implementation Plan Priorities

**Table 6.1** presents Rogers' Implementation Program from the issues identified within this LSWMP's current assessment section. More, importantly, the Implementation Program aligns with Rogers' goals and policies as presented in Section 5. The table presents implementation items in each of the four functional areas of Capital Improvements (CIP), NPDES MS4 (MS4), Operation and Maintenance (OM), and Official Controls (OC). The implementation program incorporates Rogers' Storm Water Pollution Prevention Plan (SWPPP) through direct reference of items that have financial impact. Rogers will update the implementation program in conjunction with its annual NPDES MS4 public meeting.

### 6.3 Financial Considerations

The City will use funds generated from its Stormwater Utility as the primary funding mechanism for its implementation program including; maintenance, repairs, capital projects, studies, etc. Rogers' current stormwater utility fee structure provides approximately \$520,000 per year. If funds from this utility fee do not cover necessary costs, the City will consider adjusting the Stormwater Utility Fee to cover the costs associated with the implementation program. The City will continue to review the stormwater utility fee annually and adjust based on the stormwater related needs of the City and other available funding mechanisms. The City will also take advantage of grant or loan programs to offset project costs where appropriate and cost-effective. Below is a list of various sources of revenue that the City will attempt to utilize:

- Grant monies possibly secured from various agencies. This could include watershed management organizations, Hennepin County, Mn/DOT, the MPCA, the MnDNR, Legislative-Citizen Commission on Minnesota Resources (LCCMR), the Board of Water and Soil Resources (BWSR), the watershed districts and others.
- Special assessments for local improvements performed under authority of Minnesota Statutes Chapter 429.

- Revenue generated by Watershed Management Special Tax Districts provided for under Minnesota Statutes Chapter 473.882.
- Project funds obtained from watershed district levies as provided for in Minnesota Statutes Chapter 103D.905 for those projects being completed by or in cooperation with Elm Creek.
- Developer funds.
- Other sources potentially including tax increment financing, tax abatement, state aid, and others.

Rogers Surface Water Management Implementation Plan													
No.	Project Description	Cost Estimate	Possible Funding Sources	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
<b>Capital Improvement Projects (CIP)</b>													
1	129th Ave Wetland Outlet	\$ 850,000.00	General Fund						\$ 850,000.00				
2	Word of Peace Storm Rehab	\$ 165,000.00	General Fund			\$ 165,000.00							
3	Dahlheimer Wetland Restoration	\$ 825,000.00	General Fund, Elm Creek, Grants									\$ 825,000.00	
4	Downtown Area Regional Ponding	\$ 600,000.00	General Fund, Elm Creek, Grants					\$ 600,000.00					
5	John Deere Lane and CSAH 81 Storm Sewer	\$ 250,000.00	General Fund				\$ 250,000.00						
6	Fletcher Lane Drainage	\$ 50,000.00	General Fund		\$ 50,000.00								
7	South Community Park and CSAH 150 Ditch Stabilization	\$ 220,000.00	General Fund, Elm Creek, Grants			\$ 220,000.00							
8	Fox Creek Stream Stabilization Phase I	\$ 320,000.00	General Fund, Elm Creek, Grants	\$ 320,000.00									
9	Fox Creek Stream Stabilization Phase II	\$ 390,000.00	General Fund, Elm Creek, Grants		\$ 390,000.00								
10	Hassan Elementary Infiltration Pond	\$ 110,000.00	General Fund, Elm Creek, Grants				\$ 110,000.00						
11	South Pointe Stream Stabilization	\$ 250,000.00	General Fund, Elm Creek, Grants							\$ 250,000.00			

Rogers Surface Water Management Implementation Plan													
No.	Project Description	Cost Estimate	Possible Funding Sources	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
<b>Monitor and Studies (CIP)</b>													
12	Update City Stormwater Model	\$ 50,000.00	General Fund	\$ 50,000.00									
13	Downtown Area Regional Ponding	\$ 25,000.00	General Fund		\$ 25,000.00								
14	Norden and Shadow Wood Hydrologic Study	\$ 25,000.00	General Fund			\$ 25,000.00							
15	Fox Creek at Crow River Monitoring Station	\$ 25,000.00	General Fund				\$ 25,000.00						
16	Rush Creek at CR 117 and Valley Drive Monitoring Station	\$ 25,000.00	General Fund					\$ 25,000.00					
17	Rush Creek at CSAH 101 Monitoring Station	\$ 25,000.00	General Fund						\$ 25,000.00				
18	Sylvan Lake Subwatershed Assessment	\$ 25,000.00	General Fund, Watershed, Grants				\$ 25,000.00						
19	Cowley Lake Subwatershed Assessment	\$ 25,000.00	General Fund, Watershed, Grants					\$ 25,000.00					







# SECTION 7

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## 7.ADMINISTRATION

### 7.1 Review and Adoption Process

Review and adoption of this 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 adopted pursuant to section 103B.231. 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.’

### 7.2 Collaboration with Other Entities

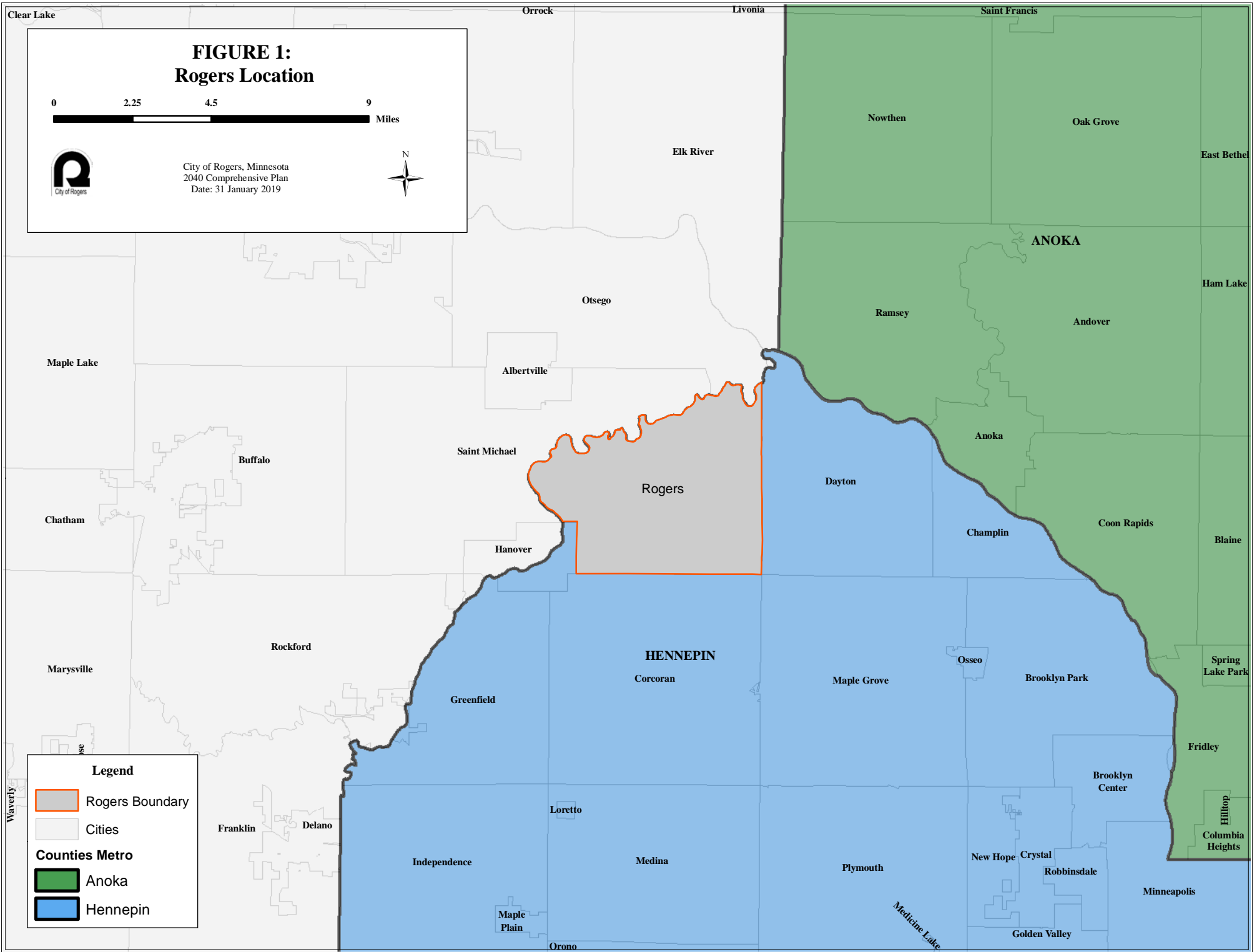
Once Elm Creek Watershed has reviewed and approved this Local Surface Water Management Plan the City and Elm Creek will work collaboratively to implement and complete the shared goals of this plan. The City of Rogers looks forward to expanding and building off of the working relationship between the City and Elm Creek Watershed Management Commission.

### 7.3 Plan Amendments and Future Updates

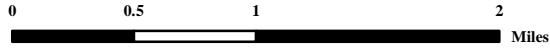
This Local Surface Water Management Plan will be incorporated into the City’s 2018 Comprehensive Plan update and will be applicable for a 10-year period, at which time an updated plan will be required. Periodic amendments may be required to incorporate changes in local practices. Changes in the Watershed Management Plan of Elm Creek may also require revisions to this plan. Any significant amendments that are made to the plan must be submitted to Elm Creek Watershed Management Commission and the Met Council for review and approval before adoption by the City. The City anticipates minor updates annually after CIP and budget reviews.

# Appendix A

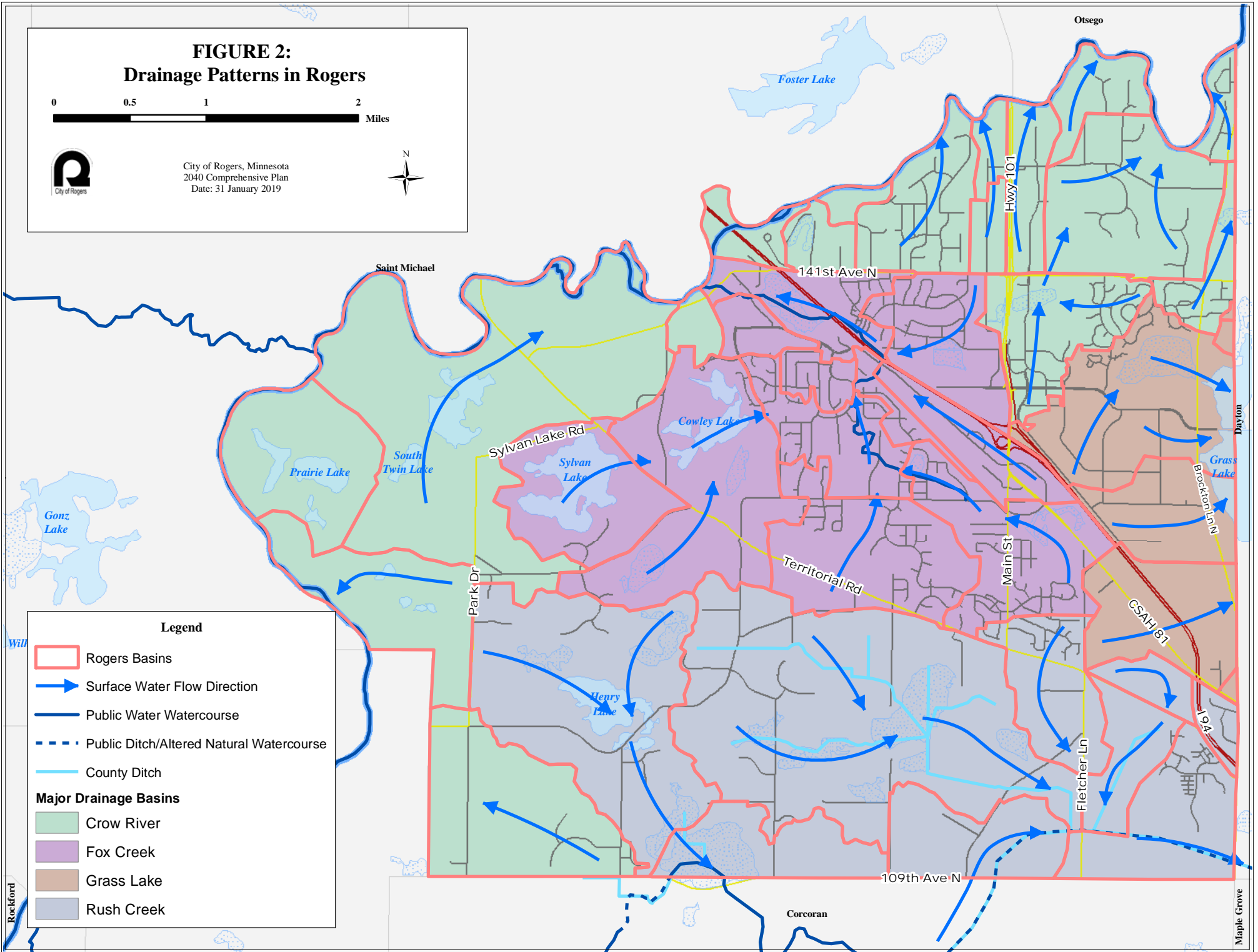
## Figures



**FIGURE 2:  
Drainage Patterns in Rogers**



City of Rogers, Minnesota  
2040 Comprehensive Plan  
Date: 31 January 2019



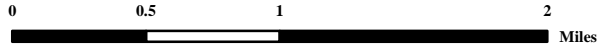
**Legend**

- Rogers Basins
- ➔ Surface Water Flow Direction
- Public Water Watercourse
- Public Ditch/Altered Natural Watercourse
- County Ditch

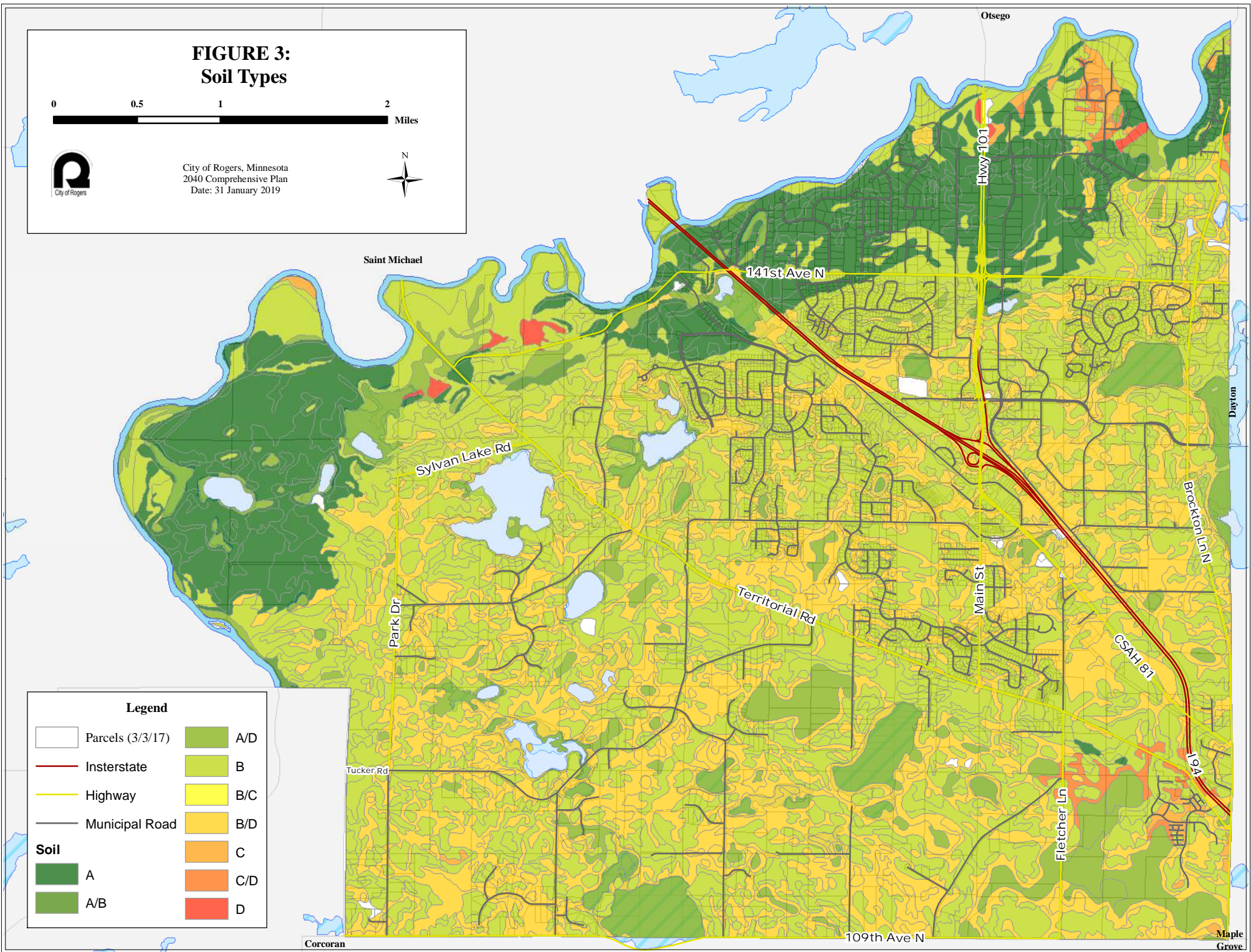
**Major Drainage Basins**

- Crow River
- Fox Creek
- Grass Lake
- Rush Creek

**FIGURE 3:  
Soil Types**



City of Rogers, Minnesota  
2040 Comprehensive Plan  
Date: 31 January 2019



**Legend**

	Parcels (3/3/17)		A/D
	Interstate		B
	Highway		B/C
	Municipal Road		B/D
	<b>Soil</b>		C
	A		C/D
	A/B		D

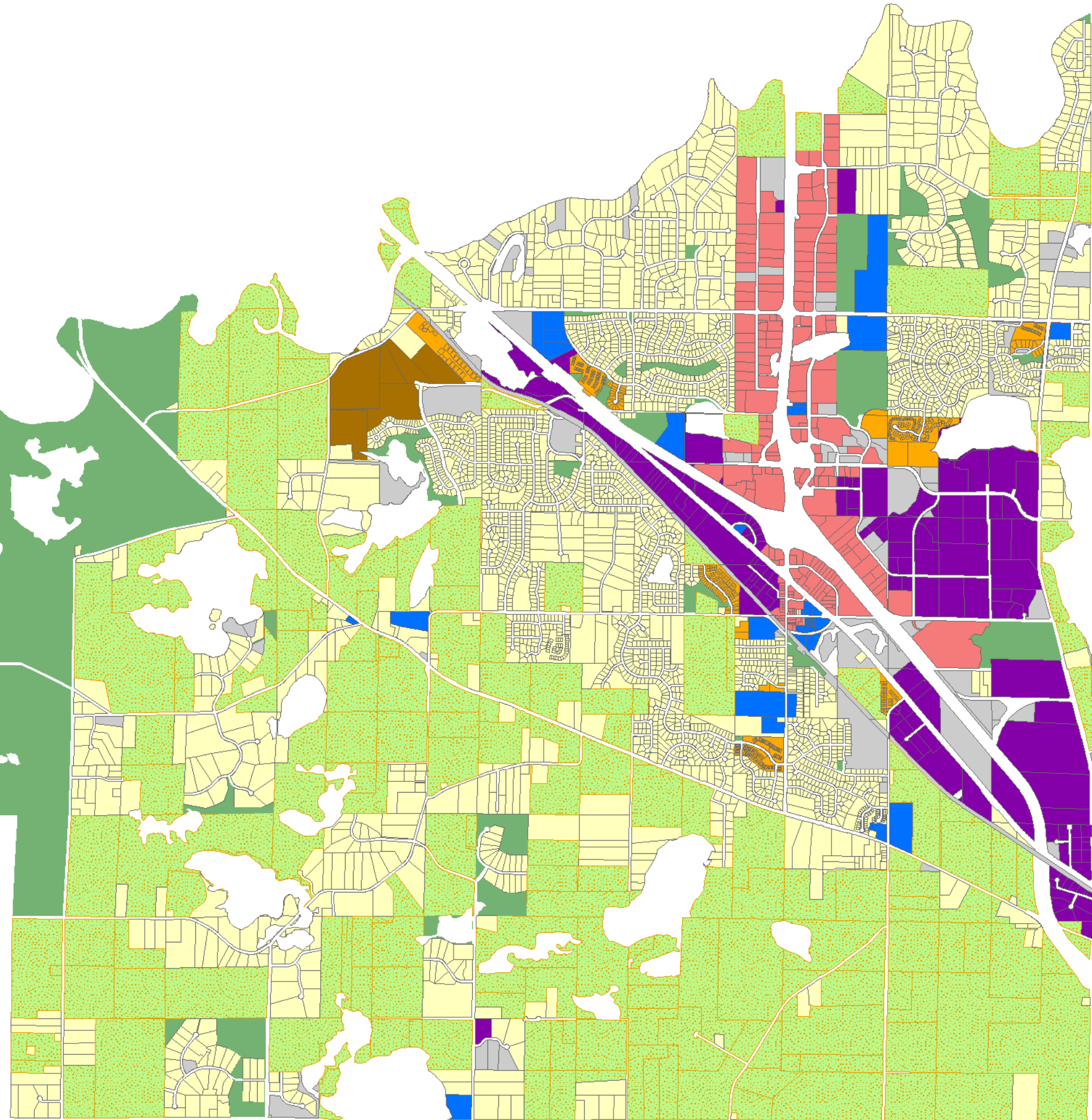
**FIGURE 4:  
2018 Land Use**













City of Rogers, Minnesota



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**Legend**

-  Agriculture
-  Vacant
-  Extractive
-  Institutional
-  Park and Open Space
-  Single-Family Residential
-  Multi-Family Residential
-  Retail and Other Commercial
-  Industrial and Utility
-  Railway

**FIGURE 5:  
Future Land Use - 2040**

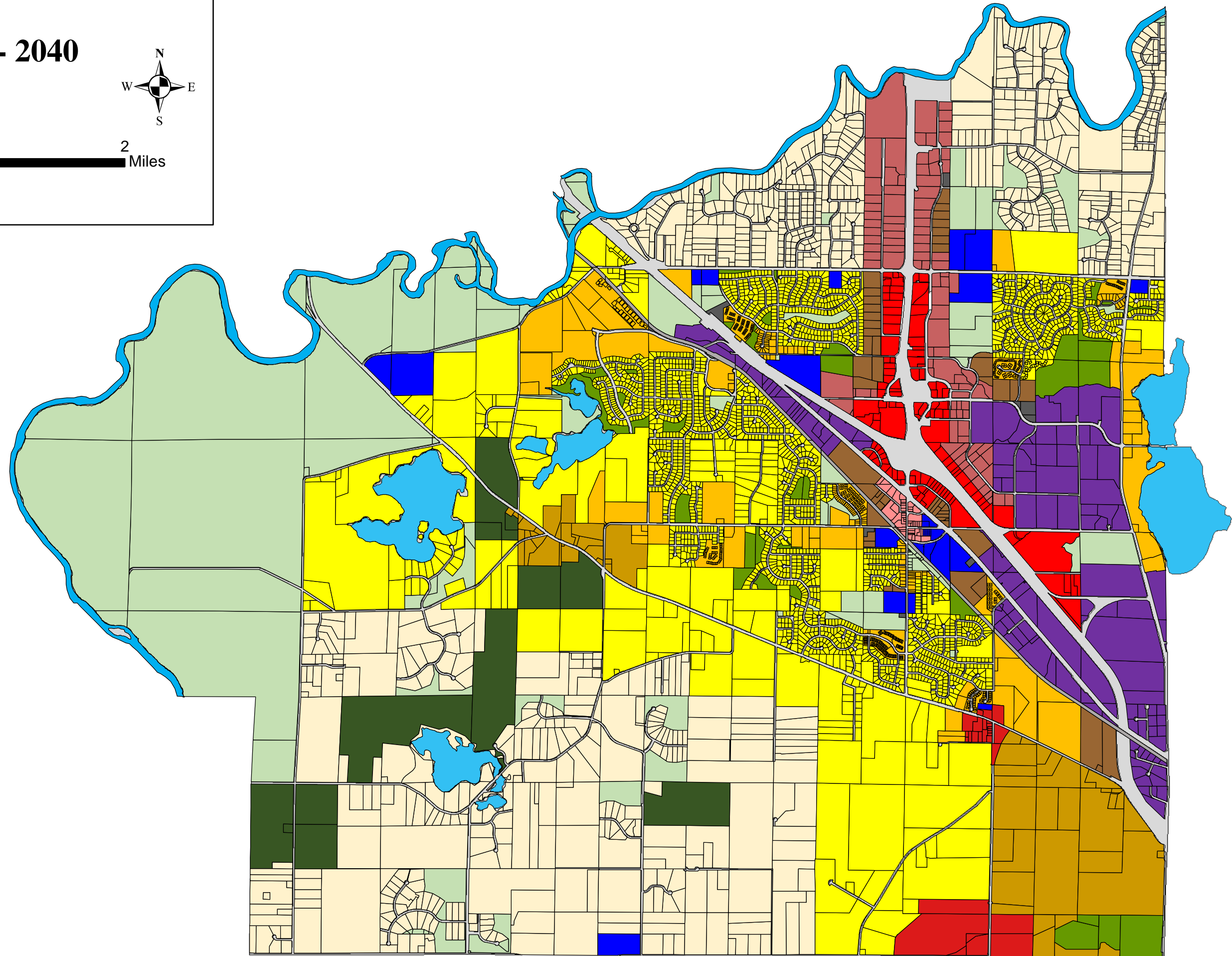


0 0.5 1 2 Miles



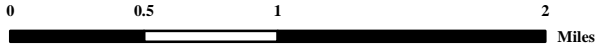
**Legend**

-  Rural Residential
-  Low Density Residential
-  Medium Density Residential
-  High Density Residential
-  Mixed Residential
-  Commercial
-  Mixed Use Regional
-  Mixed Use Neighborhood
-  Mixed Use Downtown
-  Industry
-  Park & Open Space
-  Protected Resources
-  Agriculture Preserve
-  Institutional
-  Utility
-  Railroad
-  Water
-  Roads

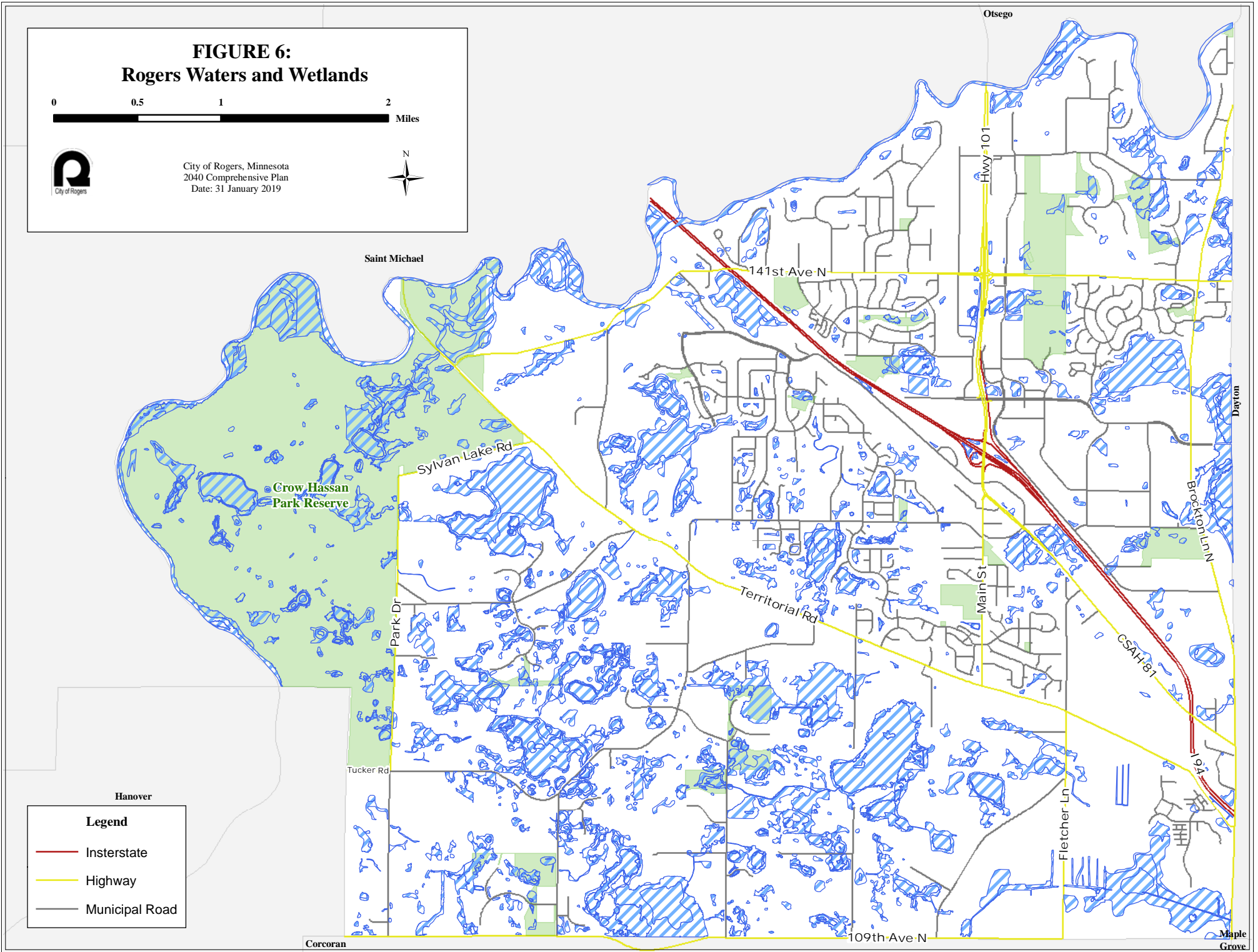







**FIGURE 6:  
Rogers Waters and Wetlands**



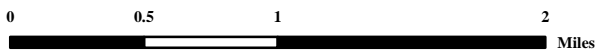
City of Rogers, Minnesota  
2040 Comprehensive Plan  
Date: 31 January 2019



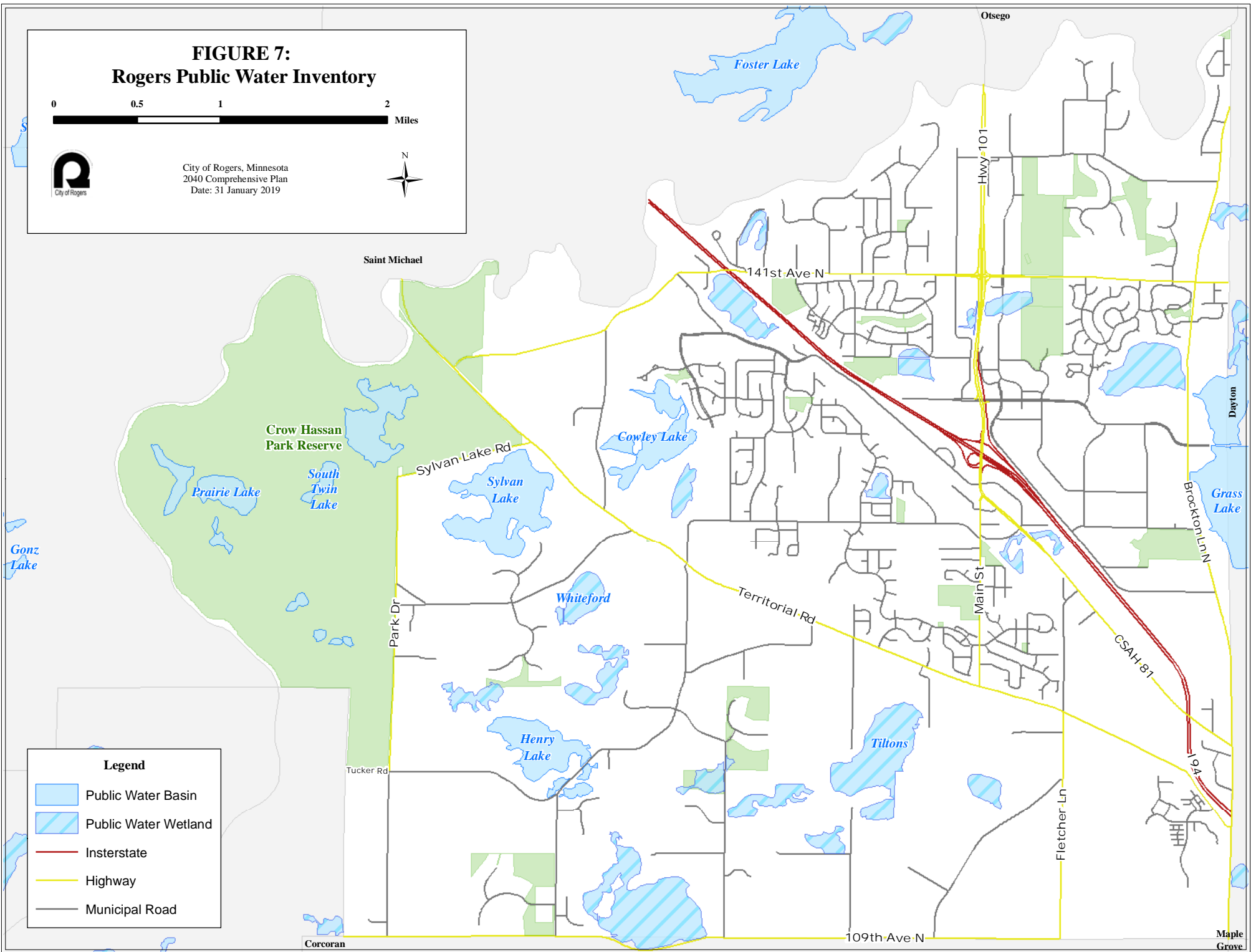
**Legend**

-  Interstate
-  Highway
-  Municipal Road






**FIGURE 7:  
Rogers Public Water Inventory**



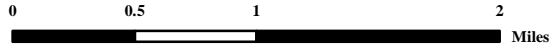
City of Rogers, Minnesota  
2040 Comprehensive Plan  
Date: 31 January 2019



**Legend**

-  Public Water Basin
-  Public Water Wetland
-  Interstate
-  Highway
-  Municipal Road

**FIGURE 8:  
MLCCS Land Coverage**

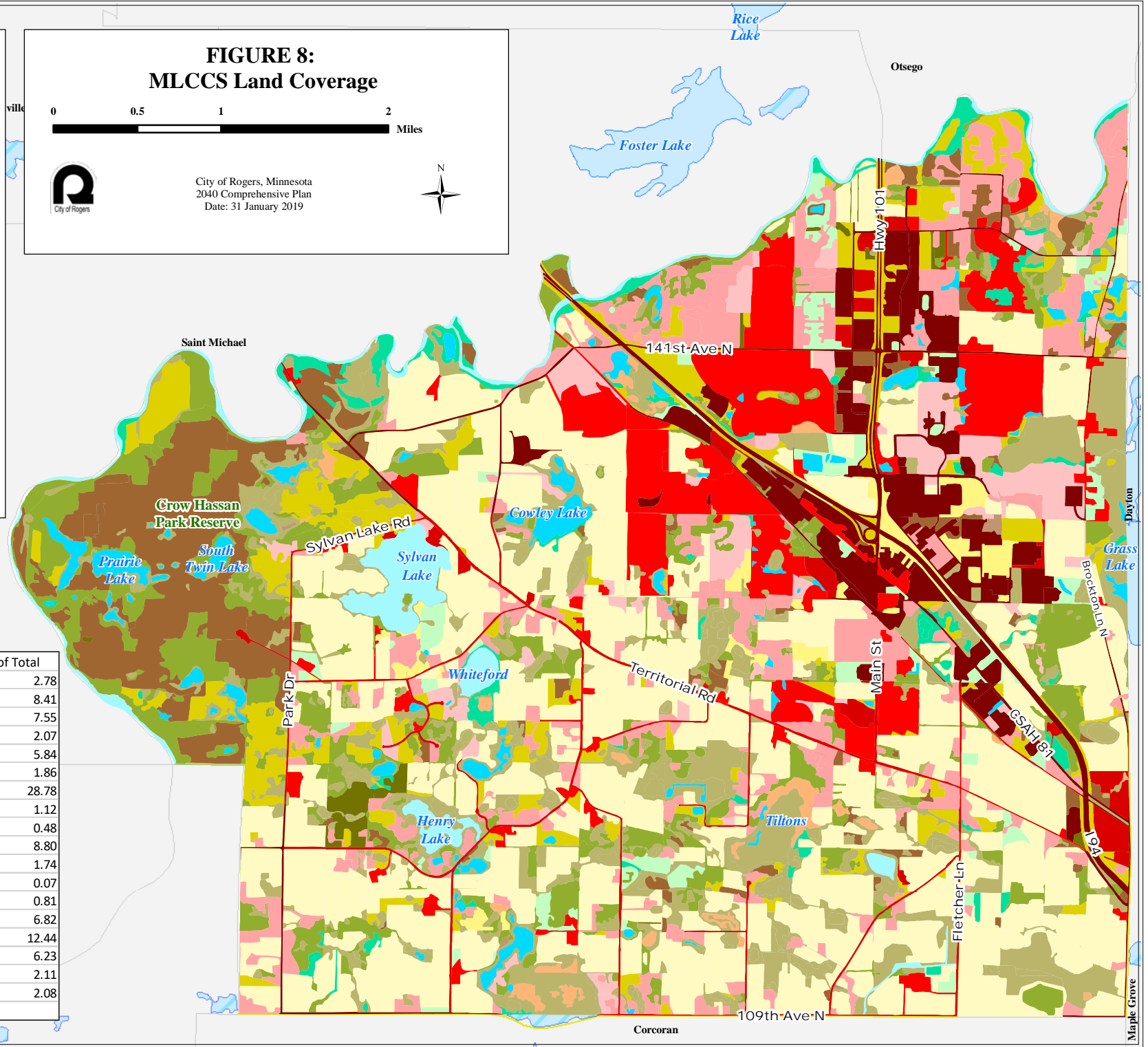


City of Rogers, Minnesota  
2040 Comprehensive Plan  
Date: 31 January 2019

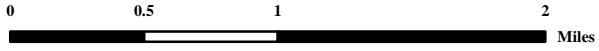


- Legend**
- 11. 5-10% Impervious
  - 12. 11-25% Impervious
  - 13. 26-50% Impervious
  - 14. 51-75% Impervious
  - 15. 76-100% Impervious
  - 21. Short Grasses
  - 22. Agricultural Land
  - 23. Maintained Tall Grass
  - 24. Tree Plantation
  - 31. Forest
  - 32. Wetland Forest
  - 51. Shrubland
  - 52. Wetland Shrubs
  - 61. Tall Grasses
  - 62. Wetland Emergent Veg.
  - 63. Dry Tall Grasses
  - 90. Open Water
  - 92. Wetland Open Water

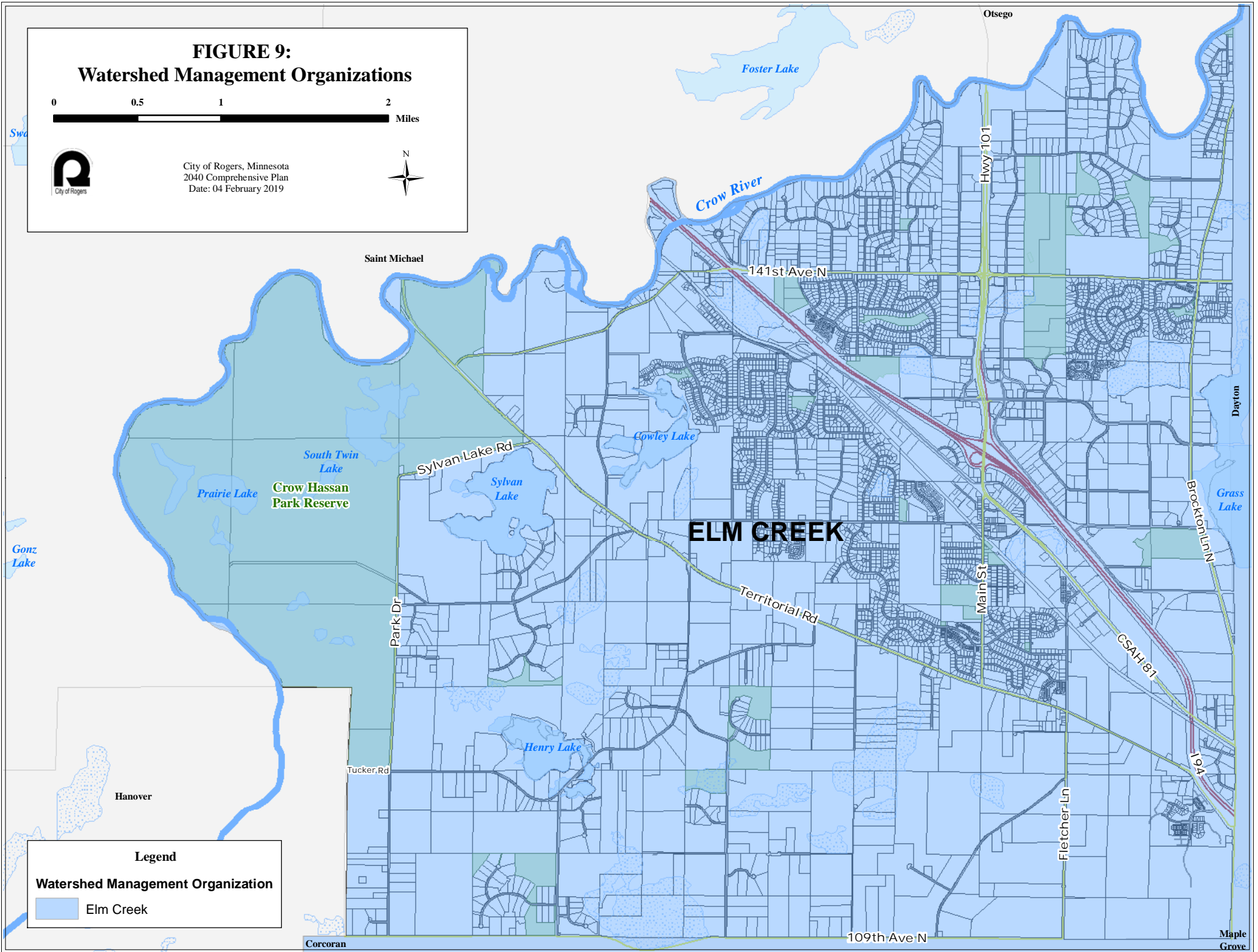
Land Cover Category	Acres	% of Total
5-10% Impervious	466.7	2.78
11-25% Impervious	1412.4	8.41
26-50% Impervious	1268.3	7.55
51-75% Impervious	348.4	2.07
76-100% Impervious	981.0	5.84
Short Grasses	312.6	1.86
Agricultural Land	4833.6	28.78
Maintained Tall Grass	188.4	1.12
Tree Plantation	81.1	0.48
Forest	1478.8	8.80
Wetland Forest	292.9	1.74
Shrubland	11.2	0.07
Wetland Shrubs	136.4	0.81
Tall Grasses	1145.3	6.82
Wetland Emergent Veg	2090.0	12.44
Dry Tall Grasses	1046.9	6.23
Open Water	353.8	2.11
Wetland Open Water	349.0	2.08
<b>Total</b>	<b>16796.8</b>	



**FIGURE 9:  
Watershed Management Organizations**



City of Rogers, Minnesota  
2040 Comprehensive Plan  
Date: 04 February 2019



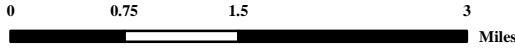
**ELM CREEK**

**Legend**

**Watershed Management Organization**

- Elm Creek

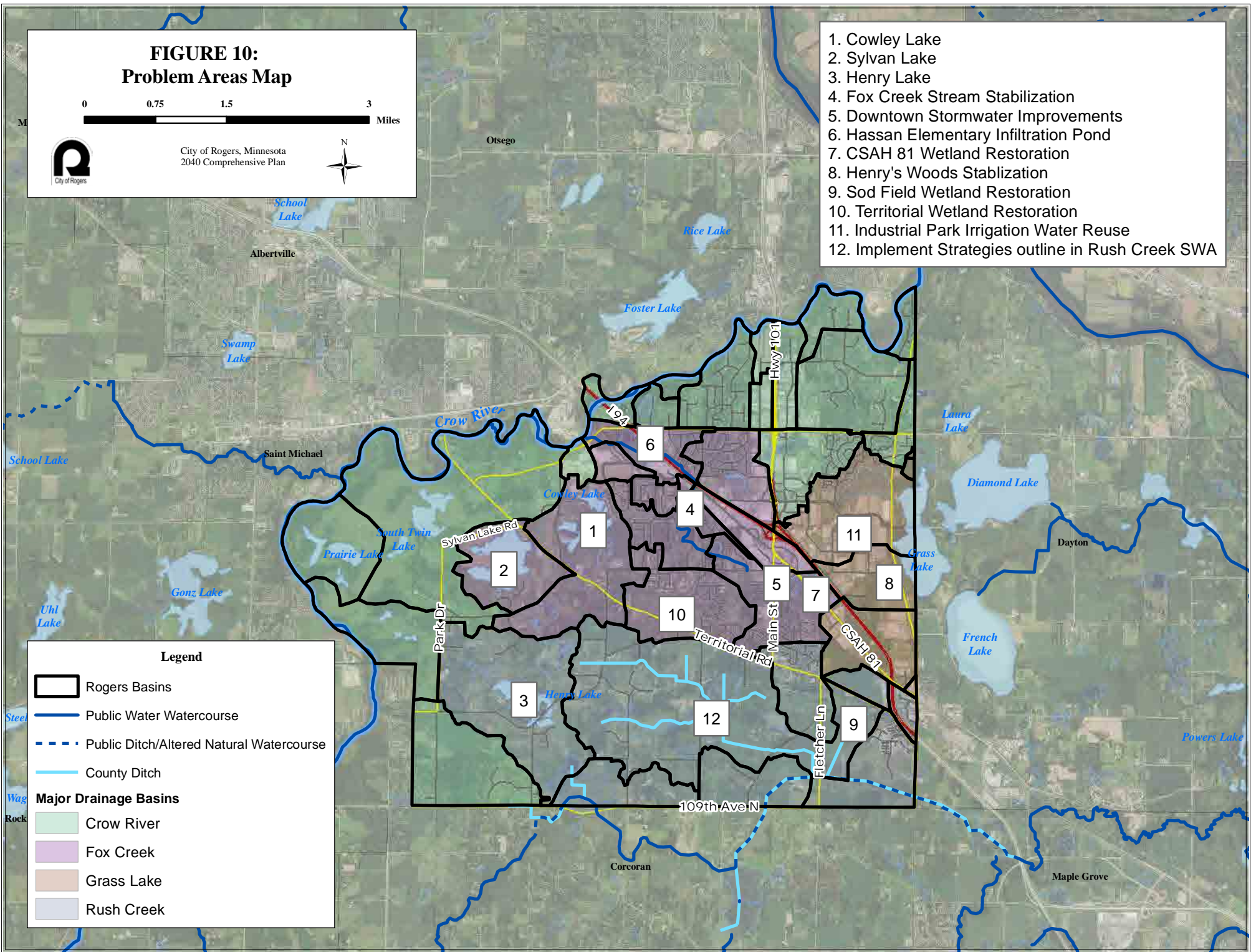
**FIGURE 10:  
Problem Areas Map**



City of Rogers, Minnesota  
2040 Comprehensive Plan



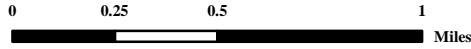
1. Cowley Lake
2. Sylvan Lake
3. Henry Lake
4. Fox Creek Stream Stabilization
5. Downtown Stormwater Improvements
6. Hassan Elementary Infiltration Pond
7. CSAH 81 Wetland Restoration
8. Henry's Woods Stabilization
9. Sod Field Wetland Restoration
10. Territorial Wetland Restoration
11. Industrial Park Irrigation Water Reuse
12. Implement Strategies outline in Rush Creek SWA



**Legend**

- Rogers Basins
- Public Water Watercourse
- Public Ditch/Altered Natural Watercourse
- County Ditch
- Major Drainage Basins**
- Crow River
- Fox Creek
- Grass Lake
- Rush Creek

**FIGURE 11:  
Stormwater System**



City of Rogers, Minnesota  
2040 Comprehensive Plan  
Date: 04 February 2019

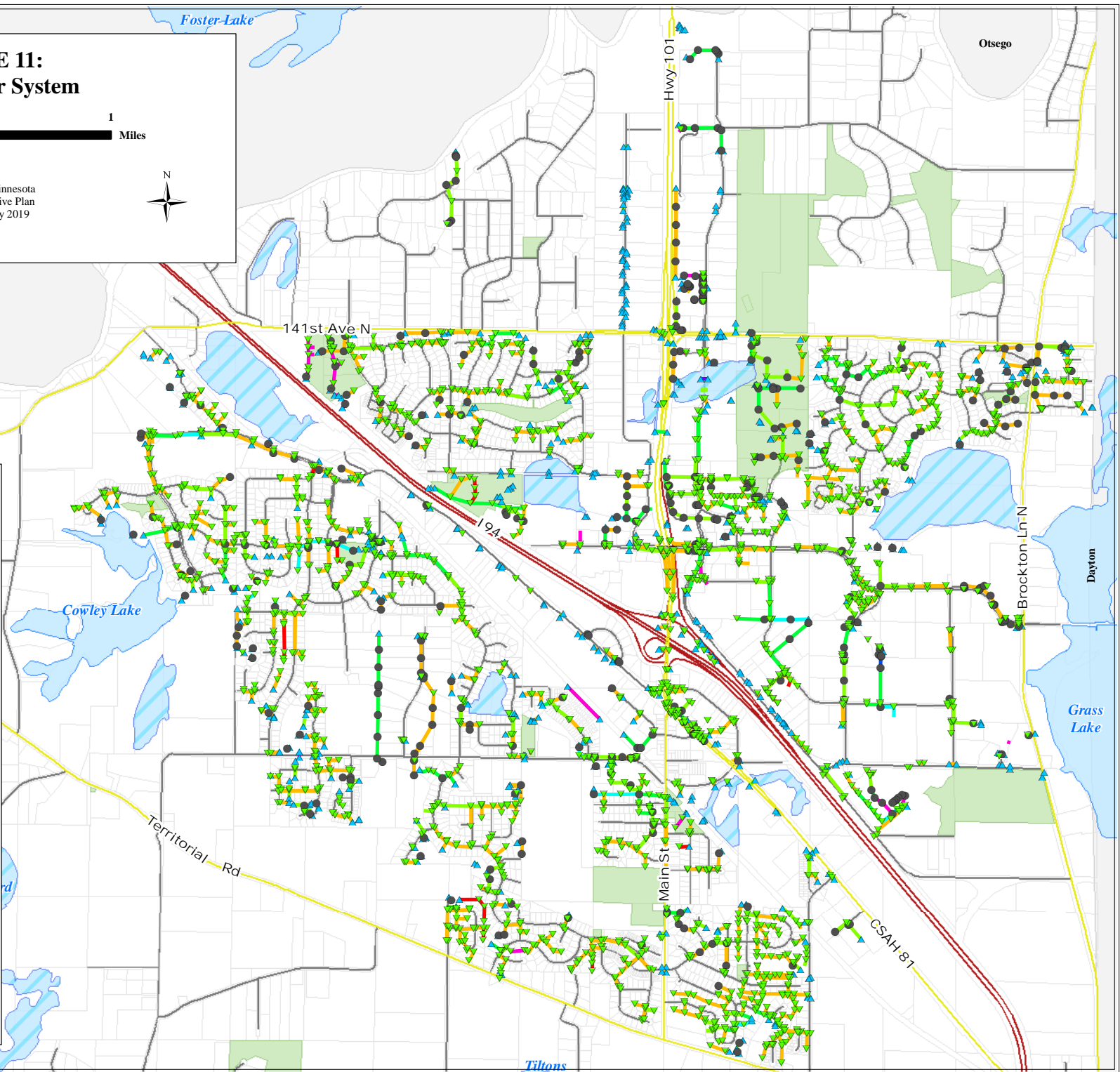


**Legend**

- Public Water Basin
- Public Water Wetland
- Interstate
- Highway
- Municipal Road
- Inlet
- Manhole
- Outlet

**Storm Main Sizes**

- 4" - 10"
- 12" - 18"
- 21" - 28"
- 30" - 36"
- 42" - 48"; 48"x54" ARCH
- 54"
- 60" - 65"
- Unknown



# Appendix B

MS4 Permit



**Minnesota Pollution Control Agency**

520 Lafayette Road North  
St. Paul, MN 55155-4194

# Part 2 Application for MS4 General Stormwater Permit

Authorization to discharge stormwater associated with small Municipal Separate Storm Sewer Systems (MS4) Stormwater Pollution Prevention Program (SWPPP) Document

Doc Type: Permit Application

**Instructions:** Submitting this application confirms your intent to receive authorization to discharge stormwater under the National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) MS4 General Stormwater Permit (MNR40000).

**Submittal:** This MS4 SWPPP Application for Authorization form must be submitted electronically via email to the MPCA at [ms4permitprogram.pca@state.mn.us](mailto:ms4permitprogram.pca@state.mn.us) from the person that is duly authorized to certify this form. All questions with an asterisk (\*) are required fields. All applications will be returned if required fields are not completed.

**Questions:** Contact Rachel Stangl at 651-757-2879 or [rachel.stangl@state.mn.us](mailto:rachel.stangl@state.mn.us), Cole Landgraf at 651-757-2880 or [cole.landgraf@state.mn.us](mailto:cole.landgraf@state.mn.us), or call toll-free at 800-657-3864.

## General Contact Information (\*Required fields)

### MS4 Owner (with ownership or operational responsibility, or control of the MS4)

\*MS4 permittee name: City of Rogers \*County: Hennepin  
*(City, county, municipality, government agency or other entity)*

\*Mailing address: 22350 S. Diamond Lake Rd

\*City: Rogers \*State: MN \*Zip code: 55374

\*Phone (including area code): 763-428-8580 \*Email: asimmons@ci.rogers.mn.us

### MS4 General contact (with Stormwater Pollution Prevention Program [SWPPP] implementation responsibility)

\*Last name: Simmons \*First name: Andrew  
*(Department head, MS4 coordinator, consultant, etc.)*

\*Title: Water Resources Technician

\*Mailing address: 22350 S. Diamond Lake Rd

\*City: Rogers \*State: MN \*Zip code: 55374

\*Phone (including area code): 763-428-8580 \*Email: asimmons@ci.rogers.mn.us

### Preparer information (complete if SWPPP application is prepared by a party other than MS4 General contact)

Last name: \_\_\_\_\_ First name: \_\_\_\_\_  
*(Department head, MS4 coordinator, consultant, etc.)*

Title: \_\_\_\_\_ Organization: \_\_\_\_\_

Mailing address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip code: \_\_\_\_\_

Phone (including area code): \_\_\_\_\_ Email: \_\_\_\_\_

## Verification

- I seek to discharge stormwater associated with a small MS4 after the effective date of this Permit, and will submit this MS4 SWPPP Application for Authorization form, in accordance with the schedule in Appendix A, Table 3, and completed in accordance with the Permit (Part II.D.).  Yes
- I have read and understand the NPDES/SDS MS4 General Permit and certify that we intend to comply with all requirements of the Permit.  Yes



**Certification (All fields are required)**

- Yes - I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gathered and evaluated the information submitted.

*I certify that based on my inquiry of the person, or persons, who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.*

*I am aware that there are significant penalties for submitting false information, including the possibility of civil and criminal penalties.*

This certification is required by Minn. Stat. §§ 7001.0070 and 7001.0540. The authorized person with overall, MS4 legal responsibility must certify the application (principal executive officer or a ranking elected official).

By typing my name below, I certify the above statements to be true and correct, to the best of my knowledge, and that this information can be used for the purpose of processing my application.

Name: \_\_\_\_\_  
*(This document has been electronically signed)*

Title: \_\_\_\_\_ Date (mm/dd/yyyy): \_\_\_\_\_

Mailing address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip code: \_\_\_\_\_

Phone (including area code): \_\_\_\_\_ Email: \_\_\_\_\_

**Note:** *The application will not be processed without certification.*

# Stormwater Pollution Prevention Program Document

## I. Partnerships: (Part II.D.1)

- A. List the **regulated small MS4(s)** with which you have *established* a partnership in order to satisfy one or more requirements of this Permit. Indicate which Minimum Control Measure (MCM) requirements or other program components that each partnership helps to accomplish (List all that apply). Check the box below if you currently have no established partnerships with other regulated MS4s.

No partnerships with regulated small MS4s

If you have more than five partnerships, use the tab key after the last line to generate a new row.

Name and description of partnership	MCM/Other permit requirements involved

- B. If you have additional information that you would like to communicate about your partnerships with other regulated small MS4(s), provide it in the space below, or include an attachment to the SWPPP Document.

## II. Description of Regulatory Mechanisms: (Part II.D.2)

### A. Illicit discharges

For guidance refer to the U.S. Environmental Protection Agency's (EPA) [Model Illicit Discharge and Connection Ordinance](http://water.epa.gov/polwaste/npdes/swbmp/Illicit-Discharge-Detection-and-Elimination.cfm) (found on EPA website at <http://water.epa.gov/polwaste/npdes/swbmp/Illicit-Discharge-Detection-and-Elimination.cfm>).

1. Do you have a regulatory mechanism(s) that effectively prohibits non-stormwater discharges into your small MS4, except those non-stormwater discharges authorized under the Permit (Part III.D.3.b.)?  Yes  No

a. If **yes**:

- 1) Check which *type* of regulatory mechanism(s) your organization has (check all that apply):

- Ordinance                       Contract language  
 Policy/Standards             Permits  
 Rules  
 Other, explain: \_\_\_\_\_

- 2) Provide either a direct link to the mechanism selected above or attach it as an electronic document to this form. Additionally, if your regulatory mechanism is an ordinance or a rule, provide a citation.

Citation:

Direct link:

Check here if attaching an electronic copy of your regulatory mechanism.

b. If **no**:

Describe the tasks and corresponding schedules that will be taken to ensure that, within **12 months** of the date permit coverage is extended, this permit requirement is met.

*The City will create and adopt a regulatory mechanism that effectively prohibits non-stormwater discharges into the City's storm sewer. This effort will be completed within 12 months of the date permit coverage is extended.*

## B. Construction site stormwater runoff control

1. Do you have a regulatory mechanism(s) that establishes requirements for erosion and sediment controls and waste controls?  Yes  No

a. If yes:

- 1) Check which *type* of regulatory mechanism(s) your organization has (check all that apply):

- Ordinance  Contract language  
 Policy/Standards  Permits  
 Rules  
 Other, explain: \_\_\_\_\_

- 2) Provide either a direct link to the mechanism selected above or attach it as an electronic document to this form. Additionally, if your regulatory mechanism is an ordinance or a rule, provide a citation:

Citation:

*City Code Chapter - 117*

Direct link:

[https://www.municode.com/library/mn/rogers/codes/code\\_of\\_ordinances?nodeId=PTIILADERE\\_CH117STMA](https://www.municode.com/library/mn/rogers/codes/code_of_ordinances?nodeId=PTIILADERE_CH117STMA)

Check here if attaching an electronic copy of your regulatory mechanism.

2. Answer **yes** or **no** to indicate whether your regulatory mechanism(s) requires owners and operators of construction activity to develop site plans that incorporate the following erosion and sediment controls and waste controls that is **at least as stringent** as the Agency's *general permit to [Discharge Stormwater Associated with Construction Activity \(CSW Permit\) No.MN R100001](#)* (Part III.D.4.a.(1)-(8)) (Document can be found on the MPCA website at <http://www.pca.state.mn.us/wfhy5b>):

Refer to [Satisfying Regulatory Mechanism Requirements for Construction Site Stormwater Runoff Control in Municipal Stormwater Permits](#) for elaboration on each of the eight permit requirements in Part III.D.4.a.(1)-(8). (Document can be found on the MPCA website at <http://www.pca.state.mn.us/sbiza7c>)

**Note:** Your regulatory mechanism may already contain some elements of these items, but it **must be at least** as stringent as the CSW Permit to check **yes**.

- |  |   |
|--|---|
| a. Best Management Practices (BMPs) to minimize erosion.   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| b. BMPs to minimize the discharge of sediment and other pollutants.  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| c. BMPs for dewatering activities.   | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| d. Site inspections and records of rainfall events.  | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| e. BMP maintenance.  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| f. Management of solid and hazardous wastes on each project site.  | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| g. Final stabilization upon the completion of construction activity, including the use of perennial vegetative cover on all exposed soils or other equivalent means. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| h. Criteria for the use of temporary sediment basins.  | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |

If you answered **no** to any of the above permit requirements, describe the tasks and corresponding schedules that will be taken to ensure that, within **six months** of the date permit coverage is extended, these permit requirements are met:

*B.2.c. The City will ammend the regulatory mechanism to require owners and operators of construction activity to incorporate into site plans BMPs for dewatering activities which are at least as stringent as the MPCA CSW Permit. This effort will be completed within 6 months of the date permit coverage is extended.*

*B.2.d The City will ammend the regulatory mechanism to require owners and operators of construction activity to conduct and document site inspections and document rainfall events to a level which is at least as stringent as the MPCA CSW Permit. This effort will be completed within 6 months of the date permit coverage is extended.*

*B.2.f The City will ammend the regulatory mechanism to require owners and operators of construction activity to manage solid and hazardous wastes on site to a level which is at least as stringent as the MPCA CSW Permit. This effort will be completed within 6 months of the date permit coverage is extended.*

*B.2.g. The City will ammend the regulatory mechanism to require owners and operators of construction activity to incorporate final stabilization strategies including the use of perennial vegetative cover on all exposed soils or other equivalent means to a level which is at least as stringent as the MPCA CSW Permit. This effort will be completed within 6 months of the date permit coverage is extended.*

B.2.h. The City will ammend the regulatory mechansim to provide owners and operators of construction activity specific criteria for the use of temporary sediment basins at a level which is at least as stringent as the MPCA CSW Permit. This effort will be completed within 6 months of the date permit coverage is extended.

### C. Post-construction stormwater management

1. Do you have a regulatory mechanism(s) to address post-construction stormwater management activities?  
 Yes  No

a. If **yes**:

- 1) Check which *type* of regulatory mechanism(s) your organization has (check all that apply):

- Ordinance  Contract language  
 Policy/Standards  Permits  
 Rules  
 Other, explain: \_\_\_\_\_

- 2) Provide either a direct link to the mechanism selected above or attach it as an electronic document to this form. Additionally, if your regulatory mechanism is an ordinance or a rule, provide a citation:

Citation:

Direct link:

Check here if attaching an electronic copy of your regulatory mechanism.

2. Answer **yes** or **no** below to indicate whether you have a regulatory mechanism(s) in place that meets the following requirements as described in the Permit (Part III.D.5.a.):

Refer to the [Technical Support Document for the Post-Construction Stormwater Management Conditions in the General Stormwater Permit \(MNR040000\) for Small Municipal Separate Storm Sewer Systems](#) for elaboration on each of the five permit requirements in Part III.D.5.a.(1)-(5) (Document can be found on the MPCA website at <http://www.pca.state.mn.us/sbiza7c>).

**Note:** Your regulatory mechanism may already contain these items, but it **must be at least** as stringent as Permit requirements (Part III.D.5.a.(1)-(5)) to check **yes**.

- a. **Site plan review:** Requires that owners and/or operators of construction activity submit site plans with post-construction stormwater management BMPs to the permittee for review and approval, prior to start of construction activity.  Yes  No

- b. **Conditions for post construction stormwater management:** Requires the use of any combination of BMPs, with highest preference given to Green Infrastructure techniques and practices (e.g., infiltration, evapotranspiration, reuse/harvesting, conservation design, urban forestry, green roofs, etc.), necessary to meet the following conditions on the site of a construction activity to the Maximum Extent Practicable (MEP):

- 1) For new development projects – no net increase from pre-project conditions (on an annual average basis) of:  Yes  No

- a) Stormwater discharge volume, unless precluded by the stormwater management limitations in the Permit (Part III.D.5.a(3)(a)).  
b) Stormwater discharges of Total Suspended Solids (TSS).  
c) Stormwater discharges of Total Phosphorus (TP).

- 2) For redevelopment projects – a net reduction from pre-project conditions (on an annual average basis) of:  Yes  No

- a) Stormwater discharge volume, unless precluded by the stormwater management limitations in the Permit (Part III.D.5.a(3)(a)).  
b) Stormwater discharges of TSS.  
c) Stormwater discharges of TP.

- c. **Stormwater management limitations and exceptions:**

- 1) Limitations

- a) Prohibit the use of infiltration techniques to achieve the conditions for post-construction stormwater management in the Permit (Part III.D.5.a(2)) when the  Yes  No

infiltration structural stormwater BMP will receive discharges from, or be constructed in areas:

- i. Where industrial facilities are not authorized to infiltrate industrial stormwater under an NPDES/SDS Industrial Stormwater Permit issued by the MPCA.
  - ii. Where vehicle fueling and maintenance occur.
  - iii. With less than three (3) feet of separation distance from the bottom of the infiltration system to the elevation of the seasonally saturated soils or the top of bedrock.
  - iv. Where high levels of contaminants in soil or groundwater will be mobilized by the infiltrating stormwater.
- b) Restrict the use of infiltration techniques to achieve the conditions for post-construction stormwater management in the Permit (Part III.D.5.a(2)), without higher engineering review, sufficient to provide a functioning treatment system and prevent adverse impacts to groundwater, when the infiltration device will be constructed in areas:
- i. With predominately Hydrologic Soil Group D (clay) soils.
  - ii. Within 1,000 feet up-gradient, or 100 feet down-gradient of active karst features.
  - iii. Within a Drinking Water Supply Management Area (DWSMA) as defined in Minn. R. 4720.5100, subp. 13.
  - iv. Where soil infiltration rates are more than 8.3 inches per hour.
- c) For linear projects where the lack of right-of-way precludes the installation of volume control practices that meet the conditions for post-construction stormwater management in the Permit (Part III.D.5.a(2)), the permittee's regulatory mechanism(s) may allow exceptions as described in the Permit (Part III.D.5.a(3)(b)). The permittee's regulatory mechanism(s) shall ensure that a reasonable attempt be made to obtain right-of-way during the project planning process.
- d. **Mitigation provisions:** The permittee's regulatory mechanism(s) shall ensure that any stormwater discharges of TSS and/or TP not addressed on the site of the original construction activity are addressed through mitigation and, at a minimum, shall ensure the following requirements are met:
- 1) Mitigation project areas are selected in the following order of preference:
    - a) Locations that yield benefits to the same receiving water that receives runoff from the original construction activity.
    - b) Locations within the same Minnesota Department of Natural Resource (DNR) catchment area as the original construction activity.
    - c) Locations in the next adjacent DNR catchment area up-stream
    - d) Locations anywhere within the permittee's jurisdiction.
  - 2) Mitigation projects must involve the creation of new structural stormwater BMPs or the retrofit of existing structural stormwater BMPs, or the use of a properly designed regional structural stormwater BMP.
  - 3) Routine maintenance of structural stormwater BMPs already required by this permit cannot be used to meet mitigation requirements of this part.
  - 4) Mitigation projects shall be completed within **24 months** after the start of the original construction activity.
  - 5) The permittee shall determine, and document, who will be responsible for long-term maintenance on all mitigation projects of this part.
  - 6) If the permittee receives payment from the owner and/or operator of a construction activity for mitigation purposes in lieu of the owner or operator of that construction activity meeting the conditions for post-construction stormwater management in Part III.D.5.a(2), the permittee shall apply any such payment received to a public stormwater project, and all projects must be in compliance with Part III.D.5.a(4)(a)-(e).
- e. **Long-term maintenance of structural stormwater BMPs:** The permittee's regulatory mechanism(s) shall provide for the establishment of legal mechanisms between the permittee and owners or operators responsible for the long-term maintenance of structural stormwater BMPs not owned or operated by the permittee, that have been implemented to meet the conditions for post-construction stormwater management in the Permit (Part III.D.5.a(2)). This only includes structural stormwater BMPs constructed after the effective date of this permit and that are directly connected to the permittee's MS4, and that are in the permittee's jurisdiction. The legal mechanism shall include provisions that, at a minimum:
- 1) Allow the permittee to conduct inspections of structural stormwater BMPs not owned or

Yes  No

Yes  No

Yes  No

Yes  No

Yes  No

Yes  No

Yes  No

Yes  No

Yes  No

operated by the permittee, perform necessary maintenance, and assess costs for those structural stormwater BMPs when the permittee determines that the owner and/or operator of that structural stormwater BMP has not conducted maintenance.

- 2) Include conditions that are designed to preserve the permittee's right to ensure maintenance responsibility, for structural stormwater BMPs not owned or operated by the permittee, when those responsibilities are legally transferred to another party.  Yes  No
- 3) Include conditions that are designed to protect/preserve structural stormwater BMPs and site features that are implemented to comply with the Permit (Part III.D.5.a(2)). If site configurations or structural stormwater BMPs change, causing decreased structural stormwater BMP effectiveness, new or improved structural stormwater BMPs must be implemented to ensure the conditions for post-construction stormwater management in the Permit (Part III.D.5.a(2)) continue to be met.  Yes  No

If you answered **no** to any of the above permit requirements, describe the tasks and corresponding schedules that will be taken to ensure that, within **24 months** of the date permit coverage is extended, these permit requirements are met:

*C.2.b.1-2 Currently the City requires development activity to manage stormwater volume so there is no increased run-off for the two-year, ten-year, and 100-year storms. The City has also requires that drainage design and stormwater management meet the regulations of the Elm Creek Watershed Management Organization, Department of Natural Resources, the Army Corps of Engineers, and other regulatory agencies. The City will update the regulatory mechanism to include requirements for volume, TP, and TSS for developing and redeveloping sites in accordance with the Permit (Part III.D.5.a(3)(a)1). This effort will be completed within 12 months of the date permit coverage is extended.*

*C.2.c.1.a-c The City will amend the current regulatory mechanism to include limitations (prohibiting, restricting, and exceptions) for infiltration to address post-construction stormwater management, in accordance with the Permit (Part III.D.5.a(3)). This effort will be completed within 12 months of the date permit coverage is extended.*

*C.2.d.1-6 The City will amend the current regulatory mechanism to include mitigation provisions for post construction stormwater management of volume, TSS, and TP in accordance with the Permit (Part III.D.5.a(4)). This effort will be completed within 12 months of the date permit coverage is extended.*

### III. Enforcement Response Procedures (ERPs): (Part II.D.3)

- A. Do you have written ERPs that satisfy the requirements of the Permit (Part III.B.) for regulatory mechanisms pertaining to illicit discharge detection and elimination, construction site stormwater runoff control, and post-construction stormwater management?  Yes  No

If **no**, describe the tasks and corresponding schedules that will be taken to ensure that, within **24 months** of the date permit coverage is extended, these permit requirements are met:

### IV. Storm Sewer System Map and Inventory: (Part II.D.4.)

#### A. Storm sewer system map

- 1. Do you have a storm sewer system map and inventory?  Yes  No

If **yes**, what format is it in (e.g., CAD, GIS, physical map)?

*The City manages our own stormwater system map. the map is currently maintained in an ArcGIS format and includes the stormwater conveyance system, ponds, all receiving water bodies, wetlands, structural pollution control devices, and outfalls. The map is reviewed and updated continuously.*

- b. Answer **yes** or **no** to indicate whether your storm sewer system map addresses the following requirements from the Permit (Part III.C.1.a-d), as listed below:
  - a. The permittee's entire small MS4 as a goal, but at a minimum, all pipes 12 inches or greater in diameter, including stormwater flow direction in those pipes.  Yes  No
  - b. Outfalls, including a unique identification (ID) number assigned by the permittee, and an associated geographic coordinate.  Yes  No
  - c. Structural stormwater BMPs that are part of the permittee's small MS4.  Yes  No
  - d. All receiving waters.  Yes  No

If you answered **no** to any of the above permit requirements, describe the tasks and corresponding schedules that will be taken to ensure that, within **24 months** of the date permit coverage is extended, these permit requirements are met:

## B. Pond, wetland, and lake inventory

1. Answer **yes** or **no** to indicate whether you have completed the requirements of 2009 Minnesota Session Law, Ch. 172. Sec. 28: with the following inventories, according to the specifications of the Permit (Part III.C.2.a.-b.), including:
  - a. All ponds within the permittee's jurisdiction that are constructed and operated for purposes of water quality treatment, stormwater detention, and flood control, and that are used for the collection of stormwater via constructed conveyances.  Yes  No
  - b. All wetlands and lakes, within the permittee's jurisdiction, that collect stormwater via constructed conveyances.  Yes  No
2. Answer **yes** or **no** to indicate whether you have completed the following information for each feature inventoried.
  - a. A unique identification (ID) number assigned by the permittee.  Yes  No
  - b. A geographic coordinate.  Yes  No
  - c. Type of feature (e.g., pond, wetland, or lake). This may be determined by using best professional judgment.  Yes  No

If you answered **no** to any of the above permit requirements for your Pond, wetland, and lake inventory, describe the tasks and corresponding schedules that will be taken to ensure that, within **24 months** of the date permit coverage is extended, these permit requirements are met:

3. Answer **yes** or **no** to indicate if you are attaching your pond, wetland and lake inventory to the MPCA on the **form provided** on the MPCA website at: <http://www.pca.state.mn.us/ms4>, under the 'Permit' tab, according to the specifications of Permit (Part III.C.2.b.(1)-(3)).  Yes  No

If you answered **no**, the inventory form must be submitted to the MPCA MS4 Permit Program within **24 months** of the date permit coverage is extended.

## V. Minimum Control Measures (MCMs) (Part II.D.5)

### A. MCM 1: Public education and outreach

1. The Permit requires that, within **36 months** of the date permit coverage is extended, new permittees develop and implement a public education program to distribute educational materials or equivalent outreach that informs the public of the impact stormwater discharges have on waterbodies and focuses on illicit discharge recognition and reporting, as well as other specifically selected stormwater-related issue(s) of high priority to the permittee during this permit term. Describe your **current** educational program, including **any high-priority topics included**:

*Currently the City's educational program only consists of working with the Elm Creek Watershed Management Organization and forwarding stormwater related issues and workshops to the public. The City also has a newsletter that is created twice a year and contains stormwater related articles ranging from salt application best practices to stormwater management.*

1. *Training and outreach in collaboration with other governmental and non-government organizations*

- a) *Elm Creek Watershed Management Organization education committees*

2. *Distribute articles and information on:*

- a) *Stormwater management*

- b) *Illicit Discharges*

- c) *Construction site erosion control*

- d) *Salt application practices to protect water quality*

2. List the categories of BMPs that address your public education and outreach program, including the distribution of educational materials and a program implementation plan. Use the table for categories of BMPs that you have established and BMPs that you plan to implement over the course of the permit term.

Include the measurable goals with appropriate timeframes that each BMP category will be implemented and completed. In addition, provide interim milestones and the frequency of action in which the permittee will implement and/or maintain

the BMPs. Refer to the EPA [Measurable Goals Guidance for Phase II Small MS4s](http://water.epa.gov/polwaste/npdes/stormwater/Municipal-Separate-Storm-Sewer-System-MS4-Main-Page.cfm) (found on the EPA website at <http://water.epa.gov/polwaste/npdes/stormwater/Municipal-Separate-Storm-Sewer-System-MS4-Main-Page.cfm>).

If you have more than five categories, use the tab key after the last line to generate a new row.

BMP categories	Measurable goals and timeframes for implementation
<p style="text-align: center;">Distribute Educational Materials</p>	<p><b><u>Goals</u></b></p> <p>1) Distribute articles and information on:</p> <ul style="list-style-type: none"> <li>a) Stormwater management</li> <li>b) Illicit discharges</li> <li>c) Construction site erosion control</li> <li>d) Post-construction erosion control</li> <li>e) Salt application practices to protect water quality</li> <li>f) Shoreline management</li> <li>g) Composting</li> <li>h) Pollution prevention</li> <li>i) Low impact development</li> <li>j) Landscaping for water quality</li> <li>k) Storm drains lead to lakes and streams</li> </ul> <p>2) Provide water quality information at City and community events including:</p> <ul style="list-style-type: none"> <li>a) Rockin' Rogers</li> <li>b) Rogers Farmers Market</li> <li>c) Rogers Oktoberfest</li> </ul> <p><b><u>Timeframes:</u></b></p> <p><b><u>Goal #1</u></b></p> <p>Once a Year - Publish erosion control brochures for local residential builders.</p> <p>Update Once a year – Provide a downloadable pdf on the City website for homeowners regarding best management practices.</p> <p><b><u>Goal #2</u></b></p> <p>Distribute Education Materials at City Sponsored Events every year.</p>
<p style="text-align: center;">Storm Drain Stenciling</p>	<p><b><u>Goals:</u></b></p> <p>Stencil storm drains throughout the City with volunteer groups to promote awareness regarding stormwater.</p> <p><b><u>Timeframes:</u></b></p> <p>Once a year.</p>
<p style="text-align: center;">Public Works Elementary Day</p>	<p><b><u>Goals:</u></b></p> <p>Educate local school children during the annual Public Works Elementary Day on how the City manages stormwater.</p> <p><b><u>Timeframes:</u></b></p> <p>Once a year.</p>

3. Provide the name or the position title of the individual(s) who is responsible for implementing and/or coordinating this MCM:

*Andrew Simmons*



**B. MCM 2: Public participation and involvement**

1. The Permit (Part III.D.2.a.) requires that, within **36 months** of the date permit coverage is extended, new permittees develop and implement a public participation/involvement program to solicit public input on the SWPPP. Describe your current program:
2. List the categories of BMPs that address your public participation and involvement program, including the distribution of educational materials and a program implementation plan. Use the table for categories of BMPs that you have established and BMPs that you plan to implement over the course of the permit term.

Include the measurable goals with appropriate timeframes that each BMP category will be implemented and completed. In addition, provide interim milestones and the frequency of action in which the permittee will implement and/or maintain the BMPs. Refer to the EPA's [Measurable Goals Guidance for Phase II Small MS4s](http://water.epa.gov/polwaste/npdes/stormwater/Municipal-Separate-Storm-Sewer-System-MS4-Main-Page.cfm) (Document can be found on the EPA website at <http://water.epa.gov/polwaste/npdes/stormwater/Municipal-Separate-Storm-Sewer-System-MS4-Main-Page.cfm>).

If you have more than five categories, use the tab key after the last line to generate a new row.

BMP categories	Measurable goals and timeframes for implementation
Comply with Public Notice Requirements	<p><b>Goals:</b> This BMP is measured by the number of residents attending.</p> <p><b>Timeframes:</b> Annual in May or June of each year.</p>
Solicit Public Input and opinion on the adequacy of the SWPPP	<p><b>Goals:</b> This BMP is measured by the number of comments received on the SWPPP</p> <p><b>Timeframes:</b> On-going. The City of Rogers is always willing to accept comments on the adequacy of our SWPPP.</p>
Consider Public Input	<p><b>Goals:</b> This BMP is measured by the number of comments received on the SWPPP</p> <p><b>Timeframes:</b> On-going. The City of Rogers is always willing to accept comments on the adequacy of our SWPPP.</p>

3. Do you have a process for receiving and documenting citizen input?  Yes  No  
If you answered **no** to the above permit requirement, describe the tasks and corresponding schedules that will be taken to ensure that, within **36 months** of the date permit coverage is extended, this permit requirement is met:
4. Provide the name or the position title of the individual(s) who is responsible for implementing and/or coordinating this MCM:  
*Andrew Simmons*  
*Water Resources Technician*  
*City of Rogers Public Works*

**C. MCM 3: Illicit discharge detection and elimination**

1. The Permit (Part III.D.3.) requires that, within **36 months** of the date permit coverage is extended, new permittees develop, implement, and enforce a program to detect and eliminate illicit discharges into the small MS4. Describe your current program:

*The City manages our own stormwater system map. The map is currently maintained in an ArcGIS format and includes stormwater conveyance system, ponds, all receiving water bodies, wetlands, structural pollution control devices, and outfalls. The map is reviewed and updated continuously.*

*Public Works staff regularly attend MPCA sponsored seminars on City's jurisdiction and responsibilities in regards to the regulatory control program. Additionally, City staff works with developers and residents to ensure compliance with water resources regulations at the local, regional, and state levels.*

*Rogers City Code Chapter 46 regulates public and private sewers and drains. Ponds and wetlands are inspected every 5 years as required by the MPCA. Discharges not consistent with stormwater are investigated. Illicit discharges are addressed through City Code Chapter 46.*

*At least 20% of all outfalls and ponds in the City are inspected each year through the City of Rogers Stormwater Maintenance Plan adopted in 2008. Additionally, each inspected outfall is also inspected for evidences of any illicit discharge. Evidence of illegal dumping is investigated and possibilities of hazardous wastes are referred to the Minnesota Duty Officer at 651-649-5451.*

2. Does your Illicit Discharge Detection and Elimination Program meet the following requirements, as found in the Permit (Part III.D.3.c.-g.)?

- a. Incorporation of illicit discharge detection into all inspection and maintenance activities conducted under the Permit (Part III.D.6.e.-f.) Where feasible, illicit discharge inspections shall be conducted during dry-weather conditions (e.g., periods of 72 or more hours of no precipitation).  Yes  No
- b. Detecting and tracking the source of illicit discharges using visual inspections. The permittee may also include use of mobile cameras, collecting and analyzing water samples, and/or other detailed procedures that may be effective investigative tools.  Yes  No
- c. Training of all field staff, in accordance with the requirements of the Permit (Part III.D.6.g.(2)), in illicit discharge recognition (including conditions which could cause illicit discharges), and reporting illicit discharges for further investigation.  Yes  No
- d. Identification of priority areas likely to have illicit discharges, including at a minimum, evaluating land use associated with business/industrial activities, areas where illicit discharges have been identified in the past, and areas with storage of large quantities of significant materials that could result in an illicit discharge.  Yes  No
- e. Procedures for the timely response to known, suspected, and reported illicit discharges.  Yes  No
- f. Procedures for investigating, locating, and eliminating the source of illicit discharges.  Yes  No
- g. Procedures for responding to spills, including emergency response procedures to prevent spills from entering the small MS4. The procedures shall also include the immediate notification of the Minnesota Department of Public Safety Duty Officer, if the source of the illicit discharge is a spill or leak as defined in Minn. Stat. § 115.061.  Yes  No
- h. When the source of the illicit discharge is found, ERPs are used as required by the Permit (Part III.B.) to eliminate the illicit discharge and require any needed corrective action(s).  Yes  No

If you answered **no** to any of the above permit requirements, describe the tasks and corresponding schedules that will be taken to ensure that, within **36 months** of the date permit coverage is extended, these permit requirements are met:

*C.2.a. The City will include the incorporation of illicit discharge detection into all inspection and maintenance activities and will incorporate this change beginning January 2017.*

*C.2.c. All City field staff will be trained in the recognition of illicit discharges and reporting potential illicit discharges for further investigation beginning January 2017*

*C.e.h. The City will develop and adopt procedures to the Stormwater Management Plan for the timely response to known, suspected, and reported illicit discharges to meet permit requirements. This effort will be completed within 12 months of the date permit coverage is granted.*

3. List the categories of BMPs that address your illicit discharge detection and elimination program, including the distribution of educational materials and a program implementation plan. Use the table for categories of BMPs that you have established and BMPs that you plan to implement over the course of the permit term.

Include the measurable goals with appropriate timeframes that each BMP category will be implemented and completed. In addition, provide interim milestones and the frequency of action in which the permittee will implement and/or maintain the BMPs. Refer to the EPA's [Measurable Goals Guidance for Phase II Small MS4s](http://water.epa.gov/polwaste/npdes/stormwater/Municipal-Separate-Storm-Sewer-System-MS4-Main-Page.cfm) (found on EPA website at <http://water.epa.gov/polwaste/npdes/stormwater/Municipal-Separate-Storm-Sewer-System-MS4-Main-Page.cfm>). **If you have more than five categories**, use the tab key after the last line to generate a new row.

BMP categories	Measurable goals and timeframes for implementation
Storm Sewer System Map	<p><b>Goals:</b> The storm sewer map is continually updated with new information from development plans (utility plans), City projects, or regular inspections.</p> <p>The City owns a GPS unit to improve accuracy of the map.</p> <p><b>Timeframe:</b> This BMP is updated on a quarterly basis and its implementation is on-going.</p>
Regulatory Control Program	<p><b>Goals:</b> The number of illicit discharges detected and rectified is the measureable goal.</p> <p><b>Timeframe:</b> This BMP is on-going and is implemented on a daily basis.</p>
Illicit Discharge Detection and Elimination Plan	<p><b>Goals:</b> Staff will attend workshops and seminars on illicit discharge when available. Atleast 20% of all outfalls will be annually inspected and investigated for illicit discharge. This will be documented in the City's GIS database of stormsewer infrastructure.</p> <p><b>Timeframe:</b> This BMP is implemented annually during the non-winter months.</p>
Public and Employee Illicit Discharge Information Program	<p><b>Goals:</b> Staff will attend workshops or seminars on illicit discharge when available.  City website will have downloadable content (articles and factsheets) regarding illicit discharges</p> <p><b>Timeframe:</b> This BMP is implemented annually during the non-winter months.</p>
Identification of Non Stormwater Discharges from Flows	<p><b>Goals:</b> Review City Ordinances at least once during the permit term.</p> <p><b>Timeframe:</b> Once during the permit term.</p>

4. Do you have procedures for record-keeping within your illicit discharge detection and elimination (IDDE) program as specified within the Permit (Part III.D.3.h.)?  Yes  No

If you answered **no**, indicate how you will develop procedures for record-keeping of your illicit discharge, detection and elimination Program, within **36 months** of the date permit coverage is extended:

5. Provide the name or the position title of the individual(s) who is responsible for implementing and/or coordinating this

MCM:  
 Andrew Simmons  
 Water Resources Technician  
 City of Rogers Public Works

**D. MCM 4: Construction site stormwater runoff control**

1. The Permit (Part III.D.4) requires that, within **six months** of the date permit coverage is extended, new permittees develop, implement, and enforce, a construction site stormwater runoff control program that reduces pollutants in stormwater runoff to the small MS4 from construction activity with a land disturbance 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, that occurs within the permittee's jurisdiction. Describe your current program:

*The City of Rogers requires an approved erosion control and grading plan for earth disturbing activities over one acre in size prior to the issuance of grading or building permits. Additionally, subdivisions and industrial/commercial development are required to be reviewed by City Staff, City Engineer, and Elm Creek Watershed Management Organization and are subject of various erosion control requirements including, silt fence, rock construction entrances, inlet protection, seed and mulch, street sweeping, temporary sedimentation basins and other best management practices. The City also requires proposed construction to develop and implement onsite erosion control plans as well as requiring qualified developers to provide the City with their SWPPP.*

*All City development over an acre of disturbance are reviewed by the City Engineer and City Staff for erosion control and best management practices before the plan is again reviewed by the Elm Creek Watershed Management Organization. Approved plans are subject to a preconstruction meeting where erosion control and best management practices are again reviewed for proper implementation.*

*The City has two trained employees that have taken classes through the University of Minnesota Sediment and Erosion Control Certification Program. Currently the City does not have a strong enforcement ordinance regarding erosion control and violations. This will be addressed within 6 months of permit approval.*

2. Does your program address the following BMPs for construction stormwater erosion and sediment control as required in the Permit (Part III.D.4.b.):

- |   |   |
|---|---|
| a. Have you established written procedures for site plan reviews that you conduct prior to the start of construction activity?  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| b. Does the site plan review procedure include notification to owners and operators proposing construction activity that they need to apply for and obtain coverage under the MPCA's general permit to Discharge Stormwater Associated with Construction Activity No. MN R100001? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| c. Does your program include written procedures for receipt and consideration of reports of noncompliance or other stormwater related information on construction activity submitted by the public to the permittee?  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| d. Have you included written procedures for the following aspects of site inspections to determine compliance with your regulatory mechanism(s):  |   |
| 1) Does your program include procedures for identifying priority sites for inspection?  | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 2) Does your program identify a frequency at which you will conduct construction site inspections?  | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 3) Does your program identify the names of individual(s) or position titles of those responsible for conducting construction site inspections?  | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 4) Does your program include a checklist or other written means to document construction site inspections when determining compliance?  | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| e. Does your program document and retain construction project name, location, total acreage to be disturbed, and owner/operator information?  | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| f. Does your program document stormwater-related comments and/or supporting information used to determine project approval or denial?   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| g. Does your program retain construction site inspection checklists or other written materials used to document site inspections?   | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |

If you answered **no** to any of the above permit requirements, describe the tasks and corresponding schedules that will be taken to ensure that, within **six months** of the date permit coverage is extended, these permit requirements are met.

*D.2.d.1-4 The City will update and adopt inspection, procedures and priorities, frequency of inspections, responsible parties, checklists for site inspections within 6 months of approval of the Permit.*

*D.2.e. The City will retain a spreadsheet of all construction projects, locations, total acreage and owner and operator information within 6 months of permit coverage.*

*D.2.g. The City will begin retaining construction site inspection checklists within 6 months of permit coverage.*

3. List the categories of BMPs that address your construction site stormwater runoff control program, including the distribution of educational materials and a program implementation plan. Use the table for categories of BMPs that you have established and BMPs that you plan to implement over the course of the permit term.

Include the measurable goals with appropriate timeframes that each BMP category will be implemented and completed. In addition, provide interim milestones and the frequency of action in which the permittee will implement and/or maintain the BMPs. Refer to the EPA's [Measurable Goals Guidance for Phase II Small MS4s](http://water.epa.gov/polwaste/npdes/stormwater/Municipal-Separate-Storm-Sewer-System-MS4-Main-Page.cfm) (found on EPA website at <http://water.epa.gov/polwaste/npdes/stormwater/Municipal-Separate-Storm-Sewer-System-MS4-Main-Page.cfm>). **If you have more than five categories**, use the tab key after the last line to generate a new row.

<b>BMP categories</b>	<b>Measurable goals and timeframes for implementation</b>
Ordinance or Other Regulatory Mechanism	<p><b>Goals:</b> Documentation of letters, project reviews and administrative fees for non-compliant projects.</p> <p>The City also works with local watershed management organizations to review, inspect, reduce and/or eliminate erosion from construction sites.</p> <p><b>Timeframes:</b> Updates to the City Code regarding construction stormwater management will be completed within 6 months of permit coverage and documentation of non-compliant projects will begin immediately following approval.</p>
Construction Site Implementation of Erosion and Sediment Control BMPs	<p><b>Goals:</b> Compliance by all developments that have an erosion control (or SWPPP) completed for their project.</p> <p><b>Timeframes:</b> This is an on-going procedure.</p>
Waste Controls for Construction Site Operators	<p><b>Goals:</b> City staff will prepare an annual report of all erosion control inspections and violations. This will be an on-going task with the goal of reducing the number of violations with enforcement and education with contractors and builders.</p> <p><b>Timeframes:</b> Report will be prepared annually</p>
Procedure for Site Plan Review	<p><b>Goals:</b> All development plans greater than 1 acre are reviewed for compliance with erosion and sediment control policies. Smaller construction sites will also be reviewed as deemed necessary by City Staff and City Engineer.</p> <p><b>Timeframes:</b> This is typically an on-going procedure; however our Engineering Guidelines are updated annually.</p>
Establishment of procedures for the Receipt and Consideration of Reports of Stormwater Noncompliance	<p><b>Goals:</b> City regularly receives calls from citizens concerned with a specific project. The City will keep track of the number of calls received, letters sent, administrative penalties applied, and stop work orders issued.</p> <p><b>Timeframes:</b> This is will be an on-going procedure.</p>

Erosion and Sediment Control Training	<p><b>Goals:</b> Passing of state test and certification as Erosion and Sediment Control Specialist – Inspector/Installer</p> <p><b>Timeframes:</b> Bi-annual certification</p>
Engineering Guidelines for Developers	<p><b>Goals:</b> Inclusion of all applicable Engineering Guidelines for sediment and erosion control onto construction plans.</p> <p><b>Timeframes:</b> Annual</p>
Establishment of Procedures for Site Inspectors and Enforcement	<p><b>Goals:</b> Create procedures and checklists for site inspectors as well as a record keeping process of the number of sites inspected and violations. Number of sites inspected will be used as the measureable goal as the goal is to minimize violations through education and cooperation with contractors and builders.</p> <p><b>Timeframes:</b> This task will be completed within 6 months of permit coverage and implemented on a continual basis.</p>

4. Provide the name or the position title of the individual(s) who is responsible for implementing and/or coordinating this MCM:

*Andrew Simmons*

*Water Resources Technician*

*City of Rogers Public Works*

**E. MCM 5: Post-construction stormwater management**

1. The Permit (Part III.D.5.) requires that, within **24 months** of the date permit coverage is extended, new permittees develop, implement, and enforce, a post-construction stormwater management program that prevents or reduces water pollution after construction activity is completed, related to new development and redevelopment projects with land disturbance 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 permittee’s small MS4. Describe your current program:
  
2. Have you established written procedures for site plan reviews that you will conduct prior to the start of construction activity?  Yes  No
  
3. Answer **yes** or **no** to indicate whether you currently document the following, as required by the Permit (Part III.D.5.c.):
  - a. Any supporting documentation that you use to determine compliance with the Permit (Part III.D.5.a), including the project name, location, owner and operator of the construction activity, any checklists used for conducting site plan reviews, and any calculations used to determine compliance?  Yes  No
  
  - b. All supporting documentation associated with mitigation projects that you authorize?  Yes  No
  
  - c. Payments received and used in accordance with Permit (Part III.D.5.a.(4)(f))?  Yes  No
  
  - d. All legal mechanisms drafted in accordance with the Permit (Part III.D.5.a.(5)), including date(s) of the agreement(s) and names of all responsible parties involved?  Yes  No

If you answered **no** to any of the above permit requirements, describe the steps that will be taken to ensure that, within **24 months** of the date permit coverage is extended, these permit requirements are met.

- List the categories of BMPs that address your post-construction stormwater management program, including the distribution of educational materials and a program implementation plan. Use the table for categories of BMPs that you have established and BMPs that you plan to implement over the course of the permit term.

Include the measurable goals with appropriate timeframes that each BMP category will be implemented and completed. In addition, provide interim milestones and the frequency of action in which the permittee will implement and/or maintain the BMPs. Refer to the EPA's [Measurable Goals Guidance for Phase II Small MS4s](http://water.epa.gov/polwaste/npdes/stormwater/Municipal-Separate-Storm-Sewer-System-MS4-Main-Page.cfm) (found on EPA website at <http://water.epa.gov/polwaste/npdes/stormwater/Municipal-Separate-Storm-Sewer-System-MS4-Main-Page.cfm>).

If you have more than five categories, use the tab key after the last line to generate a new row.

BMP categories	Measurable goals and timeframes for implementation

- Provide the name or the position title of the individual(s) who is responsible for implementing and/or coordinating this MCM:

**F. MCM 6: Pollution prevention/good housekeeping for municipal operations**

- The Permit (Part III.D.6.) requires that, within **36 months** of the date permit coverage is extended, new permittees develop and implement an operations and maintenance program that prevents or reduces the discharge of pollutants from the permittee owned/operated facilities and operations to the small MS4. Describe your current program:

*The City will conduct or attend annual training based on US EPA educational materials on reducing pollutant runoff from parks, open space, fleet, city-owned buildings, and city development. In addition, to meet the goals of Elm Creek TMDL, the City will:*

- Annually calibrate spreaders*
- Use the Road Weather Information Service (RWIS) and other sensors such as truck mounted or hand held sensors to improve application decisions such as the amount and timing of application where feasible and cost effective.*
- Evaluate new technologies such as pre-wetting and anti-icing as equipment needs to be replaced. These technologies will be adopted where feasible and practical.*
- investigate and adopt new products (such as Clear Lane, a commercially available pretreated salt) where feasible and cost effective.*
- Annually investigate salt application technologies.*

*The City inspects all of its city owned facilities on a regular basis including the City's salt stockpiles. The number of stockpiles or disposal sites is limited to one or two. The City's salt stockpile is located at 22350 S. Diamond Lake Road.*

*The City of Rogers has developed a strong Street Sweeping Program that has detailed records of materials collected.*

- Do you have a facilities inventory of permittee owned/operated facilities, as outlined in the Permit (Part III.D.6.a.), that contribute pollutants to stormwater discharges, which may include, but is not limited to: composting, equipment storage and maintenance, hazardous waste disposal, hazardous waste handling and transfer, landfills, solid waste handling and transfer, parks, pesticide storage, public parking lots, public golf courses, public swimming pools, public work yards, recycling, salt storage, vehicle storage and maintenance yards, and materials storage yards?  Yes  No

If **no**, describe the tasks and corresponding schedules that will be taken to ensure that, within **36 months** of the date permit coverage is extended, this permit requirement is met:

3. List the categories of BMPs that address your pollution prevention/good housekeeping for municipal operations program, including the distribution of educational materials and a program implementation plan. Use the table for categories of BMPs that you have established and BMPs that you plan to implement over the course of the permit term.

Include the measurable goals with appropriate timeframes that each BMP category will be implemented and completed. In addition, provide interim milestones and the frequency of action in which the permittee will implement and/or maintain the BMPs. For an explanation of measurable goals, refer to the EPA's [Measurable Goals Guidance for Phase II Small MS4s](http://water.epa.gov/polwaste/npdes/stormwater/Municipal-Separate-Storm-Sewer-System-MS4-Main-Page.cfm) (found on EPA website at <http://water.epa.gov/polwaste/npdes/stormwater/Municipal-Separate-Storm-Sewer-System-MS4-Main-Page.cfm>).

If you have more than five categories, use the tab key after the last line to generate a new row.

BMP categories	Measurable goals and timeframes for implementation
Municipal Operations and Maintenance Program	<p><b>Goals:</b> Training provided to staff and number of new BMP's adopted by the City.</p> <p><b>Timeframes:</b> On-going, at least one event per year.</p>
Street Sweeping	<p><b>Goals:</b> The quantity of all street sweeping material collected is recorded.</p> <p><b>Timeframes:</b> During/after spring thaw through mid-September</p>
Annual Inspection of all structural pollution control devices	<p><b>Goals:</b> To maintain these devices on a regular basis.</p> <p><b>Timeframes:</b> On-going</p>
Inspection of a Minimum of 20% of the MS4 outfalls, sediment basins and ponds each year on a rotating basis	<p><b>Goals:</b> To inspect at least 20% or all outfall structures</p> <p><b>Timeframes:</b> On-going</p>

5. Does discharge from your MS4 affect a Source Water Protection Area (Permit Part III.D.6.c.)?  Yes  No

a. If **no**, continue to 6.

b. If **yes**,

- 1) The Minnesota Department of Health (MDH) is in the process of mapping the following items. Maps are available at MDH website at: <http://www.health.state.mn.us/divs/eh/water/swp/maps/index.htm>. Is a map including the following items available for your MS4:

- i. Wells and source waters for drinking water supply management areas identified as vulnerable under Minn. R. 4720.5205, 4720.5210, and 4720.5330?  Yes  No
- ii. Source water protection areas for surface intakes identified in the source water  Yes  No



assessments conducted by or for the Minnesota Department of Health under the federal Safe Drinking Water Act, U.S.C. §§ 300j – 13?

- 2) Have you developed and implemented BMPs to protect any of the above drinking water sources?  Yes  No

If **no**, describe the tasks and corresponding schedules that will be taken to ensure that, within **36 months** of the date permit coverage is extended, this permit requirement is met:

6. Have you developed procedures and a schedule for the purpose of determining the TSS and TP treatment effectiveness of all permittee owned/operated ponds constructed and used for the collection and treatment of stormwater, according to the Permit (Part III.D.6.d.)?  Yes  No

If **no**, describe the tasks and corresponding schedules that will be taken to ensure that, within **36 months** of the date permit coverage is extended, this permit requirement is met:

7. Do you have inspection procedures that meet the requirements of the Permit (Part III.D.6.e.(1)-(3)) for structural stormwater BMPs, ponds and outfalls, and stockpile, storage and material handling areas?  Yes  No

If **no**, describe the tasks and corresponding schedules that will be taken to ensure that, within **36 months** of the date permit coverage is extended, this permit requirement is met:

8. Have you developed and implemented a stormwater management training program commensurate with each employee's job duties that:
- a. Addresses the importance of protecting water quality?  Yes  No
  - b. Covers the requirements of the permit relevant to the duties of the employee?  Yes  No
  - c. Includes a schedule that establishes initial training for new and/or seasonal employees and recurring training intervals for existing employees to address changes in procedures, practices, techniques, or requirements?  Yes  No

If you answered **no** to any of the above permit requirements, then describe the tasks and corresponding schedules that will be taken to ensure that, within **36 months** of the date permit coverage is extended, these permit requirements are met:

9. Do you keep documentation of inspections, maintenance, and training as required by the Permit (Part III.D.6.h.(1)-(5))?  Yes  No

If **no**, describe the tasks and corresponding schedules that will be taken to ensure that, within **36 months** of the date permit coverage is extended, this permit requirement is met:

10. Provide the name or the position title of the individual(s) who is responsible for implementing and/or coordinating this MCM:

## VI. Compliance Schedule for an Approved Total Maximum Daily Load (TMDL) with an Applicable Waste Load Allocation (WLA) (Part II.D.6.)

- A. Do you have an approved TMDL with a Waste Load Allocation (WLA) prior to the effective date of the Permit?  Yes  No

Refer to the Master List MS4 Permit TMDL Spreadsheet for a list of MS4s with an approved TMDL with an assigned WLA.

1. If **no**, continue to section VII.
2. If **yes**, fill out and attach the MS4 Permit TMDL Attachment.

This form is found on the MPCA MS4 website, under the Permit tab:  
<http://www.pca.state.mn.us/ms4>.

## VII. Alum or Ferric Chloride Phosphorus Treatment Systems (Part II.D.7.)

- A. Do you own and/or operate any Alum or Ferric Chloride Phosphorus Treatment Systems which are regulated by this Permit (Part III.F.)?  Yes  No
1. If **no**, this section requires no further information.
  2. If **yes**, you own and/or operate an Alum or Ferric Chloride Phosphorus Treatment System within your small MS4, then you must submit the Alum or Ferric Chloride Phosphorus Treatment Systems Form supplement with this document.

This form is found on the MPCA MS4 website, under the Permit tab:  
<http://www.pca.state.mn.us/ms4>.

## VIII. Add any Additional Comments to Describe Your Program

# Appendix C

## Watershed Rules and Standards

# Appendix O

## Rules and Standards

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**Elm Creek  
Watershed Management Commission**

**Rules and Standards**

**Adopted: October 8, 2014**

**Effective: January 1, 2015**

**ELM CREEK  
WATERSHED MANAGEMENT COMMISSION  
RULES AND STANDARDS**

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Appendix A – Wet Pond Design Standards

## **POLICY STATEMENT**

The Elm Creek Watershed Management Commission is a Joint Powers Association of the State under the Minnesota Watershed Act, and a watershed management organization as defined in the Metropolitan Surface Water Management Act. These acts provide the Commission with power to accomplish its statutory purpose: the conservation, protection, and management of water resources in the boundaries of the watershed through sound scientific principles. The Commission has adopted a water resources management plan pursuant to the Acts. These Rules implement the plan's principles and objectives.

Land alteration and utilization can affect the rate and volume and degrade the quality of surface water runoff. Sedimentation from ongoing erosion and construction activities can reduce hydraulic capacity of waterbodies and degrade water quality. Water quality problems already exist in many waterbodies in the watershed. Most of these waterbodies have been designated by the State of Minnesota as Impaired Waters, and do not meet state water quality standards.

Activities that increase the rate or volume of stormwater runoff will aggravate existing flooding problems and contribute to new ones. Activities that degrade runoff quality will cause quality problems in receiving water. Activities that fill floodplain or wetland areas will reduce flood storage and hydraulic capacity of waterbodies, and will degrade water quality by eliminating the filtering capacity of such areas.

These Rules and Standards protect the public health, welfare, and natural resources of the watershed by regulating the alteration of land and waters in the watershed to 1) reduce the severity and frequency of high water, 2) preserve floodplain and wetland storage capacity, 3) improve the chemical and physical quality of surface waters, 4) reduce sedimentation, 5) preserve the hydraulic and navigational capacities of waterbodies, 6) promote and preserve natural infiltration areas, and 7) preserve natural shoreline features. In addition to protecting natural resources, these Rules and Standards are intended to minimize future public expenditures on problems caused by land and water alterations.

## **RELATIONSHIP WITH MUNICIPALITIES AND COUNTY**

The Commission recognizes that the control and determination of appropriate land use is the responsibility of the municipalities. The Commission will review projects involving land-disturbing activities in accordance with these Rules and Standards. The Commission intends to be active in the regulatory process to ensure that water resources are managed in accordance with its goals and policies.

The Commission desires to provide technical advice to the municipalities in the preparation of local stormwater management plans and the review of projects that may affect water resources prior to investment of significant public or private funds.



## **RULE A. DEFINITIONS**

For the purposes of these Rules, unless the context otherwise requires, the following words and terms shall have the meanings set forth below. References in these Rules to specific sections of the Minnesota Statutes or Rules include amendments, revisions or recodifications of such sections. The words “shall” and “must” are mandatory; the word “may” is permissive.

**100 Year Event.** The rainfall depth with a 1 percent chance of occurring in a given year.

**Abstraction.** Removal of stormwater from runoff, by such methods as infiltration, evaporation, transpiration by vegetation, and capture and reuse, such as capturing runoff for use as irrigation water.

**Agricultural Activity.** The use of land for the production of agronomic, horticultural or silvicultural crops, including dairy animals, food animals, nursery stock, sod, fruits, vegetables, flowers, cover crops, grains, Christmas trees, and for grazing.

**Alteration or Alter.** When used in connection with public waters or wetlands, any activity that will change or diminish the course, current, or cross-section of public waters or wetlands.

**Applicant.** Any person or political subdivision that submits an application to the Commission for a project review under these Rules.

**Best Management Practices (BMPs).** Techniques proven to be effective in controlling runoff, erosion and sedimentation including those documented in the Minnesota Construction Site Erosion and Sediment Control Planning Handbook (BWSR 1988), Protecting Water Quality in Urban Areas (MPCA 2000), and the Minnesota Stormwater Manual (MPCA 2005) as revised.

**Biofiltration.** Using living material to capture and/or biologically degrade or process pollutants prior to discharging stormwater, such as directing runoff through a vegetated buffer or to a rain garden or vegetated basin with an underdrain.

**Bioretention.** A terrestrial-based (upland, as opposed to wetland) water quality and water quantity control process. Bioretention employs a simplistic, site-integrated design that provides opportunity for runoff infiltration, filtration, storage and water uptake by vegetation.

**Buffer Strip.** An area of natural, unmaintained, vegetated ground cover abutting or surrounding a watercourse or wetland.

**BWSR.** The Minnesota Board of Water and Soil Resources.

**Commission.** The Elm Creek Watershed Management Commission.

**Commissioners.** The Board of Commissioners of the Elm Creek Watershed Management Commission.

**Compensatory Storage.** Excavated volume of material below the floodplain elevation required to offset floodplain fill.

**County.** Hennepin County, Minnesota.

**Dead Storage.** The permanent pool volume of a water basin or the volume below the runout elevation of a water basin.

**Detention Basin.** Any natural or manmade depression for the temporary storage of runoff.

**Development.** Any proposal to subdivide land, any land-disturbing activity or creation of impervious surface.

**Directly Connected Impervious Surface.** Any hard surface (rooftop, driveway, sidewalk, roadway, etc.) from which runoff is not subject to loss beyond initial abstraction before being routed to the downstream collection and conveyance system.

**Disturbance.** See Land Disturbing Activity.

**Drain or Drainage.** Any method for removing or diverting water from waterbodies, including excavation of an open ditch, installation of subsurface drainage tile, filling, diking, or pumping.

**Erosion.** The wearing away of the ground surface as a result of wind, flowing water, ice movement, or land disturbing activities.

**Erosion and Sediment Control Plan.** A plan of BMPs or equivalent measures designed to control runoff and erosion and to retain or control sediment on land during the period of land disturbing activities in accordance with the standards set forth in these Rules.

**Excavation.** The artificial removal of soil or other earth material.

**Fill.** The deposit of soil or other material by artificial means.

**Filtration.** A process by which stormwater runoff is captured, temporarily stored, and routed through a filter bed to improve water quality and slow down stormwater runoff.

**Floodplain.** The area adjacent to a waterbody that is inundated during a 1% chance (100-year) flood as defined by the FEMA Flood Insurance Study for the member city or the Commission's flood study.

**Impaired Water.** A waterbody that does not meet state water quality standards and that has been included on the MPCA Section 303(d) list of Impaired Waters of the state.

**Impervious Surface.** A surface compacted or covered with material so as to be highly resistant to infiltration by runoff. Impervious surface shall include roads, driveways and parking areas,

whether or not paved, sidewalks greater than 3 feet wide, patios, tennis and basketball courts, swimming pools, covered decks and other structures. Open decks with joints at least ¼ inch wide, areas beneath overhangs less than 2 feet wide, and sidewalks 3 feet or less wide shall not constitute impervious surfaces under these Rules.

**Infiltration.** The passage of water into the ground through the soil.

**Infiltration Area.** Natural or constructed depression located in permeable soils that capture, store and infiltrate the volume of stormwater runoff associated with a particular design event.

**Interested Party.** A person or political subdivision with an interest in the pending subject matter.

**Land Disturbing Activity.** Any change of the land surface to include removing vegetative cover, excavation, fill, grading, and the construction of any structure that may cause or contribute to erosion or the movement of sediment into waterbodies. The use of land for agricultural activities, or improvements such as mill and overlay or concrete rehabilitation projects that do not disturb the underlying soil shall not constitute a land disturbing activity under these Rules.

**Landlocked Basin.** A basin that is 1 acre or more in size and does not have a natural outlet at or below the 1% chance (100-year) flood elevation as determined by the 1% chance (100-year), 10-day runoff event.

**Low Floor.** The finished surface of the lowest floor of a structure.

**Member City.** Any city wholly or partly within the Commission's boundary that has executed the Joint Powers Agreement.

**MnDOT.** The Minnesota Department of Transportation.

**MPCA.** The Minnesota Pollution Control Agency.

**Municipality.** Any city wholly or partly within the Commission's boundary.

**NPDES.** National Pollutant Discharge Elimination System.

**NURP.** The Nationwide Urban Runoff Program developed by the Environmental Protection Agency to study stormwater runoff from urban development.

**Ordinary High Water Level (OHW).** The elevation delineating the highest water level which has been maintained for a sufficient period of time to leave evidence upon the landscape, commonly that point where the natural vegetation changes from predominantly aquatic to predominantly terrestrial. For watercourses, the OHW level is the elevation of the top of the bank of the channel. An OHW established for a waterbody by the Minnesota Department of Natural Resources will constitute the OHW under this definition.

**Owner.** The owner of a parcel of land or the purchaser under a contract for deed.

**Parcel.** A parcel of land designated by plat, metes, and bounds, registered land survey, auditor's subdivision, or other accepted means and separated from other parcels or portions by its designation.

**Person.** Any individual, trustee, partnership, unincorporated association, limited liability company or corporation.

**Political Subdivision.** A municipality, county or other political division, agency or subdivision of the state.

**Project.** A space, parcel, or parcels of real property owned by one or more than one person which is being or is capable of being developed or redeveloped as a single project.

**Public Health and General Welfare.** Defined in Minnesota Statutes, Section 103D.011, Subdivisions 23 and 24.

**Public Waters.** Any waters as defined in Minnesota Statutes, Section 103G.005, Subdivision 15.

**Public Waters Wetland.** Any wetland as defined in Minnesota Statutes, Section 103G.005, Subdivision 15a.

**Redevelopment.** Any proposal to re-subdivide land, or any land-disturbing activity or addition of impervious surface to a developed site.

**Runoff.** Rainfall, snowmelt or irrigation water flowing over the ground surface.

**Sediment.** Soil or other surficial material transported by surface water as a product of erosion.

**Sedimentation.** The process or action of depositing sediment.

**Shoreland Protection Zone.** Land located within a floodplain or within 1,000 feet of the OHW of a public water or public waters wetland or 300 feet of a public waters watercourse.

**Site.** A space, parcel, or parcels of real property owned by one or more than one person which is being or is capable of being developed or redeveloped as a single project.

**Standard.** A required level of quantity, quality, or value.

**Stormwater Management Plan.** A plan for the permanent management and control of runoff prepared and implemented in accordance with the standards set forth in these Rules.

**Structure.** Anything manufactured, constructed or erected which is normally attached to or positioned on land, including portable structures, earthen structures, walls, roads, water and storage systems, drainage facilities and parking lots.

**Subdivision or Subdivide.** The separation of a parcel of land into two or more parcels.

**TMDL.** A Total Maximum Daily Load is the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards. "TMDL" can also refer to a study that calculates that load, or to the allocation of that allowable load to its various sources. An Implementation Plan may be part of the TMDL study or it may be a separate document that sets forth the steps that will be taken to achieve the TMDL.

**Volume Management.** The retention and abstraction of a certain volume of stormwater runoff onsite through techniques such as infiltration, evapotranspiration, and capture and reuse.

**Water Basin.** An enclosed natural depression with definable banks capable of containing water that may be partly filled with public waters.

**Waterbody.** All water basins, watercourses and wetlands as defined in these Rules.

**Watercourse.** Any natural or improved stream, river, creek, ditch, channel, culvert, drain, gully, swale, or wash in which waters flow continuously or intermittently in a definite direction.

**Water Resources Management Plan.** The watershed management plan for the Commission adopted and implemented in accordance with Minnesota Statutes, Section 103B.231.

**Watershed.** Region draining to a specific watercourse or water basin.

**Wetland.** Land transitional between terrestrial and aquatic systems as defined in Minnesota Statutes, Section 103G.005, Subdivision 19.

**Wetland Conservation Act (WCA).** Minnesota Wetland Conservation Act of 1991 as amended.

## **RULE B. PROCEDURAL REQUIREMENTS**

- 1. APPLICATION REQUIRED.** Any person or political subdivision undertaking an activity for which a project review is required by these Rules shall first submit to the Commission a project review application, design data, plans, specifications, fees, and such other information and exhibits as may be required by these Rules. Applications shall be signed by the owner, or the owner's authorized agent, except for activities of a political subdivision which may be signed by either the owner or the general contractor. All project review applications must be authorized by the municipality where the proposed project is located.
- 2. FORMS.** Project review applications shall be submitted on forms provided by the Commission. Forms are available at the Commission office or Web site.
- 3. ACTION BY COMMISSION.** The Commission shall act within 60 days after receipt of a complete application, including all required information, exhibits and fees. If a state or federal law or court order requires a process to occur before the Commission acts on an application, or if an application requires prior approval of a state or federal agency, the deadline for the Commission to act is extended to 60 days after completion of the required process or the required prior approval is granted. The Commission may extend the initial 60-day period by providing written notice of the extension to the applicant. The extension may not exceed 60 days unless approved by the applicant.
- 4. SUBMITTAL.** A complete project review application with all required information and exhibits shall be filed with the Commission at least 14 calendar days prior to the scheduled meeting date of the Commission. Late or incomplete submittals will be scheduled to a subsequent meeting date.
- 5. CONDITIONS.** A project review may be approved subject to reasonable conditions to assure compliance with these Rules. The conditions may include a requirement that the applicant and owner enter into an agreement with the member city in a form acceptable to the Commission to a) specify responsibility for the construction and future maintenance of approved structures or facilities, b) document other continuing obligations of the applicant or owner, c) grant reasonable access to the proper authorities for inspection, monitoring and enforcement purposes, d) affirm that the Commission or other political subdivisions can require or perform necessary repairs or reconstruction of such structures or facilities, e) require indemnification of the Commission for claims arising from issuance of the approved project review or construction and use of the approved structures or facilities, and f) reimburse the reasonable costs incurred to enforce the agreement. Project reviews and agreements may be filed for record to provide notice of the conditions and continuing obligations.
- 6. ISSUANCE OF PROJECT REVIEWS.** The Commission will issue a project review approval only after the applicant has satisfied all requirements of these Rules and paid all required fees.

7. **VALIDITY.** Issuance of a project review approval based on plans, specifications, or other data shall not prevent the Commission from thereafter requiring the correction of errors in the approved plans, specifications and data, or from preventing any activity being carried on thereunder in violation of these Rules.
8. **MODIFICATIONS.** The applicant shall not modify the approved activity or plans and specifications on file with the Commission without the prior approval of the Commission.
9. **INSPECTION AND MONITORING.** With permission of the property owner and under the authority of the member city, the Commission may perform such field inspections and monitoring of the approved activity as the Commission deems necessary to determine compliance with the conditions of the project review and these Rules. Any portion of the activity not in compliance shall be promptly corrected. In applying for a project review, the applicant consents to entry upon the land for field inspections and monitoring, or for performing any work necessary to bring the activity into compliance.
10. **SUSPENSION OR REVOCATION.** The Commission may suspend or revoke a project review approved under these Rules whenever the project review approval is issued in error or on the basis of incorrect information supplied, or in violation of any provision of these Rules, or if the preliminary and final project approvals received from the municipality or county are not consistent with the conditions of the approved project review.
11. **EXPIRATION OF COMMISSION APPROVALS.** An approved project review shall expire and become null and void if the approved activity is not commenced within one year from date of approval, or if the approved activity is suspended or abandoned for a period of one year from the date the activity originally commenced. With the approval of the affected member city, applicants may apply for an extension of that period if the city review process is extended beyond the usual review period. Before an activity delayed for one year or more can recommence, the project approval must be renewed. Any applicant may apply for an extension of time to commence the approved activity under an unexpired project review approval.

An application for renewal or extension must be in writing, and state the reasons for the renewal or extension. Any plan changes and required fees must be included with the application. There must be no unpaid fees or other outstanding violations of the approval being renewed or extended. An application for extension must be received by the Commission at least 30 days prior to the approval's expiration. The Commission shall consider the application for renewal or extension on the basis of the Rules in effect on the date the application is being considered. The Commission may extend the time for commencing the approved activity for a period not exceeding one year upon finding that circumstances beyond the control of the applicant have prevented action from being taken.

- 12. SEVERABILITY.** If any provision of these Rules is adjudged unconstitutional or invalid by a court of competent jurisdiction, the remainder of these Rules shall not be affected thereby.

## **RULE C. GENERAL STANDARDS**

- 1. POLICY.** It is the policy of the Commission to protect the water resources of the watershed by requiring that all activities within the watershed comply with minimum standards for the protection of water quality and the environment.
- 2. REGULATION.**
- a) All land disturbing activities, whether requiring a project review under these Rules or otherwise, shall be undertaken in conformance with BMPs.
  - b) Project reviews are required of any land disturbing activity meeting the review thresholds set forth in Rule D Section 2.
  - c) In areas that drain to Impaired Waters, TMDL Implementation Plans may include site-specific requirements for any land-disturbing activities that are in addition to these rules and standards.
  - d) No person shall conduct land-disturbing activities without protecting adjacent property and waterbodies from erosion, sedimentation, flooding, or other damage.
  - e) Development shall be planned and conducted to minimize the extent of disturbed area, runoff velocities, and erosion potential, and to reduce and delay runoff volumes. Disturbed areas shall be stabilized and protected as soon as possible and facilities or methods used to retain sediment on-site.
  - f) Existing natural watercourses and vegetated soil surfaces shall be used to convey, store, filter, and retain runoff before discharge into public waters or a stormwater conveyance system.
  - g) Runoff from roof gutter systems shall discharge onto lawns or other pervious surfaces to promote infiltration where possible.
  - h) Use of fertilizers and pesticides in the shoreland protection zone shall be so done as to minimize runoff into public waters by the use of earth material, vegetation, or both. No phosphorus fertilizer shall be used unless a soil nutrient analysis shows a need for phosphorus or in the establishment of new turf.
  - i) When development density, topographic features, and soil and vegetation conditions are not sufficient to adequately handle runoff using natural features and vegetation, various types of constructed facilities such as diversions, settling basins, skimming devices, dikes, waterways, and ponds may be used. The Commission encourages designs using surface drainage, vegetation and infiltration rather than buried pipes and man-made materials and facilities.



- j) Whenever the Commission determines that any land disturbing activity has become a hazard to any person or endangers the property of another, adversely affects water quality or any waterbody, increases flooding, or otherwise violates these Rules, the Commission shall notify the member city where the problem occurs and the member city shall require the owner of the land upon which the land disturbing activity is located, or other person or agent in control of such land, to repair or eliminate such condition within the time period specified therein. The owner of the land upon which a land disturbing activity is located shall be responsible for the cleanup and any damages from sediment that has eroded from such land. The Commission may require the owner to submit a project review application under these Rules before undertaking any repairs or restoration.

#### **RULE D. STORMWATER MANAGEMENT**

1. **POLICY.** It is the policy of the Commission to control excessive rates and volumes of runoff by:
  - a) Requiring that peak runoff rates not exceed existing conditions or the capacity of downstream conveyance facilities or contribute to flooding or streambank erosion.
  - b) Managing subwatershed discharge rates and flood storage volumes to be consistent with the goals of the Commission's water resources management plan and the local water resources management plans.
  - c) Controlling runoff rates by the use of on-site or if feasible regional detention or infiltration facilities.
  - d) Reviewing stormwater management structures based on the 1% (100-year) critical storm event for the drainage area.
  - e) Routing runoff to water treatment ponds or other acceptable facilities before discharging into waterbodies.
  - f) Promoting the use of natural resources for storing runoff and improving water quality and other amenities where appropriate.
  - g) Promoting natural infiltration of runoff.
  
2. **REGULATION.** No person or political subdivision shall commence a land disturbing activity or the development or redevelopment of land for the following types of projects without first submitting to and obtaining approval of a project review from the Commission or the city in which the project is located that incorporates a stormwater management plan for the activity, development or redevelopment:
  - a) Plans of any land development or site development that disturbs more than 1 acre of land.

- b) Linear projects that create one acre or more of new impervious surface must meet all Commission requirements for the net new impervious surface.
- c) Plans of any land development or individual site development adjacent to or containing a lake, wetland, or a natural or altered watercourse as listed in the Hennepin County wetland inventory or the final inventory of Protected Waters and Wetlands for Hennepin County, as prepared by the DNR.
- d) Any culvert installation or replacement, bridge construction, stream cross-section alteration, or activity requiring a DNR Waters Permit on Elm, Rush, North Fork Rush, or Diamond Creeks or their tributaries.
- e) Plans for any land development or site development within the 1% chance (100-year) floodplain as defined by the Flood Insurance Study for the member city or the Commission's flood study.
- f) Plans of any land development or site development regardless of size, if such review is requested by a member city.
- g) Land disturbing activity that drains to more than one watershed, for that portion of the site draining into the Elm Creek Watershed.

**3. CRITERIA.** Stormwater management plans shall comply with the following criteria regarding runoff rate restrictions, volume control requirements, and water quality requirements.

- a) A hydrograph method based on sound hydrologic theory will be used to analyze runoff for the design or analysis of flows, volumes, water quality, and water levels.
- b) *Runoff rates* for the proposed activity shall not exceed existing runoff rates for the 2-year, 10-year, and 100-year critical storm events and rainfall distribution for the project location as set forth in NOAA Atlas 14 Volume 8, published June 2013, or its successor, using the online NOAA Precipitation Frequency Data Server or a similar data source. Applicant must document the location and event depths used. If an approved local water management plan requires more restrictive rate control, then the more restrictive rate shall govern. Runoff rates may be restricted to less than the existing rates when necessary for the public health and general welfare of the watershed.
  - i) If detention basins are used to control rate of runoff they shall be designed to provide:
    - (1) An outlet structure to control the 2-year, 10-year, and 100-year critical storm events to predevelopment runoff rates. Said outlet structure will be required to control critical storm events to less than predevelopment runoff rates if downstream facilities have insufficient capacity to handle the increased flow.
    - (2) Alternative to (1), runoff may be directed to a downstream facility within the same hydrologic subwatershed that has sufficient capacity to provide the required rate control. This means that no rate control may be required for an

individual development provided there is a regional facility designed and constructed to accommodate the flow from this property.

- (3) An identified overflow spillway sufficiently stabilized to convey a 1% (100-year) critical storm event.
  - (4) A normal water elevation above the OHW of adjacent waterbodies.
  - (5) Access for future maintenance.
  - (6) An outlet skimmer to prevent migration of floatables and oils for at least the two year storm event.
  - (7) The low floor elevation shall be at minimum two feet above the critical event 100-year elevation and at minimum one foot above the emergency overflow elevation of nearby waterbodies and stormwater ponds.
- ii) Regional detention basins may be used to manage peak flow rates and meet water quality objectives when feasible.
  - iii) Analysis of flood levels, storage volumes and flow rates for waterbodies and detention basins shall be based on the range of rainfall and snow melt duration producing the critical flood levels and discharges, whichever is most critical.
  - iv) Landlocked water basins may be provided with outlets that:
    - (1) Retain a hydrologic regime complying with floodplain and wetland alterations.
    - (2) Provide sufficient storage below the outlet run-out elevation to retain back-to-back 100-year, 24-hour rainfalls and runoff above the highest anticipated groundwater elevation and prevent damage to property adjacent to the basin.
    - (3) Do not create adverse downstream flooding or water quality conditions.
- c) Stormwater runoff volume must be *infiltrated/abstracted* onsite in the amount equivalent to one point one inch (1.1") of runoff generated from new impervious surface.
- i) Applicant must minimize the creation of new impervious surface, reduce existing impervious surfaces where possible, and minimize the amount of directly connected impervious surface.
  - ii) When using infiltration for volume reduction, runoff must be infiltrated within 48 hours. Infiltration volumes and facility sizes shall be calculated based on the measured infiltration rate determined by a double-ring infiltrometer test(s) conducted to the requirements of ASTM Standard D3385 at the proposed bottom elevation of the infiltration area. Other testing methods may be used with the approval of the Commission's Engineer. The measured infiltration rate shall be divided by the appropriate correction factor selected from the Minnesota Stormwater Manual. This site investigation must be conducted by a licensed soil scientist or engineer.

- iii) A post-construction percolation test must be performed on each infiltration practice and must demonstrate that the constructed infiltration rate meets or exceeds the design infiltration rate prior to project acceptance by the city.
- iv) Infiltration areas will be limited to the horizontal areas subject to prolonged wetting.
- v) Areas of permanent pools tend to lose infiltration capacity over time and will not be accepted as an infiltration practice.
- vi) Stormwater runoff must be pretreated to remove solids before discharging to infiltration areas to maintain the long term viability of the infiltration areas.
- vii) Design and placement of infiltration BMPs shall be done in accordance with the Minnesota Department of Health guidance “Evaluating Proposed Stormwater Infiltration Projects in Vulnerable Wellhead Protection Areas,” as amended.
- viii) Constructed bioretention and infiltration practices such as rain gardens, infiltration trenches, and infiltration benches shall not be used in:
  - (1) Fueling and vehicle maintenance areas;
  - (2) Areas with less than 3 feet separation from the bottom of the infiltration system to the elevation of seasonal high groundwater;
  - (3) Areas with runoff from industrial, commercial and institutional parking lots and roads and residential arterial roads with less than 5 feet separation distance from the bottom of the infiltration system to the elevation of seasonal high groundwater;
  - (4) Areas within 400 feet of a community water well, within 100 feet of a private well, or within a delineated 1-year time of travel zone in a wellhead protection area;
  - (5) Sites documented to contain contaminated soils or groundwater.
- ix) Credit towards compliance with the abstraction requirement in (c) may be achieved by:
  - (1) Meeting post construction soil quality and amendment depth requirements. Areas that will be subjected to clearing, grading, or compaction that will not be covered by impervious surface, incorporated into a drainage facility, or engineered as structural fill or slope may be included in the credit calculation if they meet post construction soil quality and amendment depth requirements. Soil amendment areas become part of the site’s storm drainage system, and must be protected by a utility and drainage easement and be included in the site’s utility maintenance agreement. The applicant may compute a credit of 0.5 inches over the soil amendment area and apply that toward the abstraction volume requirement.
    - (a) A minimum 8-inch depth of compost amended soil or imported topsoil shall be placed in all areas of the project site being considered for the abstraction

credit. Before the soil is placed, the subsoil must be scarified (loosened) at least 4 inches deep, with some incorporation of the amended soil into the existing subsoil to avoid stratified layers.

- (b) Soil amendment may be achieved by either mixing 2 inches of approved compost into the 8 inches of soil depth, or by mixing a custom-calculated amount of compost to achieve 8 inches of uncompacted soil depth with a minimum organic content of five percent.
  - (c) The amended areas must pass a 12-inch probe test during the site final inspection, in accordance with the Commission's testing procedure. Once amended, soil areas must be protected from recompaction.
- (2) Preserving undisturbed forest or grassland conservation areas. Conservation areas must remain undisturbed during construction and must be protected by a permanent conservation easement prescribing allowable uses and activities on the parcel and preventing future development. A long-term vegetation management plan describing methods of maintaining the conservation area in a natural vegetative condition must be submitted with the stormwater management plan. The applicant may compute a credit of 0.5 inches over the conservation area and apply that toward the abstraction volume requirement.
  - (3) Providing wetland buffers in excess of minimum requirements. Areas eligible for credit must meet all wetland buffer requirements, must be monumented and shown on the construction plans. The applicant may compute a credit of 0.5 inches over the excess buffer area and apply that toward the abstraction volume requirement.
  - (4) Disconnecting impervious surface by redirecting runoff across a pervious surface or into an engineered bioinfiltration facility. Impervious disconnection must be designed to prevent any reconnection of runoff with the storm drain system. The applicant may subtract the disconnected impervious surface area from the total impervious surface area used to compute the required abstraction volume.
- x) Alternative to (c), runoff may be directed to a downstream facility within the same hydrologic subwatershed that has sufficient capacity to provide the required volume management. This means that no volume management may be required for an individual development provided there is a regional facility designed and constructed to accommodate the volume from this property.
- d) Where infiltration is not advisable or infeasible due to site conditions, *biofiltration* must be provided for that part of the abstraction volume that is not abstracted by other BMPs. Where biofiltration is infeasible, at a minimum filtration through a medium that incorporates organic material, iron fillings, or other material to reduce soluble phosphorus must be provided.
  - e) There shall be *no net increase in total phosphorus (TP) or total suspended solids (TSS)* from pre-development land cover to post-development land cover. Pre-development land cover is defined as the predominant land cover over the previous 10 years. The TP

and TSS export coefficients to be used to calculate predevelopment and post-development land use loadings are set forth in Commission project review guidance.

- i) Full infiltration of one point one (1.1) inches of runoff from all impervious surface will satisfy (e).
- ii) If it is not feasible to achieve the full 1.1 inch infiltration requirement, a combination of BMPs may be used to achieve the no-net-increase requirement.
- iii) If permanent sedimentation and water quality ponds are used they shall be designed to the Wet Pond Design Standards set forth on Appendix A to these Rules and provide:
  - (1) Water quality features consistent with NURP criteria and best management practices.
  - (2) A permanent wet pool with dead storage of at least the runoff from a 2.5-inch storm event.
- iv) Alternative to (e), runoff may be directed to a downstream facility within the same hydrologic subwatershed that has sufficient capacity to provide the required treatment. This means that no treatment may be required for an individual development provided there is a regional facility designed and constructed to accommodate the flow from this property.

#### **4. WAIVERS.**

- a) The Commission may waive the on-site runoff rate, volume and water quality control design criteria as noted above, if a municipality has an off-site stormwater facility that provides equivalent control and treatment of runoff that conforms to Commission standards.
- b) The design criteria for infiltration may be waived for sites with total impervious surface of less than one acre if infiltration BMPs have been incorporated to the maximum extent possible.

#### **5. EXHIBITS.** The following exhibits shall accompany the project review application (one set full size, one set reduced to a maximum size of 11" x 17", and one electronic set in pdf format). All plans must be signed by a licensed professional engineer registered in Minnesota.

- a) Property lines and delineation of lands under ownership of the applicant.
- b) Delineation of the subwatershed contributing runoff from off-site, proposed and existing subwatersheds on-site, emergency overflows and watercourses.
- c) Proposed and existing stormwater facilities location, alignment and elevation.
- d) Delineation of existing on-site wetland, marsh, shoreland and floodplain areas.

- e) Where infiltration or filtration is used as a stormwater management practice, identification, description, results of double-ring infiltrometer tests, and permeability and approximate delineation of site soils and seasonal high groundwater elevation in both existing and proposed as-developed condition.
- f) Existing and proposed ordinary high and 1% chance (100-year) water elevations on-site.
- g) Existing and proposed site contour elevations at 2-foot intervals, referenced to NAVD (1988 datum). If NAVD 1988 is not used, applicant must specify the datum used and the appropriate conversion factor.
- h) Construction plans and specifications of all proposed stormwater management facilities, including design details for outlet controls.
- i) Runoff volume and rate analysis for the 2-year, 10-year, and 100-year critical storm events, existing and proposed.
- j) Pre-construction and post-construction annual runoff volume (ac-ft), annual total phosphorus (lbs/yr), and annual total suspended solids (lb/yr).
- k) All hydrologic, water quality and hydraulic computations made in designing the proposed stormwater management facilities.
- l) A narrative describing the pre-and post-construction drainage conditions and the post-construction BMPs incorporated in the plans.
- m) Applications requesting a soil management credit must include a Soil Management Plan (SMP) that shall include an 11" x 17" or larger site map indicating areas where soils will be amended, and calculations for soil volumes to be stockpiled and amounts and specifications of amendment or topsoil to be imported to achieve specified minimum organic matter content.
- n) Delineation of any ponding, flowage or drainage easements, or other property interests, to be dedicated for stormwater management purposes.

**6. MAINTENANCE.** All stormwater management structures and facilities shall be maintained in perpetuity to assure that the structures and facilities function as originally designed. The owner of any water quality treatment device if not a governmental unit shall provide to the member city, in a form acceptable to the Commission, a recordable agreement detailing an operations and maintenance plan that assures that the structure(s) will be operated and maintained as designed.

**7. EASEMENTS.** The member city shall obtain from the applicant, in form acceptable to the Commission, recordable temporary and perpetual easements for ponding, flowage and drainage purposes over hydrologic features such as waterbodies, wetlands, buffers, floodplain, and stormwater basins and other permanent BMPs. The easements shall include the right of reasonable access for inspection, monitoring, maintenance and enforcement purposes.

8. **COVENANTS.** The Commission may require as a condition of project review approval that the member city shall require that the land be subjected to restrictive covenants or a conservation easement, in form acceptable to the Commission, to prevent the future expansion of impervious surface and the loss of infiltration capacity.

#### **RULE E. EROSION AND SEDIMENT CONTROL**

1. **POLICY.** It is the policy of the Commission to control runoff and erosion and to retain or control sediment on land during land disturbing activities by requiring the preparation and implementation of erosion and sediment control plans.
2. **REGULATION.** No person or political subdivision shall commence a land disturbing activity or the development or redevelopment of land for which a project review is required under Rule D without first submitting to and obtaining approval of a project review from the Commission that incorporates an erosion and sediment control plan for the activity, development or redevelopment.
3. **CRITERIA.** Erosion and sediment control plans shall comply with the following criteria:
  - a) Erosion and sediment control measures shall be consistent with best management practices as demonstrated in the most current version of the MPCA manual "Protecting Water Quality in Urban Areas," and shall be sufficient to retain sediment on-site.
  - b) Erosion and sediment controls shall meet the standards for the General Permit Authorization to Discharge Storm Water Associated with Construction Activity Under the National Pollutant Discharge Elimination System/State Disposal System Permit Program Permit MN R100001 (NPDES General Construction Permit) issued by the Minnesota Pollution Control Agency, except where more specific requirements are required.
  - c) All erosion and sediment controls shall be installed before commencing the land disturbing activity, and shall not be removed until completion.
  - d) The activity shall be phased when possible to minimize disturbed areas subject to erosion at any one time.
4. **EXHIBITS.** The following exhibits shall accompany the project review application (one set full size, one set reduced to a maximum size of 11" x 17", and one electronic set in pdf format). Erosion and sediment control plans must be prepared by a qualified professional.
  - a) An existing and proposed topographic map showing contours on and adjacent to the land, property lines, all hydrologic features, the proposed land disturbing activities, and the locations of all runoff, erosion and sediment controls and soil stabilization measures.
  - b) Plans and specifications for all proposed runoff, erosion and sediment controls, and temporary and permanent soil stabilization measures.



- c) Detailed schedules for implementation of the land disturbing activity, the erosion and sediment controls, and soil stabilization measures.
  - d) Detailed description of the methods to be employed for monitoring, maintaining and removing the erosion and sediment controls, and soil stabilization measures.
  - e) Soil borings if requested by the Commission.
5. **MAINTENANCE.** The project review applicant shall be responsible for proper operation and maintenance of all erosion and sediment controls and soil stabilization measures, in conformance with best management practices and the NPDES permit. The project review applicant shall, at a minimum, inspect and maintain all erosion and sediment controls and soil stabilization measures daily during construction, weekly thereafter, and after every rainfall event exceeding 0.5 inches, until vegetative cover is established.

## **RULE F. FLOODPLAIN ALTERATION**

1. **POLICY.** It is the policy of the Commission to prevent and control flooding damage by:
- a) Preserving existing water storage capacity below the 100-year critical flood elevation on all waterbodies in the watershed to minimize the frequency and severity of high water.
  - b) Minimizing development in the floodplain that will unduly restrict flood flows or aggravate known high water problems.
  - c) Requiring compensatory storage for floodplain fill.
2. **REGULATION.** No person or political subdivision shall alter or fill land below the 100-year critical flood elevation of any public waters watercourse, public waters wetland, or other wetland without first obtaining an approved project review from the Commission.
3. **CRITERIA.**
- a) Floodplain alteration or filling shall not cause a net decrease in flood storage capacity below the projected 1% (100-year) critical flood elevation or alter the timing of flooding unless it is shown that the proposed alteration or filling, together with the alteration or filling of all other land on the affected reach of the waterbody to the same degree of encroachment as proposed by the applicant, will not cause high water or aggravate flooding on other land and will not unduly restrict flood flows.
  - b) All new structures shall be constructed with the low floor at the elevation required in the municipality's ordinance, however, in no case shall the low floor be less than two feet above the regulatory elevation.

4. **EXHIBITS.** The following exhibits shall accompany the project review` application (one set full size, one set reduced to a maximum size of 11" x 17", and one electronic set in pdf format):
- a) Site plan showing boundary lines, delineation and existing elevation contours of the work area, ordinary high water level, and 1% (100-year) critical flood elevation. All elevations shall be referenced to the NAVD 1988 datum. If NAVD 1988 is not used, applicant must specify the datum used and the appropriate conversion factor.
  - b) Grading plan showing any proposed elevation changes.
  - c) Preliminary plat of any proposed subdivision.
  - d) Determination by a registered professional engineer of the 100-year critical flood elevation before and after the proposed activity.
  - e) Computation of the change in flood storage capacity as a result of the proposed alteration or fill.
  - f) Erosion and sediment control plan which complies with these Rules.
  - g) Soil boring logs and report if available.
5. **EXCEPTIONS.** If a municipality has adopted a floodplain ordinance that prescribes an allowable degree of floodplain encroachment, the applicable ordinance shall govern the allowable degree of encroachment and no project review will be required under this Floodplain Alteration Rule.

#### **RULE G. WETLAND ALTERATION**

1. **POLICY.** It is the policy of the Commission to preserve and protect wetlands for their water quality, stormwater storage, habitat, aesthetic, and other attributes by:
- a) Achieving no net loss in the quantity, quality and biological diversity of wetlands in the watershed.
  - b) Increasing the quantity, quality and biological diversity of wetlands in the watershed by restoring or enhancing diminished or drained wetlands.
  - c) Enforcing mitigation of direct or indirect impacts from activities that destroy or diminish the quantity, quality and biological diversity of watershed wetlands.
  - d) Replacing affected wetlands where sequencing demonstrates that avoidance is not feasible.
2. **REGULATION.** No person or political subdivision shall drain, fill, excavate or otherwise alter a wetland without first obtaining the approval of a wetland replacement plan from the local government unit with jurisdiction over the activity. Mitigation of wetland

impacts will be considered in the following sequence: 1) mitigated by enhancing the impacted wetland; 2) mitigated within the subcatchment of the impacted wetland; 3) mitigated in the drainage area of the impacted wetland; 4) mitigated in the watershed of the impacted wetland; 5) mitigated through purchase of wetland bank credits.

### **3. CRITERIA.**

- a) Any drainage, filling, excavation or other alteration of a wetland shall be conducted in compliance with Minnesota Statutes, section 103G.245, the Wetland Conservation Act, and regulations adopted thereunder.
- b) A wetland may be used for stormwater storage and treatment only if pre-treatment is provided and the use will not adversely affect the function and public value of the wetland as determined by the local government unit.
- c) Other activities which would change the character of a wetland shall not diminish the quantity, quality or biological diversity of the wetland.

**4. LOCAL GOVERNMENT UNIT.** The Commission will serve as the local government unit (LGU) for administration of the Wetland Conservation Act (WCA) for those cities that have designated the Commission to serve in that capacity. If a member city has not designated the Commission as the LGU for the administration of the WCA, they shall be responsible for administering the WCA. MnDOT serves as the LGU on its right of way.

## **RULE H. BRIDGE AND CULVERT CROSSINGS**

- 1. POLICY.** It is the policy of the Commission to maintain channel profile stability and conveyance capacity by regulating crossings of watercourses for driveways, roads and utilities.
- 2. REGULATION.** No person or political subdivision shall construct or improve a road, driveway or utility crossing across any public waters watercourse or county ditch without first submitting to the Commission and receiving approval of a project review.
- 3. CRITERIA.** Crossings shall:
  - a) Retain adequate hydraulic capacity to pass the 100-year flow and maintain the 100-year flow profile, if available.
  - b) Mimic the existing base flow (1-year, 2-year) conditions.
  - c) Not adversely affect water quality.
  - d) Represent the "minimal impact" solution to a specific need with respect to all reasonable alternatives.
  - e) Allow for future erosion, scour, and sedimentation maintenance considerations.

- f) If the project proposes changing the FEMA FIS profile, a FEMA map revision must be obtained.
- g) If the project requires a DNR Work in Public Waters permit, the conditions of that permit must be satisfied.

**4. EXHIBITS.** The following exhibits shall accompany the project review application (one set full size, one set reduced to a maximum size of 11" x 17", and one electronic set in pdf format):

- a) Construction plans and specifications.
- b) Analysis prepared by a registered professional engineer showing the effect of the project on hydraulic capacity and water quality.
- c) An erosion and sediment control plan that complies with these Rules.

**5. MAINTENANCE.**

- a) The maintenance, reconstruction and stabilization of any public crossing shall be the responsibility of the political subdivision with jurisdiction over the crossing.
- b) The maintenance, reconstruction and stabilization of any private crossing shall be the responsibility of the owner of the crossing.
- c) If a crossing over any public waters watercourse is determined by the Commission to be causing significant erosion, the Commission may notify the member city where said crossing is located and the member city may order the owner of the crossing to make necessary repairs or modifications to the crossing and outlet channel.

**RULE I. BUFFER STRIPS**

**1. POLICY.** It is the policy of the Commission to maintain the water quality and ecological functions provided by watercourses, lakes and wetlands by requiring the development of vegetated buffers around watercourses, lakes and wetlands where development and redevelopment occurs, and to encourage the installation of vegetated buffers around all watercourses and wetlands. Vegetative buffers reduce the impact of surrounding development and land use on watercourse, lake and wetland functions by stabilizing soil to prevent erosion, filtering sediment from runoff, and moderating water level fluctuations during storms. Buffers provide essential habitat for wildlife. Requiring buffers recognizes that watercourse, lake and wetland quality and function are related to the surrounding upland.

**2. REGULATION.** No person or political subdivision shall commence a land disturbing activity or the development or redevelopment of land for which a project review is required under Rule D on land that contains or is adjacent to a watercourse, lake or wetland

without first submitting to and obtaining approval of a project review from the Commission that incorporates a vegetated buffer strip between the development or redevelopment and the watercourse or wetland.

### **3. GENERAL PROVISIONS.**

- a) This Rule shall apply to all lands containing or abutting watercourses, lakes or wetlands that are subject to a project review under these Rules. Watercourses, lakes and wetlands shall be subject to the requirements established herein, and other applicable federal, state and local ordinances and regulations. If a municipality has a buffer strip requirement that has been reviewed and approved by the Commission, the municipal regulation shall have precedence over the Commission's Rules.
- b) An applicant shall determine whether any watercourse, lake or wetland exists, and shall delineate the boundary for any wetland on the land. An applicant shall not be required to delineate wetlands on adjacent property, but must review available information to estimate the wetland boundary.
- c) Documentation identifying the presence of any watercourse, lake or wetland on the applicant's land, including wetland delineation and buffer strip vegetation evaluation, must be provided to the Commission with a project review application.
- d) Wetland and buffer strip identifications and delineations shall be prepared in accordance with state and federal regulations.

### **4. CRITERIA.** The following standards apply to all lands that contain or abut a watercourse, lake or wetland:

- a) BMPs shall be followed to avoid erosion and sedimentation during land disturbing activities.
- b) When a buffer strip is required the applicant shall, as a condition to issuance of an approved project review:
  - i) Submit to the member city, in a form acceptable to the Commission, a recordable conservation easement for protection of approved buffer strips. The easement shall describe the boundaries of the watercourse or wetland and buffer strips, identify the monuments and monument locations, and prohibit any of the alterations set forth in Paragraph 5(e) below and the removal of the buffer strip monuments within the buffer strip or the watercourse or wetland.
  - ii) Submit to the member city, in a form acceptable to the Commission, an executed buffer maintenance plan and agreement for the first two growing seasons following establishment, and providing an escrow or an alternate surety to assure successful vegetation establishment.
  - iii) Install the wetland monumentation required by Paragraph 7 below.

- c) All open areas within the buffer strip shall be seeded or planted in accordance with Paragraph 8 below. All seeding or planting shall be completed prior to removal of any erosion and sediment control measures. If construction is completed after the end of the growing season, erosion and sediment control measures shall be left in place and all disturbed areas shall be mulched for protection over the winter season.

## **5. BUFFER STRIPS.**

- a) A buffer strip shall be maintained around the perimeter of all watercourses, lakes or wetlands. The buffer strip provisions of this Rule shall not apply to any parcel of record as of the date of this Rule until such parcel is developed or redeveloped or unless required by a previous project review. The Commission does, however, strongly encourage the installation of buffer strips on all parcels in the watershed.
- b) Buffer strips on Elm Creek, Rush Creek, North Fork Rush Creek, and Diamond Creek shall be an average of 50 feet wide and a minimum of 25 feet wide, measured from the top of bank. Buffer strips on other watercourses, lakes, and wetlands shall be an average 25 feet wide and a minimum of 10 feet wide. It is recommended that all structures have a minimum 15 foot setback from the buffer strip.
- c) Buffer strips shall apply whether or not the watercourse or wetland is on the same parcel as a proposed development.
- d) Buffer areas disturbed by grading operations must be finish graded to a slope of 6:1 or less or an increase in width of five (5) feet for each one (1) foot decrease in horizontal width (i.e., a 25 required foot buffer width at a 5:1 slope must be 30 feet wide, 4:1 must be 35 feet wide, and 3:1 must be 40 feet wide.)
- e) Buffer strip vegetation shall be established and maintained in accordance with Paragraph 8 below. Buffer strips shall be identified within each parcel by permanent monumentation in accordance with Paragraph 7 below.
- f) Subject to Paragraph 5(g) below, alterations including building, storage, paving, mowing, plowing, introduction of noxious vegetation, cutting, dredging, filling, mining, dumping, grazing livestock, agricultural production, yard waste disposal or fertilizer application, are prohibited within any buffer strip. Noxious vegetation shall be removed to meet state standards. Alterations would not include plantings that enhance the natural vegetation or selective clearing or pruning of trees or vegetation that are dead, diseased or pose similar hazards.
- g) The following activities shall be permitted within any buffer strip, and shall not constitute prohibited alterations under Paragraph 5(f) above:
  - i) Use and maintenance of an unimproved access strip through the buffer, not more than 20 feet in width, for recreational access to the watercourse, lake or wetland and the exercise of riparian rights.

- ii) Placement, maintenance, repair or replacement of utility and drainage systems that exist on creation of the buffer strip or are required to comply with any subdivision approval or building permit obtained from the municipality or county, so long as any adverse impacts of utility or drainage systems on the function of the buffer strip have been avoided or minimized to the extent possible.
- iii) Construction, maintenance, repair, reconstruction, or replacement of existing and future public roads crossing the buffer strip, so long as any adverse impacts of the road on the function of the buffer strip have been avoided or minimized to the extent possible.

**6. ALTERNATE WETLAND PROTECTION METHODS.**

- a) Should application of the buffer standards in Paragraph 5 above render a parcel of record as of the date of this Rule unbuildable based on current city ordinances, the Watershed engineer may allow alternative methods to protect the wetland. Such methods must include a buffer strip no less than ten feet wide, supplemented by redirection of drainage to a wider area of buffer, or to a Best Management Practice such as a rain garden or vegetated swale.
- b) The use of alternative wetland protection methods will be evaluated as part of the review of a stormwater management plan under these Rules. Alternative wetland protection methods must be in keeping with the spirit and intent of this Rule.

**7. MONUMENTATION.** A monument shall be required at each parcel line where it crosses a buffer strip and shall have a maximum spacing of 200 feet along the edge of the buffer strip. Additional monuments shall be placed as necessary to accurately define the edge of the buffer strip. A monument shall consist of a post and a buffer strip sign meeting Commission standards. The signs shall include warnings about mowing, disturbing or developing the buffer strip.

**8. VEGETATION.**

- a) Where acceptable natural vegetation exists in buffer strip areas, the retention of such vegetation in an undisturbed state is required unless an applicant receives approval to replace such vegetation. A buffer strip has acceptable natural vegetation if it:
  - i) Has a continuous, dense layer of native vegetation that has been uncultivated or unbroken for at least 5 consecutive years; or
  - ii) Has an overstory of native trees and/or shrubs that has been uncultivated or unbroken for at least 5 consecutive years; or
  - iii) Contains a mixture of the plant communities described in Subparagraphs 8(a)(i) and (ii) above that has been uncultivated or unbroken for at least 5 years.

- b) Notwithstanding the performance standards set forth in Paragraph 8(a), the Commission may determine existing buffer strip vegetation to be unacceptable if:
  - i) It contains undesirable plant species including but not limited to common buckthorn, reed canary grass, or species on the Minnesota State Noxious Weeds List; or
  - ii) It has topography that tends to channelize the flow of runoff; or
  - iii) For some other reason it is unlikely to retain nutrients and sediment.
  - iv) Where buffer strips are not vegetated or have been cultivated or otherwise disturbed within 5 years of the project review application, such areas shall be replanted and maintained with native vegetation. The buffer strip plantings must be identified on the project review application. Acceptable buffer strip design and planting methods are detailed in the reference document “Restoring and Managing Native Wetland and Upland Vegetation” (Jacobson 2006, prepared for BWSR and MnDOT).
- c) Buffer strip vegetation shall be established and maintained in accordance with the requirements found in this Paragraph. During the first two full growing seasons, the owner must replant any buffer strip vegetation that does not survive. The owner shall be responsible for reseeding and/or replanting if the buffer strip changes at any time through human intervention or activities. At a minimum the buffer strip must be maintained as a “no mow” area.

## **9. ENCROACHMENT.**

- a) Buffer strips must be kept free of all materials, equipment and structures, including fences and play equipment. Buffer strips must not be grazed, cropped, logged or mown except as approved by the Commission. The topography of the buffer strips shall not be altered by any means, including paving, plowing, cutting, dredging, filling, mining, or dumping.
- b) Variances.
  - i) Only variances meeting the standards and criteria set forth in Rule K shall be granted.
  - ii) Variances shall not be granted that would circumvent the intent and purposes of this Rule.

## **RULE J. FEES**

- 1. POLICY.** The Commission finds that it is in the public interest to require applicants to pay the cost of administering and reviewing project review applications, and inspecting approved activities to assure compliance with these Rules, rather than using the Commission’s annual administrative levy for such purposes. The Commission shall by



resolution establish a schedule of fees that may be amended from time to time to reflect the cost of providing each service.

2. **APPLICATION.** Each application for the issuance, transfer or renewal of a project review recommendation under these Rules shall be accompanied by an application fee to defray the cost of processing the application.
3. **REVIEW.** A project review applicant under these Rules shall pay a fee for the cost of the review and analysis of the proposed activity, including services of engineering, legal, and other consultants. The review fee shall be payable upon the submission of the project review application.
4. **WETLAND MITIGATION PLAN.** A project review applicant under these rules shall pay a fee for the cost of the review and analysis of a proposed activity involving a wetland mitigation plan in a municipality where the Commission is the LGU. The fee is to cover the costs of engineering, legal, and other consultants, and shall be payable upon the submission of the project review application. Should the cost of said wetland mitigation plan review exceed the review fee, the application shall deposit such additional sums as are needed to pay such costs. Failure to pay such costs is grounds to deny the application or suspend review.
5. **WETLAND MITIGATION PLAN MONITORING.** A project review applicant under these rules in a municipality where the Commission is the LGU shall deposit an escrow to cover the cost of Commission monitoring and annual monitoring plan review for the five-year period. If the escrow amount is insufficient to cover the costs the Commission may require additional funds from the applicant.
6. **WETLAND MITIGATION SECURITY DEPOSIT.** A project review applicant under these rules in a municipality where the Commission is the LGU shall provide a security to assure that the replacement plan is followed. The amount of the security shall be calculated on a case-by-case basis based on the estimated cost of construction, follow up and contingency. The security may also include an amount determined by the Commission to be sufficient to protect the public in the event the replacement plan does not succeed.
7. **DEPOSITS.** The Commission will maintain an accounting for all deposits made under this Rule. No interest will be paid to applicants for funds held in deposit.

#### **RULE K. VARIANCES**

1. **WHEN AUTHORIZED.** The Commission may grant variances from the literal provisions of these Rules. A variance shall only be granted when in harmony with the general purpose and intent of the Rules in cases where strict enforcement of the Rules will cause practical difficulties or particular hardship, and when the terms of the variance are consistent with the Commission's water resources management plan and Minnesota Statutes, chapter 103D.

2. **HARDSHIP.** "Hardship" as used in connection with the granting of a variance means the land in question cannot be put to a reasonable use if used under the conditions allowed by these Rules; the plight of the applicant is due to circumstances unique to the land and not created by the applicant; and the variance, if granted, will not adversely affect the essential character of the locality and other adjacent land. Economic considerations alone shall not constitute a hardship if a reasonable use for the land exists under the terms of these Rules. Conditions may be imposed in the granting of a variance to insure compliance and to protect adjacent land and the public health and general welfare of the Commission.
3. **PROCEDURE.** An application for a variance shall describe the practical difficulty or particular hardship claimed as the basis for the variance. The application shall be accompanied with such surveys, plans, data and other information as may be required by the Commission to consider the application.
4. **VIOLATION.** A violation of any condition imposed in the granting of a variance shall be a violation of these Rules and shall automatically terminate the variance.

#### **RULE L. ENFORCEMENT**

1. **ADMINISTRATION.** These Rules shall be administered by the Commission. The Commission shall consider applications required under these Rules and determine whether such applications should be approved, approved with conditions, or denied. Such determination shall be communicated to the member city in which the project lies and to the applicant.
2. **IMPLEMENTATION BY MEMBER CITIES.** It shall be the duty of each city to enforce and implement such determinations by the Commission under the various permitting processes and regulations of the city. Each city shall make such amendments to its official controls, regulations, and permitting processes as are necessary to provide it with the authority to enforce and implement the determinations of the Commission.
3. **FAILURE BY CITY TO IMPLEMENT.** Upon a determination by the Commission that a city has not enforced or implemented a decision of the Commission in the administration of these Rules, the Commission shall notify the city of such determination and direct that appropriate action be taken by the city. If the city does not take such action, the Commission may take such legal steps as are available to it to effect such enforcement or implementation.

#### **RULE M. AMENDMENT OF THESE RULES**

1. **AMENDMENT.** These rules may be amended from time to time by the Commission. Proposed amendments shall be reviewed by the member cities prior to adoption unless the Commission determines that said amendment is of a minor or technical nature.

Minor or technical amendments include recodifying or streamlining the rules, clarifying policies, or other actions that do not adversely affect a member city or impact the Commission's or member cities' ability to meet their water management plan goals.

2. **PROCEDURE.** Proposed major amendments to these rules shall be first considered by the Commission and then forwarded to the member cities for a 45-day comment period. Following that comment period, the Commission shall consider the proposed amendment and the comments received for approval. All amendments shall be made by resolution.

**ELM CREEK WATERSHED MANAGEMENT COMMISSION  
RULES APPENDIX A  
WET POND DESIGN STANDARDS**

Permanent Pool Depth	Average 4', maximum 10'
Permanent Pond Surface Area	Greater of 2% of watershed's impervious area and 1% of the watershed
Permanent Pool Length to Width Ratio	3:1 or greater with an irregularly shaped shoreline
Side Slopes	10:1 for 10-foot bench centered on the normal water elevation and between 3:1 and 20:1 elsewhere
Side Slope Stabilization	Native seed with mix 33-261 (MnDOT 310), 34-271 (BWSR W2) or equivalent between NWL and HWL, provide 10' buffer where possible with mix 35-221 (MnDOT 330 (dry)) or mix 35-241 (MnDOT 350 (mesic))
Floatable Removal	Skimming device discharging at no greater than 0.5 fps during the 2-year event or a submerged outlet with a minimum 0.5 feet from the normal water level to the crown of the outlet pipe
Sediment Accumulation Area	Provide maintenance pads to remove sediment deltas at inlets
Permanent Pool Volume	A 4-foot mean depth and equal to 2.5-inch rain over the watershed
Source	Protecting Water Quality in Urban Areas (MPCA 2000)

## SUMMARY

### Elm Creek Watershed Management Commission Management Rules and Standards\*

	Standard	Purpose	Applicability
<b>Project Reviews Required</b>	A Stormwater Management Plan consistent with all applicable management rules and standards* must be reviewed and approved prior to commencement of land disturbing activities.	To control excessive rates and volumes of runoff; manage subwatershed discharge rates and flood storage volumes; improve water quality; protect water resources; and promote natural infiltration of runoff.	All development or redevelopment projects of the following types: <ul style="list-style-type: none"> <li>• Projects disturbing more than one acre of land</li> <li>• Projects within the 100-year floodplain</li> <li>• Projects adjacent to or within a lake, wetland, or watercourse</li> <li>• Any land disturbing activity requested by a member city to be reviewed regardless of project size</li> <li>• Linear projects creating more than one acre of new impervious surface</li> </ul>
<b>Rate Control</b>	Peak runoff rates may not exceed existing rates for the 2-year, 10-year, and 100-year critical storm event; or the capacity of downstream conveyance facilities; or contribute to flooding	To control excessive rates and volumes of runoff; manage subwatershed discharge rates and flood storage volumes	All projects disturbing more than one acre of land. Redevelopment projects disturbing less than 50 percent of the site must meet the requirement only for the disturbed area.
<b>Volume Management</b>	1.1 inch of impervious surface runoff must be abstracted on site within 48 hours	To control excessive rates and volumes of runoff; manage discharge rates and flood storage volumes; protect stream channels from erosion; and promote natural infiltration of runoff.	All projects disturbing more than one acre of land. Redevelopment projects disturbing less than 50 percent of the site must meet the requirement only for the disturbed area.
<b>Erosion and Sediment Control</b>	Erosion control plan using Best Management Practices (BMPs) and consistent with the NPDES General Construction Permit is required	To control erosion and sediment so as to protect conveyance systems and water quality	All projects requiring a project review
<b>Floodplain Alteration</b>	Compensating storage is required to mitigate floodplain fill	To prevent and control flooding damage	All development or redevelopment projects within the 100-year floodplain regardless of project size
<b>Water Quality</b>	No net increase in total phosphorus and total suspended sediment annual load	To protect water quality	All projects disturbing more than one acre of land. Redevelopment projects disturbing less than 50 percent of the site must meet the requirement only for the disturbed area.
<b>Buffer Strips</b>	Vegetated buffer strips average 50 foot, minimum 25 foot wide adjacent to Elm, Diamond, Rush, and North Fork Rush Creeks; average 25 foot, minimum 10 foot wide adjacent to lakes, wetlands and other watercourses	To protect water quality; reduce erosion and sedimentation; reduce pollutants from runoff and debris; and provide habitat	All projects requiring a project review that contain or abut a wetland or watercourse
<b>Wetland</b>	Wetlands may not be drained, filled, excavated, or otherwise altered without an approved wetland replacement plan from the local government unit (LGU) with jurisdiction	To preserve and protect wetlands for their water quality, stormwater storage, habitat, aesthetic, and other attributes	All land disturbing activity impacting a wetland as defined by the Wetland Conservation Act (WCA)

\*Important Note: Approved TMDL Implementation Plans may have additional site-specific requirements.

Appendix D  
City Ordinances

## Sec. 125-226. - Floodplain overlay district (FP).

(a) *Statutory authorization, findings of fact and purpose.*

(1) *Statutory authorization:* The legislature of the State of Minnesota has, in Minn. Stats. chs. 103F and 462 delegated the responsibility to local government units to adopt regulations designed to minimize flood losses. Therefore, the City Council of Rogers, Minnesota, does ordain as follows.

(2) *Purpose:*

- a. This section regulates development in the flood hazard areas of the City of Rogers. These flood hazard areas are subject to periodic inundation, which may result in loss of life and property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, and impairment of the tax base. It is the purpose of this section to promote the public health, safety, and general welfare by minimizing these losses and disruptions.
- b. National Flood Insurance Program Compliance. This section is adopted to comply with the rules and regulations of the National Flood Insurance Program codified as 44 Code of Federal Regulations Parts 59—78, as amended, so as to maintain the community's eligibility in the National Flood Insurance Program.
- c. This section is also intended to preserve the natural characteristics and functions of watercourses and floodplains in order to moderate flood and stormwater impacts, improve water quality, reduce soil erosion, protect aquatic and riparian habitat, provide recreational opportunities, provide aesthetic benefits and enhance community and economic development.

(b) *General provisions.*

(1) *How to use this section:* This section adopts the floodplain maps applicable to the City of Rogers and includes three floodplain districts: floodway, flood fringe, and general floodplain.

- a. Where floodway and flood fringe districts are delineated on the floodplain maps, the standards in subsection (d) or (e) will apply, depending on the location of a property.
- b. Locations where floodway and flood fringe districts are not delineated on the floodplain maps are considered to fall within the general floodplain district. Within the general floodplain district, the floodway district standards in subsection (d) apply unless the floodway boundary is determined, according to the process outlined in subsection (f). Once the floodway boundary is determined, the flood fringe district standards in subsection (e) may apply outside the floodway.

(2) *Lands to which section applies:* This section applies to all lands within the jurisdiction of the City of Rogers shown on the official zoning map and/or the attachments to the map as being located within the boundaries of the floodway, flood fringe, or general floodplain districts.

- a. The floodway, flood fringe and general floodplain districts are overlay districts that are superimposed on all existing zoning districts. The standards imposed in the overlay districts are in addition to any other requirements in this section. In case of a conflict, the more restrictive standards will apply.

(3) *Incorporation of maps by reference:* The following maps together with all attached material are hereby adopted by reference and declared to be a part of the official zoning map and this section. The attached material includes the Flood Insurance Study for Hennepin County, Minnesota, and Incorporated Areas, dated November 4, 2016 and the flood insurance rate map panels enumerated below, dated November 4, 2016, all prepared by the Federal Emergency Management Agency. These materials are on file in the city clerk's office.

Effective flood insurance rate map panels:

27053C0008F	27053C0028F	27053C0034F	27053C0044F
27053C0009F	27053C0029F	27053C0038F	27053C0045F

27053C0017F	27053C0031F	27053C0039F	
27053C0019F	27053C0032F	27053C0040F	
27053C0027F	27053C0033F	27053C0043F	

- (4) *Regulatory flood protection elevation:* The regulatory flood protection elevation (RFPE) is an elevation no lower than one foot above the elevation of the regional flood plus any increases in flood elevation caused by encroachments on the floodplain that result from designation of a floodway.
- (5) *Interpretation:* The boundaries of the zoning districts are determined by scaling distances on the flood insurance rate map.
- a. Where a conflict exists between the floodplain limits illustrated on the official zoning map and actual field conditions, the flood elevations shall be the governing factor. The zoning administrator must interpret the boundary location based on the ground elevations that existed on the site on the date of the first National Flood Insurance Program map showing the area within the regulatory floodplain, and other available technical data.
  - b. Persons contesting the location of the district boundaries will be given a reasonable opportunity to present their case to the planning commission and to submit technical evidence.
- (6) *Abrogation and greater restrictions:* It is not intended by this section to repeal, abrogate, or impair any existing easements, covenants, or other private agreements. However, where this section imposes greater restrictions, the provisions of this section prevail. All other ordinances inconsistent with this section are hereby repealed to the extent of the inconsistency only.
- (7) *Warning and disclaimer of liability:* This section does not imply that areas outside the floodplain districts or land uses permitted within such districts will be free from flooding or flood damages. This section does not create liability on the part of the City of Rogers or its officers or employees for any flood damages that result from reliance on this section or any administrative decision lawfully made hereunder.
- (8) *Severability:* If any section, clause, provision, or portion of this section is adjudged unconstitutional or invalid by a court of law, the remainder of this section shall not be affected and shall remain in full force.
- (9) *Definitions:* Unless specifically defined [in [section 125-1](#)], words or phrases used in this section must be interpreted according to common usage and so as to give this section its most reasonable application.
- (10) *Annexations:* The flood insurance rate map panels adopted by reference into subsection (b)(3) above may include floodplain areas that lie outside of the corporate boundaries of the City of Rogers at the time of adoption of this section. If any of these floodplain land areas are annexed into the City of Rogers after the date of adoption of this section, the newly annexed floodplain lands will be subject to the provisions of this section immediately upon the date of annexation.
- (11) *Detachments.* The flood insurance rate map panels adopted by reference into subsection (b)(3) above will include floodplain areas that lie inside the corporate boundaries of municipalities at the time of adoption of this section. If any of these floodplain land areas are detached from a municipality and come under the jurisdiction of the City of Rogers after the date of adoption of this section, the newly detached floodplain lands will be subject to the provisions of this section immediately upon the date of detachment.
- (c) *Establishment of zoning districts.*
- (1) *Districts:*
    - a. *Floodway district.* The floodway district includes those areas within Zones AE that have a floodway delineated as shown on the flood insurance rate map adopted in subsection (b)(3).



- b. *Flood fringe district.* The flood fringe district includes areas within Zones AE that have a floodway delineated on the rate map adopted in subsection (b)(3), but are located outside of the floodway.
  - c. *General floodplain district.* The general floodplain district includes those areas within Zone A and AE that do not have a delineated floodway as shown on the flood insurance rate map adopted in subsection (b)(3).
- (2) *Applicability:* Within the floodplain districts established in this section, the use, size, type and location of development must comply with the terms of this section and other applicable regulations. In no cases shall floodplain development adversely affect the efficiency or unduly restrict the capacity of the channels or floodways of any tributaries to the main stream, drainage ditches, or any other drainage facilities or systems. All uses not listed as permitted uses or conditional uses in subsections (d), (e) and (f) are prohibited. In addition, critical facilities, as defined in section 125-1, are prohibited in all floodplain districts.

(d) *Floodway district (FW).*

- (1) *Permitted uses:* The following uses, subject to the standards set forth in subsection (d)(2), are permitted uses if otherwise allowed in the underlying zoning district or any applicable overlay district:
- a. General farming, pasture, grazing, outdoor plant nurseries, horticulture, truck farming, forestry, sod farming, and wild crop harvesting.
  - b. Industrial-commercial loading areas, parking areas, and airport landing strips.
  - c. Open space uses, including but not limited to private and public golf courses, tennis courts, driving ranges, archery ranges, picnic grounds, boat launching ramps, swimming areas, parks, wildlife and nature preserves, game farms, fish hatcheries, shooting preserves, hunting and fishing areas, and single or multiple purpose recreational trails.
  - d. Residential lawns, gardens, parking areas, and play areas.
  - e. Railroads, streets, bridges, utility transmission lines and pipelines, provided that the department of natural resources' area hydrologist is notified at least ten days prior to issuance of any permit.
- (2) *Standards for floodway permitted uses:*
- a. The use must have a low flood damage potential.
  - b. The use must not obstruct flood flows or cause any increase in flood elevations and must not involve structures, obstructions, or storage of materials or equipment.
  - c. Any facility that will be used by employees or the general public must be designed with a flood warning system that provides adequate time for evacuation if the area is inundated to a depth and velocity such that the depth (in feet) multiplied by the velocity (in feet per second) would exceed a product of four upon occurrence of the regional (one-percent chance) flood.
- (3) *Conditional uses:* The following uses may be allowed as conditional uses following the standards and procedures set forth in subsection (j)(4) of this section and further subject to the standards set forth in subsection (d)(4), if otherwise allowed in the underlying zoning district or any applicable overlay district.
- a. Structures accessory to the uses listed in subsections (d)(1)a.—c. above and the uses listed in [subsections] (d) (3)b. and c., below.
  - b. Extraction and storage of sand, gravel, and other materials.
  - c. Marinas, boat rentals, docks, piers, wharves, and water control structures.
  - d. Storage yards for equipment, machinery, or materials.
  - e. Placement of fill or construction of fences that obstruct flood flows. Farm fences, as defined in section 125-1, are permitted uses.
  - f. Travel-ready recreational vehicles meeting the exception standards in subsection (i)(3).
  - g. Levees or dikes intended to protect agricultural crops for a frequency flood event equal to or less than the ten-year frequency flood event.
- (4) *Standards for floodway conditional uses:*

- a. All uses. A conditional use must not cause any increase in the stage of the one-percent chance or regional flood or flood damages in the reach or reaches affected.
  - b. Fill; storage of materials and equipment:
    - 1. The storage or processing of materials that are, in time of flooding, flammable, explosive, or potentially injurious to human, animal, or plant life is prohibited.
    - 2. Fill, dredge spoil, and other similar materials deposited or stored in the floodplain must be protected from erosion by vegetative cover, mulching, riprap or other acceptable method. Permanent sand and gravel operations and similar uses must be covered by a long-term site development plan.
    - 3. Temporary placement of fill, other materials, or equipment which would cause an increase to the stage of the one-percent chance or regional flood may only be allowed if the city council has approved a plan that assures removal of the materials from the floodway based upon the flood warning time available.
  - c. Accessory structures. Accessory structures, as identified in subsection (d)(3)a., may be permitted, provided that:
    - 1. Structures are not intended for human habitation;
    - 2. Structures will have a low flood damage potential;
    - 3. Structures will be constructed and placed so as to offer a minimal obstruction to the flow of floodwaters;
    - 4. Service utilities, such as electrical and heating equipment, within these structures must be elevated to or above the regulatory flood protection elevation or properly floodproofed;
    - 5. Structures must be elevated on fill or structurally dry floodproofed in accordance with the FP1 or FP2 floodproofing classifications in the state building code. All floodproofed structures must be adequately anchored to prevent flotation, collapse or lateral movement and designed to equalize hydrostatic flood forces on exterior walls.
    - 6. As an alternative, an accessory structure may be internally/wet floodproofed to the FP3 or FP4 floodproofing classifications in the state building code, provided the accessory structure constitutes a minimal investment and does not exceed 576 square feet in size. Designs for meeting this requirement must either be certified by a registered professional engineer or meet or exceed the following criteria:
      - (i) To allow for the equalization of hydrostatic pressure, there must be a minimum of two "automatic" openings in the outside walls of the structure, with a total net area of not less than one square inch for every square foot of enclosed area subject to flooding; and
      - (ii) There must be openings on at least two sides of the structure and the bottom of all openings must be no higher than one foot above the lowest adjacent grade to the structure. Using human intervention to open a garage door prior to flooding will not satisfy this requirement for automatic openings.
  - d. Structural works for flood control that will change the course, current or cross section of protected wetlands or public waters are subject to the provisions of Minn. Stats. § 103G.245.
  - e. A levee, dike or floodwall constructed in the floodway must not cause an increase to the one-percent chance or regional flood. The technical analysis must assume equal conveyance or storage loss on both sides of a stream.
  - f. Floodway developments must not adversely affect the hydraulic capacity of the channel and adjoining floodplain of any tributary watercourse or drainage system.
- (e) *Flood fringe district (FF).*
- (1) *Permitted uses:* Permitted uses are those uses of land or structures allowed in the underlying zoning district(s) that comply with the standards in subsection (e)(2). If no pre-existing, underlying zoning districts exist, then any residential or nonresidential structure or use of a structure or land is a permitted use provided it does not constitute a public nuisance.

(2) *Standards for flood fringe permitted uses:*

- a. All structures, including accessory structures, must be elevated on fill so that the lowest floor, as defined, is at or above the regulatory flood protection elevation. The finished fill elevation for structures must be no lower than one foot below the regulatory flood protection elevation and the fill must extend at the same elevation at least 15 feet beyond the outside limits of the structure.
- b. Accessory structures. As an alternative to the fill requirements of subsection (e)(2)a., structures accessory to the uses identified in subsection (e)(1) may be permitted to be internally/wet floodproofed to the FP3 or FP4 floodproofing classifications in the state building code, provided that:
  1. The accessory structure constitutes a minimal investment, does not exceed 576 square feet in size, and is only used for parking and storage.
  2. All portions of floodproofed accessory structures below the regulatory flood protection elevation must be: (i) adequately anchored to prevent flotation, collapse or lateral movement and designed to equalize hydrostatic flood forces on exterior walls, (ii) be constructed with materials resistant to flood damage, and (iii) must have all service utilities be watertight or elevated to above the regulatory flood protection elevation
  3. Designs for meeting this requirement must either be certified by a registered professional engineer or meet or exceed the following criteria:
    - (i) To allow for the equalization of hydrostatic pressure, there must be a minimum of two "automatic" openings in the outside walls of the structure, with a total net area of not less than one square inch for every square foot of enclosed area subject to flooding; and
    - (ii) There must be openings on at least two sides of the structure and the bottom of all openings must be no higher than one foot above the lowest adjacent grade to the structure. Using human intervention to open a garage door prior to flooding will not satisfy this requirement for automatic openings.
- c. The cumulative placement of fill or similar material on a parcel must not exceed 1,000 cubic yards, unless the fill is specifically intended to elevate a structure in accordance with subsection (e)(2)a. of this section, or if allowed as a conditional use under subsection (e)(3)c. below.
- d. The storage of any materials or equipment must be elevated on fill to the regulatory flood protection elevation.
- e. All service utilities, including ductwork, must be elevated or watertight to prevent infiltration of floodwaters.
- f. The storage or processing of materials that are, in time of flooding, flammable, explosive, or potentially injurious to human, animal, or plant life is prohibited.
- g. All fill must be properly compacted and the slopes must be properly protected by the use of riprap, vegetative cover or other acceptable method.
- h. All new principal structures must have vehicular access at or above an elevation not more than two feet below the regulatory flood protection elevation, or must have a flood warning/emergency evacuation plan acceptable to the city council.
- i. Accessory uses such as yards, railroad tracks, and parking lots may be at an elevation lower than the regulatory flood protection elevation. However, any facilities used by employees or the general public must be designed with a flood warning system that provides adequate time for evacuation if the area is inundated to a depth and velocity such that the depth (in feet) multiplied by the velocity (in feet per second) would exceed a product of four upon occurrence of the regional (one-percent chance) flood.
- j. Interference with normal manufacturing/industrial plant operations must be minimized, especially along streams having protracted flood durations. In considering permit applications, due consideration must be given to the needs of industries with operations that require a floodplain location.
- k. Manufactured homes and recreational vehicles must meet the standards of subsection (i) of this section.

- (3) *Conditional uses:* The following uses and activities may be allowed as conditional uses, if allowed in the underlying zoning or any applicable overlay district, following the procedures in subsection (j)(4) of this section.
- a. Any structure that is not elevated on fill or floodproofed in accordance with subsections (e)(2)a. and b. of this section.
  - b. Storage of any material or equipment below the regulatory flood protection elevation.
  - c. The cumulative placement of more than 1,000 cubic yards of fill when the fill is not being used to elevate a structure in accordance with subsection (e)(2)a. of this section.
  - d. The use of methods to elevate structures above the regulatory flood protection elevation, including stilts, pilings, parallel walls, or above-grade, enclosed areas such as crawl spaces or tuck under garages, shall meet the standards in subsection (e)(4)f.
- (4) *Standards for flood fringe conditional uses:*
- a. The standards listed in subsections (e)(2)d. through j. apply to all conditional uses.
  - b. Basements, as defined by section 125-1 of this chapter, are subject to the following:
    1. Residential basement construction is not allowed below the regulatory flood protection elevation.
    2. Non-residential basements may be allowed below the regulatory flood protection elevation provided the basement is structurally dry floodproofed in accordance with subsection (e)(4)c. of this section.
  - c. All areas of nonresidential structures, including basements, to be placed below the regulatory flood protection elevation must be floodproofed in accordance with the structurally dry floodproofing classifications in the state building code. Structurally dry floodproofing must meet the FP1 or FP2 floodproofing classification in the state building code, which requires making the structure watertight with the walls substantially impermeable to the passage of water and with structural components capable of resisting hydrostatic and hydrodynamic loads and the effects of buoyancy.
  - d. The placement of more than 1,000 cubic yards of fill or other similar material on a parcel (other than for the purpose of elevating a structure to the regulatory flood protection elevation) must comply with an approved erosion/sedimentation control plan.
    1. The plan must clearly specify methods to be used to stabilize the fill on site for a flood event at a minimum of the regional (one-percent chance) flood event.
    2. The plan must be prepared and certified by a registered professional engineer or other qualified individual acceptable to the city council.
    3. The plan may incorporate alternative procedures for removal of the material from the floodplain if adequate flood warning time exists.
  - e. Storage of materials and equipment below the regulatory flood protection elevation must comply with an approved emergency plan providing for removal of such materials within the time available after a flood warning.
  - f. Alternative elevation methods other than the use of fill may be utilized to elevate a structure's lowest floor above the regulatory flood protection elevation. The base or floor of an enclosed area shall be considered above-grade and not a structure's basement or lowest floor if: 1) the enclosed area is above-grade on at least one side of the structure; 2) it is designed to internally flood and is constructed with flood resistant materials; and 3) it is used solely for parking of vehicles, building access or storage. The above-noted alternative elevation methods are subject to the following additional standards:
    1. *Design and certification.* The structure's design and as-built condition must be certified by a registered professional engineer as being in compliance with the general design standards of the state building code and, specifically, that all electrical, heating, ventilation, plumbing and air conditioning equipment and other service facilities must be at or above the regulatory flood protection elevation or be designed to prevent floodwater from entering or accumulating within these components during times of flooding.
    2. *Specific standards for above-grade, enclosed areas.* Above-grade, fully enclosed areas such as crawl

spaces or tuck under garages must be designed to internally flood and the design plans must stipulate:

- (i) The minimum area of openings in the walls where internal flooding is to be used as a floodproofing technique. There shall be a minimum of two openings on at least two sides of the structure and the bottom of all openings shall be no higher than one foot above grade. The automatic openings shall have a minimum net area of not less than one square inch for every square foot of enclosed area subject to flooding unless a registered professional engineer or architect certifies that a smaller net area would suffice. The automatic openings may be equipped with screens, louvers, valves, or other coverings or devices provided that they permit the automatic entry and exit of floodwaters without any form of human intervention; and
  - (ii) That the enclosed area will be designed of flood resistant materials in accordance with the FP3 or FP4 classifications in the state building code and shall be used solely for building access, parking of vehicles or storage.
- (f) *General floodplain district (GF).*
- (1) *Permitted uses:*
    - a. The uses listed in subsection (d)(1) of this section, floodway district permitted uses, are permitted uses.
    - b. All other uses are subject to the floodway/flood fringe evaluation criteria specified in subsection (f)(2) below. Subsection (d) applies if the proposed use is determined to be in the floodway district. Subsection (e) applies if the proposed use is determined to be in the flood fringe district.
  - (2) *Procedures for floodway and flood fringe determinations:*
    - a. Upon receipt of an application for a permit or other approval within the general floodplain district, the zoning administrator must obtain, review and reasonably utilize any regional flood elevation and floodway data available from a federal, state, or other source.
    - b. If regional flood elevation and floodway data are not readily available, the applicant must furnish additional information, as needed, to determine the regulatory flood protection elevation and whether the proposed use would fall within the floodway or flood fringe district. Information must be consistent with accepted hydrological and hydraulic engineering standards and the standards in (f)(2)c. below.
    - c. The determination of floodway and flood fringe must include the following components, as applicable:
      - 1. Estimate the peak discharge of the regional (one-percent chance) flood.
      - 2. Calculate the water surface profile of the regional flood based upon a hydraulic analysis of the stream channel and overbank areas.
      - 3. Compute the floodway necessary to convey or store the regional flood without increasing flood stages more than one-half foot. A lesser stage increase than 0.5 foot is required if, as a result of the stage increase, increased flood damages would result. An equal degree of encroachment on both sides of the stream within the reach must be assumed in computing floodway boundaries.
    - d. The zoning administrator will review the submitted information and assess the technical evaluation and the recommended floodway and/or flood fringe district boundary. The assessment must include the cumulative effects of previous floodway encroachments. The zoning administrator may seek technical assistance from a designated engineer or other expert person or agency, including the department of natural resources. Based on this assessment, the zoning administrator may approve or deny the application.
    - e. Once the floodway and flood fringe district boundaries have been determined, the zoning administrator must process the permit application consistent with the applicable provisions of subsections (d) and (e) of this section.
- (g) *Land development standards.*
- (1) *In general:* Recognizing that flood prone areas may exist outside of the designated floodplain districts, the requirements of this section apply to all land within the City of Rogers.
  - (2) *Subdivisions:* No land may be subdivided which is unsuitable for reasons of flooding or inadequate drainage, water

supply or sewage treatment facilities. Manufactured home parks and recreational vehicle parks or campgrounds are considered subdivisions under this section.

- a. All lots within the floodplain districts must be able to contain a building site outside of the floodway district at or above the regulatory flood protection elevation.
- b. All subdivisions must have road access both to the subdivision and to the individual building sites no lower than two feet below the regulatory flood protection elevation, unless a flood warning emergency plan for the safe evacuation of all vehicles and people during the regional (one-percent chance) flood has been approved by the city council. The plan must be prepared by a registered engineer or other qualified individual, and must demonstrate that adequate time and personnel exist to carry out the evacuation.
- c. For all subdivisions in the floodplain, the floodway and flood fringe district boundaries, the regulatory flood protection elevation and the required elevation of all access roads must be clearly labeled on all required subdivision drawings and platting documents.
- d. In the general floodplain district, applicants must provide the information required in subsection (f)(2) of this section to determine the regional flood elevation, the floodway and flood fringe district boundaries and the regulatory flood protection elevation for the subdivision site.
- e. If a subdivision proposal or other proposed new development is in a floodprone area, any such proposal must be reviewed to assure that:
  1. All such proposals are consistent with the need to minimize flood damage within the floodprone area,
  2. All public utilities and facilities, such as sewer, gas, electrical, and water systems are located and constructed to minimize or eliminate flood damage, and
  3. Adequate drainage is provided to reduce exposure of flood hazard.
- f. Building sites. If a proposed building site is in a flood prone area, all new construction and substantial improvements (including the placement of manufactured homes) must be:
  1. Designed (or modified) and adequately anchored to prevent floatation, collapse, or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy;
  2. Constructed with materials and utility equipment resistant to flood damage;
  3. Constructed by methods and practices that minimize flood damage; and
  4. Constructed with electrical, heating, ventilation, plumbing, and air conditioning equipment and other service facilities that are designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding.

(h) *Public utilities, railroads, roads, and bridges.*

- (1) *Public utilities:* All public utilities and facilities such as gas, electrical, sewer, and water supply systems to be located in the floodplain must be floodproofed in accordance with the state building code or elevated to the regulatory flood protection elevation.
- (2) *Public transportation facilities:* Railroad tracks, roads, and bridges to be located within the floodplain must comply with subsections(d) and (e) of this section. These transportation facilities must be elevated to the regulatory flood protection elevation where failure or interruption of these facilities would result in danger to the public health or safety or where such facilities are essential to the orderly functioning of the area. Minor or auxiliary roads or railroads may be constructed at a lower elevation where failure or interruption of transportation services would not endanger the public health or safety.
- (3) *On-site water supply and sewage treatment systems:* Where public utilities are not provided: 1) On-site water supply systems must be designed to minimize or eliminate infiltration of floodwaters into the systems and are subject to the provisions in Minnesota Rules Chapter 4725.4350, as amended; and 2) New or replacement on-site sewage treatment systems must be designed to minimize or eliminate infiltration of floodwaters into the systems and discharges from the systems into floodwaters, they must not be subject to impairment or contamination during times of flooding, and are subject to the provisions in Minnesota Rules Chapter 7080.2270, as amended.

(i) *Manufactured homes, manufactured home parks, and recreational vehicles.*

- (1) *Manufactured homes:* New manufactured home parks and expansions to existing manufactured home parks are prohibited in any floodplain district. For existing manufactured home parks or lots of record, the following requirements apply:
- a. Placement or replacement of manufactured home units is prohibited in the floodway district.
  - b. If allowed in the flood fringe district, placement or replacement of manufactured home units is subject to the requirements of subsection (e) of this section and the following standards.
    1. New and replacement manufactured homes must be elevated in compliance with subsection (e) of this section and must be securely anchored to an adequately anchored foundation system that resists flotation, collapse and lateral movement. Methods of anchoring may include, but are not limited to, use of over-the-top or frame ties to ground anchors. This requirement is in addition to applicable state or local anchoring requirements for resisting wind forces.
    2. New or replacement manufactured homes in existing manufactured home parks must meet the vehicular access requirements for subdivisions in subsection (g)(2)b.
- (2) *Recreational vehicles:* New recreational vehicle parks or campgrounds and expansions to existing recreational vehicle parks or campgrounds are prohibited in any floodplain district. Placement of recreational vehicles in existing recreational vehicle parks or campgrounds in the floodplain must meet the exemption criteria below or be treated as new structures meeting the requirements of this section.
- a. Recreational vehicles are exempt from the provisions of this section if they are placed in any of the following areas and meet the criteria listed in subsection (i)(2)b.:
    1. Individual lots or parcels of record.
    2. Existing commercial recreational vehicle parks or campgrounds.
    3. Existing condominium-type associations.
  - b. Criteria for exempt recreational vehicles:
    1. The vehicle must have a current license required for highway use.
    2. The vehicle must be highway ready, meaning on wheels or the internal jacking system, attached to the site only by quick disconnect type utilities commonly used in campgrounds and recreational vehicle parks.
    3. No permanent structural type additions may be attached to the vehicle.
    4. The vehicle and associated use must be permissible in any pre-existing, underlying zoning district.
    5. Accessory structures are not permitted within the floodway district. Any accessory structure in the flood fringe district must be constructed of flood-resistant materials and be securely anchored, meeting the requirements applicable to manufactured homes in subsection (i)(2)b.
    6. An accessory structure must constitute a minimal investment.
  - c. Recreational vehicles that are exempt in subsection (i)(2)b. lose this exemption when development occurs on the site that exceeds a minimal investment for an accessory structure such as a garage or storage building. The recreational vehicle and all accessory structures will then be treated as new structures subject to the elevation and floodproofing requirements of subsection (e) of this section. No development or improvement on the parcel or attachment to the recreational vehicle is allowed that would hinder the removal of the vehicle should flooding occur.

(j) *Administration.*

- (1) *Zoning administrator:* A zoning administrator or other official designated by the city council must administer and enforce this section.
- (2) *Permit requirements:*
- a. *Permit required.* A permit must be obtained from the zoning administrator prior to conducting the following

activities:

1. The erection, addition, modification, rehabilitation, or alteration of any building, structure, or portion thereof. Normal maintenance and repair also requires a permit if such work, separately or in conjunction with other planned work, constitutes a substantial improvement as defined in this section.
  2. The use or change of use of a building, structure, or land.
  3. The construction of a dam, fence, or on-site septic system, although a permit is not required for a farm fence as defined in this section.
  4. The change or extension of a nonconforming use.
  5. The repair of a structure that has been damaged by flood, fire, tornado, or any other source.
  6. The placement of fill, excavation of materials, or the storage of materials or equipment within the floodplain.
  7. Relocation or alteration of a watercourse (including new or replacement culverts and bridges), unless a public waters work permit has been applied for.
  8. Any other type of "development" as defined in this section.
- b. *Application for permit.* Permit applications must be submitted to the zoning administrator on forms provided by the zoning administrator. The permit application must include the following as applicable:
1. A site plan showing all pertinent dimensions, existing or proposed buildings, structures, and significant natural features having an influence on the permit.
  2. Location of fill or storage of materials in relation to the stream channel.
  3. Copies of any required municipal, county, state or federal permits or approvals.
  4. Other relevant information requested by the zoning administrator as necessary to properly evaluate the permit application.
- c. *Certificate of zoning compliance for a new, altered, or nonconforming use.* No building, land or structure may be occupied or used in any manner until a certificate of zoning compliance has been issued by the zoning administrator stating that the use of the building or land conforms to the requirements of this section.
- d. *Certification.* The applicant is required to submit certification by a registered professional engineer, registered architect, or registered land surveyor that the finished fill and building elevations were accomplished in compliance with the provisions of this section. Floodproofing measures must be certified by a registered professional engineer or registered architect.
- e. *Record of first floor elevation.* The zoning administrator must maintain a record of the elevation of the lowest floor (including basement) of all new structures and alterations or additions to existing structures in the floodplain. The zoning administrator must also maintain a record of the elevation to which structures and alterations or additions to structures are floodproofed.
- f. *Notifications for watercourse alterations.* Before authorizing any alteration or relocation of a river or stream, the zoning administrator must notify adjacent communities. If the applicant has applied for a permit to work in public waters pursuant to Minn. Stats. § 103G.245, this will suffice as adequate notice. A copy of the notification must also be submitted to the Chicago Regional Office of the Federal Emergency Management Agency (FEMA).
- g. *Notification to FEMA when physical changes increase or decrease base flood elevations.* As soon as is practicable, but not later than six months after the date such supporting information becomes available, the zoning administrator must notify the Chicago Regional Office of FEMA of the changes by submitting a copy of the relevant technical or scientific data.

(3) *Variances:*

- a. *Variance applications.* An application for a variance to the provisions of this section will be processed and reviewed in accordance with applicable state statutes and section(s) 125-58 of the zoning ordinance/code.



- b. *Adherence to state floodplain management standards.* A variance must not allow a use that is not allowed in that lower degree of flood protection than the regulatory flood protection elevation for the particular area, or permit those required by state law.
- c. *Additional variance criteria.* The following additional variance criteria of the Federal Emergency Management Agency must be satisfied:
  - 1. Variances must not be issued by a community within any designated regulatory floodway if any increase in flood levels during the base flood discharge would result.
  - 2. Variances may only be issued by a community upon (i) a showing of good and sufficient cause, (ii) a determination that failure to grant the variance would result in exceptional hardship to the applicant, and (iii) a determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisances, cause fraud on or victimization of the public, or conflict with existing local laws or ordinances.
  - 3. Variances may only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.
- d. *Flood insurance notice.* The zoning administrator must notify the applicant for a variance that: 1) the issuance of a variance to construct a structure below the base flood level will result in increased premium rates for flood insurance up to amounts as high as \$25.00 for \$100.00 of insurance coverage; and 2) such construction below the base or regional flood level increases risks to life and property. Such notification must be maintained with a record of all variance actions.
- e. *General considerations.* The community may consider the following factors in granting variances and imposing conditions on variances and conditional uses in floodplains:
  - 1. The potential danger to life and property due to increased flood heights or velocities caused by encroachments;
  - 2. The danger that materials may be swept onto other lands or downstream to the injury of others;
  - 3. The proposed water supply and sanitation systems, if any, and the ability of these systems to minimize the potential for disease, contamination and unsanitary conditions;
  - 4. The susceptibility of any proposed use and its contents to flood damage and the effect of such damage on the individual owner;
  - 5. The importance of the services to be provided by the proposed use to the community;
  - 6. The requirements of the facility for a waterfront location;
  - 7. The availability of viable alternative locations for the proposed use that are not subject to flooding;
  - 8. The compatibility of the proposed use with existing development and development anticipated in the foreseeable future;
  - 9. The relationship of the proposed use to the comprehensive land use plan and floodplain management program for the area;
  - 10. The safety of access to the property in times of flood for ordinary and emergency vehicles;
  - 11. The expected heights, velocity, duration, rate of rise and sediment transport of the floodwaters expected at the site.
- f. *Submittal of hearing notices to the department of natural resources (DNR).* The (designated body/community official) must submit hearing notices for proposed variances to the DNR sufficiently in advance to provide at least ten days' notice of the hearing. The notice may be sent by electronic mail or U.S. mail to the respective DNR area hydrologist.
- g. *Submittal of final decisions to the DNR.* A copy of all decisions granting variances must be forwarded to the DNR within ten days of such action. The notice may be sent by electronic mail or U.S. mail to the respective DNR area hydrologist.

- h. *Record-keeping.* The zoning administrator must maintain a record of all variance actions, including justification for each variance. The zoning administrator must report such variances in an annual or biennial report to the administrator of the National Flood Insurance Program requested by the Federal Emergency Management Agency.

(4) *Conditional uses:*

- a. *Administrative review.* An application for a conditional use permit under the provisions of this section will be processed and reviewed in accordance with section(s) 125-34 of the zoning ordinance/code.
- b. *Factors used in decision-making.* In passing upon conditional use applications, the city council must consider all relevant factors specified in other sections of this section, and those factors identified in subsection (j)(3)e. of this section.
- c. *Conditions attached to conditional use permits.* The city council may attach such conditions to the granting of conditional use permits as it deems necessary to fulfill the purposes of this section. Such conditions may include, but are not limited to, the following:
1. Modification of waste treatment and water supply facilities.
  2. Limitations on period of use, occupancy, and operation.
  3. Imposition of operational controls, sureties, and deed restrictions.
  4. Requirements for construction of channel modifications, compensatory storage, dikes, levees, and other protective measures.
  5. Floodproofing measures, in accordance with the state building code and this section. The applicant must submit a plan or document certified by a registered professional engineer or architect that the floodproofing measures are consistent with the regulatory flood protection elevation and associated flood factors for the particular area.
- d. *Submittal of hearing notices to the department of natural resources (DNR).* The (designated body/community official) must submit hearing notices for proposed conditional uses to the DNR sufficiently in advance to provide at least ten days' notice of the hearing. The notice may be sent by electronic mail or U.S. Mail to the respective DNR area hydrologist.
- e. *Submittal of final decisions to the DNR.* A copy of all decisions granting conditional uses must be forwarded to the DNR within ten days of such action. The notice may be sent by electronic mail or U.S. Mail to the respective DNR area hydrologist.

(k) *Nonconformities.*

- (1) *Continuance of nonconformities:* A use, structure, or occupancy of land which was lawful before the passage or amendment of this section but which is not in conformity with the provisions of this section may be continued subject to the following conditions. Historic structures, as defined in section 125-1 of this chapter, are subject to the provisions of subsections (k)(1)a.—f. of this section.
- a. A nonconforming use, structure, or occupancy must not be expanded, changed, enlarged, or altered in a way that increases its flood damage potential or degree of obstruction to flood flows except as provided in [subsection] (k)(1)b. below. Expansion or enlargement of uses, structures or occupancies within the floodway district is prohibited.
  - b. Any addition or structural alteration to a nonconforming structure or nonconforming use that would result in increasing its flood damage potential must be protected to the regulatory flood protection elevation in accordance with any of the elevation on fill or floodproofing techniques (i.e., FP1 thru FP4 floodproofing classifications) allowable in the state building code, except as further restricted in [subsections](k)(1)c. and g. below.
  - c. If the cost of all previous and proposed alterations and additions exceeds 50 percent of the market value of any nonconforming structure, that shall be considered substantial improvement, and the entire structure must meet the standards of subsection (d) or (e) of this section for new structures, depending upon whether

the structure is in the floodway or flood fringe district, respectively. The cost of all structural alterations and additions must include all costs such as construction materials and a reasonable cost placed on all manpower or labor.

- d. If any nonconforming use, or any use of a nonconforming structure, is discontinued for more than one year, any future use of the premises must conform to this section. The assessor must notify the zoning administrator in writing of instances of nonconformities that have been discontinued for a period of more than one year.
- e. If any nonconformity is substantially damaged, as defined in section 125-1 of this chapter, it may not be reconstructed except in conformity with the provisions of this section. The applicable provisions for establishing new uses or new structures in subsections (d) or (e) will apply depending upon whether the use or structure is in the floodway or flood fringe, respectively.
- f. If any nonconforming use or structure experiences a repetitive loss, as defined in section 125-1 of this chapter, it must not be reconstructed except in conformity with the provisions of this section.
- g. Any substantial improvement, as defined in section 125-1 of this chapter, to a nonconforming structure requires that the existing structure and any additions must meet the requirements of subsection (d) or (e) of this section for new structures, depending upon whether the structure is in the floodway or flood fringe district.

(l) *Penalties and enforcement.*

- (1) *Violation constitutes a misdemeanor:* Violation of the provisions of this section or failure to comply with any of its requirements (including violations of conditions and safeguards established in connection with grants of variances or conditional uses) constitute a misdemeanor and will be punishable as defined by law.
- (2) *Other lawful action:* Nothing in this section restricts the City of Rogers from taking such other lawful action as is necessary to prevent or remedy any violation. If the responsible party does not appropriately respond to the zoning administrator within the specified period of time, each additional day that lapses will constitute an additional violation of this section and will be prosecuted accordingly.
- (3) *Enforcement:* Violations of the provisions of this section will be investigated and resolved in accordance with the provisions of section(s) 125-2 of the zoning ordinance/code. In responding to a suspected ordinance violation, the zoning administrator and city council may utilize the full array of enforcement actions available to it including but not limited to prosecution and fines, injunctions, after-the-fact permits, orders for corrective measures or a request to the National Flood Insurance Program for denial of flood insurance availability to the guilty party. The City of Rogers must act in good faith to enforce these official controls and to correct ordinance violations to the extent possible so as not to jeopardize its eligibility in the National Flood Insurance Program.

(m) *Amendments.*

- (1) *Floodplain designation—Restrictions on removal:* The floodplain designation on the official zoning map must not be removed from floodplain areas unless it can be shown that the designation is in error or that the area has been filled to or above the elevation of the regulatory flood protection elevation and is contiguous to lands outside the floodplain. Special exceptions to this rule may be permitted by the commissioner of the department of natural resources (DNR) if the commissioner determines that, through other measures, lands are adequately protected for the intended use.
- (2) *Amendments require DNR approval:* All amendments to this section must be submitted to and approved by the commissioner of the department of natural resources (DNR) prior to adoption. The commissioner must approve the amendment prior to community approval.
- (3) *Map revisions require ordinance amendments.* The floodplain district regulations must be amended to incorporate any revisions by the Federal Emergency Management Agency to the floodplain maps adopted in subsection (b)(3) of this section.

**Editor's note**— Ord. No. 2016-20, adopted Nov. 22, 2016, repealed § 125-226 and enacted new provisions as herein set out. Former § 125-226 pertained to similar subject matter, and derived from Ord. No. 2012-02, § 3, adopted March 27, 2012.

## Chapter 109 - SHORELAND AND WETLAND PROTECTION

## ARTICLE I. - IN GENERAL

Secs. 109-1—109-18. - Reserved.

## ARTICLE II. - SHORELAND PROTECTION

Sec. 109-19. - Statutory authorization and policy.

- (a) This shoreland ordinance is adopted pursuant to the authorization and policies contained in Minn. Stats. ch. 103G; Minn. Rules pts. 6120.2500—6120.3900, and the planning legislation in Minn. Stats. ch. 462.
- (b) The uncontrolled use of shorelands of the city affects the public health, safety and general welfare not only by contributing to pollution of public waters, but also by impairing the local tax base. Therefore, it is in the best interests of the public health, safety and welfare to provide for the wise subdivision, use and development of shorelands of public waters. The legislature of the state has delegated responsibility to local governments of the state to regulate the subdivision, use and development of the shorelands of public waters and thus preserve and enhance the quality of surface waters, conserve the economic and natural environmental values of shorelands, and provide for the wise use of waters and related land resources. This responsibility is recognized by the city.

(Ord. No. 94-22, § 1, 5-10-1994)

Sec. 109-20. - General provisions.

- (a) The provisions of this article shall apply to the shorelands of the public water bodies as classified in section 109-22. Pursuant to Minn. Rules pts. 6120.2500—6120.3900, no pond, or flowage less than ten acres in size will be regulated. A body of water created by a private user where there was no previous shoreland shall be exempt from this article.
- (b) The use of any shoreland of public waters; the size and shape of lots; the use, size, type and location of structures on lots; the installation and maintenance of water supply and waste treatment systems, the grading and filling of any shoreland area; the cutting of shoreland vegetation; and the subdivision of land shall be in full compliance with the terms of this article and other applicable regulations.
- (c) The S shoreland district shall be applied to and superimposed upon all zoning districts established in chapter 125, pertaining to zoning, as existing or amended by the text and map of such zoning ordinance. The regulations and requirements imposed by the S shoreland district shall be in addition to those established for districts which jointly apply. Under the joint application of districts, the more restrictive requirements shall apply.
- (d) It is not intended by this article to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where this article imposes greater restrictions, the provisions of this article shall prevail.

(Ord. No. 94-22, § 2, 5-10-1994)

Sec. 109-21. - Administration.

- (a) Pursuant to provisions of ordinances of the city, permits may be required for the construction of structures, the installation and/or alteration of sewage treatment systems, and those grading and filling activities not exempted by section 109-23. A permit authorizing an addition to an existing structure shall stipulate that an identified nonconforming sewage treatment system, as described in sections 109-23 and 109-24, shall be reconstructed or replaced in accordance with the provisions of this article.
- (b) A certificate of occupancy shall be required for each activity requiring a permit as specified in subsection (a) of this section. Said certificate shall specify that the use of land conforms to the requirements of this article. Any use

- arrangement or construction at variance with that authorized by permit shall be deemed a violation of this article.
- (c) Variances may only be granted in accordance with ordinances of the city. No variance may circumvent the general purposes and intent of this article and conditions may be imposed in the granting of a variance to ensure compliance and to protect adjacent properties and the public interest. The provisions granting the variances under the zoning ordinance will govern the granting of variances hereunder.
- (1) The city council shall decide requests for variances in accordance with the procedures under the zoning ordinance governing variances. In addition, the council shall also consider the characteristics of development on adjacent properties, and no variance shall be granted which the council determines will or has a tendency to:
- a. Result in the placement of an artificial obstruction which will restrict the passage of storm and flood water in such a manner as to increase the height of flooding, except obstructions approved by the appropriate watershed district in conjunction with sound floodplain management;
  - b. Result in incompatible land uses or which would be detrimental to the protection of surface and ground water supplies;
  - c. Be not in keeping with land use plans and planning objectives for the city or which will increase or cause danger to life or property; or
  - d. Be inconsistent with the objectives of encouraging land uses compatible with the preservation of the natural land forms, vegetation and the marshes and wetlands within the city.
- (2) No variance shall be granted unless the applicant has submitted a shoreland impact plan as required and set forth in subsection (d) of this section. In granting any variance, the council may attach such conditions as it deems necessary to ensure compliance with the policy and intent of this article.
- (3) For existing developments, the application for variance must clearly demonstrate whether public sewer or a conforming sewage treatment system is present for the intended use of the property. The variance, if issued, must require connection to available public sewer or, if no public sewer is available, reconstruction of a nonconforming sewage treatment system pursuant to section 109-23(g)(2)h and section 109-24(3), as well as applicable provisions of the sewer ordinances of the city.
- (d) Landowners or developers desiring to develop land or construct any dwelling or any other artificial obstruction on land located within any shoreland district within the city shall first submit a conditional use permit application as regulated by the zoning ordinance and a plan of development, hereinafter referred to as "shoreland impact plan," which shall set forth proposed provisions for sediment control, water management maintenance of landscaped features, and any additional matters intended to improve or maintain the quality of environment.
- (1) Such a plan shall set forth proposed changes requested by the applicant and affirmatively disclose what, if any, change will be made in the natural condition of the earth, including loss or change of earth ground cover, destruction of trees, grade changes and its effect, if any, upon streams, watercourses and marshes.
  - (2) The plan shall minimize tree removal, ground cover change, loss of natural vegetation, and grade changes as much as possible, and shall affirmatively provide for the relocation or replanting of as many trees as possible that are proposed to be removed.
  - (3) The purpose of the shoreland impact plan shall be to eliminate as much as possible potential pollution, erosion, and siltation.
  - (4) No conditional use permit or shoreland impact plan shall be required for the development of permitted uses or permitted accessory uses contained within the agricultural and residential districts as established by chapter 125, pertaining to zoning, provided that where appropriate all such uses are serviced with public sanitary sewer.
- (e) No approval of any development or construction in the shoreland district can occur until any environmental review program or process required by the state environmental quality board such as, but not limited to, the preparation of an environmental assessment worksheet or environmental impact statement is complete.
- (f) Copies of all notices of any public hearings to consider variances, amendments, or conditional uses under this article must be sent to the commissioner or the commissioner's designated representative and postmarked at least ten days

before the hearings. Notices of hearings to consider proposed subdivision/plats must include copies of the subdivision/plat.

- (g) A copy of approved amendments and subdivisions/plats, and final decisions granting variances or conditional uses under local shoreland management controls must be sent to the commissioner or the commissioner's designated representative and postmarked within ten days of final action. In addition, when a variance is approved after the department of natural resources has formally recommended denial in the hearing record, the notification of the approved variance required in subsection (f) of this section shall also include the city council's summary of the public records/testimony and the findings of fact and conclusions which supported the issuance of the variance.
- (h) The granting of any permit, variance, or subdivision approval under provisions of this article shall, in no way, affect the owner's capability or responsibility to obtain the approval required by any other statute, ordinance or legislation of any state agency or subdivision thereof. Approval may be expressly given in conjunction with other permits applied for, but no approval shall be implied from the grant of such permits, nor from the necessity to apply for a permit as described herein.

(Ord. No. 94-22, § 3, 5-10-1994)

Sec. 109-22. - Rogers shoreland classification system.

The public waters of the city have been classified below consistent with the criteria found in Minn. Rules pt. 6120.3300, and the protected waters inventory map for the county. Other surface waters affected by this article, generally having less than ten acres, are classified as wetland systems and thus are regulated under the provisions of the city's wetland ordinance set out in article III of this chapter.

- (1) The surface waters affected by this article and which require controlled development of their shoreland (shoreland district) are identified below and include any and all channels and waterways, whether naturally created or manmade, sharing the water of a body of water identified below.
- (2) Tributary streams, the so-called Fox Creek.

(Ord. No. 94-22, § 4, 5-10-1994)

Sec. 109-23. - Lot size and improvement requirements.

- (a) The following chart sets forth the minimum lot area requirements of the classification stated in section 109-22:

			Tributary Streams
(1)	Minimum lot size above high water mark:		
	a.	Non-sewered, abutting stream	1 acre
	b.	Sewered, abutting or nonabutting stream:	
		1. Single-family	15,000 sq. ft.
		2. Duplex	26,000 sq. ft.

		3. Triplex	38,000 sq. ft.
		4. Quad	49,000 sq. ft.
(2)	Lot width (measured at building line), sewerred, abutting or nonabutting stream:		
	a.	Single-family	100 sq. ft.
	b.	Duplex	180 sq. ft.
	c.	Triplex	260 sq. ft.
	d.	Quad	340 sq. ft.

- (3) Residential subdivisions with dwelling unit densities exceeding those stated in subsections (a)(1) and (2) of this section will not be allowed.
- (4) Only land above the ordinary high water level of public waters can be used to meet lot area standards, and lot width standards must be met at both the ordinary high water level and at the building line. The sewerred lot area dimensions in subsection (a)(1) of this section can only be used if publicly owned sewer system service is available to the property.
- (5) Lots intended as controlled accesses to public waters or as recreation areas for use by owners of nonriparian lots within subdivisions shall require a conditional use permit and must meet or exceed the following standards:
- a. They must meet the width and size requirements for residential lots, and be suitable for the intended use.
  - b. Persons desiring to plat or develop such lots shall submit with a subdivision or other development application a proposed docking, launching and/or mooring plan, which plan shall set forth therein all such facilities to be used by the landowners within the proposed development.
    1. Such plan shall set forth the location and size of the proposed docking, launching and/or mooring facilities to be used by the landowners within the proposed development.
    2. No such facility shall be constructed upon waters or upon land contiguous thereto when the usage of such facilities is to be by the owner of land which land has been developed or platted subsequent to June 1, 1994, without the said facilities having been approved by the city council.
    3. The city council shall, before granting approval of any such facilities, consider the watercraft use density of the area and shall make a finding that the approval of such facilities does not disproportionately increase average watercraft use density found on other shoreland properties in the area.
    4. This subsection (a)(5)b shall not apply to a riparian single-family lot separately owned and not subject to a public walkway or trail easement adjacent to the shoreline.

(b) When more than one setback applies to a site, structures and facilities must be located to meet all setbacks. Where



structures exist on the adjoining lots on both sides of a proposed building site, structure setbacks may be altered without a variance to conform to the adjoining setbacks from the ordinary high water level, provided the proposed building site is not located in a shore impact zone or in a bluff impact zone. Otherwise, structures shall be located as follows:

(1) Setback from normal high water mark: <sup>1</sup>

		Tributary Streams (feet)
a.	Nonsewered	100
b.	Sewered	75

<sup>1</sup> Not applicable to piers, docks, and properties abutting those portions of tributary streams that are not navigable by watercraft nor utilized nor planned to be utilized by the city for public trail or park purposes.

- (2) Front yard and side yard setbacks shall conform with the regulations for the zoning district in which the property is located.
- (3) Structures and accessory facilities, except stairways and landings, must not be placed within bluff impact zones, and no structure shall be placed within 30 feet of the top of a bluff.
- (4) Structures must be placed in accordance with any floodplain and wetland regulations applicable to the site. The following structures, improvements, materials and uses are prohibited and will not be approved in shoreland setback areas unless otherwise specifically allowed pursuant to some other provision of the ordinances of the city:
  - a. Houses, runs and pens for animals.
  - b. Ice or fish houses.
  - c. Storage sheds or buildings.
  - d. Fences.
  - e. Decks or platforms, the main surface of which at any one point is more than six inches above the surface of the ground.
  - f. Open storage, debris or junk.
  - g. Boat storage or launching facilities, except as an integral part of a dock or pier that otherwise complies with the terms of the ordinances of the city. Boat storage or launching facilities may not be enclosed and must be exposed to the elements from all directions.
  - h. Stairways, except those meeting the following design specifications:
    - 1. Wood, open stairway construction, stained or painted in earth tones, or otherwise treated so as to blend with the natural surroundings of the setback area.
    - 2. Stairways and landings may either be constructed above the ground on posts or pilings or installed directly into the ground or hillside wherever reasonably possible, provided they are designed and built in a manner that ensures control of soil erosion.
    - 3. Steps no wider than three feet. Wider stairways may be used for commercial properties and public open-space recreational properties.
    - 4. Landings no wider or deeper than double the width of the steps and must not exceed 32 square feet in area. Landings larger than 32 square feet may be used for commercial properties and public open-space recreational properties.

5. Built in compliance with the city's building code.
  6. Canopies or roofs are not allowed on stairways or landings.
  7. Stairways and landings must be located in the most visually inconspicuous portions of lots, as viewed from the surface of the public water, assuming summer, leaf-on conditions, whenever practical.
  8. Facilities such as ramps, lifts, or mobility paths for physically handicapped persons are also allowed for achieving access to shore areas, provided that the dimensional and performance standards of subsections (b)(4)h.1 through 7 of this section are complied with in addition to the requirements of Minn. Rules ch. 1340.
    - i. Any concrete, blacktop, or other nonporous walkway, driveway, or double-track vehicle access having a total width of more than five feet, except that this prohibition shall not apply to public improvements.
    - j. Gazebos, screen houses, pump houses.
    - k. Any other structure, improvement, material or use that does not provide the property owner with access to and from lake waters, or that would tend to pollute or otherwise make dangerous the waters of a rising lake as debris or otherwise, or might otherwise be a threat to the public's health, safety or welfare.
- (5) Additions for decks, uncovered porches or patios shall be subject to the following setbacks:
- a. All decks, uncovered porches or patios added to homes built after June 1, 1994, shall comply with aforementioned setbacks.
  - b. All decks, uncovered porches or patios that may encroach into required setback areas if added to homes built before June 1, 1994, will be considered subject to the following:
    1. Deck encroachments stream-ward beyond the existing building line will be considered only after all other alternative locations and designs have been evaluated and found to be impractical;
    2. The maximum allowable deck, uncovered porch, or patio lakeward of the building line shall not exceed 15 percent of the structure's existing setback. The minimum setback, however, for any deck, uncovered porch or patio shall be no less than 50 percent of the required setback distance for tributary streams.
    3. Any deck, uncovered porch or patio that is constructed closer than the required setback from the normal ordinary water elevation shall be constructed of wood and be stained or painted in earth tones, or otherwise treated so as to blend with the natural surroundings of the setback area.
    4. Decks, porches or patios shall not be screened in or roofed under any circumstances.
- (6) The zoning administrator must evaluate possible soil erosion impacts and development visibility from public waters before issuing a permit for construction of sewage treatment systems, roads, driveways, structures, or other improvements on steep slopes. When determined necessary, conditions must be attached to issued permits to prevent erosion and to preserve existing vegetation screening of structures, vehicles, and other facilities as viewed from the surface of public waters, assuming summer, leaf-on vegetation. No structure shall be placed in any area that will require grading and/or filling that will result in impairment of public waters by reason of erosion and sedimentation, violate provisions of Statewide Standards and Criteria for Management of Floodplain Areas of Minnesota, or result in impairment of fish or aquatic life.
- (7) The terms of subsections (a) and (b) of this section shall not apply to property owned by the city or any other political subdivision or public governmental body where the city council finds that a proposed use, although not in compliance with said subdivision, will preserve the natural features of a site's amenities, or will be an enhancement to the public function of a site or the public facility on the site, and will not diminish the storage capacity of the affected waters.
- (8) Unless otherwise provided, any structure, improvement, material or use for which a permit or other review or permission is not already required elsewhere in the ordinances of the city shall require a permit from the zoning administrator prior to the placement or construction thereof in any setback area required by this article. Application for such a permit shall be made in writing by the property owner and delivered to the city's administrator.
- a. The application shall include a description of the proposed structure, improvement, material or use in

sufficient detail so as to enable the zoning administrator to assess compliance with this article or lack thereof.

- b. The zoning administrator may request such additional information from the applicant as is necessary to review the application and may require the applicant to modify the proposal as a condition to receiving a permit or may refuse to issue a permit if the proposal is contrary to this article.
- (c) Alterations of vegetation and topography will be regulated to prevent erosion into public waters, fix nutrients, preserve shoreland aesthetics, preserve historic values, prevent bank slumping, and protect fish and wildlife habitat.
- (1) Vegetation alterations.
    - a. Vegetation alteration necessary for the construction of structures, public trails, sewage treatment systems, roads and parking areas regulated by subsection (d) of this section are exempt from the vegetation alteration standards that follow.
    - b. Removal or alteration of vegetation, except for agricultural uses as regulated in subsection (e)(2) of this section, is allowed subject to the following standards:
      - 1. Intensive vegetation clearing within the shore and bluff impact zones and on steep slopes is not allowed.
      - 2. In shore impact and bluff impact zones and on steep slopes, limited clearing of trees and shrubs and cutting, pruning and trimming of trees is allowed to provide a view to the water from the principal dwelling site and to accommodate the placement, if allowed, of stairways and landings, picnic areas, access paths, livestock watering areas, beach and watercraft access areas, and permitted structures or facilities, provided that the screening of structures, vehicles, or other facilities as viewed from the water, assuming summer leaf-on conditions, is not substantially reduced.
      - 3. The provisions of subsections (c)(1)b.1 and 2 of this section are not meant to limit the removal of trees, limbs, or branches that are dead, diseased, or pose safety hazards, nor are they meant to prevent normal and ordinary lawn maintenance.
      - 4. Natural vegetation shall be restored insofar as feasible after any construction project.
  - (2) Topographic alterations/grading and filling.
    - a. Grading, filling and excavations necessary for construction of structures, driveways and sewage treatment systems under validly issued permits do not require the issuance of a separate grading and filling permit unless otherwise required pursuant to any other ordinance of the city. However, the grading and filling standards in this article must be incorporated into the issuance of permits for construction of structures, driveways and sewage treatment systems.
    - b. Public roads and parking areas are regulated by subsection (d) of this section.
    - c. Notwithstanding subsections (c)(2)a and b of this section, a grading and filling permit will be required for:
      - 1. The movement of more than ten cubic yards of material on steep slopes or within shore or bluff impact zones.
      - 2. The movement of more than 50 cubic yards of material outside of steep slopes and shore and bluff impact zones.
    - d. The following considerations and conditions must be adhered to during the issuance of construction permits, grading and filling permits, conditional use permits, variances and subdivision approvals:
      - 1. The provisions of the city's wetlands ordinance set out in article III of this chapter.
      - 2. Alterations must be designed and conducted in a manner that ensures only the smallest amount of bare ground is exposed for the shortest time possible.
      - 3. Mulches or similar materials must be used, where necessary, for temporary bare soil coverage, and a permanent vegetation cover such as sod must be established as soon as possible.
      - 4. Methods to minimize soil erosion and to trap sediments before they reach any surface water feature must be used.
      - 5. Altered areas must be stabilized to acceptable erosion control standards consistent with the field office

technical guides of the local soil and water conservation districts and the United States Soil Conservation Service.

6. Fill or excavated material must not be placed in a manner that creates an unstable slope.
  7. Plans to place fill or excavated material on steep slopes must be reviewed by the city engineer for continued slope stability and must not create finished slopes of more than four to one.
  8. Fill shall not restrict a floodway or destroy the storage capacity of a floodplain.
  9. Fill or excavated material must not be placed in bluff impact zones or in areas lower in elevation than the normal high water mark.
  10. Any alterations below the ordinary high water level of public waters must first be authorized by the commissioner under Minn. Stats. § 103G.245.
  11. No grading or filling shall be permitted within 20 feet of the normal high water mark of a water body. Notwithstanding the foregoing, grading or filling in connection with the following improvements may be made within said 20 feet so long as any permit required for the improvement has first been issued; beaches, landscaping for slope stabilization, erosion protection, installation of public or private utilities, and public improvements.
  12. Alterations of topography must only be allowed if they are accessory to permitted or conditional uses and do not adversely affect adjacent or nearby properties.
  13. Placement of natural rock riprap, including associated grading of the shoreline and placement of a filter blanket, is permitted if the finished slope does not exceed four feet horizontal to one foot vertical, the landward extent of the riprap is within ten feet of the ordinary high water level, and the height of the riprap above the ordinary high water level does not exceed three feet. Such riprap shall not be permitted solely for decorative purposes.
- e. Connections to public waters.
1. Any work that will change or diminish the course, current, or cross section of a public water must be approved by the state department of natural resources and the city before the work is begun. This includes construction of channels and ditches, lagooning, dredging of stream bottoms for the removal of muck, silt or weeds, and filling in the bed, including low lying marsh areas. Approval shall be construed to mean the issuance of a conditional use permit by the city and the issuance by the commissioner of natural resources of a permit pursuant to Minn. Stats. § 103G.315 and other related statutes.
  2. Excavation on shorelands where the intended purpose is connection to a public water, such as boat slips, canals, lagoons, and harbors, shall require a permit from the city engineer prior to commencement of construction. Such permit shall be obtained only after the commissioner of natural resources has approved the proposed connection to public waters. Approval will be given only if the proposed work is consistent with applicable state regulations for work in beds of public waters.
- (d) Placement and design of roads, driveways, and parking areas.
- (1) Public and private roads and parking areas must be designed to take advantage of natural vegetation and topography to achieve maximum screening from view from public waters. Documentation must be provided by an architect, landscape architect, or a civil engineer, anyone of which must be registered with the state, that all roads and parking areas are designed and constructed to minimize and control erosion to public waters consistent with the field office technical guides of the local soil and water conservation district or other applicable technical materials. Parking areas of more than four spaces shall be screened in accordance with a landscaping plan submitted and approved by the city council.
  - (2) Roads, driveways, and parking areas must meet structure setbacks and must not be placed within bluff and shore impact zones, when other reasonable and feasible placement alternatives exist. If no alternative exists, they may be placed within these areas, and must be designed to minimize adverse impacts.
  - (3) Public and private watercraft access ramps, approach roads, and access-related parking areas may be placed within

shore impact zones provided the vegetative screening and erosion control conditions of this section are met. For private facilities, the grading and filling provisions of subsection (c)(2) of this section must be met.

- (4) This subsection (d) does not apply to public trails.
- (e) Special provisions for commercial, industrial, and agricultural uses.
- (1) Surface water-oriented commercial uses and industrial uses with similar needs are prohibited. Commercial uses and industrial uses without water-oriented needs must be located on lots or parcels without public waters frontage, or, if located on lots or parcels with public waters frontage, must either be set back double the normal ordinary high water level setback or be substantially screened, blended or camouflaged from view from the water by vegetation, topography, or architecture, assuming summer, leaf-on conditions.
- (2) Agriculture use standards. General cultivation farming, grazing, nurseries, horticulture, truck farming, sod farming, and wild crop harvesting are permitted uses if steep slopes and shore and bluff impact zones are maintained in permanent vegetation or operated under an approved conservation plan (resource management systems) consistent with the field office technical guides of the local soil and water conservation districts or the United States Soil Conservation Service. The shore impact zone for parcels with permitted agricultural land uses is equal to a line parallel to and 50 feet from the ordinary high water level.
- (f) Conditional uses allowable within shoreland areas shall be subject to the review and approval procedures, and criteria and conditions for review of conditional uses, established community-wide. The following additional evaluation criteria and conditions apply within shoreland areas and are in addition to the requirements of the procedures relating to conditional use permits in chapter 125, pertaining to zoning:
- (1) A thorough evaluation of the water body and the topographic, vegetation, and soils conditions on the site must be made to ensure:
- The prevention of soil erosion or other possible pollution of public waters, both during and after construction;
  - The visibility of structures and other facilities as viewed from public waters is limited;
  - The site is adequate for water supply and on-site sewage treatment if public sewer or water are not available; and
  - The types, uses, and numbers of watercraft that the project will generate are compatible in relation to the suitability of public waters to safely accommodate these watercraft.
- (2) The city council, upon consideration of the criteria listed above and the purposes of this article, shall attach such conditions to the issuance of conditional use permits as it deems necessary to fulfill the purposes of this article. Such conditions may include, but are not limited to, the following:
- Increased setbacks from the ordinary high water level;
  - Limitations on the natural vegetation to be removed or the requirement that additional vegetation be planted;
  - Special provisions for the location, design, and use of structures, sewage treatment systems, watercraft launching and docking areas, and vehicle parking areas; and
  - Connection to public sewer and water if available.
- (g) Water supply and sewage treatment.
- (1) Any public or private supply of water for domestic purposes must meet or exceed standards for water quality of the state department of health and the state pollution control agency.
- (2) Any premises used for human occupancy shall be provided with an adequate method of sewage disposal to be maintained in accordance with acceptable practices and as follows:
- Public sanitary sewer collection and treatment facilities must be used where available and where feasible.
  - All private sewage treatment systems in the S shoreland district must meet or exceed the state pollution control agency's standards for individual sewage treatment systems contained in Minn. Rules ch. 7080, a copy of which is hereby adopted by reference and declared to be a part of this article.
  - Placement of septic tank soil absorption systems/on-site sewage treatment systems shall be subject to the

following setback requirements where soil conditions are adequate and where public sewer is not available:  
On tributary streams at least 50 feet from the normal high water mark.

- d. A septic tank drain field system shall be the only acceptable system for installation where public sewer is not available unless it can be demonstrated that this system is not feasible on the particular lot in question and it can be demonstrated that the system being proposed as an alternative will not cause a pollution problem.
- e. No person shall install, alter, repair or extend any individual sewer disposal system without first obtaining a permit therefor from the building official for the specific installation, alteration, repair or extension.
- f. Location and installation of a septic and soil absorption system (where public sewer is not available) shall be such that, with reasonable maintenance, it will function in a sanitary manner and will not create a nuisance, endanger the quality of any domestic water supply, or pollute or contaminate any waters of the state. If the determination of a site's suitability cannot be made with publicly available existing information, it shall then be the responsibility of the applicant to provide sufficient soil borings and percolation tests from on-site field investigations. In determining a suitable location for the system, consideration shall be given to the following:
  1. The size and shape of the lot;
  2. Slope of natural and finished grade;
  3. Soil conditions, properties, and permeability;
  4. High ground water elevation;
  5. Geology;
  6. Proximity to existing or future water supplies;
  7. Depth to the highest known or calculated ground water table or bedrock;
  8. Accessibility for maintenance;
  9. The existence of lowlands, local surface depressions, and rock outcrops; and
  10. Possible expansion of the system.
- g. Soil absorption systems shall not be allowed in the following areas for disposal of domestic sewage:
  1. Low swampy areas or areas subject to recurrent flooding;
  2. Areas where the highest known ground water table, bedrock or impervious soils conditions are within four feet of the bottom of the system; and
  3. Areas of ground slope will create a danger of seepage of the effluent onto the surface of the ground.
- h. Nonconforming sewage treatment systems shall be regulated and upgrading in accordance with section 109-24(3).

(Ord. No. 94-22, § 5, 5-10-1994)

#### Sec. 109-24. - Nonconformities.

Nonconforming lots, structures, and uses shall be governed by the provisions of the zoning ordinance that govern such matters. In addition, the following standards will also apply in shoreland areas. Where there is a conflict between this article and the zoning ordinance, the conflict shall be resolved in such a manner that will tend to eliminate or bring into compliance the nonconformity.

##### (1) Construction on nonconforming lots.

- a. A variance from setback requirements must be obtained before any use, sewage treatment system, or building permit is issued for a lot. In evaluating any proposed variance, the city council shall consider sewage treatment and water supply capabilities or constraints of the lot and shall deny the variance if adequate facilities cannot be provided.
- b. If, in a group of two or more contiguous lots under the same ownership, any individual lot does not meet the requirements of section 109-23(a) and (b) the lot must not be considered as a separate parcel of land for the purposes of sale or development. The lot must be combined with the one or more contiguous lots so they

equal one or more parcels of land, each meeting the requirements of section 109-23(a) and (b) as much as possible.

- (2) All additions or expansions to the outside dimensions of an existing nonconforming structure must meet the setback, height, and other requirements of section 109-23. Any deviation from these requirements must be authorized by a variance pursuant to the variance provisions of chapter 25, and section 109-21(c).
- (3) Nonconforming sewage treatment systems. A sewage treatment system not meeting the requirements of this article must be upgraded, at a minimum, at any time a permit or variance of any type is required for any improvement on, or use of, the property. For the purposes of this provision, a sewage treatment system shall not be considered nonconforming if the only deficiency is the sewage treatment system's improper setback from the ordinary high water level. However, sanitary facilities shall be discontinued when there is evidence of septic tank effluent percolating from the ground, flowing directly into a lake or stream, or other indications of system failure.

(Ord. No. 94-22, § 6, 5-10-1994)

#### Sec. 109-25. - Subdivision and platting.

The subdivision and platting requirements of the subdivision ordinance shall apply to land in the S shoreland district. In addition, the following requirements shall also apply:

- (1) Each lot created through subdivision must be suitable in its natural state for the proposed use with minimal alteration. Suitability analysis shall include, but not be limited to, near shore aquatic conditions unsuitable for water-based recreation, important fish and wildlife habitat, or any other feature of the natural land likely to be harmful to the health, safety, or welfare of future residents of the proposed subdivision or of the community.
- (2) Subdivisions must conform to all ordinances and controls of the city.
- (3) Sufficient information must be submitted by the applicant for the city to make a determination of land suitability. Such information shall include, but not be limited to, the following:
  - a. The surface water features required in Minn. Stats. ch. 505 to be shown on plats, obtained from United States Geological Survey quadrangle topographic maps or more accurate sources;
  - b. Information regarding extent of anticipated vegetation and topographic alterations, and near-shore aquatic conditions including depths, types of bottom sediments, and aquatic vegetation;
  - c. Location of 100-year floodplain areas and floodway districts from existing adopted maps or data; and
  - d. A line or contour representing the ordinary high water level, the "toe" and the "top" of bluffs, and the minimum building setback distances from the top of the bluff and the lake or stream.
- (4) Easements shall be dedicated over natural drainage or ponding areas for management of stormwater and significant wetlands.
- (5) Lots intended as controlled accesses to public waters or for recreational use areas for use by nonriparian lots within a subdivision must meet or exceed the sizing criteria in section 109-23(a)(5).

(Ord. No. 94-22, § 7, 5-10-1994)

#### Secs. 109-26—109-53. - Reserved.

### ARTICLE III. - WETLAND PROTECTION

#### Sec. 109-54. - Statement of findings, intent and policy.

- (a) Wetlands help maintain water quality, service to minimize problems with flooding and erosion, serve as sources of food and habitat for a variety of fish and wildlife, and are an integral part of the community's natural landscape providing the

aesthetic benefits of open space and a natural separation of land uses. It is the intent of this article to establish a policy of sound stewardship through coordination of regulations that strive toward zero degradation and no net loss of the wetlands by conserving, protecting, and enhancing these environmentally sensitive resources. In addition, it is the intent of the city to promote the restoration of degraded wetlands where feasible and practical. It is the city's intent that the use of sound planning policies should strive to first avoid alteration to wetlands. Where alteration of wetlands cannot be avoided, then wetland loss shall be mitigated.

- (b) The primary goal of this article is to avoid wetland impact by careful design of development proposals. An applicant for a wetland alteration has the obligation to demonstrate, to the city's satisfaction, that reasonable alternatives to the action have been explored. The city must find that the alternatives are inappropriate or that a wetland enhancement would result for the city to approve the wetland alteration. Mitigations should always result in an improvement to the wetland function and value. The wetland function and value will include improvement of water quality, maintaining the hydrological balance and provision of wildlife habitat.

(Ord. No. 94-20, § 1, 5-10-1994)

Sec. 109-55. - Purpose.

The purpose of this article is to assure the protection of the general health, safety and welfare of the residents and the protection of the wetland resources of the city, for now and in the future, through preservation and conservation of wetlands and sound management of development by:

- (1) Establishment of wetland regulations that are coordinated with flood protection and water quality programs.
- (2) Requiring sound management practices that will protect, conserve, maintain, enhance, and improve the present quality of wetlands within the community.
- (3) Requiring sound management designed to maintain and improve water quality in streams and lakes with its attendant increase in recreational use and value.
- (4) Protecting and enhancing the scenic value of the wetland.
- (5) Restricting and controlling the harmful effects of land development that adversely affect wetlands, which harmful effects include, but are not limited to:
  - a. Improper erosion control practices.
  - b. Rapid runoff from developed areas.
  - c. Pollution from gas, oil, salt, fertilizer, sand silt, and other materials.
  - d. Dumping of waste in wetlands.
  - e. Unrestricted placement of structures within wetland areas.
  - f. Lack of a buffer strip to protect the perimeter of the wetland.
- (6) Allowing only development that is planned to be compatible with wetland protection and enhancement.
- (7) Providing standards for the alteration of wetlands when permitted by the city.
- (8) Mitigating impact of development adjacent to wetland areas.
- (9) Educating and informing the public regarding the function of wetlands and the impact of urbanization upon wetlands.
- (10) Obtaining protective easements over or acquiring fee title to wetlands as opportunities occur.

(Ord. No. 94-20, § 2, 5-10-1994)

Sec. 109-56. - District application.

- (a) The W wetland systems district shall be applied to and superimposed upon all residential, retail, commercial or industrial districts established under chapter 125, pertaining to zoning. The regulations and requirements imposed by the W



wetland systems district shall be in addition to those of floodplain and shoreland and those established for the districts which jointly apply. Under the joint application of districts, the more restrictive requirements shall apply.

- (b) The wetland systems district within the city is defined and established to include those wetland areas under the protection of the U.S. Army Corps of Engineers described in the United States Fish and Wildlife Service Circular No. 39 (1971 edition) and to any required buffer strip located on the upland immediately adjacent to a wetland or a treatment pond related to a wetland.

(Ord. No. 94-20, § 3, 5-10-1994)

Sec. 109-57. - Permitted activities.

The following operations and uses are permitted in the wetland systems district as a matter of right, subject to any other applicable code, ordinance or law:

- (1) Conservation of soil, vegetation, water, fish and wildlife.
- (2) Scientific research and educational activities that teach principles of ecology and conservation.
- (3) Leisure activities such as hiking, nature studies, canoeing, boating and horseback riding, including facilities such as trails or docks that allow such activities.
- (4) Essential services, streets and trails.
- (5) Other uses deemed by the city administrator to be similar to those set forth in this Section and consistent with the purposes and intent of this article set forth in subsections (1) and (2) of this section.

(Ord. No. 94-20, § 4, 5-10-1994)

Sec. 109-58. - Prohibited activities.

Except as may hereinafter be conditionally permitted, it shall be unlawful for any person to do any of the following in the wetland systems district:

- (1) Place, deposit or permit to be deposited, debris, fill or any material including structures into, within or upon any water body, watercourse, or wetland, floodplain or natural drainage system.
- (2) Dig, dredge, or in any other way alter or remove any material from water bodies, watercourses, wetlands, floodplains, or natural drainage system except in conformance with a mitigation plan approved in conjunction with a conditional use permit pursuant to the provisions of chapter 125, pertaining to zoning, relating to conditional use permits.
- (3) Erect structures for human habitation.
- (4) Create ponds, dam or relocate any watercourse, or change the natural drainage system except in conformance with a mitigation plan approved in conjunction with a conditional use permit pursuant to the provisions of chapter 125, pertaining to zoning.
- (5) Clear and/or cut trees or other vegetation, including the installation or maintenance of a lawn or other landscaping. The eradication of noxious or other harmful plants shall be exempted from the requirements of this section.
- (6) Store materials.
- (7) Erect signs.
- (8) Dispose of waste materials including, but not limited to, sewage, garbage, rubbish and other discarded materials.

(Ord. No. 94-20, § 5, 5-10-1994)

Sec. 109-59. - Conditional uses.

Filling or alteration of medium or low value wetlands which cannot be avoided if reasonable development is to occur may take place upon the issuance of a conditional use permit as regulated by the provisions governing conditional use permits contained in chapter 125, pertaining to zoning, including the procedures therein set forth.

(Ord. No. 94-20, § 6, 5-10-1994)

Sec. 109-60. - Development regulations.

- (a) Any permitted wetland filling shall be mitigated on a basis of a minimum of two acres of mitigation for every acre of wetland alteration with mitigation occurring on the affected property where feasible but within the watershed of the filled wetland in all instances.
- (b) Mitigation shall create high value wetlands.
- (c) Mitigation shall be accomplished in a manner that allows the greatest probability of the wetland flora establishing itself in the newly created wetland.
- (d) Mitigation shall occur in conformance with a mitigation plan approved in conjunction with a conditional use permit pursuant to the provisions of chapter 125, pertaining to zoning, relating to conditional use permits.
- (e) Created wetland slopes should be a maximum of 10:1, with an average of 15:1.
- (f) Wetland soils shall be placed in all mitigation areas or seeding and/or planting shall be done.
- (g) Prior to the revegetation of a development site sedimentation basin capable of accepting runoff from storms of up to a 50-year frequency shall be established on the development site. Any required permanent treatment facilities shall be located outside the wetland.
- (h) Mitigation shall occur prior to or concurrent with wetland alteration.
- (i) In selecting a mitigation site preference shall always be given to restoring a former wetland before creating a new one.
- (j) Buffer strips in excess of those imposed by law shall not be required adjacent to mitigation areas.

(Ord. No. 94-20, § 7, 5-10-1994)

Sec. 109-61. - Wetland ranking.

In determining whether a wetland is of high, medium, or low value, all Minnesota D.N.R. protected wetlands shall be considered to be high value wetlands. For all other wetlands the state department of natural resources "Rapid Assessment Methodology for Evaluating Wetland Functional Values" shall be used. To be considered a high value wetland, a wetland must be rated as having high significance in five of the listed functional categories. For each category that receives an exceptional rating the number of high significance categories required for a high value rating shall be decreased by one.

(Ord. No. 94-20, § 8, 5-10-1994)

Sec. 109-62. - Wetland buffers.

All development commenced after June 1, 1994, shall maintain a buffer strip in the upland adjacent to the wetland. Buffer strip vegetation shall be established and maintained in accordance with the following requirements:

- (1) Plant species shall be selected from wetland and upland plants to provide habitat for various species of wildlife.
- (2) Buffer strips shall be identified by permanent monumentation acceptable to the city. A monument is required wherever a buffer strip intersects a lot line.
- (3) Buffer strips for high quality wetlands shall be 40 feet in width, however, the city council may approve a buffer strip of variable width so long as the minimum width is 25 feet and the average width is 40 feet. Buffer strips for all other wetlands shall be a minimum of ten feet in width.

(Ord. No. 94-20, § 9, 5-10-1994)

## Sec. 109-63. - Exemptions.

- (a) Those properties developed under a conditional use permit issued in keeping with the standards of the W wetland systems district shall be subject to the conditions of that permit notwithstanding any changes to wetland standards imposed by this article. This exemption would allow the continued use of wetland areas included in residential lots under previous rules.
- (b) The alteration of any wetland that is crucial to the accomplishment of the city's comprehensive plan may occur. However, such alteration is subject to all of the mitigation requirements of this article.

(Ord. No. 94-20, § 10, 5-10-1994)

## Chapter 117 - STORMWATER MANAGEMENT

## ARTICLE I. - IN GENERAL

## Sec. 117-1. - Definitions.

The following words, terms and phrases, when used in this chapter, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

*Applicant* means any person who wishes to obtain a building permit, zoning or subdivision approval.

*Control measure* means a practice or combination of practices to control erosion and attendant pollution.

*Detention facility* means a permanent natural or manmade structure, including wetlands, for the temporary storage of runoff that contains a permanent pool of water.

*Flood fringe* means the portion of the floodplain outside of the floodway.

*Floodplain* means the areas adjoining a watercourse or water basin that have been or may be covered by a regional flood.

*Floodway* means the channel of the watercourse, the bed of water basins, and those portions of the adjoining floodplains that are reasonably required to carry and discharge floodwater and provide water storage during a regional flood.

*Hydric soils* means soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part.

*Hydrophytic vegetation* means macrophytic plant life growing in water, soil, or on a substrate that is at least periodically deficient in oxygen as a result of excessive water content.

*Land disturbing or development activities* means any change of the land surface including removing vegetative cover, excavating, filling, grading, and the construction of any structure.

*Public waters* means waters of the state as defined in Minn. Stats. § 103G.005, subd. 15.

*Redevelopment* means any construction, alteration, or improvement in areas where existing land use is already in a developed condition.

*Regional flood* means a flood that is representative of large floods known to have occurred generally in the state and reasonably characteristic of what can be expected to occur on an average frequency in the magnitude of a 100-year recurrence interval.

*Retention facility* means a permanent natural or manmade structure that provides for the storage of stormwater runoff by means of a permanent pool of water.

*Sediment* means solid matter carried by water, sewage, or other liquids.

*Structure* means anything manufactured, constructed or erected which is normally attached to or positioned on land, including portable structures, earthen structures, roads, parking lots, and paved storage areas.

*Wetlands* means lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is covered by shallow water. For purposes of this definition, wetlands must have the following three attributes:

- (1) Have a predominance of hydric soils;
- (2) Are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support a prevalence of hydrophytic vegetation typically adapted for life in saturated soil conditions; and
- (3) Under normal circumstances support a prevalence of such vegetation.

(Ord. No. 2008-11, § 2, 9-23-2008)

Sec. 117-2. - Findings and purpose.

- (a) The city hereby finds that uncontrolled and inadequately planned use of wetlands, woodlands, natural habitat areas, areas subject to soil erosion, and areas containing restrictive soils adversely affects the public health, safety, and general welfare by impacting water quality and contributing to other environmental problems, creating nuisances, impairing other beneficial uses of environmental resources, and hindering the ability of the city to provide adequate water, sewage, flood control, and other community services. In addition, extraordinary public expenditures may be required for the protection of persons and property in such areas and in areas which may be affected by unplanned land usage.
- (b) The purpose of this chapter is to promote, preserve and enhance the natural resources within the city and protect them from adverse effects occasioned by poorly sited development or incompatible activities by regulating land disturbing or development activities that would have an adverse and potentially irreversible impact on water quality and unique and fragile environmentally sensitive land; by minimizing conflicts and encouraging compatibility between land disturbing and development activities, and water quality and environmentally sensitive lands; and by requiring detailed review standards and procedures for land disturbing or development activities proposed for such areas, thereby achieving a balance between urban growth and development and protection of water quality and natural areas.

(Ord. No. 2008-11, § 1, 9-23-2008)

Sec. 117-3. - Goals, policies, and standards.

The city is located within the Elm Creek Watershed Management Commission (ECWMC) boundaries. The city is required by ECWMC to adopt water resource management goals, policies, and standards consistent with the ECWMC Plan.

(1) *Goals.* The city adopts the following goals consistent with ECWMC:

- a. Protect, preserve, and manage surface water and groundwater resources. The city will meet requirements of regulatory agencies such as MPCA, DNR, and ECWMC.
- b. Stormwater design criteria, plan review, maintenance, and inspections apply to projects in both new development and redevelopment land use conditions where the minimum conditions for inclusion under this chapter are met.
- c. Minimize property damages and economic losses through water resource management.
- d. Manage public expenditures needed to study and control and/or correct flooding and water quality problems.
- e. Reduce erosion of soil into surface water systems.
- f. Promote groundwater recharge.
- g. Protect and enhance fish and wildlife habitat and water recreational facilities.
- h. Reduce and control/prevent stream degradation through land protection measures, runoff restrictions, and pollutant restrictions.

(2) *Policies.* The city adopts the following policies consistent with ECWMC:

- a. *Water quantity.*
  1. The city adopts existing FEMA studies for floodplain areas and planning purposes within its boundaries.
  2. The city shall establish floodplain management standards with their floodplain ordinance.
  3. The city shall develop standards to reduce the severity and frequency of flooding and high water by preventing the loss of floodplain storage below the established 100-year flood elevation.
  4. The city shall develop standards to reduce the severity and frequency of flooding and high water by avoiding the loss of wetland storage.
  5. The city shall develop standards to reduce the severity and frequency of flooding and high water by minimizing development in established 100-year floodplains.

6. The city prefers that stormwater rate control be provided through the use of regional stormwater retention reasonable and practical to do so. The city also supports site-by-site retention systems when regional system practical.
  7. The city promotes infiltration of precipitation and runoff through the extension of a stormwater utility credit. For new projects adding more than 5,000 square feet of new impervious area and located in areas with greater than 50 percent A or B hydrologic group soils, the city requires infiltration for the first half inch of runoff, and encourages infiltration of the two-year stormwater event. The city recommends and supports infiltration BMPs in areas with C and D hydrologic group soils.
  8. The city shall be responsible for removing deadfall in creek channels as appropriate provided that the deadfall is no longer attached to the land. For deadfall that remains attached to the land, it is the responsibility of the landowner to remove the deadfall. ECWMC shall mediate deadfall removal issues as requested by the city.
- b. *Water quality.*
1. The city adopts the Minnesota Pollution Control Agency's "Best Management Practices" and "Stormwater Manual," and Metropolitan council's "Minnesota Urban Small Site BMP Manual," as a reference.
  2. The city has adopted the state DNR's model shoreland ordinance.
  3. The city shall promote the management of stormwater runoff quality where it is reasonable and practical to do so. The city shall also manage stormwater runoff quality on a site-by-site basis when regional methods are not feasible.
  4. The city will coordinate with other agencies' efforts in monitoring, maintaining, and improving surface water quality within the watershed as possible.
  5. The city shall review progress and policies relating to total maximum daily loads (TMDLs) as they become available.
- c. *Public ditch systems.*
1. The public ditch systems within the city will be managed by the county, which is the public ditch authority.
  2. The city shall work with the county in resolving any issues associated with management of the public ditch systems in the watershed.
- d. *Groundwater.*
1. The city shall develop standards to improve and protect the groundwater within the watershed.
  2. The city has developed and submitted a wellhead protection plan.
  3. The city shall promote groundwater infiltration and recharge.
- e. *Wetlands.*
1. The city shall act as the Wetland Conservation Act's Local Government Unit (LGU).
  2. The city will protect and manage wetlands in conformance with the state Wetland Conservation Act (WCA).
  3. The city shall promote and facilitate the creation of new wetland banking areas within the watershed.
  4. The order of descending priority for the location of replacement wetlands, including the use of wetland bank credits, is as follows:
    - (i) On site.
    - (ii) Within the same subwatershed.
    - (iii) Within the Elm Creek Watershed.
    - (iv) Outside the Elm Creek Watershed within major Watershed No. 20 only under extreme and unusual circumstances.

f. *Erosion.*

1. The city has developed standards and enforcement mechanisms to minimize erosion due to development activities.
  2. The city adopts the state NPDES construction permit standards and requirements as minimum standards to prevent erosion and sediment from leaving construction sites.
- (3) *Standards.* The city adopts by reference the ECWMC Standards which require action and/or agreement by member communities. The ECWMC Standards are attached in the appendix to the ordinance from which this section is derived (App. D in SWMP).

(Ord. No. 2008-11, § 3, 9-23-2008)

## Sec. 117-4. - Exemptions.

The provisions of this chapter do not apply to:

- (1) Any part of a subdivision if a plat for the subdivision has been approved by the city council on or before the effective date of the ordinance from which this chapter is derived;
- (2) Any land disturbing activity for which plans have been approved by the watershed management organization within six months prior to the effective date of the ordinance from which this chapter is derived;
- (3) A lot for which a building permit has been approved on or before the effective date of the ordinance from which this chapter is derived;
- (4) Installation of fence, sign, telephone and electric poles and other kinds of posts or poles; or
- (5) Emergency work to protect life, limb, or property.

(Ord. No. 2008-11, § 4.2, 9-23-2008)

## Sec. 117-5. - Waiver.

The city council, upon recommendation of the planning commission, may waive any requirement of this chapter upon making a finding that compliance with the requirement will involve an unnecessary hardship and the waiver of such requirement will not adversely affect the standards and requirements as set forth in section 117-35. The city council may require as a condition of the waiver, such dedication, or construction, or agreement to dedicate or construct, as may be necessary to adequately meet said standards and requirements.

(Ord. No. 2008-11, § 4.3, 9-23-2008)

## Sec. 117-6. - Enforcement.

(a) *Violations.*

- (1) If an owner is in violation of the terms and conditions of an approved stormwater management plan and/or this chapter, all city approvals relating to the site shall be either withheld or suspended until the owner is again compliant.
- (2) Upon issuance of a notice, order, or directive, the owner and contractor shall immediately:
  - a. Develop a cleanup and restoration plan;
  - b. Obtain any necessary rights-of-entry from any adjoining property owners; and
  - c. Implement the cleanup and restoration plan within 48 hours of the notice or of obtaining the adjoining property owner's permission.
- (3) In no case, unless written approval is received from the city, shall more than seven calendar days go by without corrective action being taken. If, in the discretion of the city, the applicant does not repair the damage caused by

the erosion, the city may do the remedial work required and charge or assess the cost to the applicant.

- (4) All notices, directives, and orders may be served by the public works director, building inspector, and/or designated city staff.
- (5) When an applicant fails to conform to any provision of this chapter within the time stipulated, the city may:
- a. Issue a notice of violation;
  - b. Withhold the scheduling of inspections and/or the issuance of a certificate of occupancy;
  - c. Revoke any city permit;
  - d. Direct the correction of the violation by city forces or by persons under contract with the city. All costs incurred by the city in correcting violations must be reimbursed by the applicant:
    1. If payment is not made within 30 days after costs are incurred by the city, payment will be made from any financial securities placed with the city pursuant to this chapter;
    2. If there is an insufficient financial amount in the applicant's security to cover the costs incurred by the city, the city may assess the remaining amount against the property;
  - e. Stop work orders may be issued and the owner may be subject to criminal prosecution;
  - f. Issue a fine and/or jail time.
- (b) *Off-site violations.*
- (1) If erosion breaches the perimeter of the site, the applicant is subject to the same time schedule as shown in subsection (a) of this section.
  - (2) If eroded soils (including tracked soils from construction activities) enter or appear likely to enter streets, wetlands, or other water bodies, prevention strategies, cleanup, and repair must be immediate. The applicant shall provide all traffic control and flagging required to protect the traveling public during the cleanup operations.
- (c) *Stop work order.* Whenever the city finds any noncompliance with the provisions of the approved stormwater management plan and/or this chapter, the city shall attempt to communicate with the owner or person performing the work to obtain immediate and voluntary compliance if such person is readily available. If the owner or person performing the work is not readily available, that person refuses to voluntarily comply immediately, or the noncompliance presents imminent damage, or will cause or threatens to cause bodily injury or damage to off-site property including, but not limited to off-site runoff, the city shall post in a conspicuous place on the premises a stop work order which shall cause all activity not necessary to correct the noncompliance to cease until compliance is corrected.
- (1) *Contents.* The stop work order shall contain the following information:
    - a. Date of issuance;
    - b. Sufficient information to identify the property; and
    - c. Violations.
  - (2) *Unauthorized removal of posted notice.* Any unauthorized removal of a posted stop work order shall be punishable as a misdemeanor.
  - (3) *Additional notice.* In addition to posting a stop work order, the city shall provide notification to the applicant by personal service, written notice by certified mail, or facsimile transmission.
- (d) *Misdemeanor.* Any person failing to comply with or violating this chapter shall be deemed guilty of a misdemeanor and be subject to the maximum penalty permitted by law, which includes monetary fines and/or imprisonment. All land use and building permits must be suspended until the applicant has corrected the violation. Each day that a violation exists shall constitute a separate offense.

(Ord. No. 2008-11, § 11, 9-23-2008)



By submitting a permit application to the city, the applicant hereby consents and authorizes the city and its authorized representatives, upon presentation of credentials to:

- (1) Enter upon the permitted site for the purpose of obtaining information, examination of records, and conducting investigations or surveys;
- (2) Bring such equipment upon the permitted development as is necessary to conduct such surveys and investigations;
- (3) Examine and copy any books, papers, records, or memoranda pertaining to activities or records required to be kept under the terms and conditions of this chapter;
- (4) Enter upon the site to inspect the best management practices.

(Ord. No. 2008-11, § 12, 9-23-2008)

Sec. 117-8. - Lawn fertilizer regulations.

- (a) *Use of impervious surfaces.* No person shall apply fertilizer to or deposit grass clippings, leaves, or other vegetative materials on impervious surfaces, or within stormwater drainage systems, natural drainageways, or within wetland buffer areas.
- (b) *Unimproved land areas.* Except for driveways, sidewalks, patios, areas occupied by structures or areas which have been improved by landscaping, all areas shall be covered by plants or vegetative growth.
- (c) *Fertilizer content.* The provisions of Minn. Stats. § 18C.60 restrict phosphorus applications for a few limited circumstances. Other than where allowed by state law, phosphorus fertilizer shall not be used in the city.
- (d) *Buffer zone.* Fertilizer applications shall not be made within one rod (16.5 feet) of any wetland or water resource.

(Ord. No. 2008-11, § 8, 9-23-2008)

Secs. 117-9—117-33. - Reserved.

## ARTICLE II. - STORMWATER MANAGEMENT PLAN

Sec. 117-34. - Required for building permit, subdivision approval, and land disturbing activities.

Every applicant for a building permit, subdivision approval, or a permit to allow land disturbing activities must submit a stormwater management plan to the zoning administrator. No building permit, subdivision approval, or permit to allow land disturbing activities, where the land disturbance will be greater than or equal to the minimum required to obtain an NPDES construction stormwater permit, or where the site is part of a larger common plan of development, shall be issued until approval of the stormwater management plan or a waiver of the approval requirement has been obtained in strict conformance with the provisions of this chapter. The provisions of [section 117-8](#) apply to all land, public or private, located within the city.

(Ord. No. 2008-11, § 4.1, 9-23-2008)

Sec. 117-35. - Approval procedures.

- (a) *Application.*
  - (1) A written application for stormwater management plan approval, along with the proposed stormwater pollution prevention plan (SWPPP), shall be filed with the zoning administrator. Prior to applying for approval of a stormwater management plan, an applicant may have the stormwater management plans reviewed by the appropriate departments of the city.
  - (2) Two sets of clearly legible drawings and required information shall be submitted to the zoning administrator and shall be accompanied by a receipt from the finance director evidencing the payment of all required fees for

processing and approval as set forth in section 117-36(e) and a bond when required by section 117-36(d) in the amount to be calculated in accordance with that section. Drawings shall be prepared to a scale appropriate to the site of the project and suitable for the review to be performed. At a minimum the scale shall be one inch equals 100 feet.

- (b) *Stormwater management plan.* At a minimum, the stormwater management plan shall meet MPCA NPDES construction permit requirements and contain the following information written in a SWPPP on the drawings or narrative document. The MPCA NPDES Construction Permit Application (MNR100001) and SWPPP may be submitted if they meet these requirements.

(1) *Existing site map.*

- a. The name and address of the applicant, the section, township and range, north point, date and scale of drawing and number of sheets;
- b. Location of the tract by an insert map at a scale sufficient to clearly identify the location of the property and giving such information as the names and numbers of adjoining roads, railroads, utilities, subdivisions, towns and districts or other landmarks;
- c. Existing topography with a contour interval appropriate to the topography of the land but in no case having a contour interval greater than two feet;
- d. A map of streams, rivers, public waters and wetlands located on and immediately adjacent to the site;
- e. Location and dimensions of existing stormwater drainage systems and natural drainage patterns on and immediately adjacent to the site delineating in which direction and at what rate stormwater is conveyed from the site, identifying the receiving stream, river, public water, or wetland, and low areas where stormwater collects;
- f. A description of the soils of site, including a map indicating soil types of areas to be disturbed;
- g. Wooded areas and wooded areas proposed for removal; and
- h. 100-year floodplains and floodways.

(2) *Site construction plan.* A site construction plan, including:

- a. Locations and dimensions of all proposed land disturbing activities and any phasing of those activities;
- b. Locations of all temporary soil or dirt stockpiles;
- c. Locations and dimensions of all construction site erosion control measures necessary to meet the requirements of this chapter;
- d. Schedule of anticipated project start and completion dates; and
- e. Provisions for maintenance of the construction site erosion control measures during construction.

(3) *Plan of final site conditions.* A plan of final site conditions on the same scale as the existing site map showing the site changes including:

- a. Finished grading shown at contours at the same interval as provided above or as required to clearly indicate the relationship of proposed changes to existing topography and remaining features;
- b. A landscape plan, drawn to an appropriate scale, including dimensions and distances and the location, type, size and description of all proposed landscape materials which will be added to the site as part of the development;
- c. A drainage plan of the developed site delineating in which direction and at what rate stormwater will be conveyed from the site and setting forth the areas of the site where stormwater will be allowed to collect;
- d. The proposed size, alignment and intended use of any structures to be erected on the site;
- e. A clear delineation and tabulation of all areas which shall be paved or surfaced, including a description of the surfacing material to be used; and
- f. Any other information pertinent to the particular project which, in the opinion of the applicant, is necessary for the review of the project.

(Ord. No. 2008-11, § 5, 9-23-2008)

Sec. 117-36. - Review procedure.

- (a) *Process.* Stormwater management plans meeting the requirements of section 117-35 shall be submitted by the zoning administrator to the planning commission for review in accordance with the standards of this section. The commission shall recommend approval, recommend approval with conditions, or recommend denial of the stormwater management plan. Following planning commission action, the stormwater management plan shall be submitted to the city council at its next available meeting. City council action on the stormwater management plan must be accomplished within 60 days following the date the application for approval is filed with the zoning administrator.
- (b) *Duration.* Approval of a plan submitted under the provisions of this chapter shall expire one year after the date of approval unless construction has commenced in accordance with the plan. However, if prior to the expiration of the approval, the applicant makes a written request to the zoning administrator for an extension of time to commence construction setting forth the reasons for the requested extension, the planning department may grant one extension of not greater than one single year. Receipt of any request for an extension shall be acknowledged by the zoning administrator within 15 days. The zoning administrator shall make a decision on the extension within 30 days of receipt. Any plan may be revised in the same manner as originally approved.
- (c) *Conditions.* A stormwater management plan may be approved subject to compliance with conditions reasonable and necessary to ensure that the requirements contained in this chapter are met. Such conditions may, among other matters, limit the size, kind or character of the proposed development, require the construction of structures, drainage facilities, storage basins and other facilities, require replacement of vegetation, establish required monitoring procedures, stage the work overtime, require alteration of the site design to ensure buffering, and require the conveyance to the city or other public entity of certain lands or interests herein.
- (d) *Performance bond.*
  - (1) Prior to approval of any stormwater management plan, the applicant shall submit an agreement to construct such required physical improvements, to dedicate property or easements, or to comply with such conditions as may have been agreed to. Such agreement shall be accompanied by a letter of credit or escrow according to section 117-39. The agreement and bond shall guarantee completion and compliance with conditions within a specific time, which time may be extended in accordance with subsection (b) of this section.
  - (2) The adequacy, conditions and acceptability of any agreement and bond shall be determined by the city council or any official of the city as may be designated by resolution of the city.
- (e) *Fees.* All applications for stormwater management plan approval shall be accompanied by a processing and approval fee.

(Ord. No. 2008-11, § 6, 9-23-2008)

Sec. 117-37. - Approval standards.

- (a) *Required to meet standards of this section.* No stormwater management plan which fails to meet the standards contained in this section shall be approved by the city council.
- (b) *Site dewatering.* Water pumped from the site shall be treated by temporary sedimentation basins, grit chambers, sand filters, upflow chambers, hydrocyclones, swirl concentrators or other controls as appropriate. Water may not be discharged in a manner that causes erosion or flooding of the site, receiving channels, or a wetland.
- (c) *Waste and material disposal.* All waste and unused building materials (including garbage, debris, cleaning wastes, wastewater, toxic materials or hazardous materials) shall be properly disposed of off-site and not allowed to be carried by runoff into a receiving channel or storm sewer system.
- (d) *Tracking.* Each site shall have graveled roads, access drives, and parking areas of sufficient width and length to prevent sediment from being tracked onto public or private roadways. Any sediment reaching a public or private road shall be removed by street cleaning (not flushing) before the end of each workday.
- (e) *Drain inlet protection.* All storm drain inlets shall be protected during construction until control measures are in place by

straw bale, silt fence, or equivalent barrier meeting accepted design criteria, standards, and specifications contained in the MPCA publication "Protecting Water Quality in Urban Areas," the "Minnesota Stormwater Manual," or other resource.

- (f) *Site erosion control.* The site owner and contractor are responsible to meet the state NPDES construction permit requirements.
- (g) *Stormwater management criteria for permanent facilities.*
- (1) An applicant shall install or construct, on or for the proposed land disturbing or development activity, all stormwater management facilities necessary to manage increased runoff so that the two-year, ten-year, and 100-year storm peak discharge rates existing before the proposed development shall not be increased and accelerated channel erosion will not occur as a result of the proposed land disturbing or development activity. The city may approve the applicant to make an in-kind or monetary contribution to the development and maintenance of community stormwater management facilities designed to serve multiple land disturbing and development activities undertaken by one or more persons, including the applicant.
  - (2) The applicant shall give consideration to reducing the need for stormwater management facilities by incorporating the use of natural topography and land cover such as wetlands, ponds, natural swales and depressions as they exist before development to the degree that they can accommodate the additional flow of water without compromising the integrity or quality of the wetland or pond.
  - (3) The following stormwater management practices shall be investigated in developing a stormwater management plan in the following descending order of preference:
    - a. Natural infiltration of precipitation on-site;
    - b. Flow attenuation by use of open vegetated swales and natural depressions;
    - c. Stormwater detention or retention facilities.
  - (4) A combination of successive practices may be used to achieve the applicable minimum control requirements specified in subsection (g)(1) of this section. Justification shall be provided by the applicant for the method selected.
- (h) *Design standards.* Stormwater detention facilities constructed in the city shall be designed according to standards approved by the city engineer, and the most current technology as reflected in the MPCA publication "Protecting Water Quality in Urban Areas," the "Minnesota Stormwater Manual," or other reference publication, and shall contain, at a minimum, the following design factors:
- (1) A permanent pool, dead storage volume below the principal spillway of 1,800 cubic feet for each acre that drains to the basin;
  - (2) An average permanent pool depth of four to ten feet;
  - (3) A permanent pool length-to-width ratio of 3:1 or greater;
  - (4) A minimum protective shelf extending ten feet into the permanent pool with a slope of 10:1, beyond which slopes should not exceed 3:1;
  - (5) A protective buffer strip of vegetation surrounding the permanent pool at a minimum width of 25 feet;
  - (6) All stormwater detention facilities shall have a device to keep oil, grease, and other floatable material from moving downstream as a result of normal operations;
  - (7) Stormwater detention facilities for new development must be sufficient to limit peak flows in each subwatershed to those that existed before the development for the ten- and 100-year storm event. All calculations and hydrologic models/information used in determining peak flows shall be submitted along with the stormwater management plan;
  - (8) All stormwater detention facilities must have a forebay to remove coarse-grained particles prior to discharge into a watercourse or storage basin;
  - (9) Phosphorus loadings from new or redeveloped sites shall not exceed predevelopment phosphorus levels;
  - (10) A protective buffer strip of natural vegetation at least 20 feet in width shall surround all lakes and streams; and at least 50 feet in width along DNR protected watercourse.

- (i) *Wetlands.*
  - (1) Runoff shall not be discharged directly into wetlands without presettlement of the runoff.
  - (2) A protective buffer strip of natural vegetation at least 25 feet in width shall surround all wetlands. For a new reconstructed wetland, the buffer shall have an average of 40 feet and not less than 25 feet.
  - (3) Wetlands must not be drained or filled, wholly or partially, unless replaced by restoring or creating wetland areas of at least equal public value. Replacement must be guided by the following principles in descending order of priority:
    - a. Avoiding the direct or indirect impact of the activity that may destroy or diminish the wetland;
    - b. Minimizing the impact by limiting the degree or magnitude of the wetland activity and its implementation;
    - c. Rectifying the impact by repairing, rehabilitating, or restoring the affected wetland environment;
    - d. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the activity; and
    - e. Compensating for the impact by replacing or providing substitute wetland resources or environments.
- (j) *Steep slopes.* No land disturbing or development activities shall be allowed on slopes of 18 percent or more.
- (k) *Catchbasins.* All newly installed and rehabilitated catchbasins shall be provided with a sump area for the collection of coarse-grained material when they are the last two catchbasins in line before a stormwater treatment pond. Such basins shall be cleaned when they are half filled with material.
- (l) *Drain leaders.* All newly constructed and reconstructed buildings will route drain leaders to pervious areas wherein the runoff can be allowed to infiltrate. The flow rate of water exiting the leaders shall be controlled so no erosion occurs in the pervious areas.
- (m) *Inspection and maintenance.* All stormwater management facilities shall be designed to minimize the need of maintenance, to provide access for maintenance purposes, and to be structurally sound. All stormwater management facilities shall have a plan of operation and maintenance that ensures continued effective removal of pollutants carried in stormwater runoff. The director of public works, or designated representative, shall inspect all stormwater management facilities during construction during the first year of operation, and at least once every five years thereafter. The inspection records will be kept on file at the public works department for a period of six years. It shall be the responsibility of the applicant to obtain any necessary easements or other property interests to allow access to the stormwater management facilities for inspection and maintenance purposes. Privately owned stormwater ponds or structures shall have a signed management agreement filed with the city. The city's stormwater maintenance plan and management agreements are provided in the Appendix to the city Stormwater Management Plan, 2007.
- (n) *Models/methodologies/computations.* Hydrologic models and design methodologies used for the determination of runoff and analysis of stormwater management structures shall be approved by the city engineer. Plans, specification and computations for stormwater management facilities submitted for review shall be sealed and signed by a registered professional engineer. All computations shall appear on the plans submitted for review, unless otherwise approved by the city engineer.
- (o) *Watershed management plans/groundwater management plans.* Stormwater management plans shall be consistent with adopted watershed management plans and groundwater management plans prepared in accordance with Minn. Stats. §§ 103B.231 and 103B.255 respectively, and as approved by the Minnesota Board of Water and Soil Resources in accordance with state law.
- (p) *Easements.* All stormwater management facilities, including but not limited to, rate control structures, ponds, and drainage ways shall be placed in drainage or utility easements. If a stormwater management plan involves direction of some or all runoff of the site, it shall be the responsibility of the applicant to obtain from adjacent property owners any necessary easements or other property interests concerning flowage of water.

(Ord. No. 2008-11, § 7, 9-23-2008)

- (a) *Notice to transferee.* When ownership, possession, or control of any site subject to an incomplete, approved stormwater management plan is transferred, the former owner (seller) shall notify the new owner (buyer) as to the current status of compliance and provide a copy of the approved stormwater management plan. A copy of this notice shall be submitted to the city. A copy of the "Submittal Registration Form" required by the MPCA for each transfer under the state-required SWPPP plan shall substitute for this requirement.
- (b) *Successor liability.* The successor in interest to any portion of a site subject to an incomplete, approved SWPPP shall be responsible for implementing the best management practices contained in the plan and will be subject to regulation under this chapter.
- (c) *Penalty.* In the event a transferor (seller) fails to comply with the provisions of this section, the transferor shall remain liable for the completion of the stormwater and erosion control plan as to transferee's property.

(Ord. No. 2008-11, § 10, 9-23-2008)

Sec. 117-39. - Financial security.

The city reserves the right to collect a letter of credit, escrow, bond, or other security to ensure the proper implementation and completion of erosion and sediment control and stormwater management for any project subject to this article.

- (1) *Development agreements.* If the project is proceeding under a development agreement with the city, the applicant must also provide security in a form approved by the city for the performance of work approved by the city in the stormwater management plan. If the city is already holding financial security on a project for other purposes, this security shall substitute for the financial security required as part of the stormwater management plan.
- (2) *Action against the financial security.* The city may act against the financial security if any of the conditions listed below exist. The city shall use funds from this security to finance any corrective or remedial work undertaken by the city or a contractor under contract to the city, and to reimburse the city for all direct cost incurred in the process of remedial work including, but not limited to, staff time and attorney fees.
  - a. The applicant ceases land disturbing activities and/or filling and abandons the work site prior to completion of the grading plan.
  - b. The applicant fails to conform to any city approved grading plan and/or the stormwater management plan.
  - c. The best management practices implemented under the SWPPP in sole discretion of the city fail.
  - d. The applicant fails to reimburse the city for any corrective action taken.
- (3) *Notification by the city.* The city shall notify the applicant when the city is going to act on the financial securities part of this chapter. The initial contact will be to the party or parties listed on the application and/or the stormwater pollution control plan as contacts. Except during an emergency action under this section, 48 hours after notification by the city or 72 hours after the failure of erosion control measures, whichever is less, the city, at its discretion, may begin corrective work. Such notification should be in writing, but if it is verbal, a written notification should follow as quickly as practical. If, after making a good faith effort to notify the responsible party, the city has been unable to establish contact, the city may proceed with corrective work. There are also conditions when time is of the essence in controlling erosion. During such a condition, the city may take immediate action and then notify the applicant as soon as possible.
- (4) *Emergency action.* If circumstances exist such that noncompliance with this chapter poses an immediate danger to the public health, safety, and welfare, as determined by the city, the city may take emergency preventative action. The city shall also take every reasonable action possible to contact and direct the applicant to take any necessary action. Any cost to the city may be recovered from the applicant's financial security.

(Ord. No. 2008-11, § 9, 9-23-2008)

## Chapter 46 - UTILITIES

## ARTICLE I. - IN GENERAL

Secs. 46-1—46-18. - Reserved.

## ARTICLE II. - WATER SYSTEM

## DIVISION 1. - GENERALLY

Sec. 46-19. - Tampering with cut-off valves.

It shall be unlawful for any person to turn any curb cock on or off except a duly authorized employee of the public works department.

(Ord. No. 55, § 17, 5-11-1956)

Sec. 46-20. - Reserves right to discontinue service.

The city hereby reserves the right to discontinue service to any or all customers of the municipal water system without notice when the same is necessary in the repair of said system, or any part thereof, or for the nonpayment of rent, it shall not be resumed until the payment of the water rent past due together with interest at six percent thereon, and a fee in the amount established by ordinance for turning water on.

(Ord. No. 55, § 18, 5-11-1956)

Sec. 46-21. - Restrictions on outside use; notice; violations.

- (a) Whenever the council shall determine shall determine that a shortage of water supply threatens the city, it may, by resolution, limit the times and hours during which water may be used from the municipal water supply system for lawn and garden sprinkling, irrigation, car washing, air conditioning or other uses specified therein. Notice of such resolution shall be given in such manner as the council may determine including, but not limited to, newspaper articles, radio and television broadcasts, stating the date on which the limitation is effective. Any water customer who shall cause or permit water to be used in violation of the provisions of the resolution shall be given a warning by the city administrator as to such violation, and thereafter successive violations shall be a petty misdemeanor for each day of such violation. Continued violation after such warning shall be cause for discontinuance of water service.

- (b) Violations of such restrictions shall be a petty misdemeanor.

(Ord. No. 98-7, §§ 1, 2, 7-28-1998)

Secs. 46-22—46-45. - Reserved.

## DIVISION 2. - SERVICE APPLICATIONS AND CONNECTIONS

Sec. 46-46. - Application for service.

Any person desiring a connection with the municipal water system shall apply in writing to the clerk of the city council on a form furnished by him for that purpose for a permit to make such connection. Such application shall contain an exact description of the property to be served, the estimated minimum amount of water to be used per month and the uses to which the water is to be put, both general and special.

(Ord. No. 55, § 1, 5-11-1956)

Sec. 46-47. - Permits, fees and connection charges.

The clerk shall, upon receiving an application as provided in section 46-46, if the same is in proper form, issue to the applicant a permit to connect with the municipal water system. The applicant shall pay in addition to any applicable connection charge, a fee to cover the cost of issuing the permit and the meter shall be paid in the amount established by ordinance.

(Ord. No. 55, § 2, 5-11-1956; Ord. No. 1968-1, § 1, 12-12-1967; Ord. No. 1969-4, § 1, ?-?-1969; Ord. No. 1970-2, § 1, 5-8-1970; Ord. No. 79-10, §§ 2, 3, 12-11-1979; Ord. No. 84-2, §§ 1, 3, 1-24-1984; Ord. No. 1987-7, §§ 10, 11 ?-?-1987; Ord. No. 1997-10, § 1, 11-25-1997; Ord. No. 98-3A, § 2, 1-13-1998; Ord. No. 1999-5, § 1, 2-23-1999; Ord. No. 2001-05, § 1, 2-19-2001; Ord. No. 2003-3, § 1, 3-30-2003; Ord. No. 2004-01, § 1, 4-1-2004)

Sec. 46-48. - Deposits and guarantees.

Hereafter, the council reserves the right by motion, where the applicant is not the owner of the premises to be served, to require each and every residence customer to deposit with the clerk at the time the water is turned on at any property belonging to him the sum established by ordinance and every customer with other than residence property shall deposit an amount equal to the estimated cost of three months' service as determined by the city council to hold the municipality free from loss occasioned by his failure to pay bills legally rendered against him for water used upon his premises.

(Ord. No. 55, § 14, 5-11-1956)

Sec. 46-49. - All water to be metered.

All water furnished by the municipal water plant shall be measured by meters furnished by the city for that purpose, unless the council shall on the recommendation of the city council otherwise determine.

(Ord. No. 55, § 3, 5-11-1956)

Sec. 46-50. - All premises to have separate connections.

Unless special permission is granted by the city council, all premises shall have a separate and distinct service connection; and where permission is granted for branch service pipes, each branch pipe must have its own curb cock and separate meter.

(Ord. No. 55, § 4, 5-11-1956)

Sec. 46-51. - Service pipe to be installed by licensed plumbers only.



No one except regular employees of the public works department of the city or plumbers holding licenses issued by the city or the state shall do any plumbing work on any pipes connected or to be connected to the municipal water system.

(Ord. No. 55, § 5, 5-11-1956)

Sec. 46-52. - Inspection; trenching and backfilling.

No service line or pipe connected therewith shall be covered until after it has been inspected by someone properly designated for that purpose by the city. When any portion of pipe is laid ready to cover, the plumber shall notify the city, and the inspector shall determine whether or not all material is of good quality and properly connected and laid in place in accordance with state standards. When such line is approved, it may be covered and the ditch filled. No excavations made by plumbers in public ground shall be kept open longer than is absolutely necessary to make the connections required, and while open shall be protected by suitable barriers, guards and lights as provided in the ordinances of this city. Backfilling shall be thoroughly compacted and left in a condition satisfactory to the street commissioner. Where excavations are unsatisfactorily filled, the city council shall place them in a satisfactory condition, and the cost thereof shall be charged to the plumber; and his license will be suspended and he shall not have any more permits issued to him unless said sum is paid within ten days after notice thereof.

(Ord. No. 55, § 6, 5-11-1956)

Sec. 46-53. - Character of pipe for service connections.

All service pipes shall be of heavy copper type "K" underground service pipe, and shall be laid as low as the street mains, or not less than five feet below the established street grade in any case.

(Ord. No. 55, § 7, 5-11-1956)

Sec. 46-54. - Curb stop and waste cocks.

There shall be a curb stop and waste cock in every service line attached to the mains, the same to be placed as near as possible to the curb if on a street, or within one foot of the alley line if the main is located in the alley. Curb cocks shall be supplied with strong and suitable "T" handles, and shall be enclosed in a substantial iron case covered with a tightfitting iron lid, with the letter "W" cast upon it. There shall be one or more stop and waste cocks attached to every supply pipe, at some point between the curb cock and the meter so that the water can be shut off and the meter and the house plumbing entirely drained.

(Ord. No. 55, § 8, 5-11-1956)

Sec. 46-55. - Cost of installation borne by consumer.

The cost of original installation of all plumbing between the main and any service devices maintained by the consumer, and all extensions hereafter made to such service pipes, as well as all repairs to the same, shall be borne entirely by the consumer. Such service pipes and devices shall at all reasonable times be subject to inspection by duly authorized officials. Repairs shall be made promptly or city will discontinue service.

(Ord. No. 55, § 10, 5-11-1956)

Secs. 46-56—46-83. - Reserved.

## DIVISION 3. - USER RATES; BILLING AND COLLECTION

## Sec. 46-84. - Water account in name of owner; late fee.

- (a) Where possible all accounts carried upon the books of the public works department shall be with the owner in fee simple of the property served, or his authorized agent, and said owner shall at all times be liable for water used upon the premises, whether he is occupying the same or not. The water bill shall be sent quarterly to all customers and shall be due on or before the 19th of the following month. The rates to be charged for water service rendered shall be as established by ordinance.
- (b) A late charge in the amount established by the city to cover extra administrative costs shall be added if payment is not received by the city by the 20th day of the month in which payment is due.

(Ord. No. 55, § 13, 5-11-1956; Ord. No. 1970-2, § 2, 5-8-1970; Ord. No. 1975-1, § 1, 5-28-1975; Ord. No. 79-10, § 4, 12-11-1979; Ord. No. 83-3, § 2, 3-8-1983; Ord. No. 84-5, § 2, 5-22-1984; Ord. No. 2005-09, § 1, 8-23-2005; Ord. No 2000-10, § 2, 2-19-2001; Ord. No. 2003-10, § 2, 7-8-2003; Ord. No. 1987-7, § 12, ??-1987; Ord. No. 2008-01, § 1, 1-8-2008)

## Sec. 46-85. - Meter installation, maintenance and testing.

Every consumer shall provide a suitable place where a meter can be installed, and the municipality shall install and maintain the same. If at any time the consumer desires to have the meter tested for accuracy, the same shall be done by the city, and a fee in the amount established by ordinance charged to the customer if the meter registers 98 percent or more accurate. If the meter registers less than 98 percent accurate, it shall be replaced or repaired before installation on another service.

(Ord. No. 55, § 11, 5-11-1956)

## Sec. 46-86. - Reading meters.

For the purpose of reading meters, duly authorized employees of the public works department of the city may legally enter upon any premises at a reasonable hour.

(Ord. No. 55, § 12, 5-11-1956)

## Secs. 46-87—46-115. - Reserved.

## ARTICLE III. - SEWERS AND SEWAGE DISPOSAL

## DIVISION 1. - GENERALLY

## Sec. 46-116. - Definitions.

The following words, terms and phrases, when used in this article, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

*Approving authority* means the city council, or its duly authorized board, agent, or representative.

*Biochemical oxygen demand, carbonaceous (CBOD)* means the quantity of oxygen expressed in parts per million by weight, utilized in the biochemical oxidation of carbonaceous matter under standard laboratory conditions in five days at 20 degrees Celsius. The laboratory determinations shall be made in accordance with procedures set forth in standard methods.

*Building drain* means that part of the lowest horizontal piping of a drainage system that receives waste from inside the building and conveys it to the building sewer, beginning five feet (1.5 meters) outside the inner face of the building wall.

*Building sewer* means the extension from the building drain to the public sewer or other place of disposal. (Also called house connection.)

*City* means the area within the corporate boundaries of the city, as presently established or as amended by legal actions at a future time. The term "city" may also be used to refer to the city or any authorized person acting in its behalf.

*COD (chemical oxygen demand)* means the oxygen equivalent of that portion of the organic and inorganic matter in a sample of wastewater, expressed in parts per million by weight, that can be oxidized by a strong chemical oxidizing agent. The laboratory determinations shall be made in accordance with procedures set forth in standard methods.

*Collection system* means the system of sewers and appurtenances for the collection, transportation and pumping of domestic wastewater and industrial wastes.

*Combined sewer* means a sewer intended to receive both wastewater and stormwater or surface water. The city has no combined sewers.

*Commercial user* means any establishment listed in the Office of Management and Budget "Standard Industrial Classification Manual" (1972 edition) involved in a commercial enterprise, business or service which, based on a determination by the city, discharges primarily segregated domestic wastewater or wastewater from sanitary conveniences.

*Compatible pollutant* means biochemical oxygen demand, suspended solids, pH, and fecal coliform bacteria, plus additional pollutants identified in the city NPDES permit, if the city treatment works is capable of removing such pollutants, and in fact does remove such pollutants to a substantial degree. Examples of such additional pollutions may include: chemical oxygen demand, total organic carbon, phosphorus, phosphorus compounds, nitrogen, and/or nitrogen compounds.

*Connection* means each connection to the collection system.

*Construction cost* means the total cost incurred in the construction of sewerage works, consisting of but not limited to the sums spent for the following purposes:

- (1) Actual sums paid for construction of wastewater treatment facilities and for land acquisition.
- (2) Actual engineering fees paid for preliminary engineering studies, plans and specifications, services during construction, construction staking, operation and maintenance manuals and initial operator training.
- (3) Actual sums paid for soils investigations, wastewater sampling, and materials testing required for such construction.
- (4) Actual fees and wages paid for legal, administrative, and fiscal services required by the construction of wastewater treatment facilities.
- (5) Actual interest paid on the total amount financed by debt obligation for the construction of wastewater treatment facilities.

*Debt service charge* means the total charge levied on users for purposes of paying construction costs (principal and associated interest) of obligations incurred to finance acquisition and/or construction of sewerage works.

*Domestic wastewater* means waterborne wastes normally discharged into the sanitary conveniences of dwellings (including apartment houses and hotel), office buildings, factories and institutions, free of stormwater, surface water, and industrial wastes.

*Easement* means an acquired legal right for the specific use of land owned by others.

*Equivalent residential unit* means a unit of gallons per day per connection of normal strength domestic wastewater as established in the city's sewer service charge system, if necessary. Such assignment by the city is for the purpose of levying a charge to users that do not have a metered source of water.

*Floatable oil* means oil, fat, or grease in a physical state such that it will separate by gravity from wastewater by treatment in an approved pretreatment facility. Wastewater shall be considered free of floatable fat if it is properly pretreated and the wastewater does not interfere with the collection system.

*Garbage* means the animal and vegetable waste resulting from the handling, preparation, cooking and services of foods.

*Governmental user* means any federal, state, or local government user of the wastewater treatment facilities.

*Incompatible pollutant* means any pollutant that is not a compatible pollutant.

*Industrial user* means any nongovernmental user of the publicly owned treatment facilities identified in the 1972 Standard. Industrial Classification Manual (SICM), Office of Management and Budget as amended and supplemented under the following divisions:

- (1) Division A, Agriculture, Forestry, and Fishing;
- (2) Division B, Mining;
- (3) Division D, Manufacturing;
- (4) Division E, Transportation, Communication, Electric, Gas, and Sanitary Services;
- (5) Division 1, Services.

An industrial user is also defined as a user who discharges to the city sanitary sewer system any liquid wastes resulting from the processes employed in industry or manufacturing, or in the development of any natural resource.

*Industrial wastes*, as distinct from domestic or sanitary wastes, means the gaseous, liquid, and solid wastes resulting from industrial or manufacturing processes, trade or business or from the development, recovery and processing of natural resources.

*Infiltration* means the water entering the sanitary sewer system and service connections from the ground, through such means as, but not limited to, defective pipes, pipe joints, connections, or manhole walls. Infiltration does not include, and is distinguished from, inflow.

*Infiltration/inflow* means the total quantity of water from both infiltration and inflow without distinguishing the source.

*Inflow* means the water discharged into the sanitary sewer system from such sources as, but not limited to, roof leaders, cellar, yard, and area drains, foundation drains, cooling water discharges, drains from springs and swampy areas, manhole covers, cross connections to storm sewers, catchbasins, stormwaters, surface runoff, street wash waters, or drainage. Inflow does not include, and is distinguished from infiltration.

*Institutional user* means any establishment listed in the "SICM" involved in a social, charitable, religious, or educational function which, based on a determination by the city, discharges primarily segregated domestic wastewater or wastewater from sanitary conveniences.

*Major contributing industry* means an industrial user of the city treatment works that:

- (1) Has an equivalent wastewater flow of 50,000 gallons or more per average workday;
- (2) Has a wastewater flow greater than five percent of the flow carried by the city system receiving the wastewater;
- (3) Has in its wastewater a toxic pollutant in toxic amounts as defined in standards issued under section 307(a) of PL-92-500; or
- (4) Is found by the permit issuance authority, in connection with the issuance of an NPDES permit to the city treatment works receiving the wastewater, to have significant impact, either singly or in combination with other contributing industries, on the city treatment works or upon the quality of effluent from the city treatment works.

*Natural outlet* means any storm sewer or surface water that overflows into a watercourse, pond, ditch, lake, or other body of surface water or groundwater.

*Normal strength domestic wastewater* means wastewater for the city in which the average concentration of suspended materials is established at not greater than 430 parts per million by weight, 370 parts per million by weight CBOD. The COD of normal domestic wastewater shall not exceed 750 parts per million. Such wastewater does not include infiltration and/or inflow, and it is composed of domestic wastewater.

*NPDES permit* means the national pollutant discharge elimination system permit held by the city. This permit, which establishes limits on quality and quantity of discharges from the city treatment works, was issued by the state and federal governments in accordance with the provisions of the Federal Water Pollution Control Act, as amended, (33 USC 1251 et seq.; the "act," sections 402 and 405).

*Operation and maintenance cost* means annual expenditures made by the city in the operation and maintenance of its sewerage works, consisting of but not limited to the sums spent for each of the following purposes:

- (1) Wages and salaries of all operating, maintenance, administrative, and supervisory personnel, together with all premiums paid on such wages and salaries (state workmen's compensation coverage, for example);
- (2) Actual sums paid for electricity for light and power used for wastewater collection and treatment facilities;
- (3) Actual sums paid for chemicals, fuel and other operating supplies;
- (4) Actual sums paid for repairs to and maintenance of wastewater collection and treatment facilities and the equipment associated therewith;
- (5) Actual sums paid as premiums for hazard insurance carried on sewerage works;
- (6) Actual sums paid as premiums for insurance providing coverage against liability imposed by law for the injury to persons and/or property (including death) of any person resulting from the use and maintenance of said sewerage works;
- (7) Actual sums paid for replacement of equipment within the useful life of the wastewater treatment facilities, for example the cost to replace an electric motor or pump that fails, or a broken part in a pump.

*Parts per million* means a weight-to-weight ratio; the parts per million value multiplied by the factor 8.345 shall be equivalent to pounds per million gallons of water. Parts per million and milligrams per liter shall be synonymous terms.

*pH* means the logarithm of the reciprocal of the hydrogen ion concentration. The concentration is the weight of hydrogen ions, in grams per liter of solution. Neutral water, for example, has a pH value of 7 and a hydrogen ion concentration of 0.0000001 grams/liter, or  $10^{-7}$  grams per liter.

*Pretreatment* means the reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in wastewater to a less harmful state prior to or in lieu of discharging or otherwise introducing such pollutants into a sanitary sewer.

*Properly shredded garbage* means the wastes from the preparation, cooling, and dispensing of food that have been shredded to such a degree that all particles will be carried freely under the flow conditions normally prevailing in public sewers, with no particle greater than one-half inch (1.27 centimeters) in any dimension.

*Public sewer* means a common sewer controlled by a governmental agency or public utility.

*Rate schedule* means a published schedule of sewer service charges.

*Replacement* means expenditures for obtaining and installing equipment, accessories, or appurtenances that are necessary during the design or useful life of, whichever is longer of the sewerage works to maintain the capacity and performance for which the facilities were designed and constructed. The term "operation and maintenance cost" includes replacement costs.

*Residential user* means a user of the treatment facilities whose premises or building is used primarily as a residence for one or more persons, including dwelling units such as detached, semidetached, and row houses, mobile homes, garden and standard apartments or permanent multifamily dwellings except as follows:

- (1) Transit lodging, considered commercial in nature, is not included.
- (2) Mobile home parks and/or apartment complexes served with a single metering device for more than one dwelling will be considered commercial in nature.

*Sanitary sewer* means a sewer that carries liquid and water-carried wastes from residences, commercial buildings, industrial plants, and institutions together with minor quantities of groundwater, stormwater, and surface water (infiltration/inflow) that are not admitted intentionally.

*Sewage* means the spent water of a community. The preferred term is "wastewater," sometimes referred to as "sanitary waste."

*Sewer* means a pipe or conduit that carries wastewater or drainage water.

*Sewer service charge* means the total charge levied on users for sewer service. The sewer service charge is the sum of user charge and debt service charge.

*Sewerage works* means all facilities for collecting, pumping, treating and disposing of wastewater and industrial wastes.

*Slug* means any discharge of water or wastewater which in concentration of any given constituent or in quantity of flow exceeds for any period of duration longer than 15 minutes more than five times the average 24-hour concentration or flows during normal operation and shall adversely affect the collection system and/or performance of the wastewater treatment works.

*Standard methods* means the examination and analytical procedures set forth in the latest Edition at the time of the analysis of "Standard Methods for the Examination of Water and Wastewater" as prepared, approved and published jointly by the American Public Health Association, the Water Pollution Control Federation, and the American Water Works Association. Such standard methods shall also conform to Federal Register Reprint 40 CFR 136, "Guidelines Establishing Test Procedures for Analysis of Pollutants (October 16, 1973).

*Storm drain (sometimes termed "storm sewer")* means a drain or sewer for conveying water, groundwater, subsurface water, or unpolluted water from any source.

*Stormwater runoff* means that portion of the rainfall that is drained into the storm sewers or storm drains.

*Sump pump* means a pump for disposing of storm drainage.

*Superintendent* means the superintendent of wastewater facilities of the city, or his authorized deputy, agent, or representative.

*Suspended solids, total suspended solids or TSS* means total suspended matter that either floats on the surface of, or is in suspension in, water, wastewater, or other liquids, and that is removable by laboratory filtering as prescribed in "Standard Methods for the Examination of Water and Wastewater" and referred to as nonfilterable residue.

*Unit.* A unit of wastewater is 1,000 gallons.

*Unpolluted water* means water of a quality equal to or better than the effluent criteria in effect or water that would not cause violation of receiving water quality standards and would not be benefited by discharge to the sanitary sewers and wastewater treatment facilities provided.

*User* means any person who discharges, causes, or permits the discharge of wastewater into the city's sanitary sewer system.

*User charge* means a charge levied on users to recover the cost of operation, maintenance, and replacement of sewerage works, pursuant to section 204(b) of the Federal Water Pollution Control Act, as amended (33 USC 1251 et seq.).

*User class* means the division of the users by wastewater characteristic or discharge similarities (example: residential, commercial, industrial, institutional, and governmental).

*Wastewater* means the spent water of a community. From the standpoint of source, it may be a combination of the liquid and water-carried wastes from residences, commercial buildings, industrial plants, and institutions, together with any groundwater, surface water, and stormwater that may be present.

*Wastewater facilities* means the structures, equipment, and processes required to collect, carry away, and treat domestic and industrial wastes and dispose of the effluent.

*Wastewater treatment facilities* means an arrangement of devices and structures for treating wastewater, industrial wastes, and sludge. Sometimes used as synonymous with the terms "waste treatment plant," "wastewater treatment plant" or "water pollution control plant."

*Watercourse* means a natural or artificial channel for the passage of water either continuously or intermittently.

(Ord. No. 94-27, subd. 1, 9-13-1994)

- (a) Any person found to be violating any provision of this article shall be served by the city with written notice stating of the violation and providing a reasonable time limit for the satisfactory correction thereof. The offender shall, w period of time stated in such notice, permanently cease all violations.
- (b) Any person who shall continue any violation beyond the time limit provided for in subsection (a) of this section, shall be guilty of a misdemeanor.
- (c) Any person violating any of the provisions of this article shall become liable to the city for any expense, loss, or damage occasioned the city by reason of such violation.

(Ord. No. 94-27, subd. 8, 9-13-1994)

Sec. 46-118. - Powers and authority of inspectors.

- (a) Duly authorized employees of the city bearing proper credentials and identification shall be permitted to enter all properties for the purposes of inspection, observation, measurement, sampling, and testing pertinent to discharge to any public sewer or natural outlet in accordance with the provisions of this article. Sampling pertaining to industry will reflect the number of days an industry is not operating as well as the days in operation and discharging waste to a public sewer.
- (b) The approving authority or other duly authorized employees are authorized to obtain information concerning industrial processes that have a direct bearing on the kind and source of discharge to the wastewater collection system. The industry may withhold information considered confidential. The industry must establish that the revelation to the public of the information in question might result in an advantage to competitors.
- (c) While performing the necessary work on private properties referred to in subsection (a) of this section, duly authorized employees of the city shall observe safety rules applicable to the premises established by the company, and the company shall be held harmless for injury or death to the city employees, and the city shall indemnify the company against loss or damage to its property by city employees and against liability claims and demands for personal injury, or property damage asserted against the company and growing out of the gauging and sampling operation, except as such may be caused by negligence or failure of the company to maintain safe conditions as required in section 46-192(h).
- (d) Duly authorized employees of the city bearing proper credentials and identification shall be permitted to enter all private properties through which the city holds a duly negotiated easement for the purposes of, but not limited to, inspection, observation, measurement, sampling, repair, and maintenance of any portion of the wastewater facilities lying within said easement. All entry and subsequent work, if any, on said easement shall be done in full accordance with the terms of the duly negotiated easement pertaining to the private property involved.

(Ord. No. 94-27, subd. 7, 9-13-1994)

Sec. 46-119. - Use of public sewers required.

- (a) It shall be unlawful for any person to place, deposit, or permit to be deposited in any unsanitary manner on public or private property within the city, or in any area under jurisdiction, any human or animal excrement, garbage or objectionable waste.
- (b) It shall be unlawful to discharge to any natural outlet within the city, or in any area under city jurisdiction, any wastewater or other polluted waters, except where suitable treatment has been provided in accordance with subsequent provisions of this article.
- (c) Except as hereinafter provided, it shall be unlawful to construct or maintain any privy, privy vault, septic tank,



cesspool, or other facility intended or used for the disposal of wastewater.

- (d) The owners of all houses, buildings, or properties used for human occupancy, employment, recreation, or other purposes, situated within the city and abutting on any street, alley, or right-of-way in which there is now located or may in the future be located a public sanitary sewer of the city, is hereby required at the owner's expense to install a suitable service connection to the public sewer in accordance with the provisions of this article, within 90 days after date of official notice to do so.
- (e) In the event an owner shall fail to connect to a public sewer in compliance with a notice given under subsection (d) of this section, the city may undertake to have said connection made and shall assess the cost thereof against the benefited property. Such assessment shall be a lien against said property. Such assessment, when levied, shall bear interest at the rate determined by the city council and shall be certified to the auditor of the county and shall be collected and remitted to the city in the same manner as assessments for local improvements. The rights of the city shall be in addition to any remedial or enforcement provisions of this article.

(Ord. No. 94-27, subd. 2, 9-13-1994)

**State Law reference**— Authority to require connections, Minn. Stats. § 312.221, subd. 31.

Sec. 46-120. - Private wastewater disposal.

- (a) Where a public sanitary sewer is not available under the provisions of section 46-119(d), the building sewer shall be connected to a private wastewater disposal system complying with chapter 18, article III.
- (b) No statement contained in this section shall be construed to interfere with any additional requirements that may be imposed by the city or the state.

(Ord. No. 94-27, subd. 3, 9-13-1994)

Secs. 46-121—46-138. - Reserved.

## DIVISION 2. - BUILDING SEWERS, CONNECTIONS AND CONNECTION CHARGES

Sec. 46-139. - Building sewers and connections.

- (a) No unauthorized person shall uncover, make any connections with or opening into, use, alter, or disturb any public sewer or appurtenance thereof without first obtaining a written permit from the approving authority.
- (b) All costs and expenses incidental to the installation and connection of the building sewer shall be borne by the owner. The owner shall indemnify the city from any loss or damage that may directly or indirectly be occasioned by the installation of the building sewer.
- (c) A separate and independent building sewer shall be provided for every building; unless written permission for an alternative is obtained from the city. The city does not and will not assume any obligation or responsibility for damage caused by or resulting from any such single connection aforementioned.
- (d) Old building sewers may be used in connection with new buildings only when they are found, on examination and test by the approving authority, to meet all requirements of this article.
- (e) The size, slope, alignment, materials of construction of a building sewer, and the methods to be used in excavating, placing of the pipe, jointing, testing, and backfilling the trench, shall all conform to the requirements of the building and plumbing code or other applicable rules and regulations of the city.

- (f) Whenever possible, the building sewer shall be brought to the building at an elevation below the basement floor. buildings in which any building drain is too low to permit gravity flow to the public sewer, sanitary wastewater can such building drain shall be lifted by an approved means and discharged to the building sewer.
- (g) No person shall make connection of roof downspouts, foundation drains, areaway drains, sump pumps, or other sources of surface runoff or groundwater to a building sewer or building drain which in turn is connected directly or indirectly to a public sanitary sewer (unless such connection is approved by the approving authority).
- (h) The connection of the building sewer into the public sewer shall conform to the requirements of the building and plumbing code or other applicable rules and regulations of the city. All such connections shall be made gastight and watertight and verified by proper testing. Any deviation from the prescribed procedures and materials must be approved by the approving authority before installation.
- (i) The applicant for the building sewer permit shall notify the approving authority when the building sewer is ready for inspection and connection to the public sewer. The connection and testing shall be made under the supervision of the approving authority.
- (j) All excavations for building sewer installation shall be adequately guarded with barricades and lights so as to protect the public from hazard. Streets, sidewalks, parkways, and other public property disturbed in the course of the work shall be restored in a manner satisfactory to the approving authority.

(Ord. No. 94-27, subd. 4, 9-13-1994)

#### Sec. 46-140. - Sewer connection permit and charges.

No connection to the public sewer system of the city shall be made by any person until a sewer connection permit has been issued by the city for said connection and the charge established by ordinance are paid.

(Ord. No. 1980-1, § 2, 3-11-1980; Ord. No. 1987-7, § 2, 8-11-1987)

#### Sec. 46-141. - Connection charge revenues.

All revenues received from the collection of said connection charge shall be deposited to the sewer and water fund.

(Ord. No. 1980-1, § 8, 3-11-1980)

#### Secs. 46-142—46-165. - Reserved.

### DIVISION 3. - SEWAGE AVAILABILITY CHARGE

#### Sec. 46-166. - Recitals.

The city has determined to pay part of the cost for the improvement, modernization and expansion made of its wastewater treatment facilities, to establish a connection charge, hereinafter designated Rogers Sewage Availability Charge (RSAC) for all buildings to be constructed or connected to the city's sewage disposal system and facilities on or after January 25, 1984. The RSAC provided in this division shall be paid in addition to any other charges or fees provided by the ordinances of the city.

(Ord. No. 1976-1, § 1, 6-22-1976; Ord. No. 92-8, § 1, 7-29-1992; Ord. No. 97-7, § 1, 4-8-1997)

## Sec. 46-167. - Establishment of charges.

- (a) The Rogers Sewage Availability Charge is imposed on each building or structure in the city and each connection to the city sewage disposal system. The Rogers Sewage Availability Charge shall be payable upon the issuance of a building permit or a sewer connection permit, as the case may be, but no charge shall be due upon the issuance of a connection permit if a charge was paid upon issuance of a building permit.
- (b) The Rogers Sewage Availability Charge for each building or structure shall be equal to the number of units of sewage volume that will discharge and shall be as established by ordinance.
- (c) A unit of sewage volume shall be 100,000 gallons per year and shall be assigned as follows:
- (1) Standard Rogers Sewage Availability Charge (RSAC) units for various residential dwellings.
    - a. Single-family houses, townhouses and duplex units shall each comprise one unit;
    - b. Condominiums and apartments shall each comprise 80 percent of a unit;
    - c. Mobile homes shall each comprise 80 percent of a unit;
    - d. Public housing units subsidized under any federal program for low and moderate income housing shall be counted as 75 percent of the unit equivalent for that type of housing.
  - (2) Standard Rogers Sewage Availability Charge (RSAC) units for various commercial, public, and institutional facilities.

Type of Facility	Parameter	RSAC Units
Arenas	110 seats	1
Automobile service	2 service days	1
Ballroom facility without liquor service	825 sq. ft.	1
Ballroom facility with liquor service	590 sq. ft.	1
Banquet room, food catered with dishwashing	2,060 sq. ft.	1
Banquet room, food catering with dishwashing	1,180 sq. ft.	1
Banquet room, food preparation and dishwashing	825 sq. ft.	1
Banquet room, food preparation, dishwashing, with liquor	590 sq. ft.	1
Barbershop		1
Boardinghouse	5 beds	1

Bowling alley	3 alleys	1
Car wash (self-service)	1 stall	3
Car wash (service station)		6
Car wash (requires specification on equipment flow rate and cycle time)		
Churches	275 seats	1
Cocktail lounge	23 seats	1
Fast service restaurant, minimal dishwashing (Example: pizza parlor, McDonald's, etc.)	22 seats	1
General office building	2,400 sq. ft. floor space	1
Hospitals	1 bed	1
Laundromats (requires water volume for cycle time, 8 cycles per day)		
Motels and hotels (assume 2 persons/room)	2 rooms	1
Nursing home	3 beds	1
Restaurant (drive-in)	9 parking spaces	1
Restaurant (18-24 hours service)	6 seats	1
Restaurant (12-18 hours service)	8 seats	1
Restaurant (< 12 hours service)	13 seats	1
Restaurant (with cocktail lounge)	10 seats	1
Retail stores	3,000 sq. ft. floor space	1

Roominghouses	7 beds	1
Schools (elementary)	18 students	1
Schools (secondary)	14 students	1
Service station (gas pumping only)		1
Service station (with service center)		2
Service station (with service center and car wash)		8
Swimming pools	900 sq. ft. pool area	1
Theater	64 seats	1
Theater (drive-in)	55 parking spaces	1
Warehouses	14 employees	1

- a. The Rogers Sewage Availability Charge (RSAC) unit for a facility not included in the above list will be determined by the public works superintendent. A request for Rogers Sewage Availability Charge unit determination should be made prior to the issuance of the building permit. One unit shall be assigned for each 100,000 gallons of flow that the council estimates will be discharged, and commercial and industrial building units shall be assigned a minimum of one unit.
- b. As part of the city's comprehensive plan, the city has adopted a Master Sewer and Water Plan and a Modified Facilities Plan of 1990, amended 1994 (collectively sometimes referred to herein as the "Comprehensive Sewer Plan"). The city has implemented the comprehensive sewer plan by constructing to date wastewater treatment facilities with a design capacity of 1,602,000 gallons per day. The comprehensive sewer plan assigns the capacity based on formulae that assign capacity based on zoning and the land use elements of the comprehensive plan of the city, to wit: 1,000 gallons per acre per day to land guided retail business or commercial business and 600 gallons per acre per day to land guided mid-density residential, multifamily residential, or limited industrial. In no event shall a building in the city be assigned under the standard unit schedules above a greater number of Rogers Sewage Availability Charge (RSAC) units than is determined by multiplying the acreage of the parcel or tract of land that the building connecting to the city's sewage system is

located within, times the daily gallonage under the formula above by 365 and dividing the product by 100,000 (and rounded to the nearest half). If a parcel or tract has two or more buildings, they shall collectively be deemed one building.

(Ord. No. 1976-1, § 2, 6-22-1976; Ord. No. 84-1, § 1, 1-24-1984; Ord. No. 98-4, § 1, 4-14-1998; Ord. No. 92-8, § 2, 7-29-1992; Ord. No. 97-7, § 2, 4-8-1997; Ord. No. 1999-9, § 1, 2 3-9-1998; Ord. No. 2001-04, § 1, 7-12-2001; Ord. No. 2003-04, § 1, 3-11-2003; Ord. No. 2004-02, § 1, 2-24-2004)

#### Sec. 46-168. - Alterations or additions.

All building permits issued by the city for alterations and/or additions to existing buildings or structures will be subject to a Rogers Sewage Availability Charge (RSAC) unit charge if the addition or alteration will increase wastewater discharge. The RSAC unit will be determined in the same manner used to determine the RSAC unit for new buildings.

(Ord. No. 1976-1, § 3, 6-22-1976; Ord. No. 97-7, § 3, 4-8-1997)

#### Sec. 46-169. - Administration.

The city clerk shall prepare or revise building permit or sewage connection permit application forms to provide information necessary for the computation of the number of units assignable to the building or structure in question and shall collect the applicable charge for issuance of a permit.

(Ord. No. 1976-1, § 4, 6-22-1976)

#### Secs. 46-170—46-191. - Reserved.

### DIVISION 4. - DISCHARGE RESTRICTIONS

#### Sec. 46-192. - Use of the public sewers.

- (a) No person shall discharge or cause to be discharged any unpolluted waters such as stormwater, groundwater, roof runoff, subsurface drainage, or cooling water to any sewer. Stormwater runoff from limited areas, which may be polluted at times, may be discharged to the sanitary sewer by permission of the approving authority.
- (b) Stormwater other than that exempted under subsection (a) of this section, and all other unpolluted drainage shall be discharged to such sewers as are specifically designated storm sewers or to a natural outlet approved by the approving authority and other regulatory agencies. Unpolluted industrial cooling water or process waters may be discharged, on approval of the approving authority and in accordance with the provisions of state and federal regulations, to a storm sewer, or natural outlet.
- (c) No person shall discharge or cause to be discharged any of the following described waters or wastes to any public sewers:
  - (1) Any gasoline, benzene, naphtha, fuel oil, or other flammable or explosive liquid, solid, or gas.
  - (2) Any waters containing toxic or poisonous solids, liquids, or gases in sufficient quantity, either singly or by interaction with other wastes, to injure or interfere with any waste treatment process, constitute a hazard to humans or animals, create a public nuisance, result in a violation of state or federal water quality standards, or create any hazard in the wastewater treatment plant or the receiving waters. Toxics are as defined in section 307(a) of the Clean Water Act.

- (3) Any waters or wastes having a pH lower than 5.5, or higher than 9.5, or having any other corrosive property causing damage or hazard to structures, equipment, and personnel of the wastewater facilities. Exceptions (by the approving authority) for short duration flows where it has been, or can be shown that high or low pH cause any significant wastewater facilities problems.
  - (4) Solid or viscous substances in quantities or of such size capable of causing obstruction to the flow in sewers, or other interference with the proper operation of the wastewater facilities such as, but not limited to, ashes, bones, cinders, sand, mud, straw, shavings, metal, glass, rags, feathers, tar, plastics, wood, unground garbage, whole blood, paunch manure, hair and fleshings, entrails, paper dishes, cups, milk containers, etc., either whole or after passage through garbage grinders.
  - (5) Any wastewaters or matter that would directly or indirectly result in a violation of the city's NPDES permit.
- (d) The following described substances, materials, waters, or waste shall be limited in discharges to municipal systems to concentrations or quantities which will not violate design criteria or harm either the sewers, wastewater treatment process or equipment, will not have an adverse effect on the receiving stream, or will not otherwise endanger lives, limbs, public property, or constitute a nuisance. The approving authority may set limitations lower than the limitations established in the regulations contained in this section if in its opinion such more severe limitations are necessary to meet the objectives in subsection (c) of this section. In forming the opinion as to the acceptability, the approving authority will give consideration to such factors as the quantity of subject waste in relation to flows and velocities in the sewers, materials of construction of the sewers, the wastewater treatment process employed, capacity of the wastewater treatment plant, degree of treatability of the waste in the wastewater treatment plant, the city's NPDES permit, and other pertinent factors. The limitations or restrictions on materials or characteristics of waste or wastewater discharged to the sanitary sewer that shall not be violated without approval of the approving authority are as follows:
- (1) Wastewater having a temperature higher than 150 degrees Fahrenheit (65 degrees Celsius);
  - (2) Wastewater containing more than 25 milligrams per liter of petroleum oil, nonbiodegradable cutting oils, or product of mineral oil origin;
  - (3) Wastewater from industrial plants containing floatable oil, fat, or grease, in excess of concentrations permitted by the approving authority;
  - (4) Any garbage that has not been properly shredded. Garbage grinders may be connected to sanitary sewers from homes, hotels, institutions, restaurants, hospitals, catering establishments, or similar places where garbage originates from the preparation of food in kitchens for the purpose of consumption on the premises, or consumption elsewhere when served by caterers;
  - (5) Any waters or wastes containing iron, chromium, copper, zinc, and similar objectionable or toxic substances to such a degree that any such material received in the composite wastewater at the wastewater treatment works exceeds the limits established by the approving authority for such materials;
  - (6) Any waters or wastes containing odor-producing substances exceeding limits that may be established by the approving authority;
  - (7) Any radioactive materials of such half-life or concentration as may exceed limits established by the approving authority, or applicable state and federal regulations;
  - (8) Quantities of flow, concentrations, or both which constitute a "slug" as defined herein;
  - (9) Any waters or wastes which, by interaction with other waters or wastes in the public sewer system, release obnoxious gases, form suspended solids which interfere with the collection system, or create a

condition deleterious to structures and treatment processes.

- (e) If any waters or wastes are discharged or are proposed to be discharged to the public sewers, which waters contain the substances or possess the characteristics enumerated in subsection (d) of this section, and which in the judgment of the approving authority may have a deleterious effect upon the wastewater facilities, processes, equipment, or receiving waters, or which otherwise create a hazard to life or constitute a public nuisance, the approving authority may:
- (1) Reject the wastes;
  - (2) Require pretreatment to an acceptable condition for discharge to the public sewer, pursuant to section 307(b) of the Clean Water Act as amended 33 USC 1251 et seq.;
  - (3) Require control over the quantities and rates of discharge; and/or
  - (4) Require payment to cover added cost of handling and treating the wastes not covered by existing taxes or service charges.

If the approving authority permits the pretreatment or equalization of waste flows, the design and installation of the plants and equipment shall be subject to the review and approval of the approving authority and costs shall be borne at the user's expense.

- (f) Grease, oil, and sand interceptors shall be provided when, in the opinion of the approving authority, they are necessary for the proper handling of liquid wastes containing floatable grease in excessive amounts, as specified in subsection (d)(3) of this section, or any flammable wastes, sand, or other harmful ingredients; except that such interceptors shall not be required for private living quarters or dwelling units. All interceptors shall be of a type and capacity approved by the approving authority, and shall be located as to be readily and easily accessible for cleaning and inspection. In the maintaining of these interceptors, the owner shall be responsible for the proper removal and disposal by appropriate means of the captured material and shall maintain records of the dates, and means of disposal that are subject to review by the approving authority. Any removal and hauling of the collected materials not performed by owner's personnel must be performed by currently licensed waste disposal firms.
- (g) Where pretreatment or flow-equalizing facilities are provided or required for any waters or wastes, they shall be maintained continuously in satisfactory and effective operation by the owner at his expense.
- (h) When required by the approving authority, the owner of any property serviced by a building sewer carrying industrial or domestic wastewater shall install a suitable structure together with such necessary meters and other appurtenances in the building sewer to facilitate observation, sampling, and measurement of the wastes. Such structure, when required, shall be accessible and safely located and shall be constructed in accordance with plans approved by the approving authority. The structure shall be installed by the owner at his expense and shall be maintained by him so as to be safe and accessible at all times.
- (i) An industrial user may, at the discretion of the city, be required to provide laboratory measurements, tests, or analyses of waters or wastes to illustrate compliance with this article and any special condition for discharge established by the city or regulatory agencies having jurisdiction over the discharge. The number, type, and frequency of sampling and laboratory analyses to be performed by the owner shall be as stipulated by the city. The industry must supply a complete analysis of the constituents of the wastewater discharge to assure that compliance with federal, state, and local standards are being met. The owner shall report the results of measurements and laboratory analyses to the city at such times and in such manner as prescribed by the city. The owner shall bear the expense of all measurements, analyses, and reporting required by the city. At such times as deemed necessary, the city reserves the right to take measurements and samples for analysis by an independent laboratory.



- (j) All measurements, tests and analyses of the characteristics of waters and wastes to which reference is made in this section shall be determined in accordance with the latest edition of "Standard Methods for the Examination of Water and Wastewater," published by the American Public Health Association. Sampling methods, location, times, durations and frequencies are to be determined on an individual basis subject to approval by the approving authority.
- (k) New connections to the sanitary sewer system shall be prohibited unless sufficient capacity is available in all downstream facilities, including, but not limited to, capacity for flow, CBOD, and suspended solids.
- (l) No person, unless authorized shall uncover, make any connection with or opening into, use, alter, or disturb any sanitary or storm sewer within the city or any part of the city wastewater facilities.
- (m) No sanitary or storm sewers shall be constructed in the city (except house or building service sewers) except by the city or by others in accordance with plans and specifications approved by a professional engineer. No such sewers shall be constructed or considered to be part of the public sewer system unless accepted by the city.
- (n) The size, slope, alignment, material of construction, methods to be used in excavation, placing of pipe, jointing, testing, backfilling, and other work connected with the construction of sewers shall conform to the requirements of the city.
- (o) No statement contained in this section shall be construed as preventing any special agreement or arrangement between the city and any industrial concern whereby an industrial waste of unusual strength or character may be accepted by the city for treatment, when such city treatment can be provided in compliance with the requirements of the NPDES permit and subject to payment therefore by the industrial concern and providing that national categorical pretreatment standards are not violated.
- (p) No user shall increase the use of process water or in any manner attempt to dilute a discharge as a partial or complete substitute for adequate treatment to achieve compliance with the limitations contained in this article, the national categorical pretreatment standards, and any state or local requirements.

(Ord. No. 94-27, subd. 5, 9-13-1994)

Secs. 46-193—46-222. - Reserved.

## DIVISION 5. - USER RATES AND CHARGES

### Subdivision I. - In General

Sec. 46-223. - Sewer service charges.

- (a) The billable volume of normal strength domestic waste will be calculated from the volume of metered water usage. For residential users, the per quarter billable flow shall be equal to quarterly metered water usage in the first quarter of the calendar year. For nonresidential users discharging normal strength domestic wastewater, billable flow shall be equal to quarterly water usage measured throughout the year. The quarterly charge will include a user charge component to meet all costs associated with operation, maintenance, and replacement of the wastewater collection and treatment facilities. Construction debt will be retired through a new development connection charge as described in the city's sewer service charge system to meet facility construction costs.
- (b) As a share of the expenses incurred by the city in the administration, operation, maintenance, and replacement of the sewerage works, each user discharging NDSW will pay to the city a quarterly amount based

upon the following formula:

$$UC=(UOMR \times BMV)$$

Where: UC=Quarterly charge per connection

UOMR=Unit Cost for Operation, Maintenance and Replacement in \$/KGAL

BWV=Billable Wastewater Volume of a Particular User in KGAL

- (c) City costs shall be computed annually and shall include operation, maintenance and replacement costs.
- (1) Each user of the city sewer system that does not have a metered source of water may install an accurate water metering device (at the user's expense) that will serve as a basis for estimating the volume of wastewater discharged, and determining the sewer service charge.
  - (2) All users may install a separate water system and meter (one only in the same building as the main meter) to isolate and meter water that is not discharged to the city sanitary sewer system and for which no sewer charge is required. If at any time after this independent system is installed, water from this system enters the sanitary sewer system, the user will be subject to the penalties of section 46-117 and shall be ordered to eliminate the independent system if this violation is continued.
- (d) To ensure the required financial surveillance, the city administrator shall annually review the cash flows associated with providing wastewater treatment service for the city, and shall report the findings to the city council. Any inequities and/or shortages of revenue caused by unforeseen changes in the cost revenue pattern of the wastewater treatment facilities shall be remedied immediately by a city council resolution adjusting the unit cost figures. Adjusted unit figures shall be computed in accordance with the principals of this subdivision. The city administrator will maintain records necessary for documentation of compliance with the conditions of this section.
- (e) Each user shall pay operation, maintenance, and replacement costs in proportion to the user's proportionate contribution of wastewater flows and loadings to the treatment plant with a minimum rate for loadings of CBOD and TSS being the rate established for NDSW concentrations. The charge system established in this article will not prevent the assessment of additional charges to users who discharge wastes in concentration greater than NDSW or of unusual character.
- (f) Wastewater sewer service charges provided for in this article shall be included as a separate item on the regular bill for water. Charges shall be paid at the same time that the water charges of the person become due.
- (g) Accounts that are not paid in full within 30 days will be charged a late payment penalty as established by the city council and will be subject to interest charges at a rate established by the city council. In the event a user does not pay his account in full within 90 days after billing, the city may undertake to have the water service to the property disconnected and may file a lien against the property.

(Ord. No. 94-27, subd. 9, 9-13-1994)

#### Sec. 46-224. - Sewer service fund.

- (a) The city hereby establishes a sewer service fund as an income fund to receive all revenues generated by the sewer service charge system, and all other income dedicated to the operation, maintenance, replacement and construction of the wastewater treatment work, including taxes, special charges, fees, and assessments intended to retire construction debt.
- (b) The city also establishes the following accounts as income and expenditure accounts within the sewer service

fund:

- (1) Operation and maintenance account.
  - (2) Equipment replacement account.
  - (3) Debt retirement account.
- (c) All revenue generated by the sewer service charge system, and all other income pertinent to the treatment system, includes taxes and special assessments dedicated to retire construction debt, shall be held by the city separate and apart from all other funds of the city. Funds received by the sewer service fund shall be transferred to the operation and maintenance account, the equipment replacement account, and the debt retirement account in accordance with state and federal regulations and the provisions of this article.
- (d) Revenue generated from the sewer service charge system sufficient to ensure adequate replacement throughout the design or useful life, whichever is longer, of the wastewater facility shall be held separate and apart in the equipment replacement account and dedicated to affecting replacement costs. Interest income generated by the equipment replacement account shall remain in the equipment replacement account.
- (e) Revenue generated by the sewer service charge system sufficient for operation and maintenance shall be held separate and apart in the operation and maintenance account.
- (f) The sewer service charge system shall be adopted by city resolution upon enactment of this article, it shall be published in the local newspaper, and shall be effective upon publication.

(Ord. No. 94-27, subd. 10, 9-13-1994)

Secs. 46-225—46-241. - Reserved.

Subdivision II. - Interim Unallotted Sewer Capacity

Sec. 46-242. - Statement of policy.

- (a) As part of the city's comprehensive plan, the city has adopted a master sewer and water plan, and a Modified Facilities Plan of 1990, amended 1994 (collectively hereafter referred to as the "comprehensive sewer plan"). The city has implemented the comprehensive sewer plan by constructing to date wastewater treatment facilities with a design capacity of 1,602,000 gallons per day.
- (b) The comprehensive sewer plan assigns the wastewater treatment facilities' capacity using certain formulae consistent with the land use designations of the tracts and parcels of land under the comprehensive plan.
- (c) Prior to the city being fully developed, sewage treatment capacity is available for users on nonpermanent basis until they can implement reduction of their wastewater discharge by developing water conservation plans.
- (d) In furtherance of the fair use of the designed capacity and to provide revenue for the costs of construction, repair and replacement of the system, it is in the best interests of the users and residents of the city to provide for interim use of such capacity. Accordingly, accepting subscriptions from persons who desire on a nonpermanent basis to discharge more wastewater into the system than their assigned capacity under the comprehensive sewer plan allows, and charging a fee for the interim utilization of unallotted capacity, furthers the public interest. A fee as provided herein shall be established for each 100,000 gallons of potential flow volume subscribed to by a user. The fee so established shall be paid in addition to any other charges or fees provided by ordinances of the city.

(Ord. No. 97-1, § 1, 1-14-1997)

## Sec. 46-243. - Definitions.

The following words, terms and phrases, when used in this subdivision, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

*IASC unit* means a unit of interim allotted sewer capacity.

*Subscription* means a written contract by which a person subscribes to take and pay for one or more IASC units.

*Unit* means 100,000 gallons per year of sewage volume or potential flow volume.

*User* means any person who discharges, causes or permits the discharge of wastewater into the city's wastewater treatment facilities.

*Wastewater* means the liquid and water-carried industrial, commercial or domestic wastes from dwellings, commercial buildings, industrial facilities and institutions, together with any groundwater, surface water and stormwater that may be present, whether treated or untreated, which is discharged into or permitted to enter the city's wastewater treatment system.

*Wastewater treatment facilities or system* means any device, facility, structure, equipment or works owned or used by the city for the purpose of the transformation, storage or treatment of wastewater, including intercepting sewers, outfall sewers, wastewater collection systems, and other equipment and their appurtenances; extensions, improvements, remodeling additions and alterations thereof, and any works including land which will be an integral part of the treatment process or is used for ultimate disposal of residue resulting from such treatment.

(Ord. No. 97-1, § 2, 1-14-1997)

## Sec. 46-244. - Assigned/allocated capacity.

The design capacity of the city's wastewater treatment facility is 1,602,000 gallons per day. The comprehensive sewer plan assigns this capacity to tracts and parcels of land based on formulae that allocate the capacity based on zoning and the land use elements of the comprehensive plan of the city, to wit: 1,000 gallons per acre per day to land-guided retail business or commercial business, and 600 gallons per acre per day to land-guided mid-density, residential, multifamily residential or limited industrial.

(Ord. No. 97-1, § 3, 1-14-1997)

## Sec. 46-245. - Prohibition.

No person may discharge wastewater into the system in excess of the amount calculated under the applicable formula of the applicable parcel or tract of land, unless there is in force and effect a subscription for unallotted capacity covering such discharges, as assigned and allocated under section 46-244 and the comprehensive sewer plan.

(Ord. No. 97-1, § 4, 1-14-1997)

## Sec. 46-246. - Administration.

- (a) *Subscription duration.* Subscription agreements for IASC units shall be issued for a specified time period not to exceed ten years. The subscriber may terminate a subscription at the end of any subscription year by giving the city 60 days' prior written notice thereof.

- (b) *Fee; reservation of right to increase.* The fee for each IASC unit shall be \$80.00 per year. The city reserves the right to increase the fee at any time; provided, however, that as to any subscription having an unexpired term in excess of one year, the increase shall not be effective until the end of 365 days after the adoption of a resolution by the city increasing the fee. New subscribers shall pay the increased fee on the effective date set forth in the resolution.
- (c) *Subscription agreement conditions.* Subscriptions for IASC units may be made expressly subject to all of the provisions of this ordinance and all other applicable regulations, user charges and fees established by the city. Subscriptions accepted by the city (and signed by the public works superintendent) may contain the following provisions:
- (1) The IASC unit fee for the total number of units subscribed for.
  - (2) The term of the subscription.
  - (3) Limits on the maximum gallons per year of wastewater that can be discharged into the system under the subscription.
  - (4) Requirements for installation and maintenance of inspection and sampling facilities.
  - (5) Requirements for submission of technical reports or discharge reports.
  - (6) Requirements for maintaining and retaining records relating to wastewater discharge as specified by the public works superintendent, but in no case less than three years, and affording the superintendent access thereto.
  - (7) Requirements for notification to the superintendent of any due introduction of wastewater constituents or of any substantial change in the volume of the wastewater being introduced into the system.
  - (8) Other conditions as deemed appropriate by the city to monitor flow within the capacity allocation of the subscriber or to otherwise ensure compliance with this article.

(Ord. No. 97-1, § 5, 1-14-1997)

Sec. 46-247. - Annual review.

The city staff shall annually review the amount of volume of sewage being discharged into the system and the amount of unutilized sewage capacity. The city administrator shall certify to the council on or before July 1 of each calendar year the amount of sewer capacity available in the system for subscriptions.

(Ord. No. 97-1, § 6, 1-14-1997)

Sec. 46-248. - Subscription transfers.

Subscriptions for IASC units are issued for a specific user or for a specific operation. The holder of the subscription shall not have the right or authority to reassign, transfer or sell the subscription to a new owner or a new user. Any succeeding owner or user of the tract or parcel of land shall request a new subscription for IASC units.

(Ord. No. 97-1, § 7, 1-14-1997)

Sec. 46-249. - Payment.

Payments for each subscription accepted by the city shall be due and payable yearly in advance for the total number of IASC units subscribed for. The first year's payments shall be paid concurrently with acceptance of the subscription by the city. The city administrator shall thereafter invoice 60 days prior to the commencement of any succeeding subscription year for any unexpired year.

(Ord. No. 97-1, § 9, 1-14-1997)

Sec. 46-250. - Forms.

The city administrator shall establish and make available subscription forms to persons desiring to subscribe to IASC units. The form shall provide a space for inclusion of the conditional use permit number relating to the use of the wastewater treatment sewage capacity.

(Ord. No. 97-1, § 10, 1-14-1997)

Secs. 46-251—46-278. - Reserved.

#### ARTICLE IV. - STORMWATER UTILITY

Sec. 46-279. - Established.

There is hereby established a public utility which shall be known as the stormwater drainage utility in and for the city. The stormwater drainage utility shall be operated as a public utility pursuant to the applicable city ordinances, and applicable statutes. The revenues there from shall be derived subject to the provisions of this article and Minn. Stats. § 444.075. The stormwater drainage utility shall be administered by the city clerk.

(Ord. No. 03-02, § 1, 1-28-2003)

Sec. 46-280. - Definitions.

The following words, terms and phrases, when used in this article, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

*Administrative costs* includes costs associated with acquiring and maintaining the necessary contour maps, which define the watershed in and for the city. Also included shall be periodic planning and engineering studies, which shall determine the adequacy and condition of the stormwater drainage system as well as the operations, involved with billing and collection of utility fees.

*Construction* means the improvements to the stormwater system in areas not previously served with lateral and trunk lines.

*Developed land* means land upon which improvements have been made.

*Maintenance* includes direct and indirect costs as well as equipment costs for repairs and cleaning. Cleaning includes, catchbasin cleaning, jetting, thawing pipes and any other operation that assures a dependable drainage system. It shall also include the administrative costs.

*Reconstruction* means the improvements made to the stormwater drainage system in areas previously served with lateral and trunk lines.

(Ord. No. 03-02, § 2, 1-28-2003)

Sec. 46-281. - Stormwater drainage fees.

Stormwater drainage fees for each developed land parcel shall be as established by ordinance.

(Ord. No. 03-02, § 3, 1-28-2003; Ord. No. 2008-02, § 2(exh. A), 1-8-2008)

Sec. 46-282. - Exemptions.

The following land uses are exempt from stormwater drainage fees: public rights-of-way, municipal property being used for public service, city parks and agricultural property.

(Ord. No. 03-02, § 4, 1-28-2003)

Sec. 46-283. - Undeveloped land.

Undeveloped commercial and industrial land shall be excluded from the stormwater drainage fees until abutting public rights-of-way have been platted or dedicated; and water and sewer hookups have been made to the parcel in question.

(Ord. No. 03-02, § 5, 1-28-2003)

Sec. 46-284. - Undeveloped platted residential lots.

Undeveloped platted residential lots (including outlots) shall not be charged a fee until the water and sewer hookups have been made and sewer and water utility fees are due.

(Ord. No. 03-02, § 6, 1-28-2003)

Sec. 46-285. - Payment of fees.

The city council may establish policies relating to the payments of fees and penalties relating thereto by ordinance or resolution.

(Ord. No. 03-02, § 7, 1-28-2003)

Sec. 46-286. - Recalculation of fees.

If a property owner or person responsible for paying the stormwater drainage fee questions the correctness of an invoice for such charge, such person may have the determination of the charge recomputed by written request to the city clerk, made within three months of mailing of the invoice by the city utility department. The property owner may appeal the decision of the city clerk to the city council by filing notice of such appeal with the city clerk within 60 days of the city clerk's determination.

(Ord. No. 03-02, § 8, 1-28-2003)

Sec. 46-287. - Certification of past due fees on taxes.

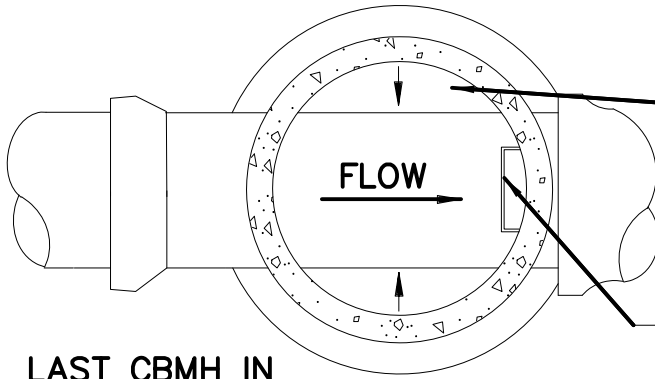
Any past due stormwater drainage fees in excess of 90 days past due on October 1, of any year may be certified to the county auditor for collection with real estate taxes in the following year pursuant to Minn. Stats. § 444.075, subd. 3. In addition, the city shall also have the right to bring a civil action or to take other legal remedies to collect unpaid fees.

(Ord. No. 03-02, § 9, 1-28-2003)

# Appendix E

## Standard Details



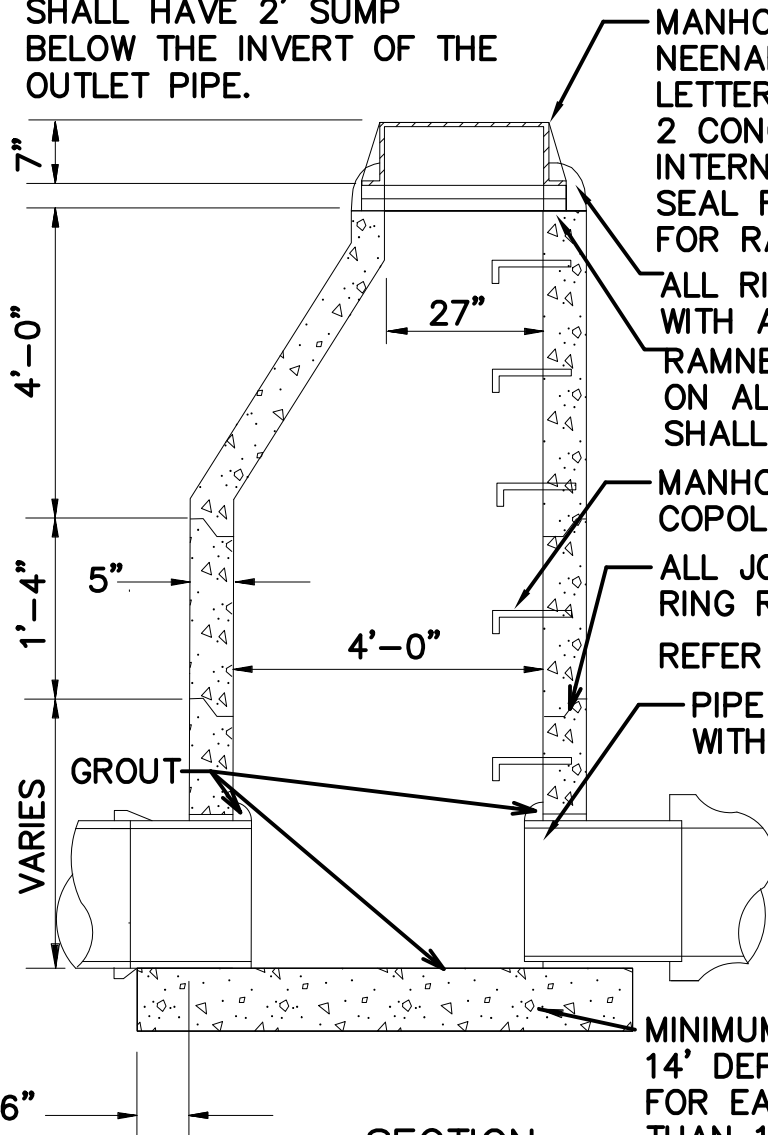


PLAN

GROUT BOTTOM OF MANHOLE TO 1/2 DIAMETER AT PIPE AND SLOPE GROUT 2" TOWARD INVERT

MANHOLE STEPS SHALL BE PLACED SO THAT OFFSET VERTICAL PORTION OF CONE IS FACING DOWNSTREAM

NOTE: LAST CBMH IN STREET BEFORE POND SHALL HAVE 2' SUMP BELOW THE INVERT OF THE OUTLET PIPE.



SECTION

MANHOLE FRAME & COVER—NEENAH R-1642 OR ACCEPTED EQUAL. LETTERED "STORM SEWER" WITH 2 CONCEALED PICK HOLES INTERNAL MANHOLE CHIMNEY SEAL REQUIRED SEE GEN-20 FOR RAISING IRON

ALL RINGS SHALL BE SEALED WITH A FULL BED OF MORTAR RAMNECK OR EQUAL REQUIRED ON ALL SURFACES WHERE METAL SHALL SEAL TO CONCRETE SURFACE

MANHOLE STEPS, 12" ON CENTER COPOLYMER POLY PLASTIC

ALL JOINTS IN MANHOLE TO HAVE "O" RING RUBBER GASKETS

REFER TO MH SIZING DETAIL STO-13

PIPE SHALL BE CUT OUT FLUSH WITH INSIDE FACE OF WALL

NOTE: DRAIN TILE OPENING MUST BE CORE-DRILLED AND GROUTED INSIDE AND OUTSIDE WITH TRACER WIRE FOR COMMON LINE / GREEN IN COLOR TO EXTEND TO 6" ABOVE TOP OF CASTING

MINIMUM SLAB THICKNESS, 6" FOR 14' DEPTH. INCREASE THICKNESS 1" FOR EACH 4' OF DEPTH GREATER THAN 14', AND REINFORCE WITH 6"X6" 10/10 MESH



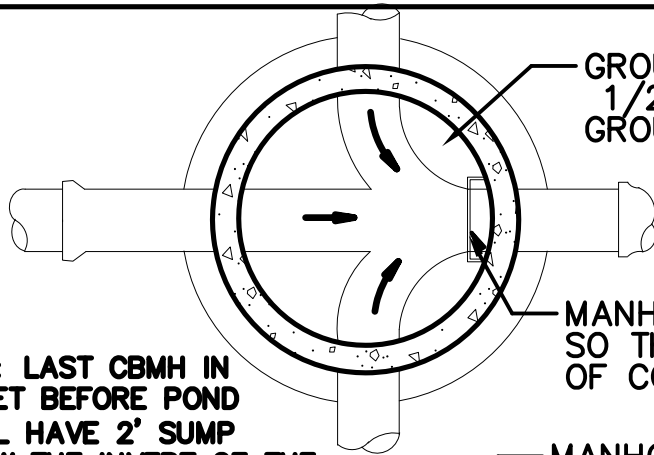
STORM SEWER MANHOLE

Standard Details

Date: JANUARY, 2014

Revised:

STO-1



GROUT BOTTOM OF MANHOLE TO 1/2 DIAMETER AT PIPE AND SLOPE GROUT 2" TOWARD INVERT

MANHOLE STEPS SHALL BE PLACED SO THAT OFFSET VERTICAL PORTION OF CONE IS FACING DOWNSTREAM

**NOTE: LAST CBMH IN STREET BEFORE POND SHALL HAVE 2' SUMP BELOW THE INVERT OF THE OUTLET PIPE.**

PLAN

MANHOLE FRAME & COVER—NEENAH R-1642 OR ACCEPTED EQUAL. LETTERED "STORM SEWER" WITH 2 CONCEALED PICK HOLES

SEE GEN-20 FOR RAISING IRON INTERNAL CHIMNEY SEAL REQUIRED

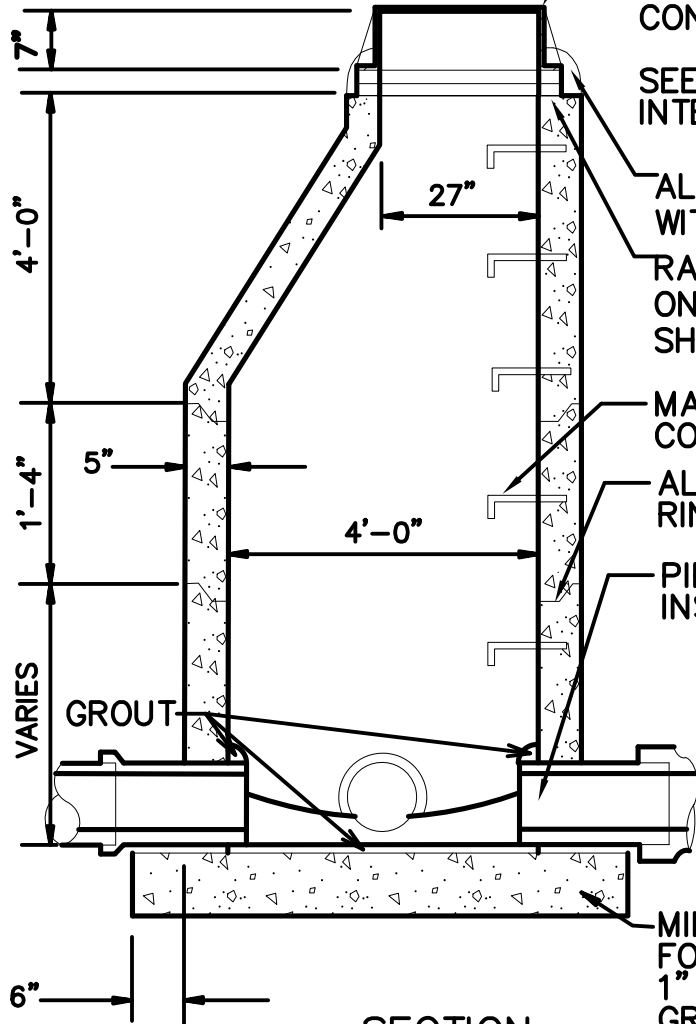
ALL RINGS SHALL BE SEALED WITH A FULL BED OF MORTAR RAMNECK OR EQUAL REQUIRED ON ALL SURFACES WHERE METAL SHALL SEAL TO CONCRETE SURFACE

MANHOLE STEPS, 12" ON CENTER, COPOLYMER POLY PLASTIC

ALL JOINTS IN MANHOLE TO HAVE "O" RING RUBBER GASKETS

PIPE SHALL BE CUT OUT FLUSH WITH INSIDE FACE OF WALL

**NOTE: DRAIN TILE OPENING MUST BE CORE DRILLED AND GROUTED INSIDE AND OUTSIDE WITH TRACER WIRE FOR COMMON LINE / GREEN IN COLOR TO EXTEND TO 6" ABOVE TOP OF CASTING**



SECTION

MINIMUM SLAB THICKNESS, 6" FOR 14' DEPTH. INCREASE THICKNESS 1" FOR EACH 4' OF DEPTH GREATER THAN 14', AND REINFORCE WITH 6"X6" 10/10 MESH



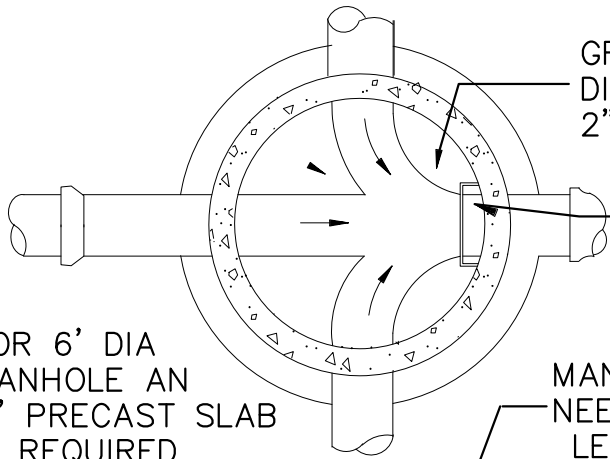
STORM SEWER JUNCTION MANHOLE

Standard Details

Date: JANUARY, 2014

Revised:

STO-2



GROUT BOTTOM OF MANHOLE TO 1/2 DIAMETER AT PIPE AND SLOPE GROUT 2" TOWARD INVERT

MANHOLE STEPS SHALL BE PLACED SO THAT OFFSET VERTICAL PORTION OF CONE IS FACING DOWNSTREAM

FOR 6' DIA MANHOLE AN 8" PRECAST SLAB IS REQUIRED

PLAN

MANHOLE FRAME & COVER—NEENAH R-1642 OR ACCEPTED EQUAL. LETTERED "STORM SEWER" WITH 2 CONCEALED PICK HOLES SEE GEN-20 FOR RAISING IRON INTERNAL CHIMNEY SEAL REQUIRED

ALL RINGS SHALL BE SEALED WITH A FULL BED OF MORTAR

RAMNECK OR EQUAL REQUIRED ON ALL SURFACES WHERE METAL SHALL SEAL TO CONCRETE SURFACE

PRECAST REINFORCED CONCRETE MANHOLE SLAB HS-20 LOADING

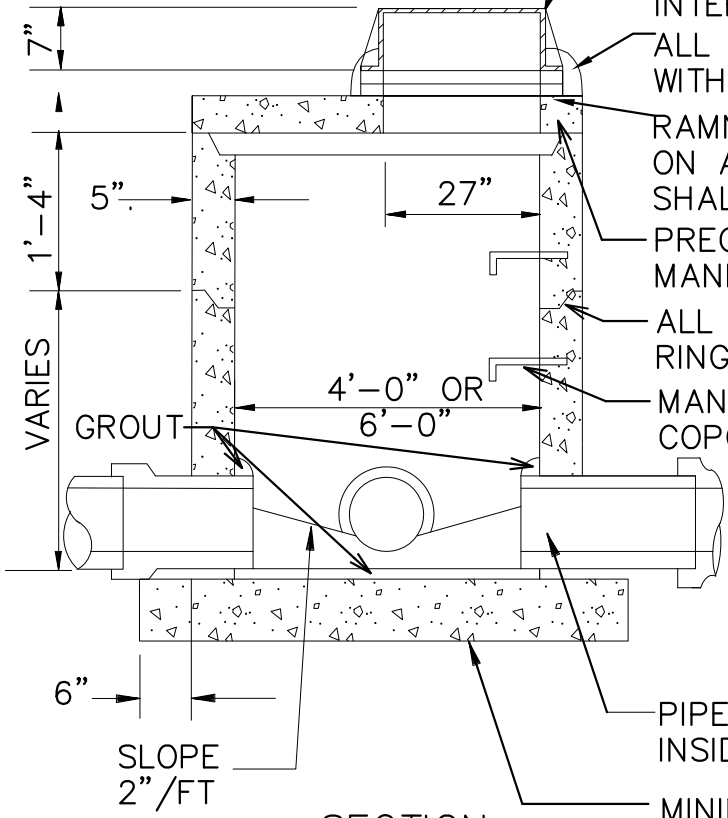
ALL JOINTS IN MANHOLE TO HAVE "O" RING RUBBER GASKETS

MANHOLE STEPS, 12" ON CENTER, COPOLYMER POLY PLASTIC

NOTE: DRAIN TILE OPENING MUST BE CORE-DRILLED AND GROUTED INSIDE AND OUTSIDE WITH TRACER WIRE FOR COMMON LINE / GREEN IN COLOR TO EXTEND TO 6" ABOVE TOP OF CASTING

PIPE SHALL BE CUT OUT FLUSH WITH INSIDE FACE OF WALL

MINIMUM SLAB THICKNESS, 6" FOR 14' DEPTH. INCREASE THICKNESS 1" FOR EACH 4' OF DEPTH GREATER THAN 14', AND REINFORCE WITH 6"X6" 10/10 MESH



SECTION

NOTE: LAST CBMH IN STREET BEFORE POND SHALL HAVE 2' SUMP BELOW THE INVERT OF THE OUTLET PIPE.



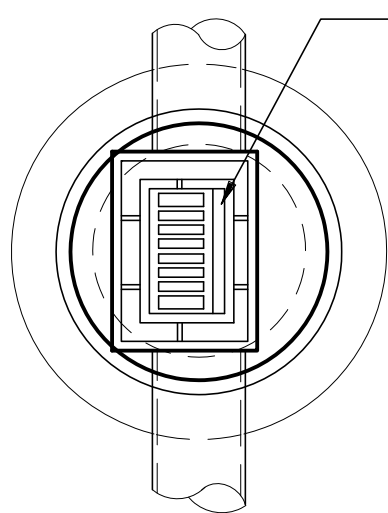
STORM SEWER JUNCTION  
MANHOLE W/  
REINFORCED TOP SLAB

Standard Details

Date: JANUARY, 2014

Revised:

STO-3

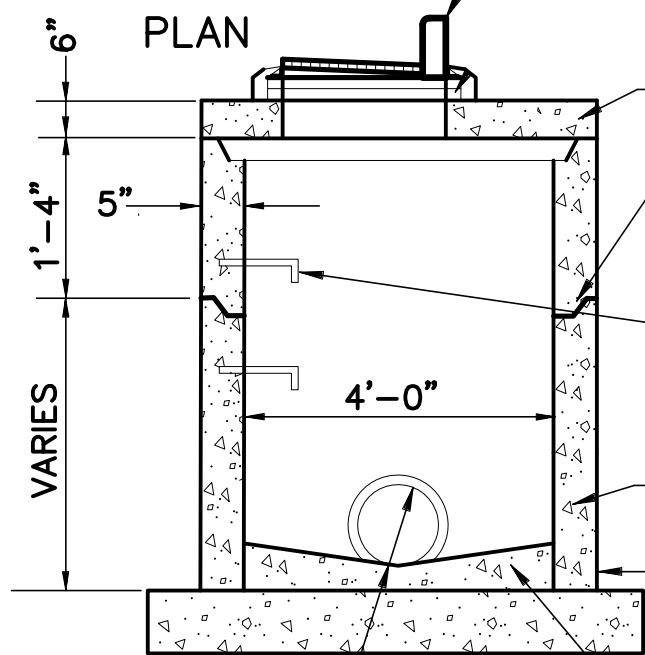


24"X36" SLAB OPENING FOR NEENAH R3067V OR ESS.BROS.330 HIGH CAPACITY OR ACCEPTED EQUAL. (VANE GRATE SHOWN)

NEENAH R3067 CASTING OR ACCEPTED EQUAL WITH TYPE D OR VANE GRATE

SEE GEN-20 FOR RAISING IRON

NOTE: LAST CBMH IN STREET BEFORE POND SHALL HAVE 2' SUMP BELOW THE INVERT OF THE OUTLET PIPE.



6" PRECAST REINFORCED CONCRETE SLAB

ALL JOINTS IN MANHOLE TO HAVE "O" RING RUBBER GASKETS

MANHOLE STEPS, 12" ON CENTER, COPOLYMER POLY PLASTIC

PRECAST CONCRETE SECTION

REFER TO MH SIZING DETAIL STO-13

GROUT BOTTOM

MINIMUM SLAB THICKNESS, 6" FOR 14' DEPTH. INCREASE THICKNESS 1" FOR EACH 4' OF DEPTH GREATER THAN 14', AND REINFORCE WITH 6"X6" 10/10 MESH

6" PIPE DIAMETER SEE STO-13

SECTION

NOTE: DRAIN TILE OPENING MUST BE CORE-DRILLED AND GROUTED INSIDE AND OUTSIDE



TYPE II - CATCH BASIN MANHOLE

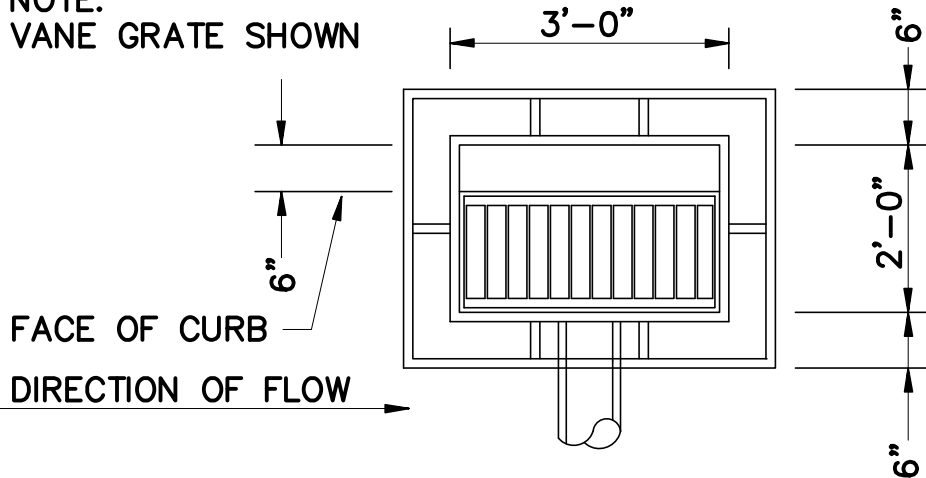
Standard Details

Date: JANUARY, 2014

Revised:

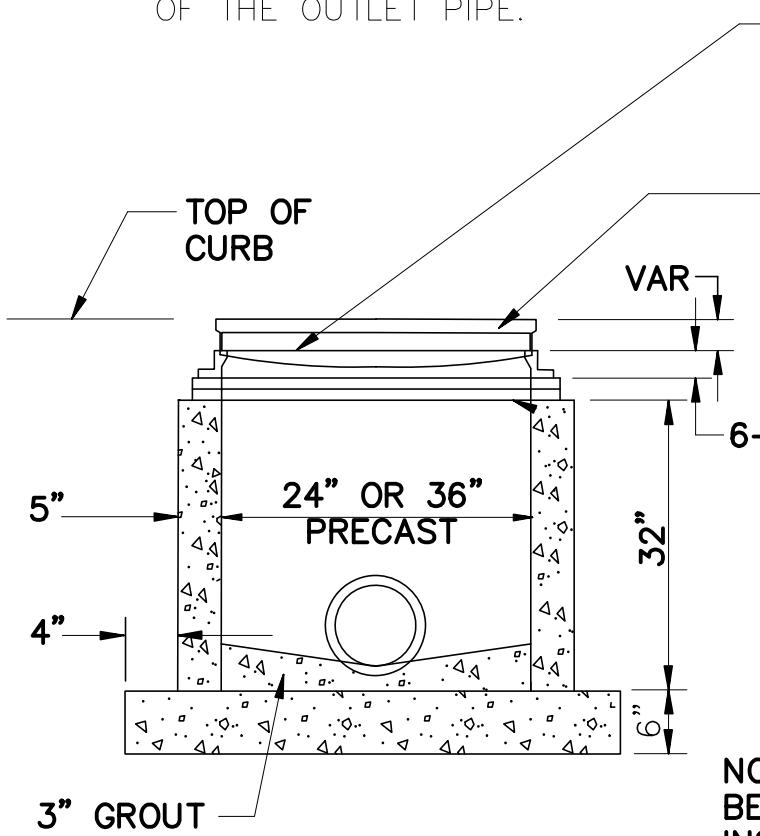
STO-4

NOTE:  
VANE GRATE SHOWN



NOTE: LAST CBMH IN STREET BEFORE POND SHALL HAVE 2' SUMP BELOW THE INVERT OF THE OUTLET PIPE.

PLAN



GRATE TO BE 2" BELOW GUTTER GRADE. 10' TRANSITION EACH SIDE OF CATCH BASIN

CATCH BASIN CASTING NEENAH R3067V OR ESS. BROS 330 HIGH CAPACITY OR ACCEPTED EQUAL WITH VANE GRATE, 3" RADIUS CURB BOX

SEE GEN-20 FOR RAISING IRON

6-1/2"

INTERNAL CHIMNEY SEALS ARE REQUIRED

NOTE: DRAIN TILE OPENING MUST BE CORE-DRILLED AND GROUTED INSIDE AND OUTSIDE

SECTION



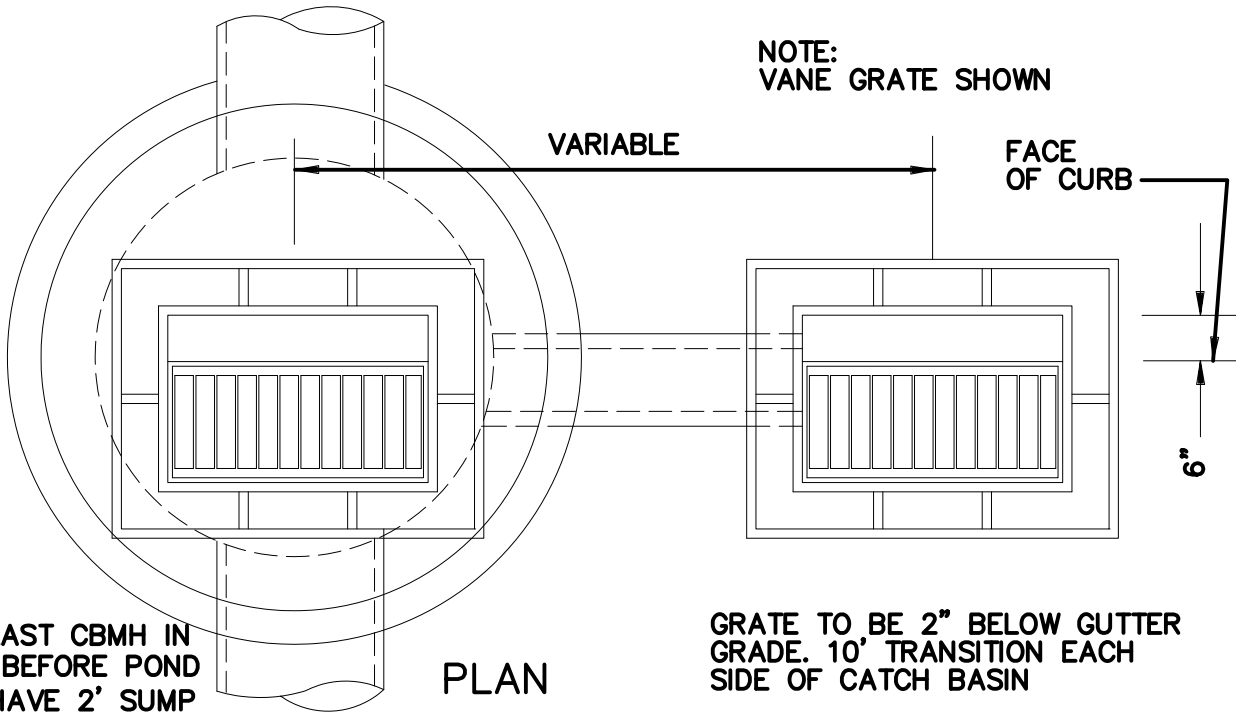
TYPE II - CATCH BASIN

Standard Details

Date:  
JANUARY, 2014

Revised:

STO-5



NOTE:  
VANE GRATE SHOWN

VARIABLE

FACE  
OF CURB

6"

PLAN

NOTE: LAST CBMH IN STREET BEFORE POND SHALL HAVE 2' SUMP BELOW THE INVERT OF THE OUTLET PIPE.

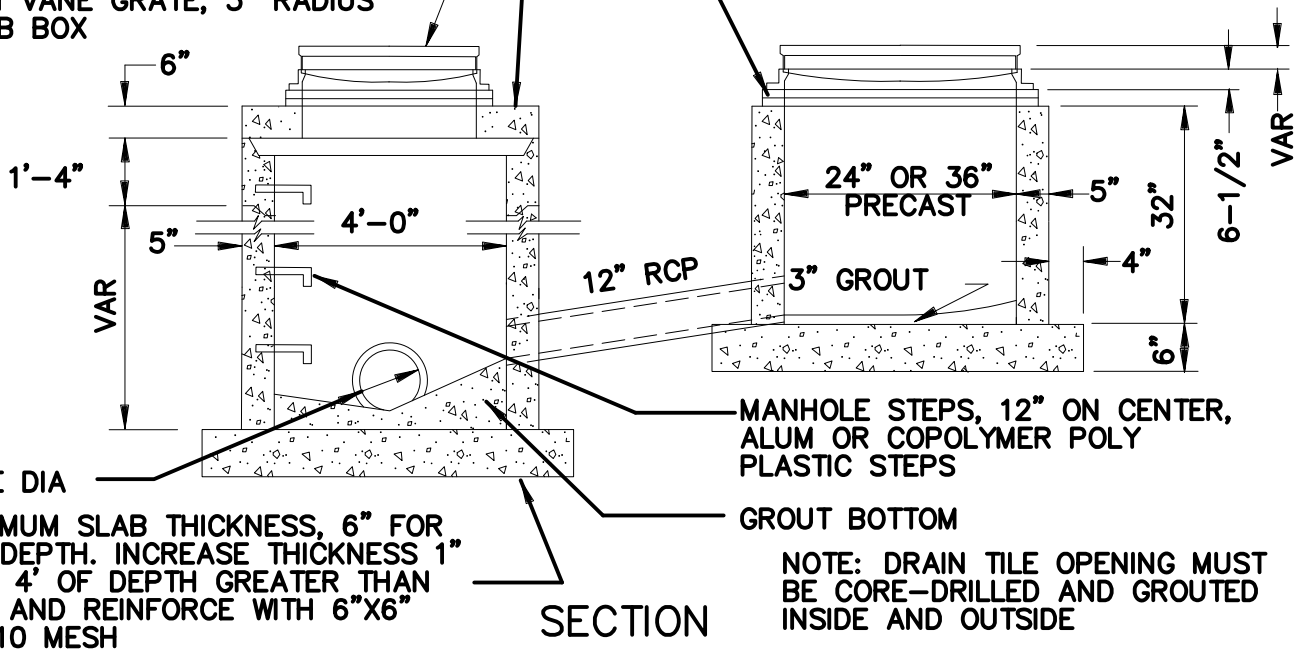
GRATE TO BE 2" BELOW GUTTER GRADE. 10' TRANSITION EACH SIDE OF CATCH BASIN

DOGHOUSES SHALL BE GROUTED ON BOTH THE OUTSIDE AND THE INSIDE

6" PRECAST REINFORCED CONCRETE SLAB FOR HS-20 LOADING

CATCH BASIN CASTING NEENAH R3067V OR ESS. BROS 330 HIGH CAPACITY OR ACCEPTED EQUAL WITH VANE GRATE, 3" RADIUS CURB BOX

SEE GEN-20 FOR RAISING IRON  
INTERNAL CHIMNEY SEALS ARE REQUIRED



1'-4"

VAR

5"

4'-0"

12" RCP

24" OR 36" PRECAST

3" GROUT

5"

32"

6-1/2"

VAR

4"

6"

PIPE DIA

MINIMUM SLAB THICKNESS, 6" FOR 14' DEPTH. INCREASE THICKNESS 1" FOR 4' OF DEPTH GREATER THAN 14', AND REINFORCE WITH 6"x6" 10/10 MESH

MANHOLE STEPS, 12" ON CENTER, ALUM OR COPOLYMER POLY PLASTIC STEPS

GROUT BOTTOM

NOTE: DRAIN TILE OPENING MUST BE CORE-DRILLED AND GROUTED INSIDE AND OUTSIDE

SECTION



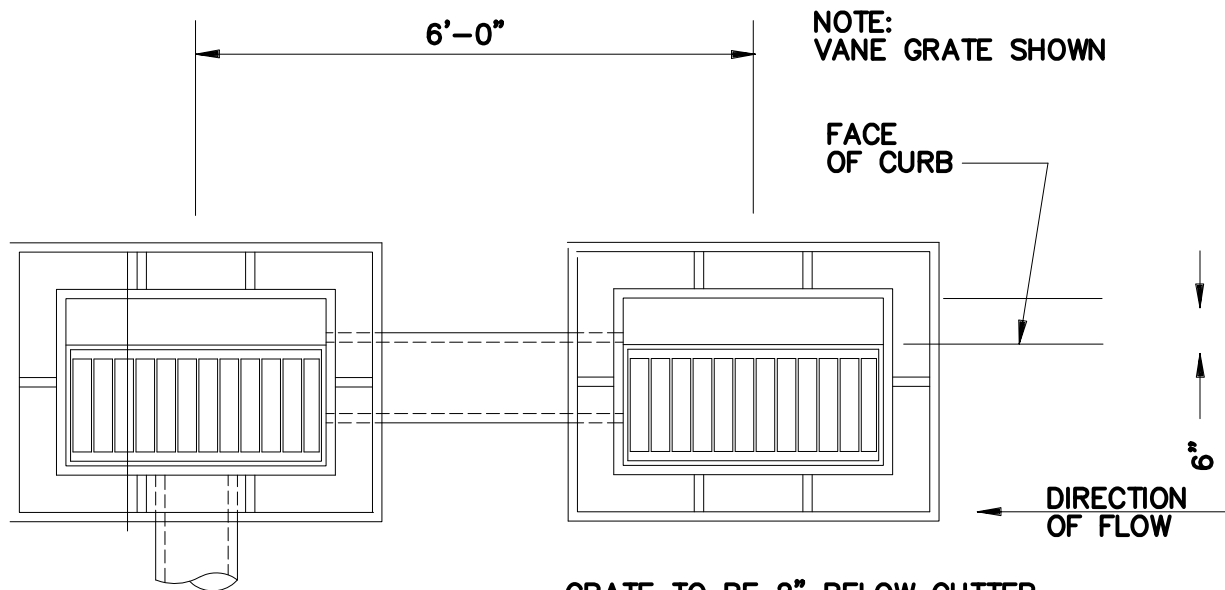
DOUBLE CATCH BASIN  
TYPE II CBMH

Standard Details

Date:  
JANUARY, 2014

Revised:

STO-6

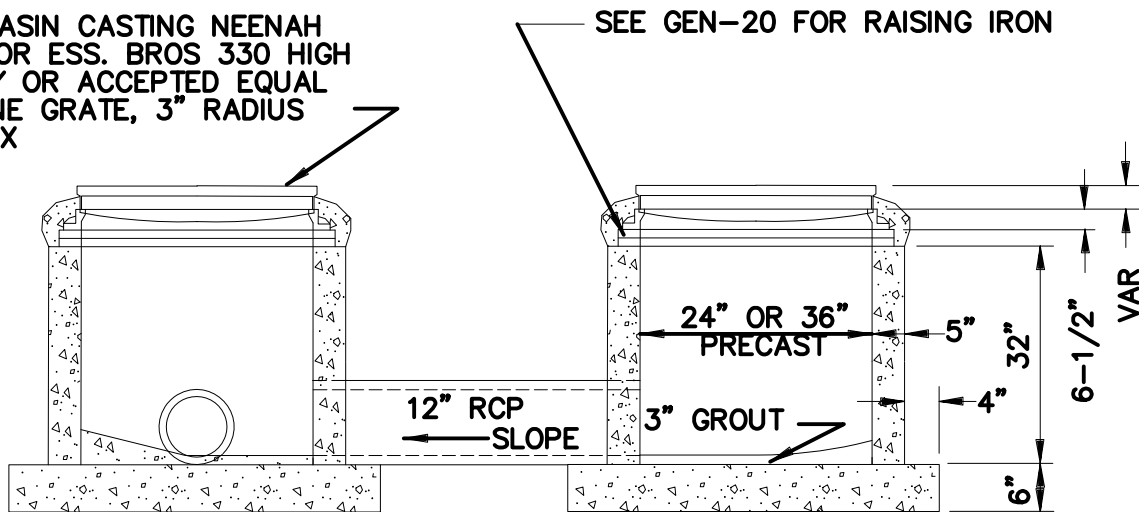


PLAN GRATE TO BE 2" BELOW GUTTER GRADE. 10' TRANSITION EACH SIDE OF CATCH BASIN

**NOTE:**

- LAST CBMH IN STREET BEFORE POND SHALL HAVE 2' SUMP BELOW THE INVERT OF THE OUTLET PIPE.
- DRAIN TILE OPENING MUST BE CORE-DRILLED AND GROUTED ON INSIDE AND OUTSIDE

CATCH BASIN CASTING NEENAH R3067V OR ESS. BROS 330 HIGH CAPACITY OR ACCEPTED EQUAL WITH VANE GRATE, 3" RADIUS CURB BOX



SECTION



OUTLET CONTROL STRUCTURE

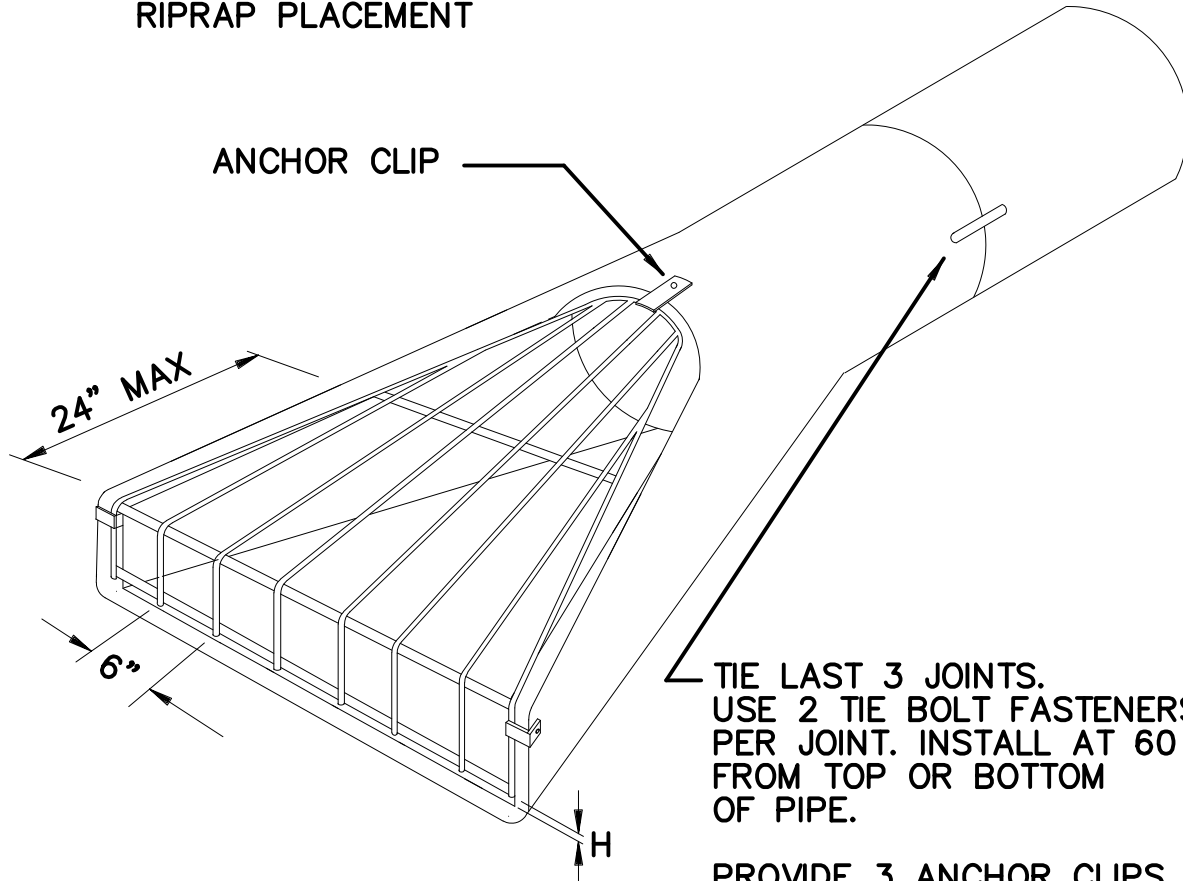
Standard Details

Date: JANUARY, 2014

Revised:

STO-7

SEE CITY PLATE NO. STO-9 FOR  
RIPRAP PLACEMENT



ISOMETRIC

SHEET PILING IS REQUIRED  
FOR PIPE 30" AND  
GREATER IN DIAMETER  
(SEE STO-10)

TIE LAST 3 JOINTS.  
USE 2 TIE BOLT FASTENERS  
PER JOINT. INSTALL AT 60 DEG  
FROM TOP OR BOTTOM  
OF PIPE.

PROVIDE 3 ANCHOR CLIPS TO  
FASTEN TRASH GUARD TO  
FLARED END SECTION.  
HOT DIP GALVANIZE  
AFTER FABRICATION

TRASH GUARD SIZING

PIPE SIZE	BARS	"H"	BOLTS
12"-18"	3/4" DIA	4"	5/8"
21"-42"	1" DIA	6"	3/4"
48"-72"	1-1/4" DIA	12"	1"



FLARED END SECTION  
AND TRASH GUARD

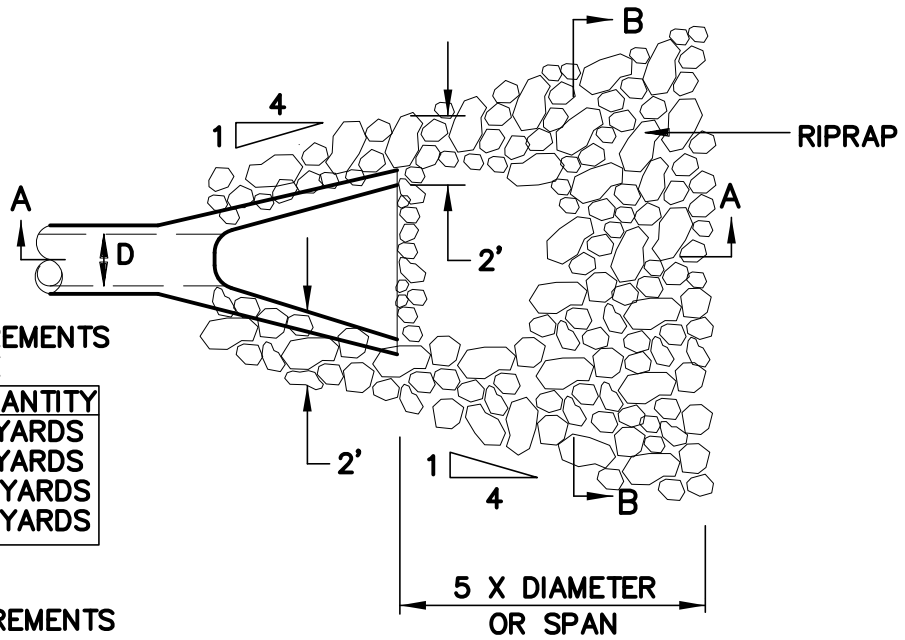
Standard Details

Date:  
JANUARY, 2014

Revised:

STO-8





**CLASS II RIPRAP REQUIREMENTS FOR ROUND PIPE**

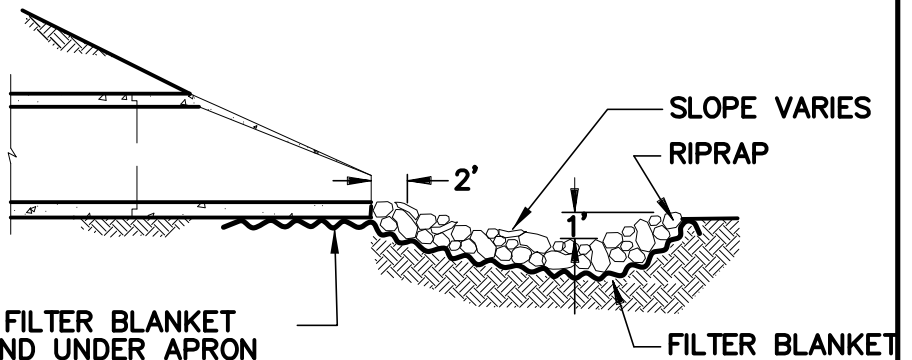
PIPE DIA.	RIPRAP QUANTITY
12" TO 24"	4 CUBIC YARDS
27" TO 33"	8 CUBIC YARDS
36" TO 48"	12 CUBIC YARDS
54" AND UP	16 CUBIC YARDS

**CLASS II RIPRAP REQUIREMENTS FOR ARCH PIPE**

PIPE SPAN	RIPRAP QUANTITY
22"	4 CUBIC YARDS
28"	6 CUBIC YARDS
36"	7 CUBIC YARDS
43"	9 CUBIC YARDS
51"	11 CUBIC YARDS
58"	13 CUBIC YARDS

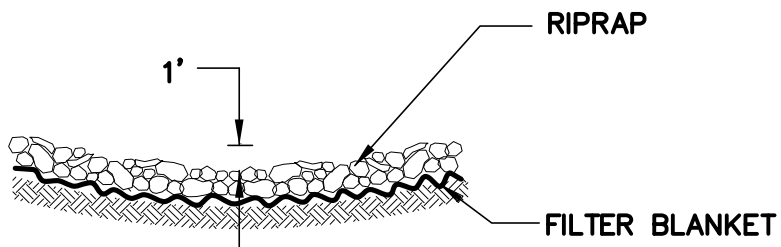
NOTE: ONE CUBIC YARD IS APPROXIMATELY 2,800 LBS

PLAN



GEOTEXTILE FILTER BLANKET SHALL EXTEND UNDER APRON

SEC. A-A



NOTE: FILTER BLANKET REQUIRED UNDER RIPRAP OR 2 LAYERS OF 500X "MIRAFI" FABRIC OR EQUAL

SEC. B-B



**CLASS II RIPRAP AT OUTLETS**

**Standard Details**

Date: JANUARY, 2014

Revised:

STO-9

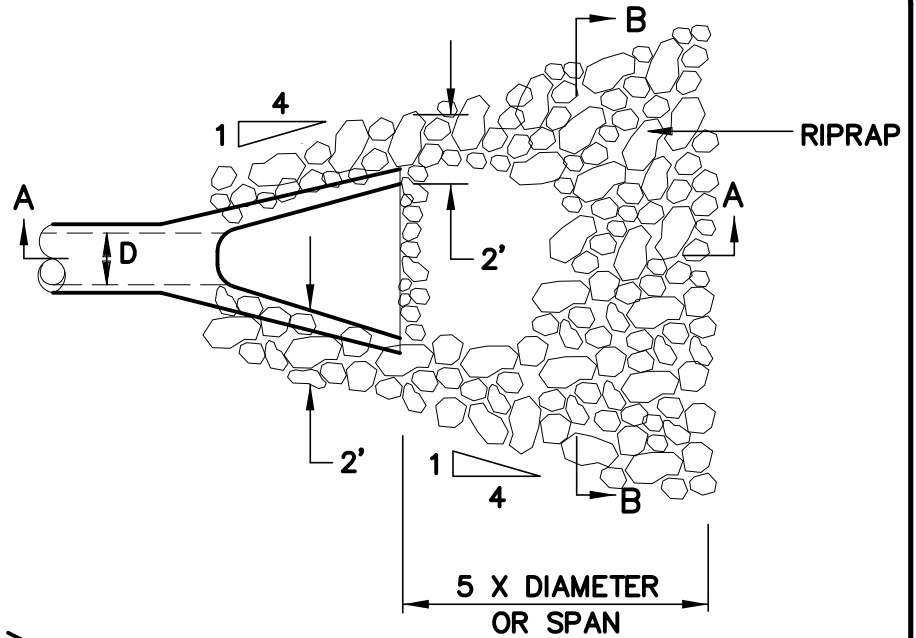
**CLASS III RIPRAP REQUIREMENTS FOR ROUND PIPE**

PIPE DIA.	RIPRAP QUANTITY
12" TO 24"	6 CUBIC YARDS
27" TO 33"	12 CUBIC YARDS
36" TO 48"	18 CUBIC YARDS
54" AND UP	24 CUBIC YARDS

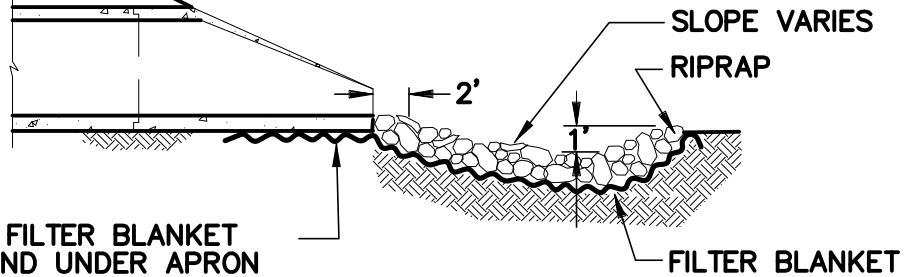
**CLASS III RIPRAP REQUIREMENTS FOR ARCH PIPE**

PIPE SPAN	RIPRAP QUANTITY
22"	6 CUBIC YARDS
28"	8 CUBIC YARDS
36"	11 CUBIC YARDS
43"	14 CUBIC YARDS
51"	16 CUBIC YARDS
58"	19 CUBIC YARDS

NOTE: ONE CUBIC YARD IS APPROXIMATELY 2,800 LBS

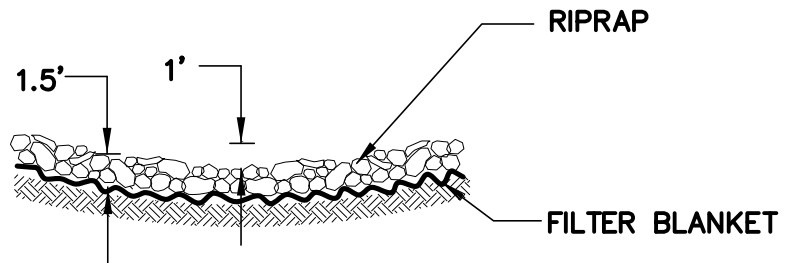


**PLAN**



**SEC. A-A**

GEOTEXTILE FILTER BLANKET SHALL EXTEND UNDER APRON



**SEC. B-B**

NOTE: FILTER BLANKET REQUIRED UNDER RIPRAP OR 2 LAYERS OF 500X "MIRAFI" FABRIC OR EQUAL

\* CLASS III RIPRAP, D50= 9 IN. (MNDOT SPEC 3601)



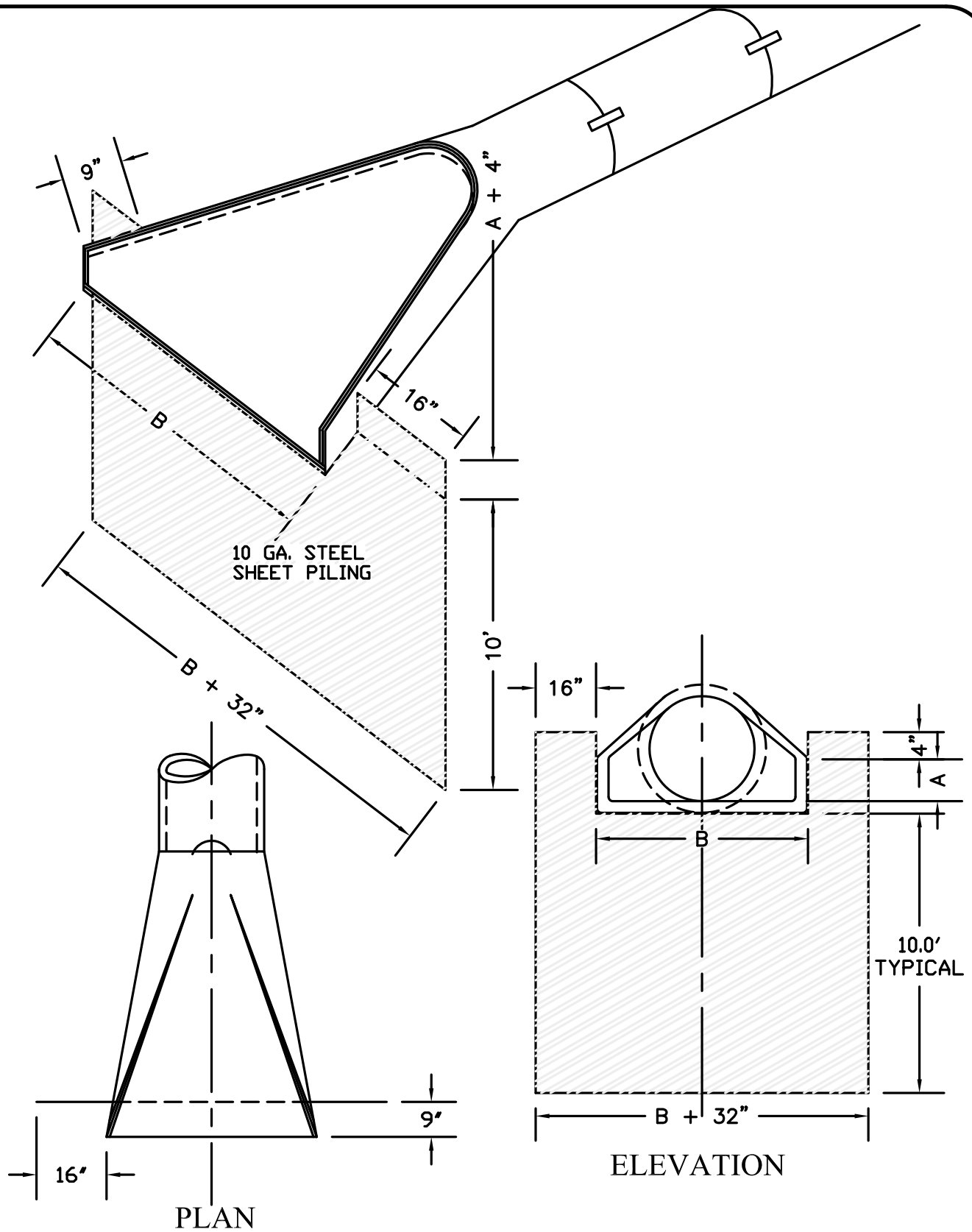
**CLASS III RIPRAP AT OUTLETS**

**Standard Details**

Date: JANUARY, 2014

Revised:

STO-9A



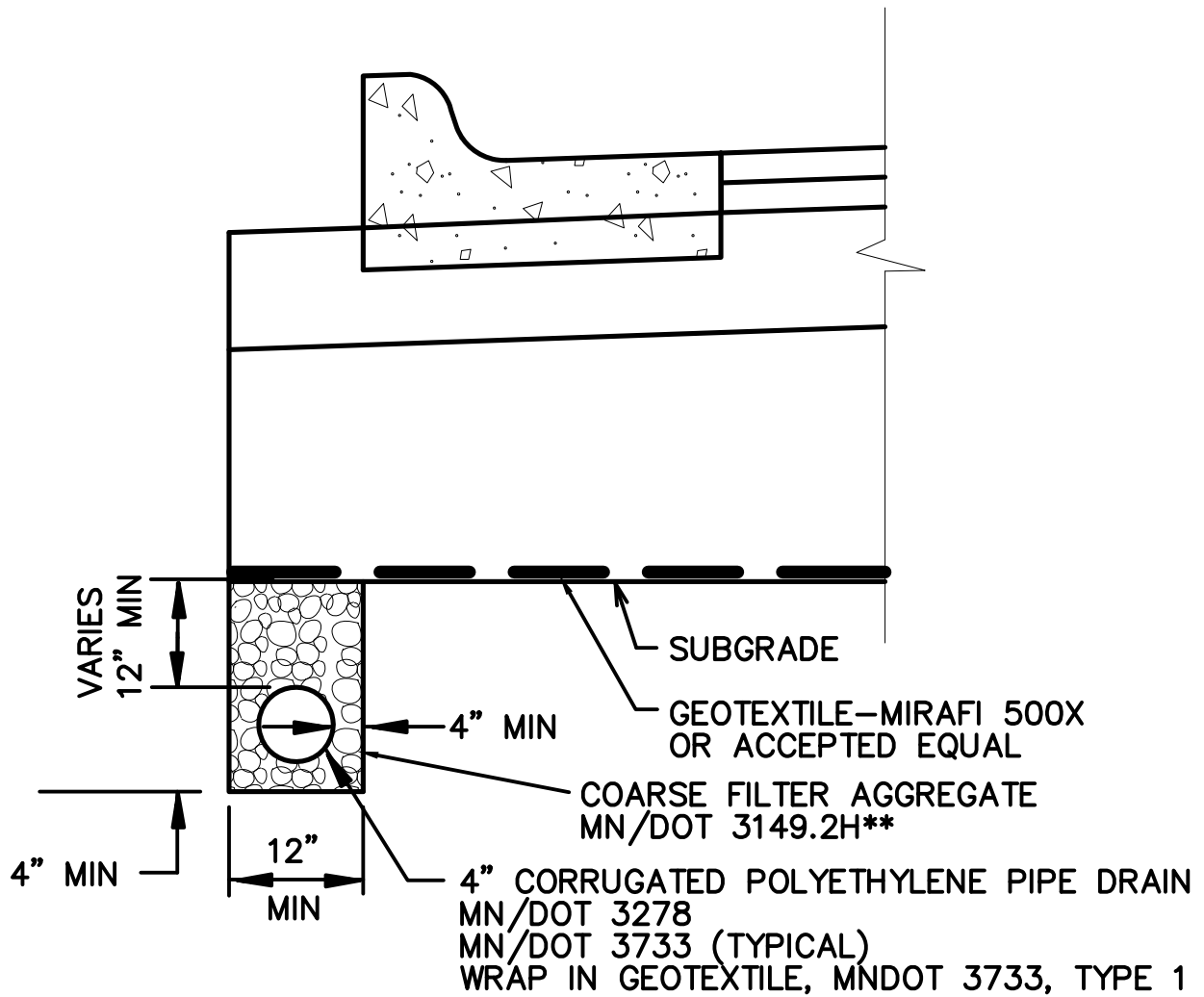
FES WITH SHEET PILING

**Standard Details**

Date:  
JANUARY, 2014

Revised:

STO-10



\*\* COURSE FILTER AGGREGATE INCIDENTAL  
 TO 4" CORRUGATED POLYETHYLENE PIPE



POLYETHYLENE  
 PERFORATED  
 PIPE

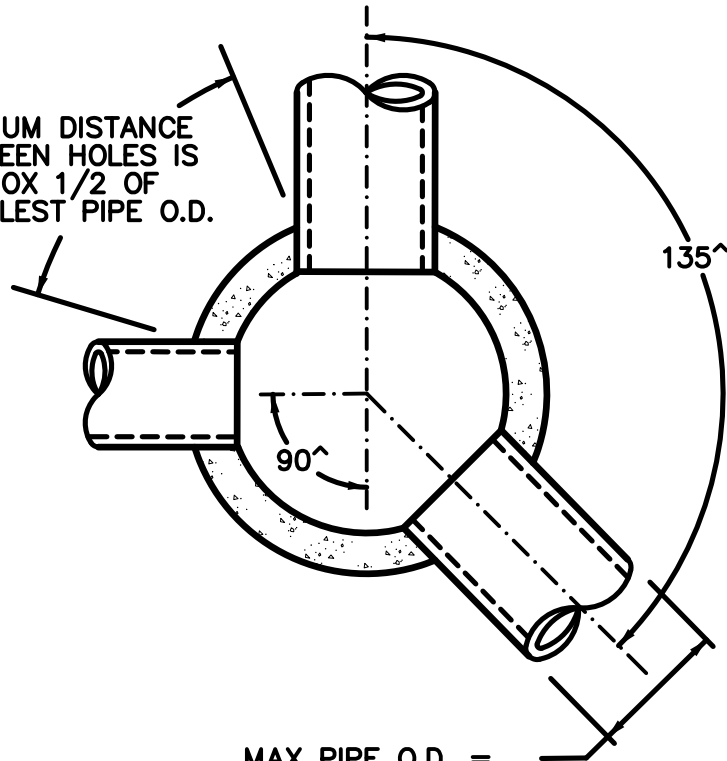
Standard Details

Date:  
 JANUARY, 2014

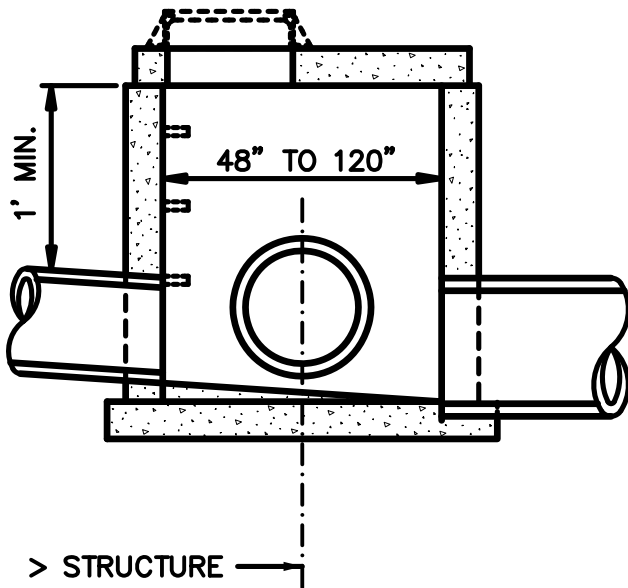
Revised:

STO-11

MINIMUM DISTANCE BETWEEN HOLES IS APPROX 1/2 OF SMALLEST PIPE O.D.



MAX PIPE O.D. = 0.707 X MH I.D.



MAXIMUM PIPE SIZE OF RCP			
MANHOLE DIA.	FROM STRAIGHT THRU TO 135° ANGLE	IF 90° ANGLE	IF 180° ANGLE
4 FT	24"RCP	18"RCP	24"RCP
5 FT	33"RCP	27"RCP	33"RCP
6 FT	36"RCP	33"RCP	36"RCP
7 FT	48"RCP	36"RCP	48"RCP
8 FT	54"RCP	42"RCP	54"RCP

> STRUCTURE →



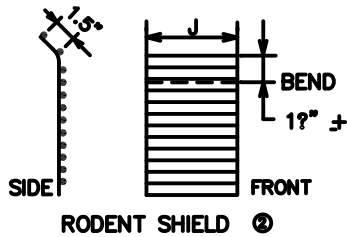
MANHOLE SIZING CHART

Standard Details

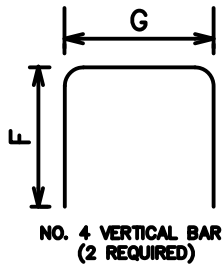
Date: JANUARY, 2014

Revised:

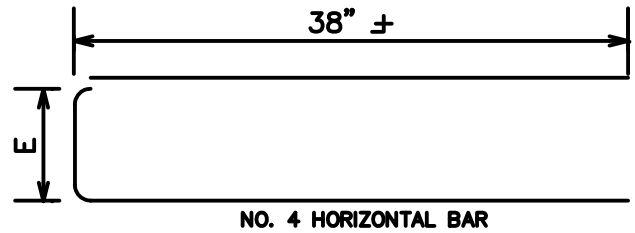
STO-12



DIMENSIONS ARE APPROXIMATE TO ALLOW FOR BEND AND A SNUG FIT IN SLOT IN HEADWALL.



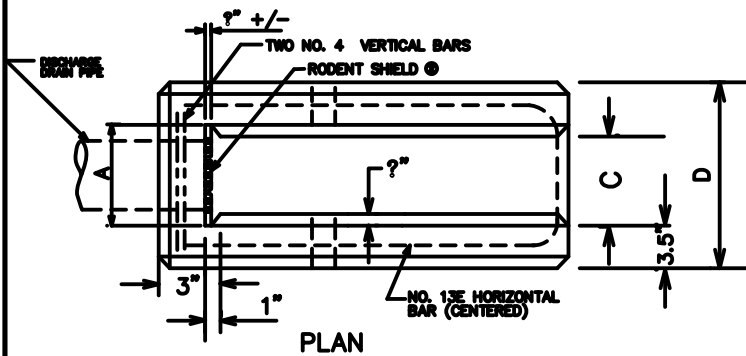
NO. 4 VERTICAL BAR  
(2 REQUIRED)



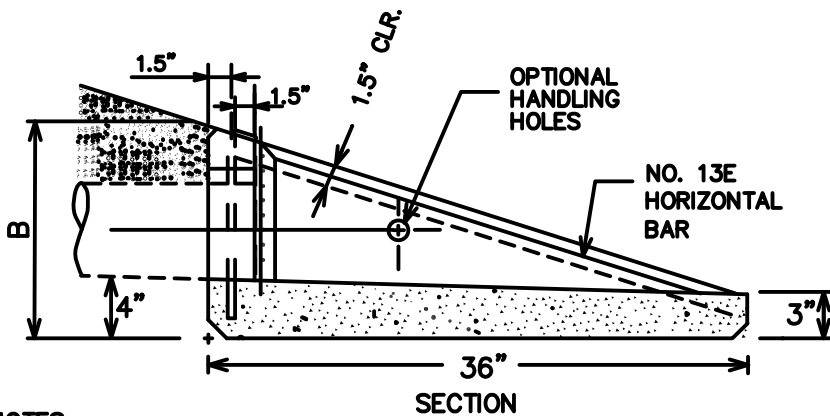
NO. 4 HORIZONTAL BAR

DIMENSIONS	4" DIA. PIPE	6" DIA. PIPE	8" DIA. PIPE
A	6.5"	8.5"	10.5"
B	12"	14"	16"
C	5"	7"	9"
D	12"	14"	16"
E	8.5"	10.5"	12.5"
F	9"	11"	13"
G	9.5"	11.5"	13.5"
H $\Delta$	5"	7"	9.5"
I	11"	14"	15"
J	5 1/2"	7 1/2"	10"
APPROX. WT.	209 LBS.	254 LBS.	298 LBS.

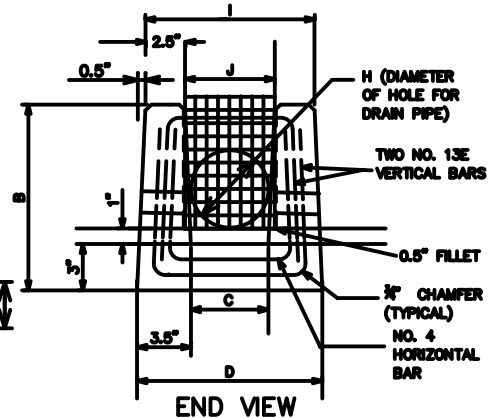
$\Delta$  EXACT DIMENSION DEPENDENT ON COUPLING METHOD.



PLAN



SECTION



END VIEW

NOTES:

1. CONCRETE FOR THE HEADWALLS SHALL HAVE A MAXIMUM WATER TO CEMENT (W/C) RATIO OF 0.4, AN AIR CONTENT OF APPROXIMATELY 5% AND A COMPRESSIVE STRENGTH OF 34.5 MPa PRIOR TO SHIPPING. THE MAXIMUM AMOUNT OF FLY ASH SUBSTITUTED FOR CEMENT ALLOWED IN THE MIX SHALL BE 15% BY WEIGHT. NO SUBSTANCE OTHER THAN CEMENT, FLY ASH, WATER, AGGREGATE, AIR ENTRAINING AGENT AND TYPE A, C, E OR F ADMIXTURES WILL BE ALLOWED IN THE MIX. ALL CONCRETE MATERIALS SHALL MEET THE REQUIREMENTS OF SPEC. 2461. THE EPOXY BARS SHALL BE SECURELY RETAINED SO THEY ARE NOT DISPLACED DURING CONCRETE PLACEMENT. TIE WIRE SHALL BE EPOXY COATED. WELDING WILL NOT BE PERMITTED. THE FABRICATOR SHALL PROVIDE A QUALITY CONTROL PROGRAM APPROVED BY THE MATERIALS ENGINEER.
2. THE RODENT SHIELD SHALL BE FABRICATED FROM CARBON STEEL FLATTENED EXPANDED METAL, STYLE 13 mm NO. 13F. IT SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION. ACTUAL SCREEN DIMENSIONS SHALL BE SUCH AS WILL SNUGLY FIT THE PROVIDED SLOT (TAPERED IF NECESSARY), WITH THE SCREEN LIP FITTING FLUSH WITH THE CASTING TOP AND THE BOTTOM FITTING TIGHT TO THE FLOW LINE.



PRECAST CONCRETE HEADWALL  
FOR SUBSURFACE DRAINS

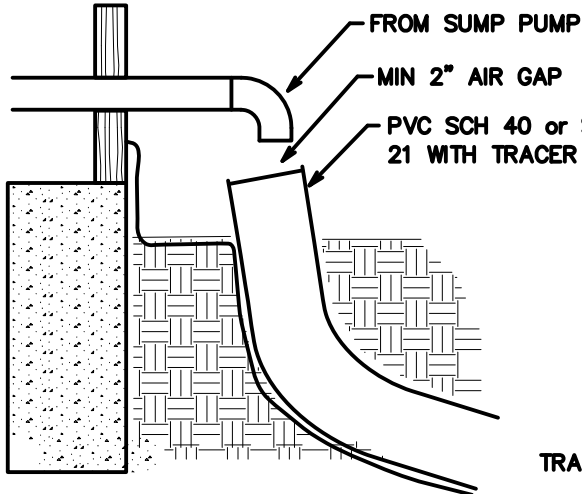
Standard Details

Date:  
JANUARY, 2014

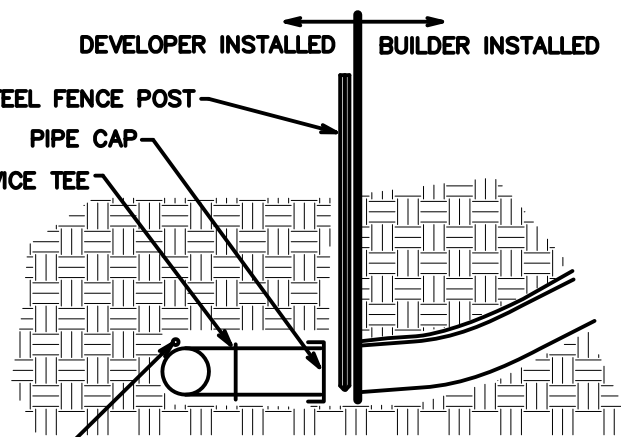
Revised:

STO-13

UPDATED 1/6/15



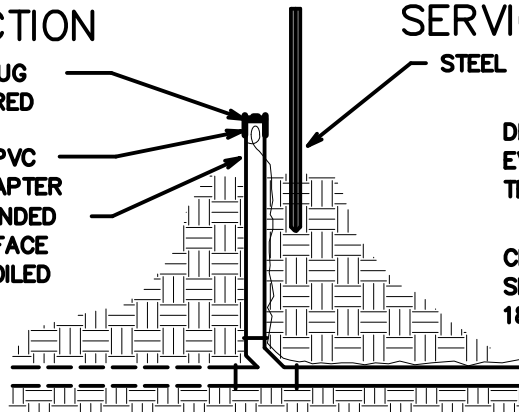
BUILDER SHALL INSTALL DRAIN TILE FROM HOUSE TO OUTLET AT COMMON DRAIN TILE, STORM SEWER STRUCTURE OR WATERBODY.



ALL COMMON DRAINTILE SHALL HAVE A MINIMUM OF 18" COVER. ALL SERVICE DRAINTILE SHALL HAVE A MINIMUM OF 12" COVER TO TOP OF PIPE. BUILDER SHALL REMOVE CAP AT SERVICE AND MAKE CONNECTION TO DRAIN TILE.

### HOUSE CONNECTION

- CAST IRON PLUG (GRINNELL CORED BAR PLUG)
- THREADED PVC FEMALE ADAPTER
- PVC RISER EXTENDED 12" ABOVE SURFACE
- TRACER WIRE COILED INSIDE OF PIPE



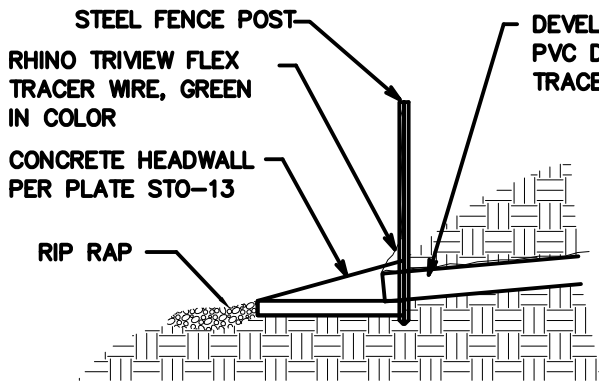
### SERVICE CONNECTION

DEVELOPER TO INSTALL A CLEANOUT EVERY 200 LINEAL FEET AND AT THE TERMINUS OF DRAINTILE LINE.

CLEANOUT LOCATED AT TERMINUS SHALL HAVE TRACER WIRE EXTENDED 18" ABOVE THE SURFACE GRADE.

### DRAINTILE CLEANOUT

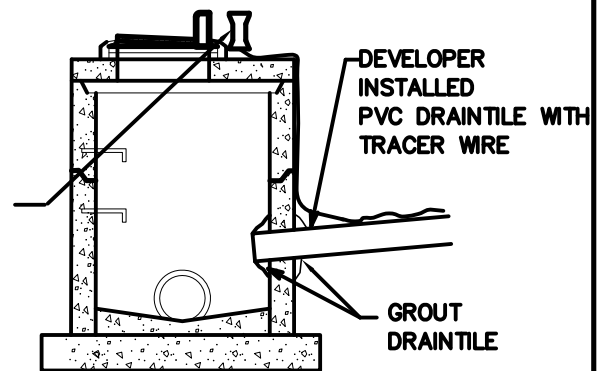
- PVC SCH 40 or SDR 21 WITH TRACER WIRE



### DRAINTILE OUTLET TO WATERBODY

- DEVELOPER INSTALLED PVC DRAINTILE WITH TRACER WIRE

- TRACER WIRE ACCESS BOX
- SNAKE PIT
- LITE DUTY BOX
- OR APPROVED EQUAL



### CONNECTION TO STORM SEWER



## SUMP PUMP DISCHARGE REQUIREMENTS

### Standard Details

Date: JANUARY, 2015

Revised:

STO-14

# CITY OF ROGER MINIMUM DRAIN TILE REQUIREMENTS

(REQUIREMENTS FOR ALL NEW HOMES AS OF JANUARY, 2016)

- PIPE SIZE – 4" PVC
- TYPE OF PIPE – SCH 40 OR ASTM 1785, OR SDR 21
- DEPTH OF PIPE – 12" TO TOP OF PIPE FROM FINISH GRADE
- TRACER WIRE – MINIMUM GAUGE #12 COPPERHEAD COPPER CLAD STEEL TRACER WIRE, GREEN IN COLOR.

**NOTE:** CORRECT FITTINGS MUST BE USED WITH ALL PIPE, NO TAPING OR SPLICING WILL BE ACCEPTED. A TRACER WIRE SHALL BE INSTALLED ALONG WITH THE PIPE, THIS WIRE MUST BE COPPERHEAD #12 AWG CCS #1230HS COMPLYING WITH ASTM-D-1248, 30 VOLT RATING BE EXPOSED A MINIMUM LENGTH OF 12 INCHES AT THE HOUSE AND SHALL DEAD END AT THE CONNECTION OR TILE DISCHARGE. NO WIRE SHALL BE ACCEPTED EXCEPT AS SPECIFIED ABOVE.

**NOTE:** THE TRENCH MUST BE LEFT OPEN AT ALL CONNECTIONS FOR INSPECTION PURPOSES. IF A TILE LINE IS TO DEAD END INTO A POND OR WET LAND A FENCE POST SHALL CLEARLY MARK ITS END. ALL INSPECTIONS SHALL REQUIRE A 24 HOUR NOTICE. ALL TRENCHES MUST BE BACK FILLED WITHIN 24 HOURS. IT IS RECOMMENDED THAT A REPRESENTATIVE OF THE BUILDER BE PRESENT AT ALL INSPECTIONS.



BUILDER INSTALLED  
SUMP PUMP DISCHARGE  
REQUIREMENTS

## Standard Details

Date:  
JANUARY, 2015

Revised:

STO-15



# Appendix F

## Stormwater Modeling

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## **3.0 Section 3 – Hydrologic Analysis**

### **3.1 Hydrologic Analysis**

The area included in the hydrologic analysis completed for this report includes the City of Rogers, the planned annexation area, and areas that drain into the City annexation area. The total area is approximately 9.86 square miles (6309 acres). The City will address hydrologic assessment and planning for areas beyond this area when annexation plans are revised.

Five different hydraulic models were created to evaluate the study area. Figure 3 shows the study area and different area models within the study area. Watersheds and runoff routing were evaluated using two different hydrologic modeling programs: XPSWMM Version 9.50 and HydroCAD® 7.0.

HydroCAD is a watershed and runoff routing analysis program that utilizes hydrologic techniques developed by the NRCS (the unit hydrograph) to predict runoff from a given rainfall event.

XPSWMM is based on the United States Environmental Protection Agency (USEPA) Stormwater Management Model (SWMM) program code. XPSWMM is also a watershed and runoff routing analysis program that has the ability to solve for gradual varied unsteady flow. It is invaluable when reviewing rainfall and flooding events within drainage systems that contain occurrences of pressurized flow, backflow, and surface storage. XPSWMM is certified by FEMA for flood plain analysis and mapping.

Figure 3 shows the study area and different models within the study area. The figure includes the acres included for each model and the type of model used. Figures 12-16 show the different model areas and their watershed sub-catchment areas. Tables 7-11 list the watershed characteristics for the sub-catchments in each area. The models were created from the best available information as described below.

### **3.2 Watersheds**

Watershed boundaries were determined based on topographical information from three main sources:

- Previously modeled drainage areas.
- Two-foot contour maps created from interpretations of 1985 aerial photos.
- Ten-foot contour United States Geological Survey Quadrangle maps.

USGS maps were used to determine watershed boundaries where that was the only topographic information available.

### **3.3 Soils Information**

The soil types in each watershed are an important hydrologic factor for determining runoff rates and volume. The hydrologic soil groups used for this study were type B and type C. Soil group B is the predominant hydrologic soil group in the study area. An explanation of hydrologic soil groups is presented in Section 2.3.

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### **3.4 Land Uses and Curve Numbers**

The NRCS Curve Number (CN) is used to estimate runoff volume from a watershed. The CN is determined as a function of land use, soil type, and hydrologic soils group. Land uses for the model were determined from aerial photography of the area supplemented with City maps and development plans. Antecedent moisture conditions (AMC) also affect runoff volumes. Curve numbers were assigned to the different land uses based on NRCS recommendations and the City of Minneapolis XP\_SWMM Hydrology and Hydraulics Model Development Guidance Manual.

Land use was modeled as it exists today. Some areas are developed and some are undeveloped. Stormwater discharge rate control regulations require that future developments discharge stormwater at a rate less than or equal to existing conditions, based on 10- and 100-year storm events. For this reason, it is not necessary to project future land use conditions for modeling purposes, when those future conditions can only be estimated at this time.

An AMC of 2, simulating average moisture conditions, was assumed for all modeling runs.

### **3.5 Time of Concentrations**

Time of concentration ( $T_c$ ) is the time it takes runoff to travel from the hydraulically most remote point in a watershed to the watershed outlet.  $T_c$  is used to determine magnitude of the runoff peak.  $T_c$  for the watersheds was determined using the NRCS sheet flow and shallow concentrated flow methods. For areas not previously modeled, the following slope grades were assumed: yard and grass flow - 1.00% slope; road flow - 1.00% slope; and pipe flow - 0.50% slope.

### **3.6 Modeling Characteristics**

For areas not previously modeled, the following site characteristics were assumed if they were not specifically known. Ponds were modeled using the Normal Water Level (NWL) as the pond bottom, the High Water Level (HWL) as the top of pond, and with 4:1 side slopes. Overland flow was modeled as a trapezoidal channel with a bottom width of 100 feet, depth of 0.50 feet, and 10:1 side slopes. Ditches were modeled as trapezoidal channels with a bottom width of 20 feet, depth of 2 feet and 4:1 side slopes.

#### **3.6.1 Watersheds**

Watersheds were delineated based on topography, storm sewer layout, and existing models. Tables 7-11 list the sub-catchments within the watersheds for each model. Information provided in these tables include: area, type of land use, percent impervious, curve number (CN), and time of concentration ( $T_c$ ). Sub-catchment labels correspond to the sub-catchments in Figures 12-16. The CN's reported are the average of the land use CN's for each watershed.

There is no existing storm drainage system for the areas outside of the developed City and much of the runoff from each watershed currently flows to existing low areas or wetlands.

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### 3.6.2 Storm Drain System

The existing storm sewer system for Rogers is shown in Figures 19 and 20. Currently, storm drainage is provided through a combination of storm sewer, open ditches, drainage swales, and creeks in the City of Rogers. Much of Rogers is served with storm sewer and/or ponds.

### 3.7 Drainage Results

The drainage analyses completed for this study are for larger, generalized study areas. An in-depth and more accurate analysis of smaller scale sites will be added to these general models, as an analysis of each of the smaller areas is needed.

The watershed discharge rates were reviewed for the 2-, 10-, and 100-year rain events. These outflow rates for each sub-catchment are represented as if all water from that area were to discharge at one location.

Results for the Rogers area are categorized two different ways. First, the outflow results were found for the six different discharge points from the City system. Second, fifteen regional areas were defined and their outflow was reported. The results for these areas are listed below and shown in Table 12.

The sub-catchment outflow rate and volume results are provided in Tables 7A, 8A, 9A, 10A, and 11A. These tables list the 2-, 10-, and 100-year outflow rate and volume results from the hydrologic models.

The pond NWL, HWL, and outflow rate and volume results are provided in Tables 7B, 8B, 9B, 10B, and 11B. These tables list the 2-, 10-, and 100-year pond outflow rate and volume results from the hydrologic models.

#### 3.7.1 City Discharge Points

There are six main outflow points within the study area. These areas are shown on Figure 17. Results for the 2-, 10-, and 100-year rain events are listed in Table 12.

- 1) Outlet from Rogers southwest to the Crow River (Figure 12): Drainage from the western half of the study area flows toward the Crow River. Approximately 3975 acres drain to this outlet point. The outlet point consists of two pipes placed on top of each other. Pipes are located under 141<sup>st</sup> Avenue North (CR 144). The pipes outlet into a drainage swale, which leads to the Crow River. The pipes include 66 lineal feet of 42-inch CMP at 0.167% slope and 65.3 lineal feet of 24-inch CMP at 0.25% slope, placed above the 42-inch CMP.
- 2) Outlet from the high school to the Crow River (Figure 13): The drainage area discharging north through the high school site includes approximately 552 acres. This drainage area was studied and presented in the Rogers 0116 Drainage Report. The high school pond outlet has 500 lf of 36-inch pipe at 0.6% slope. This outlet leads to a wetland area in Hassan Township. The pond's overflow is a weir which outlets into a drainage swale. The drainage swale flows to two culverts crossing under CR 147. The culverts are each 50 lineal feet of 24-inch RCP at 1.6% slope.

- 3) Outlet from Brockton Meadows to the Crow River (Figure 14): This outlet to the north is the main outlet for the development, which includes approximately 111 acres. Drainage from this area crosses under CR 144 through two pipes. Both pipes are 24-inch in size. One is 108 lf at 0.89% slope and the other is 56 lineal feet at 5.5% slope. Drainage from both pipes flows overland to the Crow River.
- 4) Outlet from the industrial area to Grass Lake (Figure 15): This is a large area that generally flows east. All points of discharge end up in Grass Lake just west of Diamond Lake. Approximately 1355 acres drain into Grass Lake from this area. Drainage comes from DNR wetland 288 through 100 lineal feet of 36-inch pipe at 0.5% slope and from overland flows crossing Brockton Lane through various culverts and pipes.
- 5) Outlet from Fletcher Hills to the south (Figure 16): Approximately 116 acres discharge south from the Fletcher Hills development. Drainage to this area comes from the development pond and other overland flows. These flow into a swale and outlet to an unknown culvert under CSAH 166.
- 6) Outlet from fields to the south (Figure 15): This outlet is located in the southeast corner of the project and includes approximately 187 acres. Runoff from the fields flows overland to the south.

### 3.7.2 Regional Discharge Points

There are 15 regional areas indicated within the study area. Most areas drain to regional ponds and/or wetland areas. These regional areas are shown on Figure 18. Results for the 2-, 10-, and 100-year rain events are listed in Table 12.

- 1) Triangle Park: This 121-acre area includes upland area and a large low area. The low area outlets through two culverts under the railroad. These culverts are 24 inches on the upstream end and 27 inches on the downstream end. They are modeled as one 42-lineal-foot, 24-inch pipe at a 0.86% slope, and a 41-lineal-foot, 27-inch pipe at a 1.09% slope. The culverts outlet southwest into the Brookside regional area.
- 2) Brookside: This 374-acre area is mainly residential with some commercial and open field areas. The area drains to a large pond and wetland. The pond and wetland area outlet through a weir into the Fox Creek 1 regional area to the west.
- 3) Fox Creek 1: This 176-acre area includes 5 acre lots, 1/3 acre lots, and open fields. There is a well-defined drainage swale that runs through this regional area. This swale often contains water and flows into a pond. The pond outlets into a swale, which flows under Red Fox Road into the 94 Culvert regional area. Culverts under Red Fox Road include 100 lineal feet of two 31"x 51" arch pipe at 0% slope.
- 4) Arthur Street: This large 551-acre area includes open fields, residential area, farms, ponds, and wetlands. The area outlets into Fox Creek 1 regional area through three pipes. These pipes cross under 129<sup>th</sup> Avenue North and continue into Fox Creek 1, picking up additional flow until

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they outlet into the main drainage swale. Pipes crossing under 129<sup>th</sup> Avenue North include 111 lineal feet of 36-inch pipe at 0.21% slope and two other pipes that outlet to a common low point.

- 5) Sylvan Lake: This 435-acre area drains into Sylvan Lake. The lake's main outlet point is through a culvert under CR 116 to the northeast. The culvert is 61 lineal feet of 21-inch pipe at a 0.40% slope. Runoff outlets and drains overland within the City of Rogers until it reaches Cowley Lake. Larger rain events may cause Sylvan Lake to overflow to the west at an elevation of 935.7 feet. This point of overtopping would drain away from the City of Rogers.
- 6) Meadow Lake: This 253-acre area includes Meadow Lake and a wetland area. The lake outlets north through a culvert into a low land area and swale. This swale flows through a 98 lineal feet of 24-inch culvert at a 0.60% slope under CR 116 and into the City of Rogers. Larger rain events would overtop CR 116 at an elevation of 937.9 feet. Drainage from these outlets flow overland into Cowley Lake.
- 7) Edgewater: This 612-acre area includes recently and soon to be developed areas. Runoff from this area drains to Cowley Lake and surrounding wetlands. Currently, the outlet for Cowley Lake is east through a few culverts into the Fox Creek 2 regional area. Alternate outlets to the north are being considered. The last culvert before entering the Fox Creek 2 regional area is 27 lineal feet of 24-inch pipe at a 1.41% slope.
- 8) Fox Creek 2: This 99-acre area includes residential developments. Runoff from this area ends up in a large regional pond which outlets to the Heritage regional area to the northeast. The outlet is a 48-inch pipe that continues through Heritage, picking up additional flow as it goes.
- 9) Heritage: This 104-acre area includes residential developments. Runoff drains to a regional pond located in the south portion of the area. The pond outlets east into the 94 Culvert regional area. The pond outlet is two 36-inch pipes 50 lineal feet long. One pipe has a 0.2% slope and the other has a 0.44% slope.
- 10) 94 Culvert: This 83-acre area takes drainage from many other regional drainage areas, as well as its own area. All runoff ends up in a well-defined drainageway. This drainageway flows north under Interstate 94 into the 94 Wetland regional drainage area. The culvert under Interstate 94 is a box culvert 5.5 feet square and 130 lineal feet at 0.85% slope.
- 11) Sunnyside: This 329-acre area includes both residential and commercial developments. The area drains through a number of ponds and wetlands. Runoff ultimately ends up in the large DNR Wetland 290. The outlet for the wetland flows west into the 94 Wetland regional area. The wetland outlet is a 132 lineal feet of 12-inch pipe at 0.33% slope.
- 12) 94 Wetland (includes Wetland 1 and 2): This 591-acre area includes a wide variety of development. Included in this area is the downtown area, the water treatment plant, commercial, industrial, and residential

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development, and open fields. This area drains west under Interstate 94 as an intermittent stream, and into a large wetland. The wetland drains under the railroad and into more wetlands. Drainage under Interstate 94 flows through a 132 lineal feet, 5.5 ft square box culvert at 2.32% slope. Drainage under the railroad flows through two box culverts and then as an intermittent stream through culverts and a wetland to the Crow River.

- 13) High School: This 396-acre regional drainage area contains a large residential area, industrial and commercial development, the high school and junior high school sites, and open fields. The south part drains to DNR Wetland 289 which then outlets north to the high school property.
- 14) Pond E: This 286-acre industrial development flows to regional pond ("E"). This pond outlets north into a large wetland located in the DNR Wetland 288 regional area. The outlet is a 65 lineal feet of 60-inch pipe at 1.30% slope.
- 15) DNR Wetland 288: This 233-acre area is made up mostly of DNR Wetland 288. The remaining area is mostly residential. DNR Wetland 288 outlets east into Grass Lake. The outlet is 100 lineal feet of 36-inch pipe at a 0.50% slope.

**TABLE 7: ROGER-SW XP-SWMM MODEL - WATERSHED CHARACTERISTICS**

SUB-CATCHMENT	LOCATION	TYPE / LAND USE	AREA (ac)	% IMPERVIOUS	CN	Tc (min.)
DK1	Dutch Knolls	1/3ac lots	43.33	30	72	32.0
AR1	Ahlistrom	1/3ac lots, park	55.72	28	71	78.1
AR2	Ahlistrom	1/3ac, 1/2ac lots	12.46	34	74	34.3
AR3	Ahlistrom	1/2ac lot	7.55	38	75	20.6
SP1	South Point	1/3ac lots	9.3	30	72	30.4
SP2	South Point	1/3ac lots	17.64	30	72	34.2
SP3	South Point	1/3ac lots	7.54	30	72	17.0
SP4	South Point	1/3ac lots	3.09	30	72	23.0
SH1	Scharbers	1/2 ac lots	14.21	25	70	29.3
SH2	Scharbers	field & woods	42.07	4	62	49.7
SH3	Scharbers	1/2ac lots	16.65	25	70	28.6
LE1	Fletcher Rd & CR 81	town homes	9.97	65	85	17.8
CH1	Church Street	parking	20.62	90	94	42.0
JMD1	John Milless Dr	commercial	28.62	85	93	38.3
JMD2	John Milless Dr	commercial	13.24	85	93	7.6
JMD3	John Milless Dr	commercial	5.04	85	93	22.6
RO1	Rouillard Blvd	business	9.3	71	87	36.0
RO2	Rouillard Blvd	business	5.75	64	85	25.6
RO3	Rouillard Blvd	industrial, houses	5.05	55	82	24.6
RO4	Rouillard Blvd	industrial, houses	7	34	74	37.7
BR1	Brook side Meadows	1/8ac lots	10.37	65	85	24.0
BR2	Brook side Meadows	1/3ac lots	4.58	30	72	23.9
BR3	Brook side Meadows	field, houses	6.89	15	66	50.0
BR4	Brook side Meadows	field, houses	6.96	37	75	52.9
BR5	Brook side Meadows	farm	5.37	17	66	56.6
KE1	Kemmetmueller Park	fields	45.2	0	60	66.3
FCa1	Fox Creek	1/3ac lots	12.5	30	72	24.1
FCa2	Fox Creek	1/3ac lots	15.55	30	72	37.4
FCa3	Fox Creek	1/3ac lots	8.13	30	72	25.6
FCa4	Fox Creek	backyards, wetland	7.48	15	66	25.3
FCa5	Fox Creek	1/3ac lots	5.35	100	98	21.0
FCa6	Fox Creek	wood, houses	7.9	5	62	51.6
FCb1	Fox Creek West	1/3ac lots	17.85	30	72	38.4
FCb2	Fox Creek West	1/3ac lots	9.31	35	74	32.4
FCb3	Fox Creek West	1/3ac lots	9.95	35	74	29.2
FCb4	Fox Creek West	1/3ac lots	6.14	30	72	28.8
FCb5	Fox Creek West	1/3ac lots	3.19	30	72	50.6
FCb6	Fox Creek West	1/3ac lots	3.17	30	72	21.5
FCb7	Fox Creek West	1/3ac lots	3.22	30	72	17.1
FCb8	Fox Creek West	backyards, 1/3ac lots	1.49	30	72	23.5
FCb9	Fox Creek West	1/3ac lots	2.73	30	72	26.1
FCc1	Fox Creek West	1/3ac lots, open	30.78	28	71	65.1
FCc2	Fox Creek West	1/3ac lots	7.09	30	72	30.3
FCc3	Fox Creek West	1/3ac lots	4.58	30	72	38.5
FCc4	Fox Creek West	1/3ac lots	6.89	30	72	33.8
FCc5	Fox Creek West	backyards, pond	13.85	54	82	24.7
FCc6	Fox Creek West	1/3ac lots	5.86	30	72	28.1
FCd1	Fox Creek	1/3ac lots	8.24	30	72	30.1
FCd2	Fox Creek	1/3ac lot, park	10.33	15	66	55.5
FCd3	Fox Creek	1/3ac lots	5.16	30	72	23.8
FCd4	Fox Creek	5ac lots	18.41	5	62	63.3
FCd5	Fox Creek	1/3ac lots	6.08	30	72	22.1
FCd6	Fox Creek	1/3ac lots	7.52	30	72	30.0
FCd7	Fox Creek	1/3ac lots	2.21	30	72	19.3
FCd8	Fox Creek	backyards, pond	4.48	30	72	20.6
FCe1	Fox Creek	1/3ac lots	37.18	30	72	78.6
FCe2	Fox Creek	1/3ac lots	5.09	30	72	27.7
FCe3	Fox Creek	1/3ac lots	12.37	30	72	34.6
FCe4	Fox Creek	1/2ac lots	5.92	25	70	29.9
FCe5	Fox Creek	1/3ac lots	6.35	30	72	31.1
HE1	Heritage	houses, open	4.98	25	70	16.1
HE2	Heritage	houses, open	12.96	25	70	68.5



**TABLE 7: ROGER-SW XP-SWMM MODEL - WATERSHED CHARACTERISTICS**

SUB-CATCHMENT	LOCATION	TYPE / LAND USE	AREA (ac)	% IMPERVIOUS	CN	Tc (min.)
HE3	Heritage	open	2.29	0	60	75.4
HE4	Heritage	1/2ac lots	6.45	25	70	12.0
HE5	Heritage	open	6.86	10	64	40.9
HE6	Heritage	road	1.8	100	98	17.8
HE7	Heritage	open	4.71	5	62	19.0
HE8	Heritage	open/road	13.36	10	64	53.1
HE9	Heritage	developed	65.02	65	85	47.4
HEa1-Undeveloped	Heritage	undeveloped	89.92	5	62	71.6
HEa1 - Developed	Heritage	town homes	89.92	65	85	49.9
HEa2	Heritage	developed	8.68	65	85	12.9
HEa3	Heritage	developed	38.32	65	85	92.6
HEa4	Heritage	developed	8.65	65	85	31.2
HEa5	Heritage	developed	21.07	65	85	35.9
NR1	Northridge	backyards, pond	7.9	42	77	34.2
NR2	Northridge	1/3ac lots	10.4	30	72	37.9
NR3	Northridge	1/3ac lots	10.89	30	72	28.9
NR4	Northridge	1/2ac lots	10.22	25	70	43.4
NR5	Northridge	1/3ac lots	8.06	30	72	28.0
NR6	Northridge	1/3ac lots	11.71	30	72	34.9
NR7	Northridge	town homes	4.9	65	85	12.8
NR8	Northridge	1/3ac lots, town homes	11	38	75	29.4
NR9	Northridge	park	12.66	0	60	57.1
NR10	Northridge	1/3ac lots	4.98	30	72	53.5
NR11	Northridge	1/3ac lots, pond	5.74	20	68	20.2
SS1	Sunnyside	1/3ac lots	11.7	30	72	37.7
SS2	Sunnyside	1/3ac lots	6.08	30	72	50.3
SS3	Sunnyside	1/3ac lots	16.93	30	72	60.0
SS4	Sunnyside	1/3ac lots	2.34	30	72	18.6
SS5	Sunnyside	1/3ac lots	8.43	30	72	27.1
SS6	Sunnyside	1/3ac lots	6.84	30	72	55.4
SS7	Sunnyside	1/3ac lots	3.49	30	72	48.9
SS8	Sunnyside	1/3ac lots	3.59	30	72	17.5
SS9	Sunnyside	1/3ac lots	2.36	30	72	19.1
SSa1	Sunnyside	1/3ac lots	6.62	30	72	21.3
SSa2	Sunnyside	backyard, wetland	11.86	54	82	50.0
SSa3	Sunnyside	1/3ac lots	9.27	37	75	21.8
SSa4	Sunnyside	1/3ac lots	11.69	30	72	61.9
SSa5	Sunnyside	1/3ac lots	4.98	42	77	49.3
SSa6	Sunnyside	1/3ac lots	8.99	30	72	23.3
SSa7	Sunnyside	1/3ac lots, industrial	6.52	50	80	37.1
SSa8	Sunnyside	backyard, wetland	8.28	43	77	26.0
PP1	Primrose Place	1/2ac lots	8.54	25	70	30.9
PP2	Primrose Place	1/2ac lots	5.22	25	70	40.3
WETLAND1	Large Wetlands	industrial, wetland	54.65	45	78	40.3
WETLAND2	Large Wetlands	houses, wetland	50.74	40	76	55.9
WETLAND3	Large Wetlands	backyards, wetland	6.8	80	91	40.1
WETLAND4	Large Wetlands	wetland	19.44	92	95	27.2
I941	Along Interstate 94	I94, woods, houses	25.9	23	69	49.7
I942	Along Interstate 95	I94, ditch	26.27	50	80	98.1
I943	Along Interstate 96	I94, ditch	13.77	40	76	77.7
WTP	Water Treatment Plant	holding ponds, plant	14.9	70	87	37.8
CRE1	Creek, Before River	wetland, houses	10.29	5	62	16.1
CRE2	Creek, Before River	wetland, houses	17.03	5	62	5.4
ATH1	Arthur Street	5-10ac lots	49	5	62	55.8
ATH2	Arthur Street	5ac lots	12.26	5	62	51.6
ATH3	Arthur Street	5ac lots	5.27	5	62	51.9
21a	Arthur Street	5ac lots	17.95	5	62	51.8
21	Arthur Street	open, 5-10ac lots	39.97	2	61	62.0
10	Verstecker Acker	2ac lots, fields	81	18	63	144.6
11	Verstecker Acker	fields	32	43	77	80.9
12	Verstecker Acker	2ac lots, fields	61.7	18	67	424.6
14	Verstecker Acker	1/4ac lots, brush	33.7	50	80	49.6

**TABLE 7: ROGER-SW XP-SWMM MODEL - WATERSHED CHARACTERISTICS**

SUB-CATCHMENT	LOCATION	TYPE / LAND USE	AREA (ac)	% IMPERVIOUS	CN	Tc (min.)
14a	Verstecker Acker	2ac lots, woods	15.9	3	61	20.4
15	Verstecker Acker	2ac lots, open	79	35	74	156.4
16a	Verstecker Acker	1/3ac lots, brush	16.6	5	62	25.9
16b	Verstecker Acker	1/3ac lots	21.4	30	72	12.6
16c	Verstecker Acker	1/3ac lots, 2ac lots	45.38	30	72	14.8
16d	Verstecker Acker	brush	30.8	0	48	54.7
16e	Verstecker Acker	1/3ac lots, open	20.18	15	66	36.2
17	Verstecker Acker	fields	16.5	38	75	39.1
18	Verstecker Acker	fields	11.5	30	72	26.9
20	Verstecker Acker	5 sub-catchments	47.47	38	75	114.3
DT1	Down Town and Along I94	industrial	11.76	72	88	34.4
DT2	Down Town and Along I94	industrial	37.87	72	88	36.2
DT3	Down Town and Along I94	industrial	68.97	72	88	71.2
DT4	Down Town and Along I94	commercial, wetland	67.79	78	90	24.8
DT5	Down Town and Along I94	commercial	13.45	85	93	55.4
DT6	Down Town and Along I94	commercial, park	73.87	15	66	39.4
DT7	Down Town and Along I94	ditch, backyards	21.74	5	62	93.9
DT8	Down Town and Along I94	near park	34.74	0	60	98.4
DT9	Down Town and Along I94	backyards, cabellas	6.79	5	62	75.1
EW1	Edge Wood	farms, wetlands	59.45	30	72	36.2
EW2	Edge Wood	developed, fields	195.93	23	69	42.6
EW3	Edge Wood	developed, fields	268.84	30	72	69.9
IN1	Independent Area	industrial, pond	29.87	40	76	62.5
IN2	Independent Area	open	26.3	0	60	55.0
IN3, pond1	Independent Area	industrial	105.39	65	85	44.5
IN4	Independent Area	open	20.07	5	62	64.0
IN5	Independent Area	pond	5.11	5	62	51.5
VA	Villas	town homes	11.89	65	85	26.8
SL	Sylvan Lake	farms	435.3	5	62	84.2
ML	Meadow Lake	farms, houses	179.5	10	64	50.3
MLW	Meadow Wetland	farms	74	5	62	87.3

**Total Acres: 3,969**

NOTE: CN = Curve Number; Tc = Time of Concentration

**TABLE 7A: ROGER-SW XP-SWMM MODEL - SUB-WATERSHED FLOW RATES & VOLUMES**

SUB-CATCHMENT	REACH TYPE	RATE 2 YEAR (cfs)	RATE 10 YEAR (cfs)	RATE 100 YEAR (cfs)	VOLUME 2 YEAR (ft^3)	VOLUME 10 YEAR (ft^3)	VOLUME 100 YEAR (ft^3)
DK1	24"	1.7	9.0	15.7	4.1	35.6	60.0
AR1	36"	14.0	45.9	88.5	681.0	2515.5	5585.9
AR2	48"	8.7	28.7	49.5	166.4	700.6	1651.9
AR3	48"	14.8	48.8	95.0	204.4	832.0	1289.0
SP1	27"	4.5	12.2	22.9	15.9	54.5	123.5
SP2	30"	7.1	21.9	28.6	105.3	354.8	356.3
SP3	21"	5.2	13.8	25.4	56.1	213.5	397.7
SP4	12"	1.8	4.8	9.0	3.9	15.2	33.4
SH1	15"	5.9	11.2	14.4	53.9	174.1	359.9
SH2	DITCH	2.5	11.5	27.4	2000.4	6426.7	11585.1
SH3	DITCH	5.4	17.9	29.4	5066.1	16403.7	33005.4
LE1	DITCH	3.8	13.3	17.8	319.4	1769.7	8960.7
CH1	18"	17.3	18.0	17.9	182.4	185.3	185.1
JMD1	33"	41.7	69.2	83.2	276.4	376.7	386.1
JMD2	DITCH	25.8	28.9	30.8	43.9	45.9	46.9
JMD3	DITCH	10.0	16.4	24.0	670.0	729.3	731.2
RO1	21"	10.8	15.9	16.3	917.1	918.1	920.0
RO2	DITCH	3.3	6.2	7.9	5.1	11.6	96.9
RO3	21"	15.7	19.4	19.5	918.6	1085.6	1086.0
RO4	DITCH	2.4	8.0	15.2	11.9	61.3	133.4
BR1	36"	14.0	26.8	41.9	460.0	1048.1	1303.9
BR2	15"	2.6	6.9	13.0	146.9	191.9	192.4
BR3	2X48"	14.6	48.0	90.8	3802.4	9539.4	17521.7
BR4	DITCH	11.5	42.3	79.7	2206.2	19037.4	34435.4
BR5	DITCH	0.8	4.6	14.1	223.2	2260.7	6673.6
KE1	18"	1.3	10.0	15.7	11.5	85.5	95.2
FCa1	12"	7.0	10.6	10.8	72.0	73.3	73.3
FCa2	36"	10.8	35.7	40.3	206.4	463.0	497.5
FCa3	15"	5.3	15.1	16.9	19.0	99.6	187.6
FCa4	36"	10.2	33.6	33.6	13.8	63.8	104.4
FCa5	18"	2.4	6.4	9.3	104.3	222.4	241.3
FCa6	12"	0.6	3.5	6.4	0.9	6.2	10.1
FCb1	21"	7.3	20.0	37.7	202.1	367.2	389.6
FCb2	21"	4.3	11.7	22.0	16.9	110.9	299.3
FCb3	24"	4.8	13.3	25.1	50.2	183.6	351.3
FCb4	27"	4.6	13.5	31.6	39.1	246.1	495.2
FCb5	12"	0.6	3.7	4.9	1.8	36.8	52.1
FCb6	12"	1.9	5.1	9.5	3.1	11.6	24.5
FCb7	18"	2.2	5.9	10.8	7.0	23.8	55.1
FCb8	15"	0.9	3.0	7.1	2.8	25.2	221.9
FCb9	27"	2.0	3.9	7.1	373.1	373.6	373.9
FCc1	15"	1.3	8.3	10.7	2.9	33.1	60.7
FCc2	42"	8.1	22.1	42.4	7.6	38.3	101.7
FCc3	27"	4.9	13.3	25.3	400.4	1383.7	2138.6
FCc4	21"	3.1	8.4	15.8	45.3	235.2	502.1
FCc5	48"	2.1	8.1	15.2	163.0	657.2	1633.6
FCc6	42"	3.0	12.8	23.2	97.2	254.5	465.0
FCd1	48"	4.7	15.5	32.5	306.6	1164.3	3170.7
FCd2	48"	6.4	21.0	42.9	1542.9	3303.2	5726.9
FCd3	18"	3.1	9.3	15.5	25.7	120.9	311.0
FCd4	12"	0.9	6.7	7.9	57.6	83.0	83.2
FCd5	15"	3.6	9.7	12.1	129.1	221.0	225.5
FCd6	21"	3.8	9.9	18.5	352.0	751.5	814.0
FCd7	15"	1.4	3.8	7.0	125.6	126.8	129.6
FCd8	DITCH	15.6	52.9	99.3	796.3	5011.1	13408.2
FCe1	36"	4.2	14.1	28.4	40.5	219.3	1053.3
FCe2	15"	2.6	7.1	12.5	15.8	64.0	107.0
FCe3	27"	5.5	14.9	28.0	73.9	266.8	591.2
FCe4	21"	2.4	7.1	13.7	65.1	205.5	322.8

**TABLE 7A: ROGER-SW XP-SWMM MODEL - SUB-WATERSHED FLOW RATES & VOLUMES**

SUB-CATCHMENT	REACH TYPE	RATE 2 YEAR (cfs)	RATE 10 YEAR (cfs)	RATE 100 YEAR (cfs)	VOLUME 2 YEAR (ft^3)	VOLUME 10 YEAR (ft^3)	VOLUME 100 YEAR (ft^3)
FCe5	15"	3.0	8.6	15.7	2.3	10.9	51.0
HE1	24"	3.0	8.4	16.1	46.2	95.7	143.9
HE2	24"	1.8	6.1	12.8	125.1	289.4	311.6
HE3	12"	1.1	4.8	6.2	2.6	29.0	51.8
HE4	18"	8.6	8.9	9.2	0.3	1.2	3.9
HE5	DITCH	0.4	3.9	5.3	5.7	86.1	210.5
HE6	15"	4.6	5.0	5.1	7.2	7.5	7.6
HE7	48"	0.9	3.5	6.9	1.7	6.3	12.5
HE8	18"	3.0	13.9	30.5	112.0	31114.0	58780.6
HE9	18"	56.2	114.4	184.0	1356.1	3444.0	5054.7
HEa1-Undeveloped	OVERLAND	7.3	33.4	7.3	2.2	7.1	14.8
HEa1-developed	OVERLAND	75.1	145.1	230.2	10.2	19.5	31.2
HEa2	15"	10.1	12.6	15.4	2.8	10.1	21.0
HEa3	24"	8.9	18.3	30.0	98.3	135.3	155.5
HEa4	15"	8.6	8.9	9.2	0.3	1.2	3.8
HEa5	15"	8.9	9.6	9.9	19.8	21.0	21.7
NR1	12"	0.7	1.4	2.9	6.5	280.0	365.0
NR2	27"	4.3	11.8	22.1	35.6	28.0	260.3
NR3	27"	5.5	14.8	27.9	7.2	48.8	161.8
NR4	15"	3.2	7.9	8.8	35.5	198.0	338.5
NR5	18"	4.2	13.6	15.6	107.0	245.5	432.9
NR6	24"	5.2	14.2	26.4	45.2	299.4	634.1
NR7	18"	9.2	12.9	14.0	124.8	212.3	213.0
NR8	24"	7.0	17.1	30.5	17.7	54.8	81.0
NR9	12"	0.8	4.3	4.7	11.4	82.0	85.2
NR10	18"	1.5	4.2	8.1	4.8	21.3	35.7
NR11	15"	2.4	4.2	4.5	1.5	6.5	7.1
SS1	27"	4.8	13.3	25.0	182.7	655.9	2081.0
SS2	27"	2.4	10.2	22.2	15.9	106.1	602.1
SS3	30"	5.0	13.4	25.5	398.0	1348.7	2832.2
SS4	15"	0.6	2.7	4.5	12.8	107.7	346.0
SS5	18"	4.4	12.0	22.4	19.4	131.7	325.3
SS6	21"	1.9	5.5	10.6	49.0	173.7	358.4
SS7	30"	1.4	6.6	20.9	25.8	208.1	966.3
SS8	27"	7.6	12.7	18.1	278.2	396.6	662.7
SS9	30"	1.5	6.9	22.1	22.9	301.4	647.5
SSa1	21"	4.0	10.8	20.0	1.4	4.5	9.9
SSa2	18"	0.4	4.3	10.5	26.4	113.3	154.9
SSa3	18"	5.7	15.0	18.6	412.1	428.6	431.5
SSa4	24"	2.1	6.8	13.5	3.0	24.1	91.0
SSa5	18"	1.3	3.3	5.7	1.7	6.3	113.4
SSa6	18"	7.4	14.9	23.6	97.7	152.8	156.1
SSa7	18"	3.9	9.2	18.1	25.3	150.0	386.4
SSa8	27"	4.5	11.8	22.2	27.9	143.9	157.9
PP1	12"	3.4	3.7	3.9	2.6	2.9	3.0
PP2	15"	1.7	5.1	9.9	17.7	32.2	35.8
WETLAND1	DITCH	44.1	116.1	213.3	14852.5	111543.4	181808.3
WETLAND2	DITCH	27.4	49.6	90.4	8986.5	22974.7	35155.9
WETLAND3	10"	0.1	0.4	1.0	6.7	16.3	27.9
WETLAND4	DITCH	0.2	0.8	2.2	381.8	902.8	1532.6
I941	BOX	34.0	93.3	187.0	143.7	461.8	1678.0
I942	DITCH	0.7	2.4	6.2	770.8	2200.0	4872.1
I943	30"	2.6	6.9	12.7	6.1	37.4	113.9
WTP	36"	15.9	29.4	45.1	3804.4	7730.5	9187.9
CRE1	27" & 48"	17.9	50.4	122.9	119.1	229.5	912.4
CRE2	DITCH	17.8	50.1	122.2	48561.9	76805.7	196443.9
ATH1	DITCH	15.6	54.0	93.7	2080.0	17649.3	25780.2

**TABLE 7A: ROGER-SW XP-SWMM MODEL - SUB-WATERSHED FLOW RATES & VOLUMES**

SUB-CATCHMENT	REACH TYPE	RATE 2 YEAR (cfs)	RATE 10 YEAR (cfs)	RATE 100 YEAR (cfs)	VOLUME 2 YEAR (ft^3)	VOLUME 10 YEAR (ft^3)	VOLUME 100 YEAR (ft^3)
ATH2	2X48"	11.3	37.9	41.7	77.8	228.6	269.3
ATH3	18	1.6	7.0	10.2	34.2	95.0	118.6
21a	18	1.2	4.5	6.4	210.4	566.8	565.6
21	DITCH	1.2	10.0	28.6	467.0	2105.0	4592.5
10							
11	WEIR	1.2	3.0	5.1	230.0	798.0	800.0
12							
14	12"	0.0	0.0	4.0	0.0	0.0	13.8
14a	30"	0.1	0.8	3.4	0.4	4.2	24.0
15							
16a							
16b	24"	0.0	0.3	2.9	0.0	7.0	138.0
16c							
16d							
16e							
17	DITCH	4.3	11.2	19.5	65.4	146.6	226.7
18	DITCH	0.0	0.0	24.2	0.0	0.0	0.0
20	DITCH	0.0	0.0	0.0	0.0	0.0	0.0
DT1	DITCH	14.7	26.3	40.1	384.9	1169.5	2325.8
DT2	DITCH	45.9	83.3	127.7	11219.0	55637.9	139547.3
DT3	42"	8.6	19.6	27.8	552.4	1433.7	3141.8
DT4	24"	1.0	3.6	7.2	904.3	2394.9	4354.3
DT5	22X36 ARCH	32.2	40.0	45.2	89.2	94.4	87.9
DT6	24" & 27"	0.3	2.0	9.9	1.8	44.0	130.8
DT7	DITCH	0.5	2.0	5.8	138.4	345.2	659.6
DT8	24" ARCH	0.0	0.0	1.8	3.5	25.4	105.3
DT9	DITCH	0.0	0.1	0.5	51.6	426.4	11082.9
EW1	DITCH	2.1	9.0	24.7	1215.0	2718.0	4513.0
EW2	DITCH	0.0	0.0	0.1	3.0	16.3	74.6
EW3	DITCH	0.0	0.4	1.0	20.0	141.0	422.5
IN1	12"	6.6	6.9	6.8	145.1	147.0	147.3
IN2	24"	1.7	12.7	28.1	5.4	99.4	213.7
IN3, pond1	18"	0.0	0.0	0.0	0.0	0.0	0.0
IN4	36"	16.6	33.8	56.3	377.6	965.3	1628.4
IN5	12"	0.0	0.0	0.1	0.0	0.4	2.0
VA	36"	15.0	28.7	41.0	571.3	897.7	1252.5
SL	21"	0.0	0.0	0.1	0.0	0.0	0.0
ML	24"	0.0	0.0	0.1	0.8	3.7	14.8
MLW	24"	0.1	0.4	1.0	0.0	0.3	0.9

**TABLE 7B: ROGER-SW XP-SWMM MODEL - POND RESULT INFORMATION**

POND	NWL	HWL	RATE 2 YEAR (cfs)	RATE 10 YEAR (cfs)	RATE 100 YEAR (cfs)	VOLUME 2 YEAR (ft^3)	VOLUME 10 YEAR (ft^3)	VOLUME 100 YEAR (ft^3)
DK1-POND	988.40	991.80	1.72	8.99	15.73	4.09	35.64	60.00
SP-POND	972.00	973.20	5.07	22.67	49.33	205.54	1160.21	3056.51
SH2-POND	963.00	964.40	2.47	11.49	27.36	2000.35	6426.66	11585.14
LE-POND	964.00	966.75	3.75	13.30	17.80	319.36	1769.68	8960.71
RO2-POND	946.00	948.00	0.00	0.00	0.10	0.00	0.00	0.67
RO4-POND	944.00	944.00	0.20	0.50	1.00	5.79	33.90	75.49
BR1-POND	938.00	941.50	4.13	8.59	12.41	84.97	198.08	198.12
BR3-POND	936.00	939.22	13.04	45.56	89.72	272.24	800.37	1642.38
BR4-POND	939.00	940.73	11.48	42.28	79.72	2206.16	19037.42	34435.44
BR5-POND	944.00	944.50	0.82	4.58	14.14	223.15	2260.66	6673.55
FCa2-POND	932.60	936.00	25.75	28.92	30.82	5059.85	19110.52	22236.25
FCa3-POND	934.60	936.60	0.60	2.37	3.52	28.57	129.84	133.01
FCa4-POND	936.00	938.70	10.18	33.57	33.60	13.76	63.77	104.36
Fca-WETLAND	938.00	938.70	0.09	0.42	-29.97	0.04	0.51	261.68
FCa5-POND	938.00	938.50	1.72	6.83	15.47	13.66	29.30	149.08
FCb1-POND	922.00	925.30	1.51	5.24	8.43	14.29	61.12	104.82
FCb3-POND	923.00	926.00	1.32	7.20	23.82	56.41	320.40	1015.24
FCb5-POND	922.00	924.40	0.18	0.18	0.20	48.14	51.58	51.93
FCb8-POND	922.00	924.80	0.03	0.02	0.02	7.17	7.27	7.34
FCc1-POND	936.00	937.50	1.26	8.25	10.70	2.86	33.14	60.74
FCc5-POND	914.50	918.40	2.09	8.08	15.18	162.98	657.22	1633.62
FCd8-POND	916.00	919.00	15.56	52.88	99.30	796.27	5011.11	13408.23
HE9-POND	868.45	872.78	0.00	1.61	8.71	0.00	1.58	38.20
NR1-POND	907.52	910.80	0.65	1.38	2.87	6.50	280.00	365.00
NR6-POND	909.80	918.00	1.18	2.91	6.74	46.32	322.84	385.41
NR7-POND	914.00	915.10	0.24	12.48	13.95	0.13	40.69	46.87
NR8-POND	905.00	907.00	6.66	16.68	30.08	77.69	283.04	585.35
NR11-POND1	914.50	914.80	0.23	12.14	13.93	0.05	12.97	15.30
NR11-POND2	912.00	913.00	2.23	15.97	18.35	392.02	1242.27	2545.28
SS4-POND	912.30	915.20	0.55	2.74	4.54	12.75	107.70	346.04
SS5-POND	911.00	913.40	0.88	5.00	12.02	61.48	482.02	889.57
SS7-POND	905.00	908.40	1.44	6.59	20.92	25.81	208.06	966.32
SSa2-POND1	901.00	903.10	0.61	0.97	1.65	7.15	16.95	33.96
SSa2-POND2	901.00	905.80	0.43	4.26	10.51	26.37	113.32	154.89
SSa8-POND1	902.00	905.00	4.52	11.83	22.16	27.85	143.90	157.90
SSa8-POND2	901.00	904.70	0.00	0.00	2.91	0.00	0.00	1872.75
WETLAND1	870.00	871.10	44.14	116.08	213.34	14852.49	111543.35	181808.29
WETLAND2	866.50	870.20	27.44	49.64	90.39	8986.52	22974.72	35155.85
WETLAND3	896.00	896.80	0.08	0.41	0.98	6.65	16.28	27.90
WETLAND4	896.00	869.60	0.15	0.79	2.16	381.80	902.80	1532.58
DT-WETLAND	943.00	944.80	0.96	3.59	7.18	1.91	10.86	28.91
DT6-POND	958.00	959.00	0.29	1.99	9.88	1.79	43.98	130.77
DT8-POND	958.50	958.80	0.01	0.04	1.79	3.54	25.36	105.33
IN5-POND	900.00	900.50	0.00	0.04	0.14	0.02	0.41	1.70

**TABLE 8: HIGH SCHOOL AREA HYDROCAD MODEL - WATERSHED CHARACTERISTICS**

SUB-CATCHMENT	LOCATION	TYPE / LAND USE	AREA (ac)	% IMPERVIOUS	CN	Tc (min.)
<b>Area 1</b>						
1s	South of CR 144	open, pond, part of school	15.33	75	89	22.9
3s	South of CR 144	open, wetland, parking lot	6.2	95	96	15.0
4s	South of CR 144	golf course	1.5	23	69	21.4
5s	South of CR 144	golf course	21.4	23	69	21.4
7s	South of CR 144	open	1.91	23	69	45.9
<b>Area 2</b>						
10s	S.E. Dehn Agricultural Area	farm, fields	74.9	38	73	45.4
<b>Area 3</b>						
6s	Rogers High School	open	3.5	23	69	41.9
8s	Rogers High School	open, ball fields	38	23	69	54.5
9s	Rogers High School	open, school	12.13	68	86	34.5
<b>Hassan Hills</b>						
11s	Hassan Hills	1ac lots	67.7	10	64	43.4

Sub-Total: 242.57  
 Additional area from HydroCAD links 309.43  
**Total Acres: 552**

NOTE: CN = Curve Number; Tc = Time of Concentration

**TABLE 8A: HIGH SCHOOL AREA HYDROCAD MODEL -  
SUB-WATERSHED FLOW RATES & VOLUMES**

SUB-CATCHMENT	RATE 2 YEAR (cfs)	RATE 10 YEAR (cfs)	RATE 100 YEAR (cfs)	VOLUME 2 YEAR (af)	VOLUME 10 YEAR (af)	VOLUME 100 YEAR (af)
<i>Area 1</i>	25.7	59	109.1	31.1	65	109.3
<i>Area 2</i>	29.7	78.6	145.8	4.4	10.4	18.7
<i>Area 3</i>	22.9	60.1	110.5	6.7	13.9	23.4
<b>HASSEN HILLS</b>	10.2	42.6	94.9	2.1	6.1	12.4

**TABLE 8B: HIGH SCHOOL AREA HYDROCAD MODEL - POND  
RESULT INFORMATION**

POND	NWL	HWL	RATE 2 YEAR (cfs)	RATE 10 YEAR (cfs)	RATE 100 YEAR (cfs)	VOLUME 2 YEAR (af)	VOLUME 10 YEAR (af)	VOLUME 100 YEAR (af)
INFILTRATION POND	882.5	888.3	6.4	36.7	98.8	4.5	34.1	83.3
HASSAN HILLS WETLAND	875.3	878	0	29.3	69.8	0	27.9	78.5



**TABLE 9: BROCKTON MEADOWS HYDROCAD MODEL - WATERSHED CHARACTERISTICS**

SUB-CATCHMENT	LOCATION	TYPE / LAND USE	AREA (ac)	% IMPERVIOUS	CN	Tc (min.)
S11	Brockton Meadows	development	5.15	40	76	20.1
S14	Brockton Meadows	development	8.5	17	65	34.5
S16	Brockton Meadows	development	1.335	19	67	13.2
21S	Brockton Meadows	development	0.957	30	72	23.7
S23	Brockton Meadows	development	1.65	84	64	17.4
S24	Brockton Meadows	development	1.3	37	75	27.2
S25	Brockton Meadows	development	1.193	25	70	12.5
S12E	Brockton Meadows	development	2.032	30	72	13.1
S12F	Brockton Meadows	development	1.163	37	75	9.6
S12G	Brockton Meadows	development	0.532	37	75	12.3
S12H	Brockton Meadows	development	0.338	37	75	13.2
S12I	Brockton Meadows	development	0.293	37	75	9.1
S12J	Brockton Meadows	development	0.176	100	98	5.7
S12K	Brockton Meadows	development	1.152	37	75	10.1
S12L	Brockton Meadows	development	5.174	37	75	23.6
S12M	Brockton Meadows	development	0.616	30	72	9.7
S12N	Brockton Meadows	development	1.021	37	75	12.2
S13A	Brockton Meadows	development	4.1	25	70	13.7
S13B	Brockton Meadows	development	1.293	37	75	10.9
S13C	Brockton Meadows	development	0.36	37	75	5.9
S13D	Brockton Meadows	development	0.223	37	75	11.1
S13E	Brockton Meadows	development	0.469	37	75	12.5
S13F	Brockton Meadows	development	1.127	37	75	11.5
S13G	Brockton Meadows	development	1.314	37	75	16.0
S13H	Brockton Meadows	development	0.65	37	75	9.6
S13I	Brockton Meadows	development	0.932	37	75	8.0
S13J	Brockton Meadows	development	1.823	12	65	23.4
S13K	Brockton Meadows	development	2.856	15	66	16.3
S13L	Brockton Meadows	development	0.609	37	75	9.8
S13M	Brockton Meadows	development	5.234	17	67	23.9
S13N	Brockton Meadows	development	1.055	37	75	12.0
S15A	Brockton Meadows	development	0.747	90	94	12.6
S15B	Brockton Meadows	development	0.815	50	80	10.7
S15C	Brockton Meadows	development	1.456	30	72	10.1
S15D	Brockton Meadows	development	0.287	37	75	6.0
S15E	Brockton Meadows	development	0.447	85	93	10.7
S15G	Brockton Meadows	development	0.971	37	75	10.1
S15H	Brockton Meadows	development	1.171	37	75	12.1
S15I	Brockton Meadows	development	1.285	30	72	15.9
S15J	Brockton Meadows	development	0.67	10	64	16.0
S15K	Brockton Meadows	development	2.521	12	65	16.0
S15L	Brockton Meadows	development	1.58	20	68	18.7
S15M	Brockton Meadows	development	1.035	37	75	11.3
S15N	Brockton Meadows	development	0.559	37	75	7.8
S15O	Brockton Meadows	development	1.073	37	75	13.2
S15P	Brockton Meadows	development	0.954	37	75	13.4
S15Q	Brockton Meadows	development	0.437	37	75	13.5
S15R	Brockton Meadows	development	1.133	30	72	12.3
S15S	Brockton Meadows	development	2.521	30	72	27.1
S15T	Brockton Meadows	development	0.353	37	75	10.9
S17A	Brockton Meadows	development	0.833	25	70	10.5

**TABLE 9: BROCKTON MEADOWS HYDROCAD MODEL - WATERSHED CHARACTERISTICS**

SUB-CATCHMENT	LOCATION	TYPE / LAND USE	AREA (ac)	% IMPERVIOUS	CN	Tc (min.)
S17B	Brockton Meadows	development	0.997	27	71	21.4
S17C	Brockton Meadows	development	0.395	53	81	10.5
S17D	Brockton Meadows	development	0.246	47	79	5.7
S17Q	Brockton Meadows	development	5.953	20	68	32.0
S19A	Brockton Meadows	development	0.515	37	75	10.8
S19B	Brockton Meadows	development	0.943	37	75	18.3
S19C	Brockton Meadows	development	1.372	55	82	11.4
S20A	Brockton Meadows	development	3.503	27	71	0.0
S20B	Brockton Meadows	development	0.217	37	75	10.4
S20C	Brockton Meadows	development	0.968	37	75	12.5
S20D	Brockton Meadows	development	1.853	10	64	15.4
S20E	Brockton Meadows	development	1.329	30	72	11.4
S20F	Brockton Meadows	development	1.582	30	72	22.3
S20G	Brockton Meadows	development	1.789	25	70	13.1
S20H	Brockton Meadows	development	2.116	25	70	14.1
S22A	Brockton Meadows	development	4.212	7	63	16.6
S22B	Brockton Meadows	development	0.789	37	75	10.1
S22C	Brockton Meadows	development	0.971	37	75	9.9
S22D	Brockton Meadows	development	1.473	15	66	15.0
S22E	Brockton Meadows	development	0.165	60	83	5.2
S22F	Brockton Meadows	development	0.165	60	83	6.5
S22G	Brockton Meadows	development	0.463	37	75	10.1
S22H	Brockton Meadows	development	0.741	37	75	12.4
S22I	Brockton Meadows	development	0.748	37	75	12.1
S22J	Brockton Meadows	development	0.777	37	75	11.8
S22K	Brockton Meadows	development	0.66	37	75	11.4
S22L	Brockton Meadows	development	0.203	37	75	5.5
S22Q	Brockton Meadows	development	0.224	37	75	5.8

**Total Acres: 111**

NOTE: CN = Curve Number; Tc = Time of Concentration

**TABLE 9A: BROCKTON MEADOWS HYDROCAD  
MODEL - SUB-WATERSHED FLOW RATES &  
VOLUMES**

SUB-CATCHMENT	RATE 2 YEAR (cfs)	RATE 10 YEAR (cfs)	RATE 100 YEAR (cfs)	VOLUME 2 YEAR (af)	VOLUME 10 YEAR (af)	VOLUME 100 YEAR (af)
S11	4.35	10.20	19.19	0.35	0.78	1.45
S14	1.60	6.36	15.19	0.27	0.77	1.67
S16	0.62	2.09	4.58	0.05	0.13	0.28
21S	0.52	1.42	2.86	0.05	0.12	0.24
S23	0.43	1.82	4.36	0.05	0.14	0.31
S24	0.83	2.05	3.93	0.08	0.19	0.36
S25	0.80	2.27	4.67	0.05	0.14	0.28
S12E	1.59	4.19	8.33	0.11	0.26	0.51
S12F	1.32	3.11	5.86	0.08	0.17	0.32
S12G	0.55	1.30	2.45	0.03	0.08	0.15
S12H	0.34	0.80	1.51	0.02	0.05	0.09
S12I	0.34	0.80	1.51	0.02	0.04	0.08
S12J	0.66	1.01	1.48	0.04	0.06	0.08
S12K	1.28	3.02	5.69	0.07	0.17	0.32
S12L	3.65	8.89	17.08	0.33	0.75	1.42
S12M	0.55	1.43	2.83	0.03	0.08	0.15
S12N	1.05	2.50	4.72	0.07	0.15	0.28
S13A	2.60	7.46	15.41	0.19	0.48	0.96
S13B	1.40	3.30	6.22	0.08	0.19	0.35
S13C	0.47	1.09	2.03	0.02	0.05	0.10
S13D	0.24	0.57	1.07	0.01	0.03	0.06
S13E	0.48	1.14	2.15	0.03	0.07	0.13
S13F	1.19	2.82	5.33	0.07	0.16	0.31
S13G	1.18	2.82	5.37	0.08	0.19	0.36
S13H	0.74	1.74	3.28	0.04	0.09	0.18
S13I	1.14	2.66	4.98	0.06	0.14	0.26
S13J	0.45	1.79	4.21	0.06	0.17	0.36
S13K	1.04	3.76	8.49	0.10	0.27	0.58
S13L	0.68	1.62	3.04	0.04	0.09	0.17
S13M	1.67	5.79	12.95	0.19	0.53	1.10
S13N	1.10	2.60	4.91	0.07	0.15	0.29
S15A	2.05	3.31	4.99	0.13	0.21	0.33
S15B	1.23	2.56	4.49	0.07	0.14	0.26
S15C	1.29	3.32	6.58	0.08	0.19	0.36
S15D	0.38	0.87	1.61	0.18	0.04	0.08
S15E	1.25	2.05	3.12	0.07	0.12	0.19
S15G	1.08	2.54	4.80	0.06	0.14	0.27
S15H	1.21	2.88	5.43	0.08	0.17	0.32
S15I	0.91	2.40	4.80	0.07	0.16	0.32
S15J	0.18	0.78	1.85	0.02	0.06	0.13
S15K	0.81	3.13	7.26	0.08	0.23	0.49
S15L	0.67	2.16	4.71	0.06	0.17	0.35
S15M	1.10	2.61	4.92	0.07	0.15	0.28
S15N	0.69	1.61	3.01	0.04	0.08	0.15
S15O	1.07	2.54	4.80	0.07	0.16	0.29
S15P	0.94	2.24	4.24	0.06	0.14	0.26
S15Q	0.43	1.02	1.94	0.03	0.06	0.12
S15R	0.92	2.40	4.77	0.06	0.15	0.28
S15S	1.26	3.43	6.94	0.13	0.32	0.63
S15T	0.38	0.90	1.70	0.02	0.05	0.10
S17A	0.61	1.70	3.47	0.04	0.10	0.20
S17B	0.53	1.50	3.07	0.05	0.12	0.24
S17C	0.64	1.29	2.25	0.04	0.07	0.13
S17D	0.42	0.88	1.55	0.02	0.04	0.08
S17Q	1.74	5.74	12.66	0.24	0.63	1.30
S19A	0.56	1.32	2.49	0.03	0.08	0.14
S19B	0.78	1.89	3.60	0.06	0.14	0.26
S19C	2.27	4.53	7.77	0.13	0.26	0.46
S20A	4.11	10.59	20.84	0.17	0.43	0.85

**TABLE 9A: BROCKTON MEADOWS HYDROCAD  
MODEL - SUB-WATERSHED FLOW RATES &  
VOLUMES**

SUB-CATCHMENT	RATE 2 YEAR (cfs)	RATE 10 YEAR (cfs)	RATE 100 YEAR (cfs)	VOLUME 2 YEAR (af)	VOLUME 10 YEAR (af)	VOLUME 100 YEAR (af)
S20B	0.24	0.56	1.06	0.14	0.03	0.06
S20C	0.99	2.35	4.43	0.06	0.14	0.27
S20D	0.52	2.19	5.21	0.05	0.16	0.35
S20E	1.12	2.91	5.76	0.07	0.17	0.33
S20F	0.90	2.44	4.91	0.08	0.20	0.40
S20G	1.17	3.33	6.87	0.08	0.21	0.42
S20H	1.32	3.79	7.84	0.10	0.25	0.50
S22A	0.96	4.45	10.92	0.11	0.34	0.76
S22B	0.88	2.07	3.90	0.05	0.12	0.22
S22C	1.09	2.57	4.84	0.77	0.14	0.27
S22D	0.57	2.02	4.55	0.05	0.14	0.30
S22E	0.36	0.69	1.16	0.02	0.03	0.06
S22F	0.34	0.66	1.10	0.02	0.03	0.06
S22G	0.52	1.21	2.29	0.03	0.07	0.13
S22H	0.76	1.80	3.40	0.05	0.11	0.20
S22I	0.78	1.84	3.47	0.05	0.11	0.21
S22J	0.81	1.93	3.64	0.05	0.11	0.21
S22K	0.70	1.66	3.13	0.04	0.10	0.18
S22L	0.27	0.62	1.17	0.01	0.03	0.06
S22Q	0.30	0.68	1.27	0.01	0.03	0.06

**TABLE 9B: BROCKTON MEADOWS HYDROCAD MODEL - POND  
RESULT INFORMATION**

POND	NWL	HWL	RATE 2 YEAR (cfs)	RATE 10 YEAR (cfs)	RATE 100 YEAR (cfs)	VOLUME 2 YEAR (af)	VOLUME 10 YEAR (af)	VOLUME 100 YEAR (af)
Pond 1	916.00	918.40	0.70	3.59	20.64	0.76	1.76	3.34
Pond 2	911.00	913.30	1.38	6.92	28.08	1.01	2.56	5.15
Pond 3	910.50	912.60	0.85	8.41	28.21	1.26	3.01	5.83
Pond 4	924.50	925.51	0.31	1.17	2.71	0.21	0.46	0.84
Pond 5	913.00	915.70	1.25	3.74	14.75	0.82	2.04	4.05
Pond 6	904.00	906.36	0.63	2.83	5.15	0.33	0.86	1.77

**TABLE 10: INDUSTRIAL AREA HYDROCAD MODEL - WATERSHED CHARACTERISTICS**

SUB-CATCHMENT	LOCATION	TYPE / LAND USE	AREA (ac)	% IMPERVIOUS	CN	Tc (min.)
IRD1	Ironwood Road	Industrial / open	87.37	40	80	41.6
IRD2	Ironwood Road	open	58.63	0	72	92.5
IRD3	Ironwood Road	open	134.4	3	65	101.2
VL1	Vevea Lane	industrial	42.05	72	88	10.1
VL2	Vevea Lane	open, wetland	214	0	70	85..7
CB	Cabella	commercial	42.04	95	96	14.1
IND5	Industrial Area	industrial, open	103.52	25	72	64.9
IND10	Industrial Area	industrial, open	110.1	15	66	59.0
IND1	Industrial Area	open	54.3	0	80	80.4
LWL1	Near Large Wetland	open, wetland	134.05	15	75	56.3
LWL2	Near Large Wetland	townhomes	42.43	65	85	40.5
LWL3	Near Large Wetland	1/3ac lots	36.9	30	72	48.7
LWL4	Near Large Wetland	open	76.99	3	61	61.1
FLD	Open Fields to the Southeast	fields	186.33	0	65	117.2
Pond B & POND A	Industrial Area	industrial	82.9	72	88	20.0
Pond C	Industrial Area	industrial	18.7	85	93	5.0
Pond D	Industrial Area	industrial	82.63	53	81	60.0
Pond E	Industrial Area	industrial	35.83	48	79	19.0
Department 56	Industrial Area	industrial	9.1	100	98	10.0
Wetland	Industrial Area	industrial	5.18	100	98	10.0

**Total Acres: 1,557**

NOTE: CN = Curve Number; Tc = Time of Concentration

**TABLE 10A: INDUSTRIAL AREA HYDROCAD MODEL -  
SUB-WATERSHED FLOW RATES & VOLUMES**

SUB-CATCHMENT	RATE 2 YEAR (cfs)	RATE 10 YEAR (cfs)	RATE 100 YEAR (cfs)	VOLUME 2 YEAR (af)	VOLUME 10 YEAR (af)	VOLUME 100 YEAR (af)
IRD1	61.83	133.07	223.77	7.66	15.90	26.61
IRD2	12.45	34.31	65.06	3.12	7.59	13.85
IRD3	13.05	47.96	104.42	4.22	12.35	24.69
VL1	96.05	171.59	206.59	5.32	9.71	15.09
VL2	40.39	119.72	233.79	9.97	25.37	47.39
CB	119.86	189.02	269.23	8.06	13.07	18.97
IND5	28.89	79.50	149.99	5.58	13.53	24.66
IND10	17.48	63.63	135.25	3.84	10.84	21.31
IND1	23.71	51.14	86.25	4.70	9.77	16.37
LWL1	53.36	132.48	238.77	8.77	19.97	35.18
LWL2	41.08	79.28	125.65	4.83	9.24	14.75
LWL3	12.67	35.00	66.02	2.00	4.85	8.83
LWL4	5.83	29.74	72.37	1.70	5.73	12.18
FLD	16.29	59.72	130.10	5.79	17.00	34.03
Pond B & POND A	146.35	264.32	403.57	10.99	20.05	31.17
Pond C	62.24	103.49	151.26	3.00	5.16	7.74
Pond D	70.60	128.71	197.87	10.86	19.80	30.79
Pond E	63.26	114.24	174.43	4.75	8.67	13.47
Department 56	30.62	47.21	66.57	1.91	3.00	4.29
Wetland	17.43	26.87	37.89	1.09	1.71	2.44

**TABLE 10B: INDUSTRIAL AREA HYDROCAD MODEL - POND  
RESULT INFORMATION**

POND	NWL	HWL	RATE 2 YEAR (cfs)	RATE 10 YEAR (cfs)	RATE 100 YEAR (cfs)	VOLUME 2 YEAR (af)	VOLUME 10 YEAR (af)	VOLUME 100 YEAR (af)
POND C	948.50	951.50	2.65	7.30	15.88	1.85	3.73	6.11
POND D	948.23	952.18	25.48	62.45	105.89	10.68	21.04	33.97
POND E	929.00	933.17	20.07	53.90	100.24	13.40	33.49	58.53
POND B	944.30	949.76	14.78	26.38	37.16	9.30	18.00	28.05
WETLAND BEFORE DIAMOND LAKE	910.00	910.88	0.00	0.00	0.00	0.00	0.00	0.00
LWL2 POND	916.00	1064.27	14.49	123.63	183.59	4.37	8.64	14.02
LWL3 POND	916.00	922.29	2.55	10.38	36.28	1.51	4.17	7.98
LARGE WETLAND	910.00	911.53	0.00	0.00	1.59	0.00	0.00	0.41

**TABLE 11: FLETCHER HILLS HYDROCAD MODEL - WATERSHED CHARACTERISTICS**

SUB-CATCHMENT	LOCATION	TYPE / LAND USE	AREA (ac)	% IMPERVIOUS	CN	Tc (min.)
FH1	Fletcher Hills	farm	9.12	3	68	44.2
FH2	Fletcher Hills	1/3 lots	18.6	30	80	27.0
FH3	Fletcher Hills	1/3 lots	14.47	30	80	40.2
FH4	Fletcher Hills	1/3 lots	3.99	30	72	35.4
FH5	Fletcher Hills	1/3 lots	26.54	30	80	32.5
FH6	Fletcher Hills	1/3 lots	6.79	30	72	40.7
FH7	Fletcher Hills	5ac lots	22	5	62	36.3
FH8	Dutch Knolls	1/3 lots	14.83	30	72	20.1

**Total Acres: 116**

NOTE: CN = Curve Number; Tc = Time of Concentration

**TABLE 11A: FLETCHER HILLS HYDROCAD MODEL -  
SUB-WATERSHED FLOW RATES & VOLUMES**

SUB-CATCHMENT	RATE 2 YEAR (cfs)	RATE 10 YEAR (cfs)	RATE 100 YEAR (cfs)	VOLUME 2 YEAR (af)	VOLUME 10 YEAR (af)	VOLUME 100 YEAR (af)
FH1	2.25	7.41	15.04	0.37	1.00	1.91
FH2	17.78	37.98	63.58	1.64	3.40	5.89
FH3	10.50	22.63	38.04	1.27	2.63	4.41
FH4	1.73	4.75	8.93	0.22	0.53	0.96
FH5	22.38	47.99	80.63	2.33	4.84	8.10
FH6	2.66	7.31	13.78	0.37	0.90	1.63
FH7	2.76	13.50	31.75	0.55	1.76	3.66
FH8	9.52	25.51	47.46	0.81	1.97	3.58

**TABLE 11B: FLETCHER HILLS HYDROCAD MODEL - POND RESULT  
INFORMATION**

POND	NWL	HWL	RATE 2 YEAR (cfs)	RATE 10 YEAR (cfs)	RATE 100 YEAR (cfs)	VOLUME 2 YEAR (af)	VOLUME 10 YEAR (af)	VOLUME 100 YEAR (af)
DUTCH KNOLLS	1012.99	1014.84	1.14	25.97	20.71	0.46	1.60	3.20
BIG POND	972.00	974.81	15.13	21.27	28.11	8.32	14.14	21.68
LITTLE POND	968.00	975.59	13.01	29.59	36.70	8.77	16.59	26.97



**TABLE 12: CITY AND REGIONAL DISCHARGE POINTS**

**CITY DISCHARGE POINT RESULTS**

AREA DESCRIPTION	AREA(ac)	POINT OF DISCHARGE	2 YEAR		10 YEAR		100 YEAR	
			RATE (cfs)	VOL.	RATE (cfs)	VOL.	RATE (cfs)	VOL.
ROGER-SW	3,269	Drainage swale after CR 144	17.72	937.30 CF	49.95	3568 CF	93.53	7988 CF
HIGH SCHOOL AREA	552	Pond outlet from 36" pipe	6.36	4.54 AF	36.67	34.14 AF	66.86	76.34 AF
		Pond outlet weir overflow	0.00	0 AF	0.00	0 AF	31.91	7.05 AF
		Wetland outlet	0.00	0 AF	29.29	27.95 AF	69.82	78.51 AF
		Before 147th Ave. 24" culverts	0.00	0 AF	29.29	27.94 AF	92.86	85.55 AF
After 147th Ave. 24" culverts	0.00	0 AF	29.19	27.94 AF	92.82	85.55 AF		
BROCKTON MEADOWS	111	Culverts under CR144	2.41	2.13 AF	9.79	7.46 AF	23.85	17.06 AF
INDUSTRIAL AREA	1,427	From wetland and overland flow to unknown culverts	132.11	32.15 AF	298.19	83.11 AF	550.76	161.59 AF
OUTLET FROM FLETCHER HILLS	116	To culverts under CSAH 166	9.58	7.29 AF	26.76	15.17 AF	45.90	26.57 AF
FIELDS	187	Overland flow to south	8.17	3.58 AF	40.72	12.7 AF	100.85	27.61 AF

**REGIONAL DISCHARGE POINT RESULTS**

AREA DESCRIPTION	AREA(ac)	POINT OF DISCHARGE	2 YEAR		10 YEAR		100 YEAR	
			RATE (cfs)	VOL.	RATE (cfs)	VOL.	RATE (cfs)	VOL.
TRIANGLE PARK	121	To culvert under railroad	0.29	1.79 CF	1.99	43.98 CF	9.88	130.77 CF
BROOK SIDE	374	Through weir into Fox Creek 1	11.04	5060 CF	36.96	19110 CF	35.38	22236 CF
FOX CREEK 1	176	Outlet from arch pipes	15.54	675 CF	52.66	2633 CF	86.99	5304 CF
ARTHUR STREET	551	Flow through 36" pipe	3.04	426 CF	16.47	822 CF	78.34	823 CF
		Outlet into low point	1.19	230 CF	2.95	798 CF	5.12	800 CF
SYLVAN LAKE	435	Culvert under CR116	0.01	0 CF	0.02	0 CF	0.09	0.02 CF
MEADOW LAKE	253	Culvert under CR116	0.09	0 CF	0.36	0 CF	0.27	0.94 CF
EDGEWATER	612	Through 24" culvert	7.84	46.16 CF	9.10	51.3 CF	9.71	53.56 CF
FOX CREEK 2	99	Through the first section of the 42" pipe	2.09	163 CF	8.08	657 CF	15.18	1633 CF
HERITAGE	104	Through both 36" pipes	3.99	56 CF	15.24	193 CF	46.40	471 CF
94 CULVERT	83	Box culvert under 194	57.30	530 CF	87.10	1477 CF	162.40	2274 CF
SUNNYSIDE	329	Wetland 12" outlet	0.81	104 CF	1.73	106 CF	2.93	108 CF
94 WETLAND 1	591	Box culvert under 194	33.94	144 CF	93.28	462 CF	187.02	1678 CF
94 WETLAND 2		Box culvert under Railroad	24.97	1566 CF	49.62	2311 CF	90.35	2527 CF
HIGH SCHOOL	396	Into DNR Wetland 289	76.58	31.13 AF	187.02	65.12 AF	366.17	109.41 AF
		Out of DNR Wetland 289	25.65	31.09 AF	58.98	65.08 AF	110.07	109.36 AF
POND E	286	Into Pond "E"	80.13	18.12 AF	147.13	39.95 AF	224.07	67.16 AF
		Out of Pond "E"	20.07	13.4 AF	53.90	33.49 AF	100.24	58.53 AF
DNR WETLAND 288	233	Into DNR Wetland 288	45.14	24.92 AF	226.07	61.68 AF	411.34	110.56 AF
		Out of DNR Wetland 288	0.00	0 AF	0.00	0 AF	0.97	0.21 AF

# Appendix G

## Water Resources Related Agreements

AMENDED AND RESTATED  
JOINT POWERS AGREEMENT ESTABLISHING  
THE ELM CREEK. WATERSHED MANAGEMENT COMMISSION

RECITALS

WHEREAS, on May 12, 1993, pursuant to statutory authority, the Cities of Champlin, Corcoran, Dayton, Greenfield, Maple Grove, Medina, Plymouth and Rogers, the Town of Hassan, and the Hennepin Conservation District adopted a "Joint Powers Agreement for the Establishment of the Elm Creek Watershed Management Commission to Plan, Protect and Manage the Elm Creek Watershed and Adjacent Minor Watersheds" (the "Joint Powers Agreement"); and

WHEREAS, in 2001 the City of Greenfield withdrew from the Agreement; and

WHEREAS, the Cities of Champlin, Corcoran, Dayton, Maple Grove, Medina, Plymouth and Rogers, and the Town of Hassan, wish to amend and restate the Agreement's terms in this document.

NOW, THEREFORE, pursuant to the authority conferred upon the parties by Minn. Stat §§ 471.59 and 103B.201, et seq., the parties to this Agreement do mutually agree as follows:

SECTION ONE  
DEFINITIONS

For purposes of this Agreement, each of the following terms, when used herein with an initial capital letter, will have the meaning ascribed to it as follows:

"Agreement" means the Joint Powers Agreement, as amended and restated in this document.

"Board" means the Board of Commissioners of the Commission.

"BWSR" means the Minnesota Board of Water and Soil Resources.

"Commissioner" means an individual appointed by a governmental unit to serve on the Board. The term Commissioner shall include both the representative and alternate representative appointed to serve on the Board.

"Elm Creek Watershed" or "Watershed" means the area within the mapped area delineated on the map filed with BWSR, as may be amended. A complete legal description defining the boundary of the Elm Creek Watershed is attached hereto and made apart hereof.

"Governmental Unit" means any signatory city or township.

"Member" means a governmental unit that enters into this Agreement.

"Watershed Management Organization ("WMO") means the organization created by this Agreement, the full name of which is "Elm Creek Watershed Management Commission." The Commission shall be a public agency of its respective governmental units.

SECTION TWO  
ESTABLISHMENT

The parties create and establish the Elm Creek Watershed Management Commission. The Commission membership shall include the Cities of Champlin, Corcoran, Dayton, Maple Grove, Medina, Plymouth and Rogers, and the Town of Hassan. In addition to other powers identified in this Agreement, the Commission shall have all of the authority for a joint powers watershed management organization identified in Minn. Stat. § 103B.211.

SECTION THREE  
PURPOSE STATEMENT

The purpose of this Agreement is to establish an organization within the Elm Creek Watershed to (a) protect, preserve, and use natural surface and groundwater storage and retention systems, (b) minimize public capital expenditures needed 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 and water recreational facilities, and (h) secure the other benefits associated with the proper management of surface and ground water, as identified in Minn. Stat. § 103B.201, including but not limited to aesthetic values when owned by the public or constituting public resources, as defined in Minn. Stat. Ch. 116B.

The Commission's Members agree to (a) provide a forum for exchanging information in the management of land use and land use techniques and control, (b) provide a forum for resolution of intergovernmental disputes relating to management and protection of the Elm Creek Watershed; and (c) cooperate on a united basis on behalf of all units of government within the Elm Creek Watershed with all other levels of government for the purpose of facilitating natural resource protection and management in the Watershed.

SECTION FOUR  
BOARD OF COMMISSIONERS

4.1. Appointment. The governing body of the Commission shall be its Board. Each Member shall be entitled to appoint one representative to serve on the Board and one alternate who may sit when the representative is not in attendance, and said representative or alternative representative shall be called a "Commissioner."

4.2. Term. Each Member shall determine the term length for its Commissioner's appointment to the Board. Each Member agrees that it will not remove from the Board its appointed Commissioner before the expiration of his/her term except for just cause. The Commission and its Members shall fill all Board vacancies pursuant to Minn, Stat. §

103B.227, subd. 1 and 2, as may be amended from time to time.

4.3. Compensation. Commissioners shall serve without compensation from the Commission, but this shall not prevent a Member from providing compensation to its Commissioner for serving on the Board.

4.4. Officers. By the first meeting in March of each year, the Commission shall elect from its membership a chairperson, a vice-chairperson, a treasurer and a secretary and such other officers as it deems necessary to reasonably carry out the purposes of this Agreement. Except for the position of chairperson, any Commissioner may be elected to more than one office. All officers shall hold office for terms of one year and until their successors have been elected by the Commission. An officer may be reelected to the same office for unlimited terms. A vacancy in an office shall be filled from the Board membership by election for the remainder of the unexpired term of such office. The officers' duties include the following:

- A. Chairperson. The Chairperson shall preside at all Board meetings and shall have all the same privileges of discussion, making motions and voting, as do other Commissioners. The Chairperson may delegate certain responsibilities to the Executive Secretary as necessary to carry out the duties of the office.
- B. Vice-Chairperson. The Vice-Chairperson shall, in the absence or disability of the Chairperson, perform the duties and exercise the powers of the Chairperson.
- C. Treasurer. The Treasurer shall have the custody of the funds and securities of the Commission and shall keep full and accurate accounts of receipts and disbursements in books belonging to the Commission and shall deposit all monies and other valuable effects in the name and to the credit of the Commission in such depository as may be designated by the Commission. He/she shall disburse funds of the Commission as approved by the Commission and shall render to the Commission at regular meetings, or as the Board may request, an account of all his/her transactions as Treasurer and of the financial condition of the Commission. The Treasurer may delegate certain duties to the Executive Secretary as necessary to carry out the duties of the office.
- D. Secretary. The Secretary shall attend all Board meetings, shall act as clerk of such meetings, and shall record all votes and the minutes of all proceedings. He/she shall give notice of all Board meetings. The Secretary may delegate certain duties to the Executive Secretary as necessary to carry out the duties of the office.
- E. Executive Secretary. The Commission may appoint an Executive Secretary to coordinate activities of the Commission, accept delegated duties by the Commission officers, and accept business duties not assigned to officers. All notices to the Commission shall be delivered or served at the office of the Executive Secretary.

4.5. Quorum and Voting. A minimum of four (4) Commissioners with voting privileges shall constitute a quorum. Once a quorum is present, a majority vote is required for approval on an action, unless as provided otherwise in this Agreement.

4.6. Meetings. The Board shall schedule meetings at least quarterly (every three months) on a uniform day and place selected by the Commission. Written notice of the location and time of all Commission meetings shall

be sent to all Commission representatives and alternate representatives and to the Clerk of each Member. Special meetings may be held at the call of the Chairperson or by any three Commissioners by giving not less than 72 hours written notice of the time, place and purpose of such meeting.

SECTION FIVE  
COMMISSION POWERS AND DUTIES

5.1. Watershed Management Plan. The Commission shall develop a watershed management plan including a capital improvement program in conformance with Minn. Stat. § 103B.231. The Commission shall adopt the plan within 120 days after BWSR's approval of the plan. After adoption, the Commission shall implement the watershed management plan and enforce the regulations set out in the plan. A copy of the adopted plan shall be filed with the clerk of each Member governmental unit,

5.2. Local Water Management Plans. The Commission shall review Members' local water management plans as required by Minn. Stat. § 103B.235, subd. 3.

5.3. Review Services.

A. Where the Commission is authorized or requested to review and make recommendations on any matter, the Commission shall act on such matter in compliance with Minn. Stat. § 15.99,

B. The Commission may charge a reasonable fee for such review services. The Commission's standard fee schedule, as amended from time to time, will be a part of the Commission's Rules.

C. The Commission may charge an additional fee when it determines that a particular project will require extraordinary and substantial review services. Before undertaking such review services, the Commission shall provide the party to be charged the additional fee with written notice of the services to be performed and the additional fee therefor, Unless said party objects within 5 business days of receipt of such written notice to the amount of the additional fee to be charged, such review services shall be performed and the party shall be responsible for the cost thereof. If said party objects to the proposed additional fee for such services within 5 business days and the party and the Commission are unable to agree on a reasonable alternative amount for review services, such extraordinary and substantial review services shall not be undertaken by the Commission.

D. Upon request of any Member, the Commission shall review and evaluate any dispute between the Member and other unit(s) of government regarding land use and natural resource protection and management.

E. Where the Commission makes recommendations on any matter to a Member, a Member not acting in accordance with such recommendation shall submit a written statement of its reasons for doing otherwise to the

Commission within ten days of its decision to act contrary to the Commission's recommendation. The Commission shall review the written statement and, if determined insufficient by the Commission, request written clarification within an additional ten days.

5.4 Public Participation.

A. Technical Advisory Committee. A Technical Advisory Committee ("TAC") to the Commission is hereby created, TAC members and one or more alternate members shall be appointed by the governing body of each Member. TAC members may be, but need not be, Commissioners. TAC members shall serve at the pleasure of the governing body of each Member which appoints them and are not required to meet statutory qualifications for Commissioners. TAC members may attend and participate in all meetings of the Commission. TAC members shall not have the authority to make motions or vote on matters before the Commission, but shall otherwise have the rights of a Commissioner to question, discuss, debate and comment on all matters before the Commission.

B. Citizen Advisory Committee. If a need is determined by the Commission, the Commission will establish a Citizen Advisory Committee to the Commission,

5.5. Rules. The Commission shall adopt rules for (a) conducting its business, including but not limited to additional duties of the Commission's officers, (b) the scope of responsibilities of the Technical Advisory Committee and the Citizen Advisory Committee, if one is established, and (c) preparing the annual work plan.

5.6. Contracts. The Commission may make such contracts, and enter into any such agreements, as it deems necessary to make effective any power granted to it by this Agreement. No Commissioner shall receive a direct financial benefit from any contract made by the Commission. Every contract for the purchase or sale of merchandise, materials or equipment by the Commission shall be let in accordance with the Uniform Municipal Contracting Law (Minn. Stat. § 471.345) and the Joint Exercise of Powers statute (Minn. Stat. § 471.59). In accordance with Minn. Stat. § 471.59, subd. 3, contracts let and purchases made under this Agreement shall conform to the statutory requirements applicable to the Member cities with a population over 2,500.

5.7. Employment. The Commission may contract for services, may use staff of other governmental agencies, may use staff of the Members and may employ such other persons as it deems necessary. Where staff services of a Member are utilized, such services shall not reduce the financial contribution of such Member to the Commission's operating fund unless utilization of staff service is substantial and the Commission so authorizes.

5.8. Public/Private Organizations. The Commission may cooperate or contract with the State of Minnesota or any subdivision thereof or federal agency or private or public organization to accomplish the purposes for which it

is organized.

5.9. Annual Financial, Activity and Audit Reports; Newsletter. The Commission shall submit to its Members and BWSR a financial report, an activity report and an audit report for the preceding fiscal year, in compliance with state law. The Commission shall publish and distribute an annual newsletter in compliance with state law, The Commission shall transmit to the clerk of each Member copies of the reports/newsletter in a format ready for publication. Each Member shall publish/distribute the reports/newsletter as it deems necessary. All of the Commission's books, reports and records shall be available for and open to examination by any Member at all reasonable times.

5.10. Gifts, Grant, Loans. The Commission may, within the scope of this Agreement, accept gifts, apply for and use grants or loans of money or other property from the United States, the State of Minnesota, a unit of government or other governmental unit or organization, or any person or entity for the purposes described herein; may enter into any reasonable agreement required in connection therewith; may comply with any laws or regulations applicable thereto; and may hold, use and dispose of such money or property in accordance with the terms of the gift, grant, loan or agreement relating thereto.

5.11. Boundary Change in the Elm Creek Watershed.

A. Enlargement. Proceedings for the enlargement of the Elm Creek Watershed shall be initiated by a request from affected Member(s) to the Commission, or as mandated by law. Such request should include a map and legal description of the affected area. In reviewing such a request, the Commission should consider, among other things, (a) whether the affected area is contiguous to the existing Elm Creek Watershed, (b) whether the affected area can be feasibly administered by the Commission; and (c) the reasons why it would be conducive to the public health and welfare to add the area to the existing Elm Creek Watershed. Upon deliberation, if it appears to the Commission that the enlargement of the Watershed as requested would be for the public welfare and public interest and the purpose of resource management would be served, or that in fact the enlargement is mandated by law, the Commission shall by its findings and order enlarge the Elm Creek Watershed and file a copy of said findings and order with the appropriate governmental offices.

B. Transfer of Territory. Proceedings to transfer territory that is within the Elm Creek Watershed to the jurisdiction of another watershed management organization or a watershed district shall be initiated by a request from affected Member(s) to the Commission, or as mandated by law. Such request should include a map and legal description of the affected area. Upon deliberation, if it appears to the Commission that the transfer of territory as requested would be for the public welfare and public interest and the purpose of resource management would be



served, the Commission shall by its findings and order change the Elm Creek Watershed boundaries accordingly and file a copy of said findings and order with the appropriate governmental offices.

5.12. Subdistricts. The Commission may define and designate drainage subdistricts within the Watershed and shall have authority to separate the Watershed into such different subdistricts and to allocate capital improvement costs to a subdistrict area if that subdistrict is the only area that materially benefits from the capital improvement.

5.13. Monitor Water Quality. The Commission will continue to monitor waterbodies and streams, to evaluate the success of its program to control non-point sources of pollution, and use the results of the water quality monitoring program to determine the progress towards these goals.

5.14. Ratification. The Commission may, and where required by this Agreement shall, refer matters to the governing bodies of the Members for ratification. Within 60 days, the governing bodies of the Members shall take action upon any matter referred for ratification.

5.15. Statutory Powers. The Commission may exercise all other powers necessary and incidental to the implementation of the purposes and powers set forth herein and as outlined and authorized by Minn, Stat. §§ 103B.201, et seq.

## SECTION SIX FINANCIAL MATTERS

6.1. Depositories/Disbursements. The Commission may collect and receive money and services subject to the provisions of this Agreement from the parties and from any other sources approved by the Commission and it may incur expenses and make expenditures and disbursements necessary and incidental to the effectuation of the purposes of this Agreement. The Board shall designate a national, state, or private bank or banks as a depository of Commission funds. Funds may be expended by the Commission in accordance with procedures established herein. Orders, checks and drafts shall be signed by two officers,

6.2. General Administration. Each voting Member agrees to contribute each year to a general fund to be used for general administration purposes including, but not limited to, salaries, rent, supplies, development on an overall plan, insurance, bonds, and to purchase and maintain devices to measure hydrological and water quality data. The funds may also be used for normal maintenance of facilities and capital improvements. The annual contribution by each voting Member shall be based on its share of the taxable market value of all real property within the Watershed to the total area in the Watershed.

6.3. Budget Approval and Appeal Process. On or before June 15 of each year, the Board shall adopt an operating budget for the following calendar year for the purpose of providing funds to operate the Commission's

business in accordance with its annual work plan. The operating budget shall never be greater than the equivalent of 0.02418% of total market value on all real property within the Watershed. Budget approval shall require a majority vote of all Commissioners eligible to vote. The Commission shall certify the budget on or before July 1 to the clerk of each Member governmental unit together with a statement of the proportion of the budget to be provided by each Member. The schedule of payments by the Members shall be determined by the Board in such a manner as to provide for an orderly collection of the funds needed.

The governing body of each Member agrees to review the budget, and the Board shall upon notice from any Member received prior to August 15, hear objections to the budget, and may, upon notice to all Members and after a hearing, modify or amend the budget (except the fee due cannot be increased), and then give notice to the Members of any and all modifications or amendments. Each Member agrees to provide the funds required by the budget and said determination shall be conclusive if no Member enters objections in writing on or before August 15. If objections are submitted to the Board, each Member agrees to provide the funds approved by the Board, after the Board has conducted the aforementioned hearing. Modifications or amendments to the original budget require a favorable vote by a majority of all Commissioners eligible to vote.

6.4. Supplemental Budget. Upon notice and hearing, the Board by a majority vote of all Commissioners eligible to vote may adopt a supplemental budget requiring additional payments by the Members within 60 days of its adoption. The operating budget, including any supplemental budget, shall never be greater than the equivalent of 0.02418% of total market value on all real property within the Watershed.

## SECTION SEVEN CAPITAL IMPROVEMENT PROGRAM

7.1. Assessments. If a capital improvement ordered by the Commission may result in payment from any Member, or if a capital improvement ordered by the Commission may result in a levy by a Member against privately or publicly owned land within the Watershed, said capital improvement shall follow the statutory procedure outlined in Minn. Stat. Ch. 429, except as herein modified.

7.2. Preliminary Reports/Public Hearings. For those improvements initiated by the Commission or so designated in the Commission's watershed management plan to be constructed by the Board, the Board shall secure from its engineers or some other competent person a preliminary report advising it whether the proposed improvement is feasible and as to whether it shall best be made as proposed or in connection with some other improvement and the estimated cost of the improvement as recommended,

The Board shall then hold a public hearing on the proposed improvement after mailed notice to the clerk of each Member governmental unit within the Watershed. The Commission shall not be required to mail or publish notice except by said notice to the clerk. Said notice shall be mailed not less than 45 days before the hearing, shall state the time and place of the hearing, the general nature of the improvement, the estimated total cost and the estimated cost to each Member governmental unit. The Board may adjourn said hearing to obtain further information, may continue said hearing pending action of the Member governmental units or may take such other action as it deems necessary to carry out the purpose of this Commission.

A resolution setting forth the order for a capital improvement project shall require a favorable vote by at least two-thirds of all Commissioners eligible to vote. In all cases other than to order a capital improvement project, a majority vote of all Commissioners eligible to vote shall be sufficient to adopt an action. The order shall describe the improvement, shall allocate in percentages the cost between the Member governmental units, shall designate the engineers to prepare plans and specifications, and shall designate the Member who will contract for the improvement.

After the Board has ordered the improvement or if the hearing is continued while the Member governmental units act on said proposal, it shall forward said preliminary report to all Member governmental units with an estimated time schedule for the construction of said improvement. The Board shall allow an adequate amount of time, and in no event less than 45 days, for each Member governmental unit to conduct hearings, in accordance with the provisions of the aforesaid Chapter 429 or the charter requirements of any Member city, or to ascertain the method of financing which said Member governmental unit will utilize to pay its proportionate share of the costs of the improvement, Each Member governmental unit shall ascertain within a period of 90 days the method it shall use to pay its proportionate share of the costs.

If the Commission proposes to use Hennepin County's bonding authority as set forth in Minn. Stat. § 103B.251, or if the Commission proposes to certify all or any part of a capital improvement to Hennepin County for payment, then and in that event all proceedings shall be carried out in accordance with the provisions set forth in said Section 103B.251.

The Board shall not order and no engineer shall prepare plans and specifications before the Board has adopted a resolution ordering the improvement. The Board may direct one of its Members to prepare plans and specifications and order the advertising for bids upon receipt of notice from each Member governmental unit who will be assessed that it has completed its hearing or determined its method of payment or upon expiration of 90 days after the mailing of the preliminary report to the Members.

7.3. Appeals/Arbitration. Any Member governmental unit being aggrieved by the Board's determination as to the cost allocation of said capital improvement shall have 30 days after the Commission resolution ordering the improvement to appeal said determination. Said appeal shall be in writing and shall be addressed to the Board asking for arbitration. The determination of the Member's appeal shall be referred to a Board of Arbitration. The Board of Arbitration shall consist of three persons; one to be appointed by the Board of Commissioners, one to be appointed by the appealing Member governmental 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, then the Chief Judge of the Hennepin 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 and if appointed by the Chief Judge said person shall be a person knowledgeable in the subject matter. The arbitrators' expenses and fees, together with the other expenses, not including attorney fees, incurred in the conduct of the arbitration shall be divided equally between the Commission and the appealing Member. Arbitration shall be conducted in accordance with the Uniform Arbitration Act, Minn. Stat. Ch. 572.

7.4. Contracts for Capital Improvements. All contracts which are to be let as a result of the Board ordering a capital improvement, and for which two or more Member governmental units shall be responsible for the costs, shall be let in accordance with the provisions of Minn. Stat. § 429.041. The bidding and contracting of said work shall be let by any one of the Member governmental units, as ordered by the Board, after compliance with the statutory requirements. Contracts and bidding procedures shall comply with the legal requirements applicable to statutory cities.

The Commission shall not have the authority to contract in its own name for any improvement work for which a special assessment will be levied against any private or public property under the provisions of Chapter 429 or under the provisions of any Member city charter. These contracts shall be awarded by action of the governing body of a Member and shall be in the name of a Member governmental unit. This section does not preclude the Commission from proceeding under Minn. Stat. § 103B.251.

7.5. Contracts with Other Governmental Bodies. The Commission may exercise the powers set forth in Section 7.4 but said contracts for a capital improvement shall require a majority vote of all Commissioners eligible to vote,

7.6. Supervision. All improvement contracts shall be supervised by the entity awarding the contract. The Commission staff shall also be authorized to observe and review the work in progress and the Members agree to cooperate with the Commission staff in accomplishing its purposes. Representatives of the WMO shall have the right to enter upon the place or places where the improvement work is in progress for the purpose of making reasonable tests

and inspections. The Commission staff shall report and advise and recommend to the Board on the progress of the work.

7.7. Land Acquisition. The Commission shall not have the power of eminent domain. The Member governmental units agree that any and all easements or interests in land which are necessary will be negotiated or condemned in accordance with Minn. Stat. Ch. 117 by the unit wherein said lands are located, and each Member agrees to acquire the necessary easements or right-of-way or partial or complete interest in land upon order of the Board of Commissioners to accomplish the purposes of the improvement. All reasonable costs of said acquisition shall be considered as a cost of the improvement. If a Member government unit determines it is in the best interests of that Member to acquire additional lands, in conjunction with the taking of lands for storm and surface drainage or storage, or some other purpose, the costs of said acquisition will not be included in the improvement costs of the ordered project. The Board in determining the amount of the improvement costs to be assessed to each Member governmental unit may take into consideration the land use for which the additional lands are being acquired and may credit the acquiring municipality for said land acquisition to the extent that it benefits the other Members to this Agreement. Any credits may be applied to the cost allocation of the improvement project under consideration or the Board if feasible and necessary may defer said credits to a future project.

If any Member unit refuses to negotiate or condemn lands as ordered by the Board, any other Member may negotiate or condemn outside its corporate limits in accordance with Minn. Stat. Ch. 117. All Members agree that they will not condemn or negotiate for land acquisition to pond or drain storm and surface waters within another Member's corporate boundaries within the Watershed except upon order of the Board of Commissioners.

7.8. Capital Improvement Fund.

A. The Commission shall establish an improvement fund for each capital improvement project. Each Member agrees to contribute to said fund its proportionate share of the engineering, construction, legal and administrative costs as determined by the amount to be assessed against each Member as a cost of the improvement. The Board shall submit in writing a statement to each Member, setting forth in detail the expenses incurred by the Commission for each project,

Each Member agrees to pay its proportionate share of the cost of the improvement in accordance with the determination of the Board under Section 7.2. The Board, in its discretion, may require Members to make advance payments based upon estimated costs, subject to adjustment to reflect actual costs, or may bill the Members as costs are actually incurred. Members agree to pay billings within 30 days of receipt. The Board or the Member awarding the

contract shall advise other contributing Members of the tentative time schedule of the work and the estimated times when the contribution shall be necessary.

B. Notwithstanding the provisions of Section 7,8.A., the Commission may fund all or part of the cost of a capital improvement contained in the capital improvement program of the plan in accordance with Minn. Stat. § 103B.251, The Commission and Hennepin County may establish a maintenance fund to be used for normal and routine maintenance of an improvement constructed in whole or in part with money provided by Hennepin County pursuant to Minn. Stat. § 103B.251. The levy and collection of an ad valorem tax levy for an improvement, payment of bonds, or maintenance shall be by Hennepin County based upon a tax levy resolution adopted by a majority vote of all eligible Members of the Board and remitted to the County on or before the date prescribed by law each year. If it is determined to levy for maintenance, the Commission shall be required to follow the hearing process established by Minn. Stat. Ch. 103D. Mailed notice shall also be sent to the clerk of each Member governmental unit at least 30 days before the hearing.

7.9. Capital Improvement Cost Allocation.

A. All costs of improvements designated in the Board's adopted watershed management plan for construction by the Board, which the Board determines will benefit only one Member, shall be paid for entirely by that Member.

B. All costs of improvements designated in the Board's adopted watershed management plan for construction by the Board, which the Board determines benefit more than one Member, shall be apportioned by the Board by the following bases:

- (1) A negotiated amount to be arrived at by the Members who have lands in the subdistrict responsible for the capital improvement.
- OR
- (2) Based on each Member's share of the taxable market value of all real property within the Watershed to the total area within the Watershed.
- OR
- (3) Capital costs allocated under option (2) above may be varied by the Commission by a favorable vote by at least two-thirds of all Commissioners eligible to vote if (a) any Member community receives a direct benefit from the capital improvement which benefit can be defined as a lateral as well as a trunk benefit, or (b) the capital improvement provides a direct benefit to one or more Members which benefit is so disproportionate as to require in a sense of fairness a modification in the formula,

C. If the project is constructed and financed pursuant to Minn, Stat, § 103B.251, the Members understand and agree that said costs will be levied on all taxable property in the watershed as set forth in the statute.

D. Credits to any Member for lands acquired by said Member to pond or store storm and surface

water shall be allowed against costs as set forth in Section 7.7.

SECTION EIGHT  
WITHDRAWAL FROM AGREEMENT

Withdrawal of any Member may be accomplished by filing written notice with the Commission and the other Members 60 days before the effective date of withdrawal. No Member may withdraw from this Agreement until the withdrawing Member has met its full financial obligations for the year of withdrawal and prior years,

SECTION NINE  
DISSOLUTION OF COMMISSION

9.1. This Agreement may be terminated upon the unanimous consent of the parties. If the Agreement is to be terminated, a notice of the intent to dissolve the Commission shall be sent to Hennepin County and BWSR, at least 90 days before the date of dissolution,

9.2. In addition to the manner provided in Section 9.1 for termination, any Member may petition the Commission's Board to dissolve the Commission. Upon 90 days notice in writing to the clerk of each member governmental unit and to Hennepin County and BWSR, the Board shall hold a hearing and upon a majority vote of all Commissioners eligible to vote, the Board may by Resolution recommend that the Commission be dissolved, Said Resolution shall be submitted to each Member governmental unit and if ratified by three-fourths of the governing bodies of all eligible Members within 60 days, said Board shall dissolve the Commission allowing a reasonable time to complete work in progress and to dispose of personal property owned by the Commission.

9.3. Winding Up. Upon dissolution, all personal property of the Commission shall be sold and the proceeds thereof, together with monies on hand after payment of all obligations, shall be distributed to the Members, Such distribution of Commission assets shall be made in approximate proportion to the total contributions to the Commission for such costs made by each Member. All payments due and owing for operating costs under Section 6.2, or other unfilled financial obligations, shall continue to be the lawful obligation of the Members. In no event may this Agreement be terminated until all of the planning and plan implementation provisions of the Act, which are required of a watershed management organization, have been completed.

SECTION TEN  
MISCELLANEOUS PROVISIONS

10.1. Eminent Domain. The Commission shall not have the power of eminent domain and shall not own any interest in real property. All interests in lands shall be held in the name of the Member wherein said lands are located.

10.2. Special Assessments. The Commission shall not have the power to levy a special assessment upon any privately or publicly owned land. All such assessments shall be levied by the Member wherein said lands are located. The Commission shall have the power to require any Member to contribute the costs allocated or assessed according to the other provisions of this agreement.

10.3. Member's Construction Projects that Will Affect Elm Creek. Each Member agrees that it will not directly or indirectly collect or divert any additional surface water to or from Elm Creek or its tributaries without approval from the Commission. Such approval may be granted by the Commission for a Member to proceed with the construction or reconstruction of improvements within the individual corporate Member's boundaries and at said Member's sole cost upon a finding (a) that there is an adequate outlet, (b) that said construction is in conformance with the overall plan, and (c) that the construction will not adversely affect other Members.

10.4. Member Vote Suspension for Failure to Contribute. Any Member who is more than 60 days in default in contributing its proportionate share to the general fund shall have the vote of its Board representative suspended pending the payment of its proportionate share. Any Member who is more than 60 days in default in contributing its proportionate share of the cost of any improvement to the contracting Member shall upon request of the contracting Member have the vote of its Board representative suspended, pending the payment of its proportionate share. Any Member whose Board representative vote is under suspension shall not be considered as an eligible Member as such membership affects the number of votes required to proceed on any matter under consideration by the Board.

10.5. Amendment. The Commission may recommend changes and amendments to this Agreement to the Members. Amendments shall be acted upon by the Members within 90 days of referral. Amendments shall be evidenced by appropriate resolutions of the Members filed with the Commission and shall, if no effective date is contained in the amendment, become effective as of the date all such filings have been completed.

10.6. Termination of Prior Agreement. By executing this document, the parties hereby agree to terminate the prior joint powers agreement, adopted May 12, 1993.

10.7. Counterparts. This Agreement and any amendment may be executed in several counterparts and all so executed shall constitute one Agreement or amendment, binding on all of the parties hereto notwithstanding that all of the parties are not signatory to the original or the same counterpart.

10.8. Effective Date. This Agreement shall be in full force and effect when all governmental units delineated in Section 2 have executed this Agreement. All Members need not sign the same copy.



10.9. Duration. This agreement shall have an unlimited duration.

10.10. Statutory References. All statutory references include all future amendments.

Dated: 11/10/2003

CITY OF CHAMPLIN  
By: [Signature]  
Its Mayor  
Attest: [Signature]  
Its City Clerk

Dated: November 13, 2003

CITY OF CORCORAN  
By: [Signature]  
Its Mayor  
Attest: [Signature]  
Its City Clerk

Dated: 4-14-04

CITY OF DAYTON  
By: [Signature]  
Its Mayor  
Attest: [Signature]  
Its City Clerk

Dated: Dec. 15th, 2003

CITY OF MAPLE GROVE  
By: [Signature]  
Its Mayor  
Attest: [Signature]  
Its City Clerk

Dated: 11-18-2003

CITY OF MEDINA  
By: [Signature]  
Its Mayor  
Attest: [Signature]  
Its City Clerk

11-25-03  
Dated:

CITY OF PLYMOUTH

By: Judith Johnson  
Its Mayor  
Attest: Sandra Kaulon  
Its City Clerk

5-25-04  
Dated:

CITY OF ROGERS

By: Reigh Stanley  
Its Mayor  
Attest: Tara Robozinski  
Its City Clerk

Dated: Dec 7, 2003

TOWN OF HASSAN

By: COOR F.  
Chair of Town Board  
Attest: [Signature]  
Its Town Clerk

# Appendix C - Rogers Water Supply Plan



**2040 WATER SUPPLY AND DISTRIBUTION PLAN**  
Rogers, MN

October 2018

## **City Council**

Rick Ihli	Mayor
Mark Eiden	Councilmember
Bruce Gorecki	Councilmember
Shannon Klick	Councilmember
Darren Jakel	Councilmember

## **Planning Commission**

Brian Binkley  
David Nei  
Drew Bryan  
Keith Neis  
Kevin Jullie  
Lindsay Silverstein  
Mark Kraemer  
Bernie Terhaar  
Joleen Johnson

## **Staff**

Steve Stahmer	City Administrator
John Seifert	Director of Public Works
Andrew Simmons	Water Resources Technician
Jason Ziemer	City Planner
Mike Bauer	Parks and Facilities Director

# Local Water Supply Plan Template Third Generation for 2016-2018

*Formerly called Water Emergency & Water Conservation Plan*



*Cover photo by Molly Shodeen*



For more information on this Water Supply Plan Template, please contact the DNR Division of Ecological and Water Resources at (651) 259-5034 or (651) 259-5100.

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This information is available in an alternative format upon request.

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## DEPARTMENT OF NATURAL RESOURCES – DIVISION OF ECOLOGICAL AND WATER RESOURCES AND METROPOLITAN COUNCIL

### INTRODUCTION TO WATER SUPPLY PLANS (WSP)

#### Who needs to complete a Water Supply Plan

Public water suppliers serving more than 1,000 people, large private water suppliers in designated Groundwater Management Areas, and all water suppliers in the Twin Cities metropolitan area are required to prepare and submit a water supply plan.

The goal of the WSP is to help water suppliers: 1) implement long term water sustainability and conservation measures; and 2) develop critical emergency preparedness measures. Your community needs to know what measures will be implemented in case of a water crisis. A lot of emergencies can be avoided or mitigated if long term sustainability measures are implemented.

#### Groundwater Management Areas (GWMA)

The DNR has designated three areas of the state as Groundwater Management Areas (GWMAs) to focus groundwater management efforts in specific geographies where there is an added risk of overuse or water quality degradation. A plan directing the DNR's actions within each GWMA has been prepared. Although there are no specific additional requirements with respect to the water supply planning for communities within designated GWMAs, communities should be aware of the issues and actions planned if they are within the boundary of one of the GWMAs. The three GWMAs are the North and East Metro GWMA (Twin Cities Metro), the Bonanza Valley GWMA and the Straight River GWMA (near Park Rapids). Additional information and maps are included in the DNR webpage at <http://www.dnr.state.mn.us/gwmp/areas.html>

#### Benefits of completing a WSP

Completing a WSP using this template, fulfills a water supplier's statutory obligations under M.S. [M.S.103G.291](#) to complete a water supply plan. For water suppliers in the metropolitan area, the WSP will help local governmental units to fulfill their requirements under M.S. 473.859 to complete a local comprehensive plan. Additional benefits of completing WSP template:

- The standardized format allows for quicker and easier review and approval.
- Help water suppliers prepare for droughts and water emergencies.
- Create eligibility for funding requests to the Minnesota Department of Health (MDH) for the Drinking Water Revolving Fund.
- Allow water suppliers to submit requests for new wells or expanded capacity of existing wells.
- Simplify the development of county comprehensive water plans and watershed plans.
- Fulfill the contingency plan provisions required in the MDH wellhead protection and surface water protection plans.
- Fulfill the demand reduction requirements of Minnesota Statutes, section 103G.291 subd 3 and 4.

- Upon implementation, contribute to maintaining aquifer levels, reducing potential well interference and water use conflicts, and reducing the need to drill new wells or expand system capacity.
- Enable DNR to compile and analyze water use and conservation data to help guide decisions.
- Conserve Minnesota’s water resources

If your community needs assistance completing the Water Supply Plan, assistance is available from your area hydrologist or groundwater specialist, the MN Rural Waters Association circuit rider program, or in the metropolitan area from Metropolitan Council staff. Many private consultants are also available.

## **WSP Approval Process**

### **10 Basic Steps for completing a 10-Year Water Supply Plan**

1. Download the DNR/Metropolitan Council Water Supply Plan Template [www.mndnr.gov/watersupplyplans](http://www.mndnr.gov/watersupplyplans)
2. Save the document with a file name with this naming convention:  
WSP\_cityname\_permitnumber\_date.doc.
3. The template is a form that should be completed electronically.
4. Compile the required water use data (Part 1) and emergency procedures information (Part 2)
5. The Water Conservation section (Part 3) may need discussion with the water department, council, or planning commission, if your community does not already have an active water conservation program.
6. Communities in the seven-county Twin Cities metropolitan area should complete all the information discussed in Part 4. The Metropolitan Council has additional guidance information on their webpage <http://www.metrocouncil.org/Handbook/Plan-Elements/Water-Resources/Water-Supply.aspx>. All out-state water suppliers do *not* need to complete the content addressed in Part 4.
7. Use the Plan instructions and Checklist document to insure all data is complete and attachments are included. This will allow for a quicker approval process. [www.mndnr.gov/watersupplyplans](http://www.mndnr.gov/watersupplyplans)
8. Plans should be submitted electronically – no paper documents are required. <https://webapps11.dnr.state.mn.us/mpars/public/authentication/login>
9. DNR hydrologist will review plans (in cooperation with Metropolitan Council in Metro area) and approve the plan or make recommendations.
10. Once approved, communities should complete a Certification of Adoption form, and send a copy to the DNR.

Complete Table 1 with information about the public water supply system covered by this WSP.

**Table 1. General information regarding this WSP**

<b>Requested Information</b>	<b>Description</b>
DNR Water Appropriation Permit Number(s)	<b>1979-6311</b>
Ownership	<input checked="" type="checkbox"/> Public or <input type="checkbox"/> Private
Metropolitan Council Area	<input checked="" type="checkbox"/> Yes or <input type="checkbox"/> No (Hennepin)
Street Address	<b>22350 South Diamond Lake Road</b>
City, State, Zip	<b>Rogers, MN, 55374</b>
Contact Person Name	John Seifert
Title	Public Works Director
Phone Number	763-428-8580
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:

--

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	6641	2218	266.12	136.76	0	0	422.51	432.10	19.63	2.22	1.18	4.08	08/16/05	109.79	178.26
2006	6683	2398	315.31	147.35	0	0	480.07	494.81	17.41	2.98	1.36	4.12	07/29/06	129.26	202.85
2007	6901	2706	372.30	167.24	0	0	547.11	548.70	7.57	0.29	1.50	3.94	07/31/07	147.81	217.84
2008	6971	2761	346.09	168.35	0	0	525.09	525.54	10.65	0.09	1.44	4.59	07/01/08	136.02	206.55
2009	7300	2781	351.53	163.42	0	0	518.50	526.45	3.55	1.51	1.44	3.91	07/03/09	131.93	197.58
2010	7800	2800	311.20	147.89	0	0	476.21	482.33	17.12	1.27	1.32	3.09	07/12/10	109.31	167.27
2011	8597	2851	314.94	142.94	0	0	478.06	495.36	20.18	3.49	1.36	3.29	07/01/11	100.37	157.86
2012	8847	2941	396.08	160.44	0	0	572.54	574.50	16.02	0.34	1.57	3.33	08/22/12	122.66	177.91
2013	9150	3077	341.99	158.80	0	0	528.37	545.37	27.58	3.12	1.49	4.93	08/29/13	102.40	163.30
2014	9250	3249	295.01	141.34	0	0	452.29	460.28	15.94	1.76	1.26	4.48	08/06/14	87.38	136.33
2015	9400	3289	305.39	150.00	0	0	467.95	471.06	12.26	0.66	1.29	2.93	08/09/15	89.01	137.30
Avg. 2010-2015	8841	3034.5	327.44	150.24	0	0	495.90	504.82	18.18	1.77	1.38	3.68		101.86	156.66

**MG** – Million Gallons      **MGD** – Million Gallons per Day      **GPCD** – Gallons per Capita per Day

See Glossary for definitions

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 CABELAS	COMMERCIAL	9,790,000	1.97	UNKNOWN
2 PRESERVE AT COMMERCE	RESIDENTIAL	8,994,000	1.81	UNKNOWN
3 WELLSTEAD	RESIDENTIAL	8,526,000	1.72	UNKNOWN
4 FLAME METALS	INDUSTRIAL	7,280,000	1.47	UNKNOWN
5 GRACO (DAVID KOCH)	INDUSTRIAL	3,939,000	0.79	UNKNOWN
6 GRACO (BROCKTON LANE)	INDUSTRIAL	3,332,000	0.67	UNKNOWN
7 HAMPTON INN	COMMERCIAL	3,141,000	0.63	UNKNOWN
8 ROGERS SENIOR HIGH SCHOOL	INSTITUTIONAL	2,709,000	0.55	UNKNOWN
9 HOLIDAY GAS STATION	COMMERCIAL	2,413,000	0.49	UNKNOWN
10 REINHART FOOD SERVICE	INDUSTRIAL	2,263,000	0.46	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 (GPD)	Treatment Method	Treatment Type	Annual Amount of Residuals	Disposal Process for Residuals	Do You Reclaim Filter Backwash Water?
NA	NA	NA	NA	NA	NA	NA	NA
Total	NA		NA	NA		NA	

\*The City does not have any Water Treatment facilities, water is treated at every well with Fluoride, Chlorine gas, and poly



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)
1 Orchid Ave Tower	Elevated Storage	2000	Steel	750,000
2 George Weber Dr Tower	Elevated Storage	1994	Steel	400,000
3 James Road GSR	Ground Storage	2012	Concrete	2,000,000
Total	NA	NA	NA	3,150,000

### 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):

Currently the storage capacity in Rogers is greater than the average daily demand. There are future plans for the addition of a new million gallon water tower likely to be installed near 2020. Storage capacities at this time are lower than the maximum daily demand.

### 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	FIG	161431	1983	800	370	Active	Yes
Groundwater	FIG	541548	1995	1000	367	Active	Yes
Groundwater	FIG	625354	1999	700	364	Active	Yes
Groundwater	FIG	664853	2002	850	374	Active	Yes
Groundwater	FIG	740966	2006	650	362	Active	Yes
Groundwater	FIG	749842	2007	750	360	Active	Yes

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	FIG	101915	2016	650		Active	Yes

**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.

The City of Rogers has an interconnection with the City of Dayton. The connection consists of a 12” watermain which can be connected by the opening of 2 isolation valves. The connection supplies enough for drinking water but would lack on fire protection.

**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?

- 1) The population served has been on a steady increase in the last 10 years, population served is expected to continue to rise as development continues to occur in Rogers
- 2) Total per capita water demand has been trending downward in the last 10 years, with higher demands during years of dryer weather and higher building permits. An encouraging downward trend has occurred in the last two years since the implementation of a new block structured water use fee.
- 3) Average daily demand over the course of the last 10 years shows a slight increase. Average daily demand during 2012 and 2013 skewed the average due to dryer weather and a higher number of new residential building permits issued during those years. The last two years showed a decrease, again likely due to the new inclining block rate structure.
- 4) Maximum daily demand has fluctuated from year to year but the overall trend is downward.

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	12820	9500	133.79	1.27	3.66
2017	12940	9800	133.89	1.31	3.75
2018	13360	10660	133.37	1.55	4.24
2019	13780	11080	132.84	1.59	4.33
2020	14200	11450	132.32	1.62	4.41
2021	14620	11870	131.69	1.67	4.50
2022	15040	12290	131.06	1.71	4.59
2023	15460	12710	130.44	1.75	4.67
2024	15880	13130	129.81	1.79	4.76
2025	16300	13550	129.19	1.83	4.85
2030	18400	15650	126.06	2.04	5.29
2040	22800	20050	116.65	2.48	6.22

**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:

Future demand was projected using the goal of 70 gallons per day per residential capita by 2040. With the expected growth of the community of nearly 10,000 in the next 20 years, population growth was split evenly across 20 years. All projections were based on linear relationships between population and water usage.

**E. Resource Sustainability**

**Monitoring – Key DNR Benchmark**

Complete Table 8 by inserting information about source water quality and quantity monitoring efforts. List should include all production wells, observation wells, and source water intakes or reservoirs. Add rows to the table as needed. Find information on groundwater level monitoring program at:

[http://www.dnr.state.mn.us/waters/groundwater\\_section/obwell/index.html](http://www.dnr.state.mn.us/waters/groundwater_section/obwell/index.html)

**Table 8. Information about source water quality and quantity monitoring**

MN Unique Well # or Surface Water ID	Type of monitoring point	Monitoring program	Frequency of monitoring	Monitoring Method
161431	<input checked="" type="checkbox"/> production well <input type="checkbox"/> observation well <input type="checkbox"/> source water intake <input type="checkbox"/> source water reservoir	<input checked="" type="checkbox"/> routine MDH sampling <input type="checkbox"/> routine water utility sampling <input type="checkbox"/> other	<input type="checkbox"/> continuous <input type="checkbox"/> hourly <input type="checkbox"/> daily <input checked="" type="checkbox"/> monthly <input type="checkbox"/> quarterly <input type="checkbox"/> annually	<input type="checkbox"/> SCADA <input checked="" type="checkbox"/> grab sampling <input type="checkbox"/> steel tape <input type="checkbox"/> stream gauge
541548	<input checked="" type="checkbox"/> production well <input type="checkbox"/> observation well <input type="checkbox"/> source water intake <input type="checkbox"/> source water reservoir	<input checked="" type="checkbox"/> routine MDH sampling <input type="checkbox"/> routine water utility sampling <input type="checkbox"/> other	<input type="checkbox"/> continuous <input type="checkbox"/> hourly <input type="checkbox"/> daily <input checked="" type="checkbox"/> monthly <input type="checkbox"/> quarterly <input type="checkbox"/> annually	<input type="checkbox"/> SCADA <input checked="" type="checkbox"/> grab sampling <input type="checkbox"/> steel tape <input type="checkbox"/> stream gauge
625354	<input checked="" type="checkbox"/> production well <input type="checkbox"/> observation well <input type="checkbox"/> source water intake <input type="checkbox"/> source water reservoir	<input checked="" type="checkbox"/> routine MDH sampling <input type="checkbox"/> routine water utility sampling <input type="checkbox"/> other	<input type="checkbox"/> continuous <input type="checkbox"/> hourly <input type="checkbox"/> daily <input checked="" type="checkbox"/> monthly <input type="checkbox"/> quarterly <input type="checkbox"/> annually	<input type="checkbox"/> SCADA <input checked="" type="checkbox"/> grab sampling <input type="checkbox"/> steel tape <input type="checkbox"/> stream gauge
664853	<input checked="" type="checkbox"/> production well <input type="checkbox"/> observation well <input type="checkbox"/> source water intake <input type="checkbox"/> source water reservoir	<input checked="" type="checkbox"/> routine MDH sampling <input type="checkbox"/> routine water utility sampling <input type="checkbox"/> other	<input type="checkbox"/> continuous <input type="checkbox"/> hourly <input type="checkbox"/> daily <input checked="" type="checkbox"/> monthly <input type="checkbox"/> quarterly <input type="checkbox"/> annually	<input type="checkbox"/> SCADA <input checked="" type="checkbox"/> grab sampling <input type="checkbox"/> steel tape <input type="checkbox"/> stream gauge
740966	<input checked="" type="checkbox"/> production well <input type="checkbox"/> observation well	<input checked="" type="checkbox"/> routine MDH sampling	<input type="checkbox"/> continuous <input type="checkbox"/> hourly <input type="checkbox"/> daily	<input type="checkbox"/> SCADA <input checked="" type="checkbox"/> grab sampling <input type="checkbox"/> steel tape

MN Unique Well # or Surface Water ID	Type of monitoring point	Monitoring program	Frequency of monitoring	Monitoring Method
	<input type="checkbox"/> source water intake <input type="checkbox"/> source water reservoir	<input type="checkbox"/> routine water utility sampling <input type="checkbox"/> other	<input checked="" type="checkbox"/> monthly <input type="checkbox"/> quarterly <input type="checkbox"/> annually	<input type="checkbox"/> stream gauge
749842	<input checked="" type="checkbox"/> production well <input type="checkbox"/> observation well <input type="checkbox"/> source water intake <input type="checkbox"/> source water reservoir	<input checked="" type="checkbox"/> routine MDH sampling <input type="checkbox"/> routine water utility sampling <input type="checkbox"/> other	<input type="checkbox"/> continuous <input type="checkbox"/> hourly <input type="checkbox"/> daily <input checked="" type="checkbox"/> monthly <input type="checkbox"/> quarterly <input type="checkbox"/> annually	<input type="checkbox"/> SCADA <input checked="" type="checkbox"/> grab sampling <input type="checkbox"/> steel tape <input type="checkbox"/> 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/groundwater/hydrographs.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 3	FIG	70'	<input type="checkbox"/> Falling <input checked="" type="checkbox"/> Stable <input type="checkbox"/> Rising	See Appendix 3
Well 5	FIG	20'	<input type="checkbox"/> Falling <input checked="" type="checkbox"/> Stable <input type="checkbox"/> Rising	See Appendix 3
Well 6	FIG	50'	<input type="checkbox"/> Falling <input checked="" type="checkbox"/> Stable <input type="checkbox"/> Rising	See Appendix 3
Well 7	FIG	20'	<input type="checkbox"/> Falling <input checked="" type="checkbox"/> Stable <input type="checkbox"/> Rising	See Appendix 3

**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 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
<input checked="" type="checkbox"/> River or stream	Crow River  Fox Creek	<input type="checkbox"/> Flow/water level decline <input type="checkbox"/> Degrading water quality trends and/or MCLs exceeded <input type="checkbox"/> Impacts on endangered, threatened, or special concern species habitat or other natural resource impacts <input checked="" type="checkbox"/> Other: <u>None</u>	<input type="checkbox"/> GIS analysis <input type="checkbox"/> Modeling <input type="checkbox"/> Mapping <input type="checkbox"/> Monitoring <input type="checkbox"/> Aquifer testing <input checked="" type="checkbox"/> Other: Not Connected to Aquifer___	N/A	<input type="checkbox"/> Revise permit <input type="checkbox"/> Change groundwater pumping <input type="checkbox"/> Increase conservation <input checked="" type="checkbox"/> Other NA	N/A Resource is located beyond DWSMA boundary; no decline in water table observed at DWSMA boundary
<input checked="" type="checkbox"/> Calcareous fen	N/A	<input type="checkbox"/> Flow/water level decline <input type="checkbox"/> Degrading water quality	<input type="checkbox"/> GIS analysis <input type="checkbox"/> Modeling <input type="checkbox"/> Mapping <input type="checkbox"/> Monitoring	N/A	<input type="checkbox"/> Revise permit <input type="checkbox"/> Change groundwater pumping	N/A

Resource Type	Resource Name	Risk	Risk Assessed Through	Describe Resource Protection Threshold*	Mitigation Measure or Management Plan	Describe How Changes to Thresholds are Monitored
		trends and/or MCLs exceeded <input type="checkbox"/> Impacts on endangered, threatened, or special concern species habitat or other natural resource impacts <input type="checkbox"/> Other: _____	<input type="checkbox"/> Aquifer testing <input type="checkbox"/> Other: _____		<input type="checkbox"/> Increase conservation <input checked="" type="checkbox"/> Other NA	
<input checked="" type="checkbox"/> Lake	Grass Lake  Diamond Lake  French Lake	<input type="checkbox"/> Flow/water level decline <input type="checkbox"/> Degrading water quality trends and/or MCLs exceeded <input type="checkbox"/> Impacts on endangered, threatened, or special concern species habitat or other natural resource impacts <input checked="" type="checkbox"/> Other: <u>None</u>	<input type="checkbox"/> GIS analysis <input type="checkbox"/> Modeling <input type="checkbox"/> Mapping <input type="checkbox"/> Monitoring <input type="checkbox"/> Aquifer testing <input type="checkbox"/> Other: _____	N/A	<input type="checkbox"/> Revise permit <input type="checkbox"/> Change groundwater pumping <input type="checkbox"/> Increase conservation <input type="checkbox"/> Other	N/A
<input checked="" type="checkbox"/> Wetland		<input type="checkbox"/> Flow/water level decline <input type="checkbox"/> Degrading water quality trends and/or MCLs exceeded <input type="checkbox"/> Impacts on endangered, threatened, or special concern species habitat or other natural resource impacts <input type="checkbox"/> Other: _____	<input type="checkbox"/> GIS analysis <input type="checkbox"/> Modeling <input type="checkbox"/> Mapping <input type="checkbox"/> Monitoring <input type="checkbox"/> Aquifer testing <input type="checkbox"/> Other: _____		<input type="checkbox"/> Revise permit <input type="checkbox"/> Change groundwater pumping <input type="checkbox"/> Increase conservation <input type="checkbox"/> Other	
<input checked="" type="checkbox"/> Trout stream		<input type="checkbox"/> Flow/water level decline	<input type="checkbox"/> GIS analysis		<input type="checkbox"/> Revise permit	NA



Resource Type	Resource Name	Risk	Risk Assessed Through	Describe Resource Protection Threshold*	Mitigation Measure or Management Plan	Describe How Changes to Thresholds are Monitored
		<input type="checkbox"/> Degrading water quality trends and/or MCLs exceeded <input type="checkbox"/> Impacts on endangered, threatened, or special concern species habitat or other natural resource impacts <input checked="" type="checkbox"/> Other: <u>NA</u>	<input type="checkbox"/> Modeling <input type="checkbox"/> Mapping <input type="checkbox"/> Monitoring <input type="checkbox"/> Aquifer testing <input checked="" type="checkbox"/> Other: <u>NA</u>		<input type="checkbox"/> Change groundwater pumping <input type="checkbox"/> Increase conservation <input checked="" type="checkbox"/> Other NA	
<input checked="" type="checkbox"/> Aquifer	Tunnel City – Wonewoc Aquifer	<input checked="" type="checkbox"/> Flow/water level decline <input checked="" type="checkbox"/> Degrading water quality trends and/or MCLs exceeded <input type="checkbox"/> Impacts on endangered, threatened, or special concern species habitat or other natural resource impacts <input type="checkbox"/> Other: _____	<input type="checkbox"/> GIS analysis <input checked="" type="checkbox"/> Modeling <input type="checkbox"/> Mapping <input checked="" type="checkbox"/> Monitoring <input checked="" type="checkbox"/> Aquifer testing <input checked="" type="checkbox"/> Other: <u>_Well Pumping_</u>	Aquifer drawdown to the extent the wells cannot operate properly.	<input type="checkbox"/> Revise permit <input type="checkbox"/> Change groundwater pumping <input checked="" type="checkbox"/> Increase conservation <input type="checkbox"/> Other	The city has a SCADA system to monitor water levels and will know if wells cannot produce water effectively
<input checked="" type="checkbox"/> Endangered, threatened, or special concern species habitat, other natural resource impacts	NA	<input type="checkbox"/> Flow/water level decline <input type="checkbox"/> Degrading water quality trends and/or MCLs exceeded <input type="checkbox"/> Impacts on endangered, threatened, or special concern species habitat or other natural resource impacts <input checked="" type="checkbox"/> Other: <u>NA</u>	<input type="checkbox"/> GIS analysis <input type="checkbox"/> Modeling <input type="checkbox"/> Mapping <input type="checkbox"/> Monitoring <input type="checkbox"/> Aquifer testing <input checked="" type="checkbox"/> Other: <u>NA</u>	NA	<input type="checkbox"/> Revise permit <input type="checkbox"/> Change groundwater pumping <input type="checkbox"/> Increase conservation <input checked="" type="checkbox"/> Other NA	NA

\* 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 Surface 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 Surface Water Protection Plans**

Plan Type	Status	Date Adopted	Date for Update
WHP	<input type="checkbox"/> In Process <input checked="" type="checkbox"/> Completed <input type="checkbox"/> Not Applicable	October 2014	October 2024
SWP	<input checked="" type="checkbox"/> In Process <input type="checkbox"/> Completed <input type="checkbox"/> Not Applicable	2008	2018

### 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	<input type="checkbox"/> No action planned - adequate <input checked="" type="checkbox"/> Repair/replacement <input checked="" type="checkbox"/> Expansion/addition	New Well Drilled in 2016	Currently not on City System anticipated 2018
Water Storage Facilities	<input type="checkbox"/> No action planned - adequate <input checked="" type="checkbox"/> Repair/replacement <input checked="" type="checkbox"/> Expansion/addition	2022	New 1.0 MGal Water Tower in high pressure zone.
Water Treatment Facilities	<input type="checkbox"/> No action planned - adequate <input type="checkbox"/> Repair/replacement <input checked="" type="checkbox"/> Expansion/addition	2025	New water treatment facility to treat high Mn concentrations
Distribution Systems (pipes, valves, etc.)	<input type="checkbox"/> No action planned - adequate <input checked="" type="checkbox"/> Repair/replacement <input checked="" type="checkbox"/> Expansion/addition	2020	Downtown Rogers; new residential subdivisions

System Component	Planned action	Anticipated Construction Year	Notes
Pressure Zones	<input type="checkbox"/> No action planned - adequate <input type="checkbox"/> Repair/replacement <input checked="" type="checkbox"/> Expansion/addition	2022	New High service pressure zone elevated tower
Other:	<input checked="" type="checkbox"/> No action planned - adequate <input type="checkbox"/> Repair/replacement <input type="checkbox"/> 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	North Well Field	FIG	600	2024	None
Surface Water	n/a	Mississippi River	N/A	N/A	Research with Neighboring Communities and Met Council
Interconnection to another supplier	n/a				

**Water Source Alternatives - Key Metropolitan Council Benchmark**

Do you anticipate the need for alternative water sources in the next 10 years? Yes  No

For metro communities, will you need alternative water sources by the year 2040? Yes  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
<input type="checkbox"/> Groundwater	N/A	N/A	N/A	N/A	N/A	N/A
<input type="checkbox"/> Surface Water	N/A	N/A	N/A	N/A	N/A	N/A
<input type="checkbox"/> Reclaimed stormwater	N/A	N/A	N/A	N/A	N/A	N/A
<input type="checkbox"/> Reclaimed wastewater	N/A	N/A	N/A	N/A	N/A	N/A
<input type="checkbox"/> Interconnection to another supplier	N/A	N/A	N/A	N/A	N/A	N/A

## 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?** 4/19/2005

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	DAN JANISH	763-428-0904	<a href="mailto:DJANISH@ROGERSMN.GOV">DJANISH@ROGERSMN.GOV</a>
Alternate Emergency Response Lead	JOHN SEIFERT	763-428-0906	<a href="mailto:JSEIFERT@ROGERSMN.GOV">JSEIFERT@ROGERSMN.GOV</a>

### 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](http://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
CITY OF DAYTON	1000	NO LIMITATIONS	2 ISOLATIONS VALVES NEED TO BE TURNED

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
N/A	N/A	N/A	N/A	N/A

If not covered above, describe additional emergency measures for providing water (obtaining bottled water, or steps to obtain National Guard services, etc.)

The City’s Contingency plan is to adapt to the problem at hand. In emergency situations where bottled water is distributed locations at the Public Works and Community Room would be used to distribute water.

**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 (GPD)	Short-Term Emergency Demand Reduction Potential (GPD)
Residential	1	897,000	336,000
Commercial/Industrial	2	411,000	155,000
TOTAL	NA	1,308,000	491,000

**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
<input checked="" type="checkbox"/> Contamination <input checked="" type="checkbox"/> Loss of production <input checked="" type="checkbox"/> Infrastructure failure <input checked="" type="checkbox"/> Executive order by Governor <input type="checkbox"/> Other: _____	<input type="checkbox"/> Supply augmentation through _____ <input checked="" type="checkbox"/> Adopt (if not already) and enforce a critical water deficiency ordinance to penalize lawn watering, vehicle washing, golf course and park irrigation & other nonessential uses. <input checked="" type="checkbox"/> Water allocation through emergency action of City Council <input type="checkbox"/> Meet with large water users to discuss their contingency plan.	<input checked="" type="checkbox"/> Supply augmentation through interconnections <input checked="" type="checkbox"/> Adopt (if not already) and enforce a critical water deficiency ordinance to penalize lawn watering, vehicle washing, golf course and park irrigation & other nonessential uses. <input checked="" type="checkbox"/> Water allocation through emergency action of the City Council <input checked="" type="checkbox"/> 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
<input checked="" type="checkbox"/> Short-term demand reduction declared (< 1 year)	<input checked="" type="checkbox"/> Website <input type="checkbox"/> Email list serve <input checked="" type="checkbox"/> Social media (e.g. Twitter, Facebook) <input checked="" type="checkbox"/> Direct customer mailing, <input checked="" type="checkbox"/> Press release (TV, radio, newspaper), <input type="checkbox"/> Meeting with large water users (> 10% of total city use) <input type="checkbox"/> Other: _____	<input type="checkbox"/> Daily <input type="checkbox"/> Weekly <input checked="" type="checkbox"/> Monthly <input type="checkbox"/> Annually	City Staff, Neighboring Communities, Local new outlets
<input checked="" type="checkbox"/> Long-term Ongoing demand reduction declared	<input checked="" type="checkbox"/> Website <input type="checkbox"/> Email list serve <input checked="" type="checkbox"/> Social media (e.g. Twitter, Facebook) <input checked="" type="checkbox"/> Direct customer mailing, <input checked="" type="checkbox"/> Press release (TV, radio, newspaper), <input type="checkbox"/> Meeting with large water users (> 10% of total city use) <input type="checkbox"/> Other: _____	<input type="checkbox"/> Daily <input type="checkbox"/> Weekly <input checked="" type="checkbox"/> Monthly <input type="checkbox"/> Annually	City Staff, Neighboring Communities, Local new outlets
<input checked="" type="checkbox"/> Governor’s critical water deficiency declared	<input checked="" type="checkbox"/> Website <input type="checkbox"/> Email list serve <input checked="" type="checkbox"/> Social media (e.g. Twitter, Facebook)	<input type="checkbox"/> Daily <input type="checkbox"/> Weekly <input checked="" type="checkbox"/> Monthly <input type="checkbox"/> Annually	City Staff, Neighboring Communities, Local new outlets

Notification Trigger(s)	Methods (select all that apply)	Update Frequency	Partners
	<input checked="" type="checkbox"/> Direct customer mailing, <input checked="" type="checkbox"/> Press release (TV, radio, newspaper), <input type="checkbox"/> Meeting with large water users (> 10% of total city use) <input type="checkbox"/> Other: _____		

**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**.

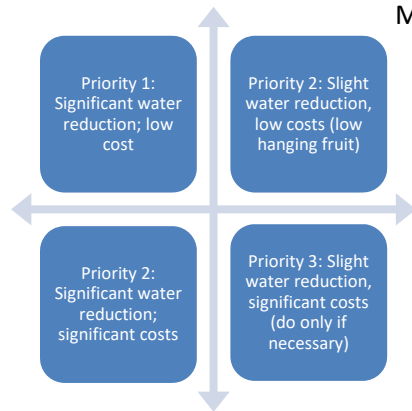
If no, the municipality must adopt such an official control within 6 months of submitting this WSP and submit it to the DNR as an amendment to this WSP.

**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: Section 46-21\_\_\_\_\_.

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.

Replacing with more efficient meters in residential and C/I. Water rate inclining block pricing system to encourage conservation (irrigation water billed at 70% higher rate than average user) Odd even watering ban, public outreach to minimize inefficient irrigation methods.

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	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Water supply system improvements (e.g. leak repairs, valve replacements, etc.)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Educational efforts	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
New water conservation ordinances	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Rebate or retrofitting Program (e.g. for toilet, faucets, appliances, showerheads, dish washers, washing machines, irrigation systems, rain barrels, water softeners, etc.)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Enforcement	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Describe other	<input type="checkbox"/> Yes <input type="checkbox"/> No

**What are the results you have seen from the actions in Table 21 and how were results measured?**

Since introducing a inclining block rate for water usage in 2013, water usages have decreased.

**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	<input type="checkbox"/> Low stream flow conditions <input checked="" type="checkbox"/> Reports of declining wetland and lake levels <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Increase promotion of conservation measures <input type="checkbox"/> Other: _____
Short-term demand reduction (less than 1 year)	<input checked="" type="checkbox"/> Extremely high seasonal water demand (more than double winter demand) <input checked="" type="checkbox"/> Loss of treatment capacity <input checked="" type="checkbox"/> Lack of water in storage <input checked="" type="checkbox"/> State drought plan <input type="checkbox"/> Well interference <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Enforce the critical water deficiency ordinance to restrict or prohibit lawn watering, vehicle washing, golf course and park irrigation & other nonessential uses. <input checked="" type="checkbox"/> Supply augmentation through interconnection <input checked="" type="checkbox"/> Water allocation through interconnections <input type="checkbox"/> Meet with large water users to discuss user’s contingency plan.
Long-term demand reduction (>1 year)	<input checked="" type="checkbox"/> Per capita demand increasing <input type="checkbox"/> Total demand increase (higher population or more industry)Water level in well(s) below elevation of _____ <input checked="" type="checkbox"/> Declared Emergency	<input checked="" type="checkbox"/> 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. <input checked="" type="checkbox"/> 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. <input type="checkbox"/> Meet with large water users to discuss user’s contingency plan. <input checked="" type="checkbox"/> Enhanced monitoring and reporting: audits, meters, billing, etc.
Governor’s “Critical Water Deficiency Order” declared	<input checked="" type="checkbox"/> Governor declaration as needed	<input checked="" type="checkbox"/> Take action as directed by the governor

**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 five-year average (2005-2014) unaccounted Water Use in Table 2 higher than 10%?**

Yes  No

**What is your leak detection monitoring schedule? (e.g. monitor 1/3rd of the city lines per year)**

**Periodic as needed, Rogers has a very low unaccounted for water percentage.**

**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](http://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?**

Frequency of water audits:     yearly         other (specify frequency) Annual water balance checks

Leak detection and survey:     every year     every other year         periodic as needed

Year last leak detection survey completed: n/a

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 City currently has an annual water loss of well below 10%. In 2017 the City installed new water meters for 8 top water users to better meter water usage. The City will also continue to meter during hydrant flushing.

**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	2832	2832	2832	5 year sampling	15_ / _20_
Irrigation meters	NA	NA	NA	NA	___ / ___
Institutional	NA	NA	NA	NA	___ / ___
Commercial	477	477	477	10	_15 / 20_
Industrial	NA	NA	NA	NA	___ / ___



Customer Category	Number of Customers	Number of Metered Connections	Number of Automated Meter Readers	Meter testing intervals (years)	Average age/meter replacement schedule (years)
Public facilities	NA	NA	NA	NA	___ / ___
Other	NA	NA	NA	NA	___ / ___
TOTALS	NA	NA	NA	NA	NA

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.

There are no unmetered connections.

**Table 24. Water source meters**

	Number of Meters	Meter testing schedule (years)	Number of Automated Meter Readers	Average age/meter replacement schedule (years)
Water source (wells/intakes)	7	Annual	7	__5_ / 10__
Treatment plant				___ / ___

**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 2010 – 2015 five-year average residential per capita water demand? 101.86 g/person/day

Describe the water use trend over that timeframe:

What usage in the time period from 2010-2015 has dropped significantly with the help of the new inclining block pay structure for water billing. Since the implementation of the new billing structure the residential per capita water demand decreased from over 100 gpd to under 90 gpd. The decreasing trend is encouraging and will continue.

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
<input type="checkbox"/> Revise city ordinances/codes to encourage or require water efficient landscaping.	
<input checked="" type="checkbox"/> 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	1-3 years following implementation of this plan.
<input type="checkbox"/> Revise ordinances to limit irrigation. Describe the restricted irrigation plan:	
<input checked="" type="checkbox"/> 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.	1-3 years following implementation of this plan.
<input checked="" type="checkbox"/> Make water system infrastructure improvements	On-going
<input checked="" type="checkbox"/> Offer free or reduced cost water use audits) for residential customers.	1-3 years following implementation of this plan.
<input type="checkbox"/> Implement a notification system to inform customers when water availability conditions change.	
<input checked="" type="checkbox"/> Provide rebates or incentives for installing water efficient appliances and/or fixtures indoors (e.g., low flow toilets, high efficiency dish washers and washing machines, showerhead and faucet aerators, water softeners, etc.)	1-3 years following implementation of this plan – heavy emphasis on water softeners for efficiency
<input checked="" type="checkbox"/> 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.)	1-3 years following implementation of this plan
<input checked="" type="checkbox"/> Identify supplemental Water Resources	Neighboring Communities and MetCouncil
<input checked="" type="checkbox"/> Conduct audience-appropriate water conservation education and outreach.	Annually with MS4 Education and Outreach
<input type="checkbox"/> Describe other plans	

**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
<input type="checkbox"/> Conduct a facility water use audit for both indoor and outdoor use, including system components	
<input checked="" type="checkbox"/> Install enhanced meters capable of automated readings to detect spikes in consumption	On-going
<input type="checkbox"/> 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.)	
<input type="checkbox"/> Install water conservation fixtures and appliances or change processes to conserve water	
<input type="checkbox"/> Repair leaking system components (e.g., pipes, valves)	
<input checked="" type="checkbox"/> Investigate the reuse of reclaimed water (e.g., stormwater, wastewater effluent, process wastewater, etc.)	City Pilot project in place On-going
<input checked="" type="checkbox"/> Reduce outdoor water use (e.g., turf replacement/reduction, rain gardens, rain barrels, smart irrigation, outdoor water use meters, etc.)	On-going
<input checked="" type="checkbox"/> Train employees how to conserve water	On-going
<input checked="" type="checkbox"/> Implement a notification system to inform non-residential customers when water availability conditions change.	AMI –Early notification of high water usage with smart meter technology
<input type="checkbox"/> 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. Proposed plumbing code 4714.1702.1 <a href="http://www.dli.mn.gov/PDF/docket/4714rule.pdf">http://www.dli.mn.gov/PDF/docket/4714rule.pdf</a>	
<input type="checkbox"/> 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.

Current trends for the City’s two customer categories Residential and Commercial/Industrial are on a downward trend. The residential trends are based heavily on building permit trends, newly sodded lawns require more water, once the sod is established water usage decreases. The overall trend for residential water usage is trending downwards in the last 10 years. A similar downward trend is occurring for C/I in the last 10 years. There has been a large increase in commercial/industrial buildings in Rogers in the last 10 years, but most of the users have been large warehouses that require little water.

**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: 2.8

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: 6000 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: 2017\_\_\_\_\_

**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	<input type="checkbox"/> Monthly billing	<input type="checkbox"/> Uniform <input checked="" type="checkbox"/> Odd/even day watering	<input type="checkbox"/> Service charge based on water volume

Customer Category	Conservation Billing Strategies in Use *	Conservation Neutral Billing Strategies in Use **	Non-Conserving Billing Strategies in Use ***
	<input checked="" type="checkbox"/> Increasing block rates (volume tiered rates) <input type="checkbox"/> Seasonal rates <input type="checkbox"/> Time of use rates <input type="checkbox"/> Water bills reported in gallons <input type="checkbox"/> Individualized goal rates <input type="checkbox"/> Excess use rates <input type="checkbox"/> Drought surcharge <input type="checkbox"/> Use water bill to provide comparisons <input type="checkbox"/> Service charge not based on water volume <input type="checkbox"/> Other (describe)		<input type="checkbox"/> Declining block <input type="checkbox"/> Flat <input type="checkbox"/> Other (describe)
Commercial/Industrial/Institutional	<input checked="" type="checkbox"/> Monthly billing <input checked="" type="checkbox"/> Increasing block rates (volume tiered rates) <input type="checkbox"/> Seasonal rates <input type="checkbox"/> Time of use rates <input type="checkbox"/> Water bills reported in gallons <input type="checkbox"/> Individualized goal rates <input type="checkbox"/> Excess use rates <input type="checkbox"/> Drought surcharge <input type="checkbox"/> Use water bill to provide comparisons <input type="checkbox"/> Service charge not based on water volume <input type="checkbox"/> Other (describe)	<input type="checkbox"/> Uniform	<input type="checkbox"/> Service charge based on water volume <input type="checkbox"/> Declining block <input type="checkbox"/> Flat <input type="checkbox"/> Other (describe)
<input type="checkbox"/> 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:

The City has implemented an odd/even watering restriction to reduce peak day demands during months of high water usage.

**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**

<input checked="" type="checkbox"/>	Participate in the GreenStep Cities Program, including implementation of at least one of the 20 “Best Practices” for water
<input type="checkbox"/>	Prepare a master plan for smart growth (compact urban growth that avoids sprawl)
<input checked="" type="checkbox"/>	Prepare a comprehensive open space plan (areas for parks, green spaces, natural areas)
<input type="checkbox"/>	Adopt a water use restriction ordinance (lawn irrigation, car washing, pools, etc.)
<input type="checkbox"/>	Adopt an outdoor lawn irrigation ordinance
<input type="checkbox"/>	Adopt a private well ordinance (private wells in a city must comply with water restrictions)
<input checked="" type="checkbox"/>	Implement a stormwater management program
<input type="checkbox"/>	Adopt non-zoning wetlands ordinance (can further protect wetlands beyond state/federal laws-for vernal pools, buffer areas, restrictions on filling or alterations)
<input type="checkbox"/>	Adopt a water offset program (primarily for new development or expansion)
<input type="checkbox"/>	Implement a water conservation outreach program
<input type="checkbox"/>	Hire a water conservation coordinator (part-time)

<input type="checkbox"/>	Implement a rebate program for water efficient appliances, fixtures, or outdoor water management
<input type="checkbox"/>	Other

**Objective 8: Tracking Success: How will you track or measure success through the next ten years?**

Continue to monitor water usage by customer category.

**Tip: The process to monitor demand reduction and/or a rate structure includes:**

- The DNR Hydrologist will call or visit the community the first 1-3 years after the water supply plan is completed.
- 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.
- 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.
- 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.
- 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.

**A. 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)?
<input type="checkbox"/> Rainfall sensors required on landscape irrigation systems	<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared Emergencies
<input type="checkbox"/> Water efficient plumbing fixtures required	<input type="checkbox"/> New development <input type="checkbox"/> Replacement <input type="checkbox"/> Rebate Programs
<input checked="" type="checkbox"/> Critical/Emergency Water Deficiency ordinance	<input checked="" type="checkbox"/> Only during declared Emergencies
<input checked="" type="checkbox"/> Watering restriction requirements (time of day, allowable days, etc.)	<input checked="" type="checkbox"/> Odd/even <input type="checkbox"/> 2 days/week <input type="checkbox"/> Only during declared Emergencies
<input type="checkbox"/> Water waste prohibited (for example, having a fine for irrigators spraying on the street)	<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared Emergencies

Regulations Utilized	When is it applied (in effect)?
<input type="checkbox"/> Limitations on turf areas (requiring lots to have 10% - 25% of the space in natural areas)	<input type="checkbox"/> New development <input type="checkbox"/> Shoreland/zoning <input type="checkbox"/> Other
<input checked="" type="checkbox"/> Soil preparation requirements (after construction, requiring topsoil to be applied to promote good root growth)	<input checked="" type="checkbox"/> New Development <input checked="" type="checkbox"/> Construction Projects <input type="checkbox"/> Other
<input type="checkbox"/> Tree ratios (requiring a certain number of trees per square foot of lawn)	<input type="checkbox"/> New development <input type="checkbox"/> Shoreland/zoning <input type="checkbox"/> Other
<input type="checkbox"/> Permit to fill swimming pool and/or requiring pools to be covered (to prevent evaporation)	<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared Emergencies
<input type="checkbox"/> Ordinances that permit stormwater irrigation, reuse of water, or other alternative water use (Note: be sure to check current plumbing codes for updates)	<input type="checkbox"/> Describe

### B. 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
<input type="checkbox"/> Low flush toilets, <input type="checkbox"/> Toilet leak tablets, <input type="checkbox"/> Low flow showerheads, <input type="checkbox"/> Faucet aerators;	<input type="checkbox"/> Education about <input type="checkbox"/> Free distribution of <input type="checkbox"/> Rebate for <input type="checkbox"/> Other	<input type="checkbox"/> Gas company <input type="checkbox"/> Electric company <input type="checkbox"/> Watershed organization



Water Use Targets	Outreach Methods	Partners
<input type="checkbox"/> Water conserving washing machines, <input type="checkbox"/> Dish washers, <input checked="" type="checkbox"/> Water softeners;	<input checked="" type="checkbox"/> Education about <input type="checkbox"/> Free distribution of <input type="checkbox"/> Rebate for <input type="checkbox"/> Other	<input type="checkbox"/> Gas company <input type="checkbox"/> Electric company <input type="checkbox"/> Watershed organization
<input checked="" type="checkbox"/> Rain gardens, <input checked="" type="checkbox"/> Rain barrels, <input checked="" type="checkbox"/> Native/drought tolerant landscaping, etc.	<input checked="" type="checkbox"/> Education about <input type="checkbox"/> Free distribution of <input type="checkbox"/> Rebate for <input type="checkbox"/> Other	<input type="checkbox"/> Gas company <input type="checkbox"/> Electric company <input checked="" type="checkbox"/> 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.):

The City frequently receives educational materials regarding native landscaping and rain gardens from Elm Creek Watershed. Educational materials are made available to the public at City Hall.

### C. 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			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Consumer Confidence Reports	Report of City’s water quality	1/year	<input checked="" type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Press releases to traditional local news outlets (e.g., newspapers, radio and TV)			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Social media distribution (e.g., emails, Facebook, Twitter)	Water Conservation	2/year	<input type="checkbox"/> Ongoing <input checked="" type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Paid advertisements (e.g., billboards, print media, TV, radio, web sites, etc.)			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Presentations to community groups			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Staff training			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Facility tours			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Displays and exhibits			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Marketing rebate programs (e.g., indoor fixtures & appliances and outdoor practices)			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal

Education Methods	General summary of topics	#/Year	Frequency
			<input type="checkbox"/> Only during declared emergencies
Community news letters	Educational strategies regarding water usage	2/year	<input checked="" type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Direct mailings (water audit/retrofit kits, showerheads, brochures)			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Information kiosk at utility and public buildings	Information regarding native landscaping and rain gardens	1/year	<input checked="" type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Public service announcements			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Cable TV Programs			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Demonstration projects (landscaping or plumbing)			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
K-12 education programs (Project Wet, Drinking Water Institute, presentations)			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Community events (children’s water festivals, environmental fairs)			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Community education classes			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies

Education Methods	General summary of topics	#/Year	Frequency
Water week promotions			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Website (include address: )			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Targeted efforts (large volume users, users with large increases)			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Notices of ordinances		As needed	<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input checked="" type="checkbox"/> Only during declared emergencies
Emergency conservation notices		As needed	<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input checked="" type="checkbox"/> Only during declared emergencies
Other:			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies

Briefly discuss what future education and information activities your community is considering in the future:

The City is looking into further educating residents on benefits of water conservation with direct mailings, social media posts, and City website updates.

## 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
<input checked="" type="checkbox"/> None at this time		
<input type="checkbox"/> Comprehensive planning that guides development in vulnerable drinking water supply management areas		
<input type="checkbox"/> Zoning overlay		
<input type="checkbox"/> 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/or 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 – see [www.mndnr.gov/watersupplyplans](http://www.mndnr.gov/watersupplyplans)

# **Appendix 1**

Well Logs and Maintenance Records

WELL OR BORING LOCATION

MINNESOTA DEPARTMENT OF HEALTH  
WELL AND BORING RECORD  
Minnesota Statutes, Chapter 103I

MINNESOTA UNIQUE WELL AND BORING NO.

749842

County Name  
**Hennepin**

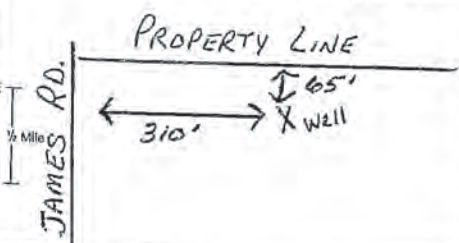
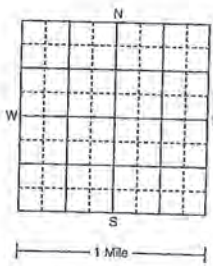
Township Name: **Rogers** Township No.: **120N** Range No.: **23W** Section No.: **11** Fraction: **NE SE SE**

WELL/BORING DEPTH (completed) **356** ft. DATE WORK COMPLETED **5-15-07**

LOCATION: Latitude \_\_\_\_\_ degrees \_\_\_\_\_ minutes \_\_\_\_\_ seconds \_\_\_\_\_  
Longitude \_\_\_\_\_ degrees \_\_\_\_\_ minutes \_\_\_\_\_ seconds \_\_\_\_\_

House Number, Street Name, City, and Zip Code of Well Location  
**ROGERS 55374** or Fire Number \_\_\_\_\_

Show exact location of well/boring in section grid with "X." Sketch map of well/boring location. Showing property lines, roads, buildings, and direction.



DRILLING METHOD  
 Cable Tool  Driven  Dug  
 Auger  Rotary  Jetted  
 Dual Rotary

DRILLING FLUID **H2O** WELL HYDROFRACTURED?  Yes  No  
From \_\_\_\_\_ ft. To \_\_\_\_\_ ft.

USE  Domestic  Monitoring  Heating/Cooling  
 Noncommunity PWS  Environ. Bore Hole  Industry/Commercial  
 Community PWS  Irrigation  Remedial  
 Elevator  Dewatering  \_\_\_\_\_

CASING MATERIAL Drive Shoe?  Yes  No HOLE DIAM.  
 Steel  Threaded  Welded  
 Plastic  \_\_\_\_\_

CASING Diameter Weight Specifications  
24" in. to 157 ft. 94.62 lbs./ft.  
18" in. to 303 ft. 70.59 lbs./ft.  
\_\_\_\_\_ in. to \_\_\_\_\_ ft. \_\_\_\_\_ lbs./ft.

SCREEN **N/A** OPEN HOLE  
Make \_\_\_\_\_ From **303** ft. To **356** ft.  
Type \_\_\_\_\_ Diam. \_\_\_\_\_  
Slot/Gauze \_\_\_\_\_ Length \_\_\_\_\_  
Set between \_\_\_\_\_ ft. and \_\_\_\_\_ ft. FITTINGS \_\_\_\_\_

STATIC WATER LEVEL Measured from \_\_\_\_\_  
**58.5** ft.  Below  Above land surface Date measured **5-15-07**

PUMPING LEVEL (below land surface)  
**114.5** ft. after **12.5** hrs. pumping **400** g.p.m.

WELLHEAD COMPLETION  
 Pitless/adaptor manufacturer \_\_\_\_\_ Model \_\_\_\_\_  
 Casing Protection \_\_\_\_\_  12 in. above grade  
 At-grade (Environmental Well and Boring ONLY)

GROUTING INFORMATION  
Well grouted  Yes  No  
Grout materials  Neat cement  Bentonite  Concrete  Other \_\_\_\_\_

From **380** To **356** ft. **1.75**  Yds.  Bags  
From **303** To **0** ft. **30**  Yds.  Bags  
From \_\_\_\_\_ To \_\_\_\_\_ ft. \_\_\_\_\_ Yds.  Bags

NEAREST KNOWN SOURCE OF CONTAMINATION  
**1100** feet **East** direction **Storm pond** type

Well disinfected upon completion?  Yes  No  
PUMP  
 Not installed Date installed \_\_\_\_\_

Manufacturer's name \_\_\_\_\_  
Model Number \_\_\_\_\_ HP \_\_\_\_\_ Volts \_\_\_\_\_

Length of drop pipe \_\_\_\_\_ ft. Capacity \_\_\_\_\_ g.p.m.  
Type:  Submersible  L.S. Turbine  Reciprocating  Jet  \_\_\_\_\_

ABANDONED WELLS  
Does property have any not in use and not sealed well(s)?  Yes  No

VARIANCE  
Was a variance granted from the MDH for this well?  Yes  No TN# \_\_\_\_\_

WELL CONTRACTOR CERTIFICATION  
This well was drilled under my supervision and in accordance with Minnesota Rules, Chapter 4725. The information contained in this report is true to the best of my knowledge.

Mark J. Traut Wells, Inc. 1404  
Licensee Business Name Lic. or Reg. No.

*Mark J. Traut* **5-29-07**  
Certified Representative Signature Certified Rep. No. Date

Matt Erickson & Tony Burroughs  
Name of Driller

GEOLOGICAL MATERIALS	COLOR	HARDNESS OF MATERIAL	FROM	TO
See Attached Sheet...				

REMARKS, ELEVATION, SOURCE OF DATA, etc.

Well #8

MINN. DEPT. OF HEALTH COPY 749842

GEOLOGICAL MATERIALS	COLOR	HARDNESS OF MATERIALS	FROM	TO
Top soil, grey clay	gray	Soft	0	5
Clay	Dark Gray	Med	5	13
Sand & Gravel	Brown	Soft	13	58
Sand, Gravel, Rock	Mixed	Soft	58	85
sand, gravel, rock, brown clay	Mixed	Soft	85	95
Sand	Brown	Soft	95	105
Sand, Gravel, Rock	Mixed	Soft	105	120
Sand	Brown	Soft	120	135
Sand, Gravel, Rock	Mixed	Soft	135	149
Rock & Gravel	Mixed	Hard	149	152
Shale	Brown & Green	Hard	152	153
Limestone, Brown-Green Shale	Light Brown	Hard	153	159
Limestone	Brown	Hard	159	162
Limestone	Gray	Hard	162	165
Sandstone	Light Tan	Soft	165	201
Sandstone, Green Shale	Light Tan	Soft	201	215
Sandstone, Green Shale	Gray & Purple	Soft	215	220
Sandstone, Green Shale	Gray & Brown	Soft	220	240
Sandstone, Green Shale	Gray & Red/Brown	Med	240	243
Sandstone, Green Shale	Tan	Med	243	248
Sandstone, Green Shale	Brown	Med	248	249
Sandstone, Green Shale	Gray, Black, Brown	Hard	249	254
Sandstone, Green Shale	Brown	Med	254	255
Sandstone, Green Shale	Gray, Black, Brown	Hard	255	265
Sandstone, Green Shale	Gray & Brown	Med	265	275
Sandstone, Green Shale	Brown	Med	275	281
Shale	Brown	Soft	281	282
Sandstone, Mixed Green Shale	Brown	Med	282	283
Sandstone, Green Shale	Gray & Dark Brown	Med	283	293
Sandstone, Green Shale	Brown, Gray, Black	Med	293	301
Sandstone, Green Shale	Tan	Soft	301	311
Sandstone	Gray	Soft	311	316
Sandstone, Green Shale	Gray	Soft	316	321
Sandstone, gray/green shale layers	Gray	Soft	321	331
Sandstone	Gray	Soft	331	341
Sandstone, Green Shale	Gray	Med	341	351
Sandstone, green/gray Shale	Gray	Med	351	356
Sandstone, Green Shale	Tan	Med	356	366
Sandstone, Green Shale	Tan	Soft	366	371
Sandstone	Tan	Med	371	375
Shale	Green	Soft	375	380

Township Name Township Range Dir Section Subsection 120 23 W 23 DBBDDD	Well Depth 370 ft.	Depth Completed 370 ft.	Date Well Completed 1983/10/31
---	-----------------------	----------------------------	-----------------------------------

Well Name ROGERS 3	Drilling Method Cable Tool
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Well Owner's Name ROGERS 3  ROGERS MN 55374	Drilling Fluid	Well Hydrofractured? <input type="checkbox"/> Yes <input type="checkbox"/> No	From ft. to ft.
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Contact's Name CITY OF ROGERS 12913 MAIN ST ROGERS MN 55374	Use Community Supply (municipal)
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<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>GEOLOGICAL MATERIAL</th> <th>COLOR</th> <th>HARDNESS</th> <th>FROM</th> <th>TO</th> </tr> </thead> <tbody> <tr><td>DRIFT</td><td>BROW</td><td>SOFT</td><td>0</td><td>132</td></tr> <tr><td>DRIFT</td><td>BROW</td><td>SOFT</td><td>132</td><td>147</td></tr> <tr><td>ST. LAWRENCE</td><td>BROW</td><td>HARD</td><td>147</td><td>169</td></tr> <tr><td>FRANCONIA</td><td>GREE</td><td>SOFT</td><td>169</td><td>188</td></tr> <tr><td>FRANCONIA</td><td>GREE</td><td>SOFT</td><td>188</td><td>299</td></tr> <tr><td>FRANCONIA</td><td>GREE</td><td>SOFT</td><td>299</td><td>309</td></tr> <tr><td>IRONTON/GALESVILLE</td><td>BRN/G</td><td>SOFT</td><td>309</td><td>351</td></tr> <tr><td>IRONTON/GALESVILLE</td><td>BRN/G</td><td>SOFT</td><td>351</td><td>370</td></tr> </tbody> </table>	GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	DRIFT	BROW	SOFT	0	132	DRIFT	BROW	SOFT	132	147	ST. LAWRENCE	BROW	HARD	147	169	FRANCONIA	GREE	SOFT	169	188	FRANCONIA	GREE	SOFT	188	299	FRANCONIA	GREE	SOFT	299	309	IRONTON/GALESVILLE	BRN/G	SOFT	309	351	IRONTON/GALESVILLE	BRN/G	SOFT	351	370	Casing Drive Shoe? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> N	Hole Diameter	<table border="1" style="width:100%; border-collapse: collapse;"> <tr><td>0 in. t</td><td>319 ft</td></tr> <tr><td>0 in. t</td><td>370 ft</td></tr> </table>	0 in. t	319 ft	0 in. t	370 ft
GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO																																																
DRIFT	BROW	SOFT	0	132																																																
DRIFT	BROW	SOFT	132	147																																																
ST. LAWRENCE	BROW	HARD	147	169																																																
FRANCONIA	GREE	SOFT	169	188																																																
FRANCONIA	GREE	SOFT	188	299																																																
FRANCONIA	GREE	SOFT	299	309																																																
IRONTON/GALESVILLE	BRN/G	SOFT	309	351																																																
IRONTON/GALESVILLE	BRN/G	SOFT	351	370																																																
0 in. t	319 ft																																																			
0 in. t	370 ft																																																			

Screen N	Open Hole From	319 ft. to	370 ft.
Make	Type		

Static Water Level 90 ft. from Land surface	Date 1983/10/31
---	-----------------

PUMPING LEVEL (below land surface)	160 ft. after 12 hrs. pumping 1000 g.p.m.
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Well Head Completion	Pitless adapter mfr Model
Casing Protection	<input checked="" type="checkbox"/> 12 in. above grade
	<input type="checkbox"/> At-grade(Environmental Wells and Borings ONLY)

Grouting Information	Well grouted? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Material	From	To (ft.)	Amount(yds/bags)
		G	0	319	18 Y

Nearest Known Source of Contamination	ft.	direction	type	Well disinfected upon completion? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
---------------------------------------	-----	-----------	------	---

Pump <input checked="" type="checkbox"/> Not Installed	Date Installed	N	Mfr nam	Model	HP	Volts
Drop Pipe Length	ft.	Capacity	g.p.m			
Type						

REMARKS, ELEVATION, SOURCE OF DATA, etc.	Any not in use and not sealed well(s) on property? <input type="checkbox"/> Yes <input type="checkbox"/> No
--	---

M.G.S. NO.2015. GAMMA LOGGED 10-15-1983.	Was a variance granted from the MDH for this Well? <input type="checkbox"/> Yes <input type="checkbox"/> No
--	---

USGS Quad Rogers Elevation 962	Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. 27058
Aquifer: CIGL Alt Id: 79-6311	License Business Name

<b>Report Copy</b>	Name of Driller <u>MANTHIE, D.</u>
--------------------	------------------------------------

Township Name Township Range Dir Section Subsection  
 120 23 W 23 DBAABD

Well Depth Depth Completed Date Well Completed  
 367 ft. 367 ft. 1995/10/16

Well Name ROGERS 4

Drilling Method Cable Tool

Contact's Name CITY OF ROGERS  
 12913 MAIN ST  
 ROGERS MN 55374

Drilling Fluid Well Hydrofractured?  Yes  No  
 From ft. to ft.

Well Owner's Name ROGERS 4  
 CHURCH AV  
 ROGERS MN 55374

Use Community Supply (municipal)  
 Casing Drive Shoe?  Yes  N Hole Diameter  
 in. t 367 ft

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
CLAY	BROW	SOFT	0	9
CLAY-SAND-GRAVEL	GRAY	MEDIUM	9	140
LIMESTONE	BROW	MEDIUM	140	150
LIMESTONE-SAND & SHALE	BROW	MEDIUM	150	175
SANDSTONE-SHALE LAYER	BROW	HARD	175	180
SANDSTONE	YELLO	MEDIUM	180	215
SANDSTONE-SHALE LAYER	LT. BR	MEDIUM	215	310
SANDSTONE-SHALE LAYER	GRAY	SFT-HRD	310	330
SANDSTONE-SHALE SEAM	BROW	MEDIUM	330	340
SANDSTONE	LT. BR	SFT-MED	340	367

Casing Diameter	Weight(lbs/ft)
20 in. t 151 ft	78.6
14 in. t 231 ft	61.57

Screen N Open Hole From 231 ft. to 367 ft.  
 Make Type

Static Water Level 85 ft. from Land surface Date 1995/08/21

PUMPING LEVEL (below land surface)  
 168 ft. after 3 hrs. pumping 1000 g.p.m.

Well Head Completion  
 Pitless adapter mfr Model  
 Casing Protection  12 in. above grade  
 At-grade(Environmental Wells and Borings ONLY)

Grouting Information Well grouted?  Yes  No

Material	From	To (ft.)	Amount(yds/bags)
G	0	231	28 Y

Nearest Known Source of Contamination  
 ft. direction type  
 Well disinfected upon completion?  Yes  No

Pump  Not Installed Date Installed Y  
 Mfr nam Model HP Volts  
 Drop Pipe Length ft. Capacity g.p.m.  
 Type

REMARKS, ELEVATION, SOURCE OF DATA, etc.

M.G.S. NO.3636.  
 USGS Quad Rogers Elevation 961  
 Aquifer: CFG Alt Id: 79-6311

Any not in use and not sealed well(s) on property?  Yes  No

Was a variance granted from the MDH for this Well?  Yes  No

Well CONTRACTOR CERTIFICATION Lic. Or. Reg. No. 27010  
 License Business Name  
 Name of Driller WENDT, F

**Report Copy**



Township Name Township Range Dir Section Subsection 120 23 W 23 DADCBB	Well Depth 382 ft.	Depth Completed 364 ft.	Date Well Completed 1999/02/11
---	-----------------------	----------------------------	-----------------------------------

Well Name ROGERS 5	Drilling Method Non-specified Rotary
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Well Owner's Name ROGERS 5 81 S CR ROGERS MN 55374	Drilling Fluid Bentonite	Well Hydrofractured? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No From ft. to ft.
--	-----------------------------	---

Contact's Name CITY OF ROGERS 12913 MAIN ST ROGERS MN 55374	Use Community Supply (municipal)
---	----------------------------------

Casing Drive Shoe? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> N	Hole Diameter in. t 364 ft.
---	--------------------------------

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
CLAY	BROW		0	12
CLAY & SAND	GRAY		12	139
ST. LAWRENCE	BLU/G		139	146
ST. LAWRENCE	BLU/G		146	162
ST. LAWRENCE	BLU/G		162	164
FRANCONIA	GRN/T		164	308
FRANCONIA	GRN/T		308	310
IRONTON GALESVILLE			310	359
IRONTON GALESVILLE			359	364
EAU CLAIRE			364	364

Casing Diameter Weight(lbs/ft) 18 in. t 222 ft	Screen N Open Hole From 222 ft. to 364 ft. Make Type
---	--

Static Water Level 85 ft. from Land surface	Date 1999/02/11
---	-----------------

PUMPING LEVEL (below land surface) 364 ft. after 11 hrs. pumping 200 g.p.m.	
--	--

Well Head Completion Pitless adapter mfr Model Casing Protection <input type="checkbox"/> 12 in. above grade <input type="checkbox"/> At-grade(Environmental Wells and Borings ONLY)	
---	--

Grouting Information Well grouted? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
--	--

Material	From	To (ft.)	Amount(yds/bags)
G	0	222	12 Y

Nearest Known Source of Contamination ft. direction type Well disinfected upon completion? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
--	--

Pump <input type="checkbox"/> Not Installed Date Installed Mfr nam Model HP 100 Volts 480 Drop Pipe Length ft. Capacity g.p.m. Type T	
---	--

REMARKS, ELEVATION, SOURCE OF DATA, etc. GAMMA LOGGED 1-21-1999.	Any not in use and not sealed well(s) on property? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
---	--

USGS Quad Rogers Elevation 961 Aquifer: CFG Alt Id: 79-6311	Was a variance granted from the MDH for this Well? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
--	--

<b>Report Copy</b>	Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. 71536 License Business Name Name of Driller <u>BRUCE/LYLE</u>
--------------------	--

Township Name Township Range Dir Section Subsection 120 23 W 11 DDBB	Well Depth 376 ft.	Depth Completed 374 ft.	Date Well Completed 2001/08/14
---	-----------------------	----------------------------	-----------------------------------

Well Name ROGERS 6	Drilling Method Driven
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Contact's Name CITY OF ROGERS 12913 MAIN ST ROGERS MN 55374	Drilling Fluid	Well Hydrofractured? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	From ft. to ft.
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Well Owner's Name ROGER 6  ROGERS MN 55374	Use Community Supply (municipal)
--	----------------------------------

<b>GEOLOGICAL MATERIAL</b>	<b>COLOR</b>	<b>HARDNESS</b>	<b>FROM</b>	<b>TO</b>		<b>Casing</b>	<b>Drive Shoe?</b>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> N	<b>Hole Diameter</b>
TOP SOIL	BLACK	SOFT	0	2		24 in. t	258 ft		94.62
CLAY	BROW	SOFT	2	5		18 in. t	299 ft		70.59

SAND & GRAVEL	BROW	SOFT	5	33		<b>Screen</b> N	<b>Open Hole</b> From 299 ft. to 374 ft.
SAND & CLAY	GRAY	SOFT	33	49		Make	Type
SAND GRAVEL ROCK	BROW	SOFT	49	82			
SANDY CLAY	BROW	SFT-MED	82	115			
SANDY CLAY GRAVEL	BROW	SFT-MED	115	128			
SAND & GRAVEL	BROW	SOFT	128	195			
COARSE SAND	BROW	SOFT	195	250			
SHALE	GREE	SFT-MED	250	296			
SANDSTONE	WHITE	SOFT	296	315			
SANDSTONE/SHALE	GRN/	SFT-MED	315	320			
SANDSTONE	WHITE	SOFT	320	340			
SANDSTONE/SHALE WHITE		SFT-MED	340	353			
SANDSTONE/SHALE	TAN/G	MED-HRD	353	373			
SHALE PLUM GRAY		MED-HRD	373	374			

Static Water Level 32 ft. from Land surface	Date 2001/08/13
---	-----------------

<b>PUMPING LEVEL (below land surface)</b>	ft. after hrs. pumping g.p.m.
---	-------------------------------

<b>Well Head Completion</b>	Pitless adapter mfr Model
Casing Protection	<input checked="" type="checkbox"/> 12 in. above grade
<input type="checkbox"/> At-grade(Environmental Wells and Borings ONLY)	

<b>Grouting Information</b>	Well grouted? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>Material</b>	<b>From To (ft.) Amount(yds/bags)</b>
G	0 299 16 Y

<b>Nearest Known Source of Contamination</b>	300 ft. direction S type BOW
Well disinfected upon completion?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

<b>Pump</b> <input checked="" type="checkbox"/> Not Installed	Date Installed N
Mfr nam	
Model	HP Volts
Drop Pipe Length	ft. Capacity g.p.m
Type	

Any not in use and not sealed well(s) on property?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
--	---

Was a variance granted from the MDH for this Well?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
--	---

<b>Well CONTRACTOR CERTIFICATION</b>	Lic. Or Reg. No. 71536
License Business Name	
Name of Driller	TONY/ED

**REMARKS, ELEVATION, SOURCE OF DATA, etc.**

M.G.S. NO. 4105.

USGS Quad Rogers Elevation 894  
Aquifer: CIGE Alt Id: 1270047S06

## Report Copy

Minnesota Unique Well No.

**740966**

County Hennepin  
 Quad Rogers  
 Quad ID 121A

MINNESOTA DEPARTMENT OF HEALTH

**WELL AND BORING RECORD**

Entry Date 08/22/2006  
 Update Date 04/19/2007  
 Received Date 10/06/2006

Minnesota Statutes Chapter 103J

<p>Well Name <b>ROGERS 7</b></p> <p>Township Range Dir Section Subsections Elevation 959 ft.</p> <p>120 23 W 24 CCBCAA Elevation Method 7.5 minute topographic map (+/- 5 feet)</p>	<p>Well Depth 365 ft. Depth Completed 362 ft. Date Well Completed 08/01/2006</p> <p>Drilling Method Dual Rotary</p>																																																																																																																																																																																											
<p>Well Address                  20600 81 CR                  ROGERS MN 55374</p>	<p>Drilling Fluid Water</p> <p>Well Hydrofractured? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No                  From Ft. to Ft.</p>																																																																																																																																																																																											
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GRY	MEDIUM	360	365	<p>Use Community Supply PWS ID Source</p> <p>Casing Type Steel (black or low carbon) Joint Welded Drive Shoe? <input checked="" type="checkbox"/></p> <p>Yes <input type="checkbox"/> No Above/Below 1 ft.</p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Casing Diameter</th> <th>Weight</th> <th>Hole Diameter</th> </tr> </thead> <tbody> <tr> <td>24 in. to 152 ft.</td> <td>lbs./ft.</td> <td>24 in. to 365 ft.</td> </tr> <tr> <td>18 in. to 200 ft.</td> <td>lbs./ft.</td> <td></td> </tr> </tbody> </table> <p>Open Hole from ft. to ft.</p> <p>Screen YES Make JOHNSON Type stainless steel</p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Diameter</th> <th>Slot/Gauze</th> <th>Length</th> <th>Set Between</th> </tr> </thead> <tbody> <tr> <td>12</td> <td>30</td> <td>167</td> <td>195 ft. and 362 ft.</td> </tr> </tbody> </table> <p>Static Water Level 97.1 ft. from Land surface Date Measured 08/01/2006</p> <p>PUMPING LEVEL (below land surface) 176 ft. after 12 hrs. pumping 900 g.p.m.</p> <p>Well Head Completion                  Pileless adapter manufacturer Model  <input type="checkbox"/> Casing Protection <input checked="" type="checkbox"/> 12 in. above grade  <input type="checkbox"/> At-grade (Environmental Wells and Borings ONLY)</p>	Casing Diameter	Weight	Hole Diameter	24 in. to 152 ft.	lbs./ft.	24 in. to 365 ft.	18 in. to 200 ft.	lbs./ft.		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<p><b>REMARKS</b>                  GAMMA LOGGED 8-16-2006. LOGGED BY JIM TRAEN, M.G.S. NO. 4582.</p> <p>Located by: Minnesota Geological Survey Method: Digitization (Screen) - Map (1:24,000)</p> <p>Unique Number Verification: Information from owner Input Date: 08/22/2006</p> <p>System: UTM - Nad83, Zone15, Meters X: 457483 Y: 5003553</p>	<p>Grouting Information Well Grouted? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Grout Material: Neat Cement from to 185 ft. 10 yds.</p> <p>Nearest Known Source of Contamination 80 feet S direction Sewer type</p> <p>Well disinfected upon completion? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Pump <input type="checkbox"/> Not installed Date installed                  Manufacturer's name Model number HP Vols                  Length of drop Pipe ft. Capacity g.p.m. Type Material</p> <p>Abandoned Wells Does property have any not in use and not sealed well(s)? <input type="checkbox"/></p> <p>Yes <input checked="" type="checkbox"/> No</p> <p>Variance Was a variance granted from the MDH for this well? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>Well Contractor Certification                  Traut M.J. Well Co. 71536 ED/BUTCH</p>																																																																																																																																																																																											
<p>Cuttings Yes Borehole Geophysics Yes</p> <p>First Bedrock St.Lawrence Aquifer Franconia-Ironton-Galesvill</p>																																																																																																																																																																																												

Last Strat	Depth to Bedrock	License Business Name	Lic. Or Reg. No.	Name of Driller
Ironton-Galesville	147 ft.	740966		HE-01205-07

**ATTACHMENT II**

**WATER SUPPLY SYSTEM**  
**CAPITAL IMPROVEMENTS PLAN (CIP)**



**REQUEST FOR ACTION  
ROGERS CITY COUNCIL**

**Meeting Date:** February 11, 2014

**Agenda Item:** No. 5.10

**Subject:** Approval of Well #4 Inspections and Rebuild professional services proposal

**Prepared By:** John Seifert, Public Works Superintendent

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**Recommended City Council Action:** Approval of professional services scope of work for Well #4 Inspection and Rebuild.

**Overview / Background:**

Periodically, the City of Rogers wear utility performs preventative maintenance on municipal drinking water wells to maintain reliability and sustained production volume of its underground wells. Typically, the utility department performs this work in late winter and early spring before the peak pumping season requires the availability of all of community's working wells.

Staff has solicited a request for quotation for the standard labor and equipment rates to remove and inspect the well no. 4 for 2014. In addition to the predictable labor and equipment RFQ, the utility also requests an estimate on common wear items for the well rebuild. The actual final costs will depend on the extent of the necessary repairs for a complete rebuild.

The lowest responsive responsible bidder for the requested work on Well No. 4 was Traut Wells of Waite Park, MN.-

**Supporting Documentation:**

- Attachment 1: Request for proposal from Traut Wells

**Staff Recommendation:**

Recommendation: Approval of Well #4 Inspections and Rebuild to Traut Wells of Waite Park MN.

Financial Impact: \$5,370 -Partial      Budgeted (Y/N, Year)? Yes      Source/Fund: 601 Repairs

Notes, ongoing costs, etc: Final costs dependent on wear items



# City of Rogers

Public Works Department

22350 S. Diamond Lake Rd.  
 Rogers, MN 55374  
 Phone (763) 428-8580  
 Fax (763) 428-9261

Request Quote ID  
 Requestor Dan Janish  
 Date 1/2/2014  
 Date/Time Quote Open  
 Date/Time Quote Closed  
 Customer ID

**Quotation For:**

well #4 inspection and rebuild

Submitted by: JOE TRAUT

Date: \_\_\_\_\_  
 Vendor: Traut Wells  
 Phone: 320-251-5090  
 Fax: 320-259-0594  
 E-mail: \_\_\_\_\_

Comments or Special Instructions None

QUOTATION #	QUOTE VALID UNTIL:	F.O.B	SHIP DATE	SHIP VIA

QUANTITY

ITEM #	QUANTITY	DESCRIPTION	UNIT PRICE	TAXABLE	AMOUNT
Labor		Mobilization- Setup	350.00 LS	1	350.00
Labor		Demobilization - Tear Down	350.00 LS	1	350.00
Labor		Pull Pump	185.00 Hr Rate	8	1480.00
Labor		Clean & Disassemble Pump	75.00 Hr Rate	5	375.00
Labor		Repair Pump ( if required)	75.00 Hr Rate	6	450.00
Labor		Remobilize & Demobilize	700.00 <del>HR RATE</del> LS	1	700.00
Labor		Reinstall Pump - Hook to System	185.00 Hr Rate	8	1480.00
Labor		Start up & Test	110.00 Hr Rate	1	110.00
Labor		Chlorinate well	75.00 <del>HR RATE</del> LS	1	75.00
Labor		<del>Mobilization - Setup</del>	<del>350.00 LS</del>		
				SUBTOTAL	\$ 5370.00 -

TAX RATE	N/A
SALES TAX	N/A -
OTHER	-
<b>Traut - TOTAL</b>	<b>\$ 5370.00 -</b>

PLEASE SEND THE QUOTATION VIA E-MAIL, FACSIMILE, OR US MAIL TO:

City of Rogers  
 Public Works  
 22350 S. Diamond Lk. Rd.  
 Rogers, MN 55374  
 Fax: 763-428-9261  
 E-mail: djanish@ci.rogers.mn.us

THANK YOU!

*Handwritten:* Traut - TOTAL \$ 5370.00 -  
 E H Rausser - \$6,497.00



**REQUEST FOR ACTION  
ROGERS CITY COUNCIL**

**Meeting Date:** March 25, 2014

**Agenda Item:** No. 5.12

**Subject:** Approval to Purchase Well No. 4 Pump and Related Material.

**Prepared By:** John Seifert, Public Works Superintendent

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**Recommended City Council Action:** Approval to Purchase Well No. 4 Pump and Material.

**Overview / Background:**

The Utility Department requested as part of its normal routine maintenance for authorization to pull and repair Well No. 4 pump, motor, well pipe and related equipment. This authorization was granted by Council on February 11, 2014 and captured the mobilization and labor to pull and inspect necessary parts for repair. At this time the Contractor and Utility Supervisor have inspected the pumping equipment and have determined the appropriate replacement parts necessary to bring Well No. 4 back within pumping specifications.

Enclosed is a quotation from Traut Wells to supply a new four stage well pump assembly, 190 of replacement column pipe and carbon steel shaft components. Collectively the pump and related equipment adds an additional \$15, 533.00 over and above the labor necessary to pull and reinstall Well No. 4.

**Supporting Documentation:**

- Attachment 1: Traut Wells Quote
- Attachment 2: Pictures of Deteriorated Pump

**Staff Recommendation:**

Recommendation: Approval to Purchase Well No. 4 Pump and Material.

Financial Impact: \$15533.00

Budgeted (Y/N, Year)? Yes

Source/Fund: 601 Repairs

Notes, ongoing costs, etc:





141 28th Ave South  
 Waite Park, MN 56387  
 320-251-5090

Email  
 joetraut@trautwells.com

## Quote - Roger's - well 4 - pump repair

DATE: February 10, 2014

PROJECT NAME: City of Roger's

JOB # 302098

	Description	Unit	Unit Price	Quantity	Totals
LABOR	Pump Repair				
	Mobilization - Setup	LS	\$ 350.00	1	\$ 350.00
	Demobilization - tear down	LS	\$ 350.00	1	\$ 350.00
	Pull Pump	HR	\$ 185.00	8	\$ 1,480.00
	Clean & Disassemble Pump	HR	\$ 75.00	6	\$ 450.00
	Remobilize & Demobilize	LS	\$ 700.00	1	\$ 700.00
	Reinstall Pump & Hook to System	HR	\$ 185.00	8	\$ 1,480.00
	Start Pump & Test Run	HR	\$ 110.00	1	\$ 110.00
	Chlorinate Well	LS	\$ 75.00	1	\$ 75.00
MATERIALS	New pump 12GC-4 stage Am-marsh	EACH	\$4,380.00	1	\$ 4,380.00
	Packing box rebuild	EACH	\$ 275.00	1	\$ 275.00
	Rubber Spider Bearings	EACH	\$ 25.00	20	\$ 500.00
	Column pipe Sch40 8" blk steel 10 ft.	EACH	\$ 420.00	9	\$ 3,780.00
	Column pipe Sch40 8" blk steel 5 ft.	EACH	\$ 275.00	2	\$ 550.00
	1 1/2" Head shaft SS	EACH	\$ 450.00	1	\$ 450.00
	Shaft - 1 1/2" x 10' C1045 w/sleeves	EACH	\$ 200.00	17	\$ 3,400.00
	Shaft - 1 1/2" x 5' C1045 w/sleeves	EACH	\$ 150.00	3	\$ 450.00
	1' PVC sound tube SDR26	LF	\$ 2.00	185	\$ 370.00
	KPSI320 transducer w/235' wire	EACH	\$1,150.00	1	\$ 1,150.00
	Wire connectors Med (Polaris)	EACH	\$ 44.50	3	\$ 133.50
	Misc Materials	LS	\$ 95.00	1	\$ 95.00

TOTAL MATERIALS	\$ 15,533.50
SALES TAX	
TOTAL LABOR	\$ 4,995.00
INCOMING FRT. (Estimated)	\$ 750.00
<b>TOTAL</b>	<b>\$ 21,278.50</b>

Option: Shaft - 1 1/2" x 10' SS w/sleeves - \$475.00 / ea  
 Option: Shaft - 1 1/2" x 5' SS w/sleeves - \$275.00 / ea



# E. H. Renner & Sons

# INVOICE

INCORPORATED

WELL DRILLING FOR FIVE GENERATIONS

15688 JARVIS ST. N.W. • ELK RIVER, MN 55330

PHONE: (763)427-6100 • FAX: (763)427-0533

www.ehrenner.com

INVOICE NO.:000155490000

CUSTOMER NO.:11496

DATE: 04/30/17

SOLD TO:

CITY OF ROGERS  
22350 S. DIAMOND LAKE RD

ROGERS, MN 55374

SHIP TO:

CITY OF ROGERS  
20901 COUNTY RD 81  
WELL #5 REHAB #625354  
ROGERS, MN 55374

SALES- ORDER

SHIP DATE SHIPPED VIA F.O.B. TERMS PERSON DATE P.O. NUMBER

04/30/17 SMEAL 12R WELL NO 5 NET 30 09 01/13/17 QUOTATION

QUANTITY	DESCRIPTION	UNIT PRICE	AMOUNT
1	NIPPLE BLACK 8" X 12" LONG TBE	64.45	64.45
1	REPAIR PUMP (MATERIALS ONLY)	4,275.00	4,275.00
	New bowl shaft, collets, bearings		
160	PIPE PVC 1-1/4" SURELINE	2.28	364.80
4	PIPE PVC 1-1/4" SCH 80 THD DROP	1.43	5.72
1	CAP PVC 1-1/4" THREADED	1.79	1.79
1	SHAFT COUPLING 1 1/2 10TPI	15.00	15.00

WORK COMPLETED PERIOD \$14,841.26

FINAL AMOUNT DUE \$14,841.26

TOTAL WORK COMPLETED \$17,901.26

LESS AMOUNT PAID \$ 3,060.00

FINAL AMOUNT DUE \$14,841.26

PR#2 (FINAL)

* T H A N K Y O U *	SUB-TOTAL	14,841.26	SHIPPING CHARGES	0.00
	SALES TAX	0.00	TOTAL	14,841.26

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WHITE - CUSTOMER YELLOW - OFFICE PINK - SEND BACK WITH PAYMENT

# E. H. Renner & Sons

# INVOICE

INCORPORATED

WELL DRILLING FOR FIVE GENERATIONS

15688 JARVIS ST. N.W. • ELK RIVER, MN 55330

PHONE: (763)427-6100 • FAX: (763)427-0533

www.ehrenner.com

INVOICE NO.:000155490000

CUSTOMER NO.:11496

DATE: 04/30/17

SOLD TO:

CITY OF ROGERS  
22350 S. DIAMOND LAKE RD

ROGERS, MN 55374

SHIP TO:

CITY OF ROGERS  
20901 COUNTY RD 81  
WELL #5 REHAB #625354  
ROGERS, MN 55374

SALES- ORDER

SHIP DATE	SHIPPED VIA	F.O.B.	TERMS	PERSON	DATE	P.O. NUMBER
04/30/17	SMEAL 12R	WELL NO 5	NET 30	09	01/13/17	QUOTATION

QUANTITY	DESCRIPTION	UNIT PRICE	AMOUNT
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1	ROGERS WELL NO 5, PR#2		
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WELL #5 REHAB, FINAL PAY REQUEST  
MN DEPT of HEALTH UNIQUE #625354

LABOR:

2	WIRE BRUSH SHAFTING	90.00	180.00
2	SANDBLAST REMAINING COLUMN	90.00	180.00
1.25	PAINT DISCHARGE HEAD	90.00	112.50
5	LABOR TO REPAIR PUMP	120.00	600.00
2	REMOBILIZE & DEMOBLIZE EQUIPMENT	300.00	600.00
8	REINSTALL PUMP - HOOK TO SYSTEM	350.00	2,800.00
1	START UP AND TEST	150.00	150.00
1	CHLORINATE WELL	300.00	300.00

MATERIALS:

1	PACKING BOX/REBUILD	200.00	200.00
12	PACKING 3/8 STYLE C1070 /INCH		
17	RUBBER SPIDER INSERT	30.00	510.00
75	DROP PIPE SCH 40 8"	35.00	2,625.00
5	1-1/2" S.S. SHAFTS W/SLEEVES	30.00	150.00
1	HEADSHAFT 1-1/2" s.s. 24 1/4" LONG	400.00	400.00
1	MSC TAPE, CONNECTORS, DOPE	150.00	150.00
1	FLANGE GASKET 8" RED RUB 1/16 FF		
1	TAPE PIPE WRAP TAPE 2"		

ADDITIONAL MATERIALS:

1	LAKWOOD SLOW BLEED CHECK	1,157.00	1,157.00
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\*CONTINUED\*

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WHITE - CUSTOMER YELLOW - OFFICE PINK - SEND BACK WITH PAYMENT



**REQUEST FOR ACTION  
ROGERS CITY COUNCIL**

**Meeting Date:** February 24, 2015

**Agenda Item:** No. 5.08

**Subject:** Approval of Repairs for Well #7

**Prepared By** Daniel Janish, Utility Supervisor

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**Recommended City Council Action**

Staff recommends the following motion: Approval for Reinstallation and Repair of Well #7

**Overview / Background**

Periodically, the city of Rogers Utility Department performs preventative maintenance on municipal drinking water wells to maintain reliability and sustained production volume on its underground wells. Typically, the Utility Department performs this work in late winter and early spring before the peak pumping season requires the availability of all its community wells to be working.

Because of the recent drop in production of Well #7 it was pulled and inspected. Traut Wells has submitted a quote for repair and replacement parts.

**Supporting Documentation**

- Attachment 1: Quote for repair and replacement parts from Traut Wells

**Staff Recommendation:**

Recommendation: Approval of Well #7 Replacement Parts and Repair to Traut Wells of Waite Park, MN.

Financial Impact: \$23,947.50

Budgeted (Y/N, Year)? Yes

Source/Fund: 601 Repairs

Notes, ongoing costs, etc:



141 28th Ave South  
 Waite Park, MN 56387  
 320-251-5090  
 Email joetraut@trautwells.com  
 www.trautwells.com

**Quote - Rogers - Well 7 - Replacemt. Parts**

DATE: 2/9/2015

PHONE # \_\_\_\_\_

NAME: City of Rogers

FAX # \_\_\_\_\_

ADDRESS \_\_\_\_\_

ATTN: . Dan J.

JOB # 30-7644

RE:

Description  
 Mob/Demob  
 Field time to reinstall pump  
 New 8" - 125hp Franklin Sub Motor - 460/3ph  
 New 10" - 1100S1250-3A Grundfos pump  
 New - wire splice  
 New 18x20 Baker pitless o-rings  
 New - 1" PVC sound tube  
 Wire connectors size medeum (Polaris)  
 New - 7/8 x 4 1/2" SS bolts, nuts, & washers  
 New - 10" flange gaskets  
 New - 6" x 6" SS nipple  
 Misc supplies

Unit	Unit Price	QTY	Totals
LS	750.00	1	\$ 750.00
HR	215.00	8	\$ 1,720.00
EA	13,980.00	1	\$ 13,980.00
EA	4,790.00	1	\$ 4,790.00
EA	145.00	1	\$ 145.00
EA	115.00	2	\$ 230.00
LF	2.00	200	\$ 400.00
EA	45.00	3	\$ 135.00
EA	6.75	120	\$ 810.00
EA	12.25	10	\$ 122.50
EA	190.00	1	\$ 190.00
LS	225.00	1	\$ 225.00

TOTAL MATERIALS	\$	21,027.50
TOTAL LABOR	\$	2,470.00
INCOMING FREIGHT	(Est.) \$	450.00
TOTAL	\$	23,947.50



**REQUEST FOR ACTION  
ROGERS CITY COUNCIL**

**Meeting Date:** March 13, 2018

**Agenda Item:** No. 5.6

**Subject:** Authorization to Accept Scope of Services for Reconditioning Services for Well Number 8

**Prepared By:** John Seifert; Public Works Director

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**Recommended City Council Action**

Motion to Approve Authorization to Accept Scope of Services for Reconditioning Services for Well Number 8

**Overview / Background**

Annually the utility department reviews the condition of Municipal pumping wells before the peak summer season. In this process the utility department works with a well contractor to remove the well pump and casing to inspect for deterioration of bearings, pump wear parts, and steel drop columns.

Due to the nature of this work and the uncertainty of the amount of repair parts needed the request for quotation by the contractors is limited to the cost of removal, replacement, inspections, and general shop rates. It is understood that the final repair costs will be dependent on the inspection and will be brought back at a later meeting.

Utility department has solicited for competitive bids for this described work and is recommending a scope of services with Traut wells of Waite Park, MN.

**Staff Recommendation**

Motion to Approve Authorization to Accept Scope of Services for Reconditioning Services for Well Number 8

**Financial Impact:** TBD

**Budgeted?** Yes

**Source Fund:** 601 Water Fund

**Notes:**

**ATTACHMENTS:**

Description

Traut Well 8 Bid

EH Renner and Sons Well 8 Bid

Project: CITY OF ROGERS  
WELL #8

# TRAUT WELLS

Date: 9/15/09

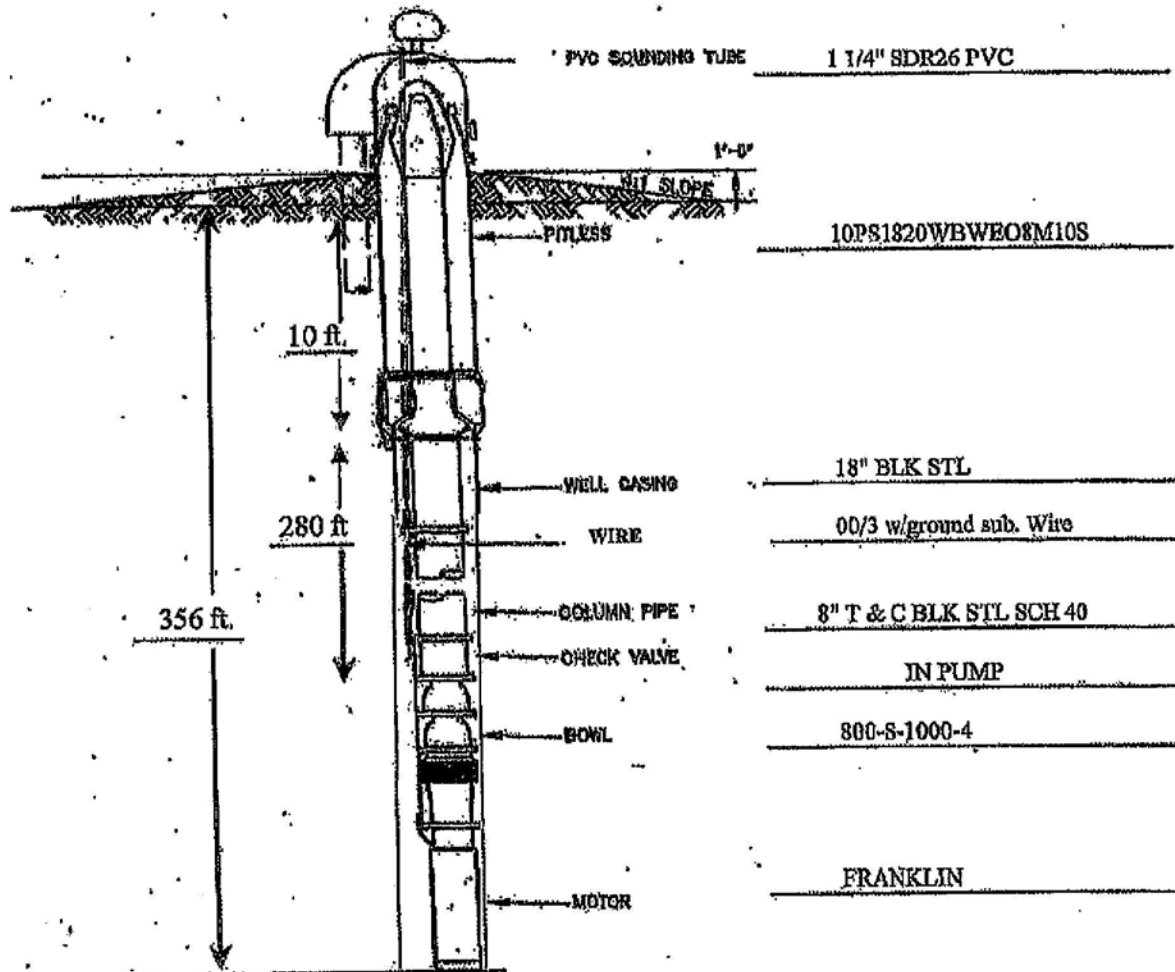
Unique # 749842

## WELL DATA

Engineer PROGRESSIVE CONSULTING  
Static Water Level 58'  
Drilling Date MAY 2007  
Driller MARK J TRAUT WELLS, INC.

## PUMP DATA

Manufacturer GRUNDFOS  
Installation Date AUGUST 2009  
Installer MARK J TRAUT WELLS, INC.  
Capacity 900 GPM@ 380 TDH  
Motor HP 100 RPM 3600  
Volts 460 Phase 3 HZ 60



(Elevations to be Field Verified)

### SUBMERSIBLE PUMP AND PITLESS UNIT

Not to Scale



# TRAUT COMPANIES

CITY OF ROGER'S - WELL #8

2/13/18

## QUOTE

NO.	ITEM	UNITS	QTY.	UNIT PRICE	TOTAL PRICE
1	REMOVE AND REINSTALL SUBMERSIBLE TURBINE PUMP AND ELECTRIC MOTOR	LS	1	\$ 4500. <sup>00</sup>	\$ 4500. <sup>00</sup>
2	SHOP TIME FOR CLEANING AND REPAIRING PUMP	HR	5	\$ 85. <sup>00</sup>	\$ 425. <sup>00</sup>
3	8" x 20', SCHEDULE 40, R&D COLUMN PIPE WITH COUPLING	EA	14	\$ 850. <sup>00</sup>	\$ 11,900. <sup>00</sup>
4	8" x 10', SCHEDULE 40, R&D COLUMN PIPE WITH COUPLING	EA	1	\$ 425. <sup>00</sup>	\$ 425. <sup>00</sup>
5	8" x 5', SCHEDULE 40, R&D COLUMN PIPE WITH COUPLING	EA	1	\$ 225. <sup>00</sup>	\$ 225. <sup>00</sup>
6	REPLACE COLUMN CHECK VALVE 8"	EA	1	\$ 1650. <sup>00</sup>	\$ 1650. <sup>00</sup>
7	REPLACE PITLESS O-RINGS	LS	1	\$ 250. <sup>00</sup>	\$ 250. <sup>00</sup>
8	FURNISH AND INSTALL COMPLETE SET OF BOWL BEARINGS	LS	1	\$ -	\$ -
9	STAINLESS STEEL BOWL SHAFT	LS	1	\$ -	\$ -
10	MACHINE BOWL AND FURNISH AND INSTALL BRONZE IMPELLER WEAR RING EACH STAGE	EA		\$ -	\$ -
11	REASSEMBLE BOWL	LS	1	\$ -	\$ -
12	PAINT COLUMN, BOWL, AND MOTOR	LS	1	\$ -	\$ -
13	INSTALL LEVEL MONITOR TUBING	LS	1	\$ 580. <sup>00</sup>	\$ 580. <sup>00</sup>
14	TELEVISION INSPECTION OF WELL	LS	1	\$ 1300. <sup>00</sup>	\$ 1300. <sup>00</sup>
15	FURNISH + INSTALL KPSI 320 TRANSDUCER W/ 295' CABLE	LS	1	\$ 1950. <sup>00</sup>	\$ 1950. <sup>00</sup>
16	ALLOWANCE FOR MOTOR AND MISCELLANEOUS REPAIRS	LS	1	-	-
	<b>TOTAL BASE BID-</b>				<b>\$ 22,780.<sup>00</sup></b>

### ALTERNATE 1 - MAINTENANCE WORK:

17	TRANSPORT TO AND ERECT ON THE JOB SITE, A WELL RIG WITH ALL NECESSARY EQUIPMENT, TOOLS, AND MATERIALS FOR CLEANING THE SCREEN USING HIGH VELOCITY JETTING (HVJ) PROCEDURE	LS	1	\$ 2500. <sup>00</sup>	\$ 2500. <sup>00</sup>
18	CLEAN SCREEN USING HIGH VELOCITY JET (HVJ)	HR		\$ -	\$ -
19	REMOVE SAND (BALL)	YD	5	225. <sup>00</sup>	1125. <sup>00</sup>
	(DELETED)				
21	WIRE BRUSH INTERIOR SURFACE OF WELL CASING	LS	1	\$ 2200. <sup>00</sup>	\$ 2200. <sup>00</sup>
	<b>TOTAL ALTERNATE 1 - MAINTENANCE WORK</b>				<b>\$ 5825.<sup>00</sup></b>

ALTERNATE 2 - ADDITIONAL REPLACEMENT PRICES

23	REPLACE PUMP BOWL Manufacturer: <u>GRUNDOS</u> Bowl Efficiency:	LS	1	\$ 5350. <sup>00</sup>	\$ 5350. <sup>00</sup>
23	REPLACE SUBMERSIBLE MOTOR Manufacturer: <u>FRANKLIN</u> Motor Efficiency at Full Load:	LS	1	\$ 11,700. <sup>00</sup>	\$ 11,700. <sup>00</sup>
24	REPLACE ELECTRIC CABLE <u>2/0TT FLAT DBL JACKED</u>	FT	290	\$ 14. <sup>00</sup>	\$ 4060. <sup>00</sup>
TOTAL ALTERNATE 2 - ADDITIONAL REPLACEMENT PRICES					\$ 21,110. <sup>00</sup>

*Joe Trant*

Project: CITY OF ROGERS  
WELL #8

# TRAUT WELLS

Date: 9/15/09

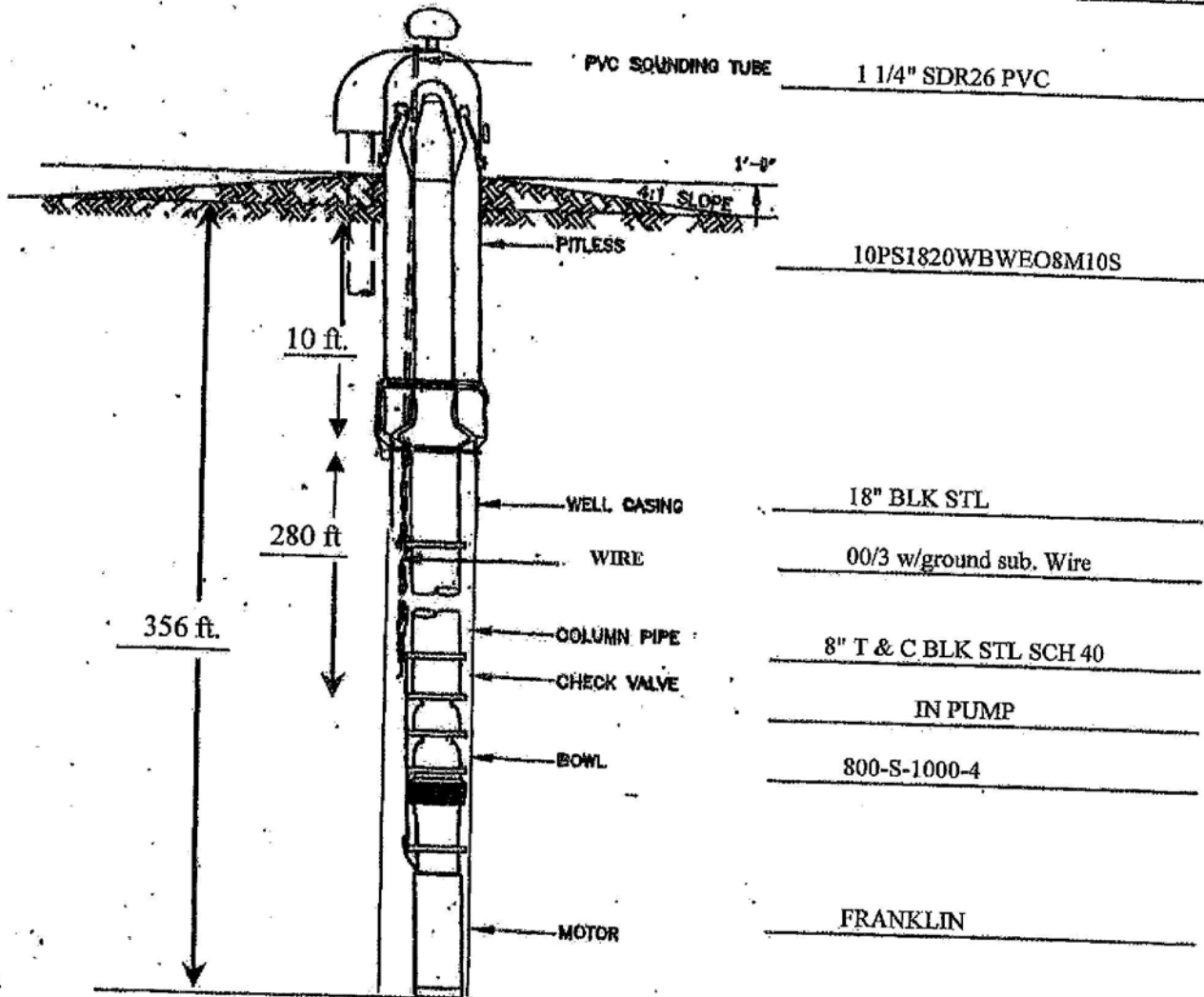
Unique # 749842

## WELL DATA

Engineer PROGRESSIVE CONSULTING  
Static Water Level 58'  
Drilling Date MAY 2007  
Driller MARK J TRAUT WELLS, INC.

## PUMP DATA

Manufacturer GRUNDFOS  
Installation Date AUGUST 2009  
Installer MARK J TRAUT WELLS, INC.  
Capacity 900 GPM@ 380 TDH  
Motor HP 100 RPM 3600  
Volts 460 Phase 3 HZ 60



(Elevations to be Field Verified)

**SUBMERSIBLE PUMP AND PITLESS UNIT**

Not to Scale

# E H Renner & Sons

NO.	ITEM	UNITS	QTY.	UNIT PRICE	TOTAL PRICE
1	REMOVE AND REINSTALL SUBMERSIBLE TURBINE PUMP AND ELECTRIC MOTOR	LS	1	\$	\$ 6,500 <sup>00</sup>
2	SHOP TIME FOR CLEANING AND REPAIRING PUMP	HR	5	\$ 90.00	\$ 450 <sup>00</sup>
3	8" x 20', SCHEDULE 40, R&D COLUMN PIPE WITH COUPLING	EA	14	\$ 700.00	\$ 9,800 <sup>00</sup>
4	8" x 10', SCHEDULE 40, R&D COLUMN PIPE WITH COUPLING	EA	1	\$ 475 <sup>00</sup>	\$ 475 <sup>00</sup>
5	8" x 5', SCHEDULE 40, R&D COLUMN PIPE WITH COUPLING	EA	1	\$ 275 <sup>00</sup>	\$ 275 <sup>00</sup>
6	REPLACE COLUMN CHECK VALVE	EA	1	\$ 1,425 <sup>00</sup>	\$ 1,425 <sup>00</sup>
7	REPLACE PITLESS O-RINGS	LS	1	\$ 125 <sup>00</sup>	\$ 125 <sup>00</sup>
8	FURNISH AND INSTALL COMPLETE SET OF BOWL BEARINGS	LS	1	\$	\$
9	STAINLESS STEEL BOWL SHAFT	LS	1	\$	\$
10	MACHINE BOWL AND FURNISH AND INSTALL BRONZE IMPELLER WEAR RING EACH STAGE	EA		\$	\$
11	REASSEMBLE BOWL	LS	1	\$	\$
12	PAINT COLUMN, BOWL, AND MOTOR	LS	1	\$	\$
13	INSTALL LEVEL MONITOR TUBING	LS	1	\$ 900 <sup>00</sup>	\$ 900 <sup>00</sup>
14	TELEVISION INSPECTION OF WELL	LS	1	\$ 1,700 <sup>00</sup>	\$ 1,700 <sup>00</sup>
15	INSTALL BLUE RIBBON TRANSDUCER	LS	1	\$ 2,000 <sup>00</sup>	\$ 2,000 <sup>00</sup>
16	ALLOWANCE FOR MOTOR AND MISCELLANEOUS REPAIRS	LS	1		
	<b>TOTAL BASE BID-</b>				\$ <b>23,650<sup>00</sup></b>

### ALTERNATE 1 - MAINTENANCE WORK:

17	TRANSPORT TO AND ERECT ON THE JOB SITE, A WELL RIG WITH ALL NECESSARY EQUIPMENT, TOOLS, AND MATERIALS FOR CLEANING THE SCREEN USING HIGH VELOCITY JETTING (HVJ) PROCEDURE	LS	1	\$ 4,000 <sup>00</sup>	\$ 4,000 <sup>00</sup>
18	CLEAN SCREEN USING HIGH VELOCITY JET (HVJ)	HR	8	\$	\$
19	<del>CHEMICAL TREATMENT MATERIALS</del> remove sand	LS	5	\$ 100.00	\$ 500 <sup>00</sup>
20	<del>(DELETED)</del> APC 1.5 set up				\$ 10,000 <sup>00</sup>
21	WIRE BRUSH INTERIOR SURFACE OF WELL CASING	LS	1	\$ 1,800 <sup>00</sup>	\$ 1,800 <sup>00</sup>
	<b>TOTAL ALTERNATE 1 - MAINTENANCE WORK</b>				\$ <b>16,300<sup>00</sup></b>

ALTERNATE 2 - ADDITIONAL REPLACEMENT PRICES

22	REPLACE PUMP BOWL Manufacturer: <u>Grandfos</u>  Bowl Efficiency:	LS	1	\$ <u>5,600</u> <sup>00</sup>	\$ <u>5,600</u> <sup>00</sup>
23	REPLACE SUBMERSIBLE MOTOR Manufacturer: <u>Franklin</u>  Motor Efficiency at Full Load: <u>100 GPM</u>	LS	1	\$ <u>5,800</u> <sup>00</sup>	\$ <u>5,200</u> <sup>00</sup> <i>not correct wrong 12/7</i>
24	REPLACE ELECTRIC CABLE	FT	290	\$ <u>14</u> <sup>00</sup>	\$ <u>4,060</u> <sup>00</sup>
TOTAL ALTERNATE 2 - ADDITIONAL REPLACEMENT PRICES					\$ <u>14,860</u> <sup>00</sup>

# **Appendix 2**

## Water Level Monitoring Plan

## City of Rogers Water Level Monitoring Plan

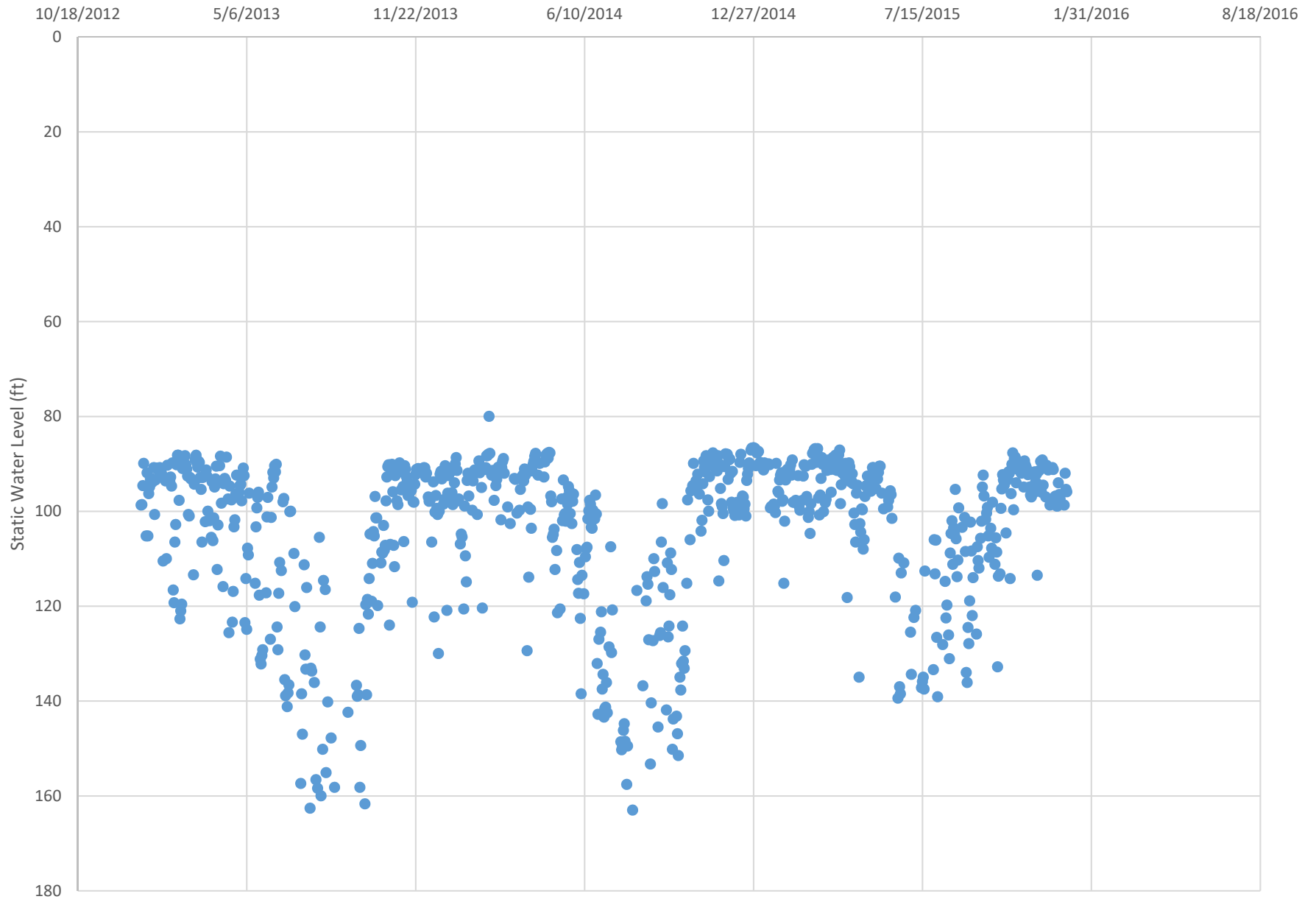
<b>Source</b>	<b>Monitoring Type</b>	<b>Frequency</b>
Well 3	SCADA	Continuous
Well 4	SCADA	Continuous
Well 5	SCADA	Continuous
Well 6	SCADA	Continuous
Well 7	SCADA	Continuous
Well 8	SCADA	Continuous
Well 9	SCADA	Continuous

# **Appendix 3**

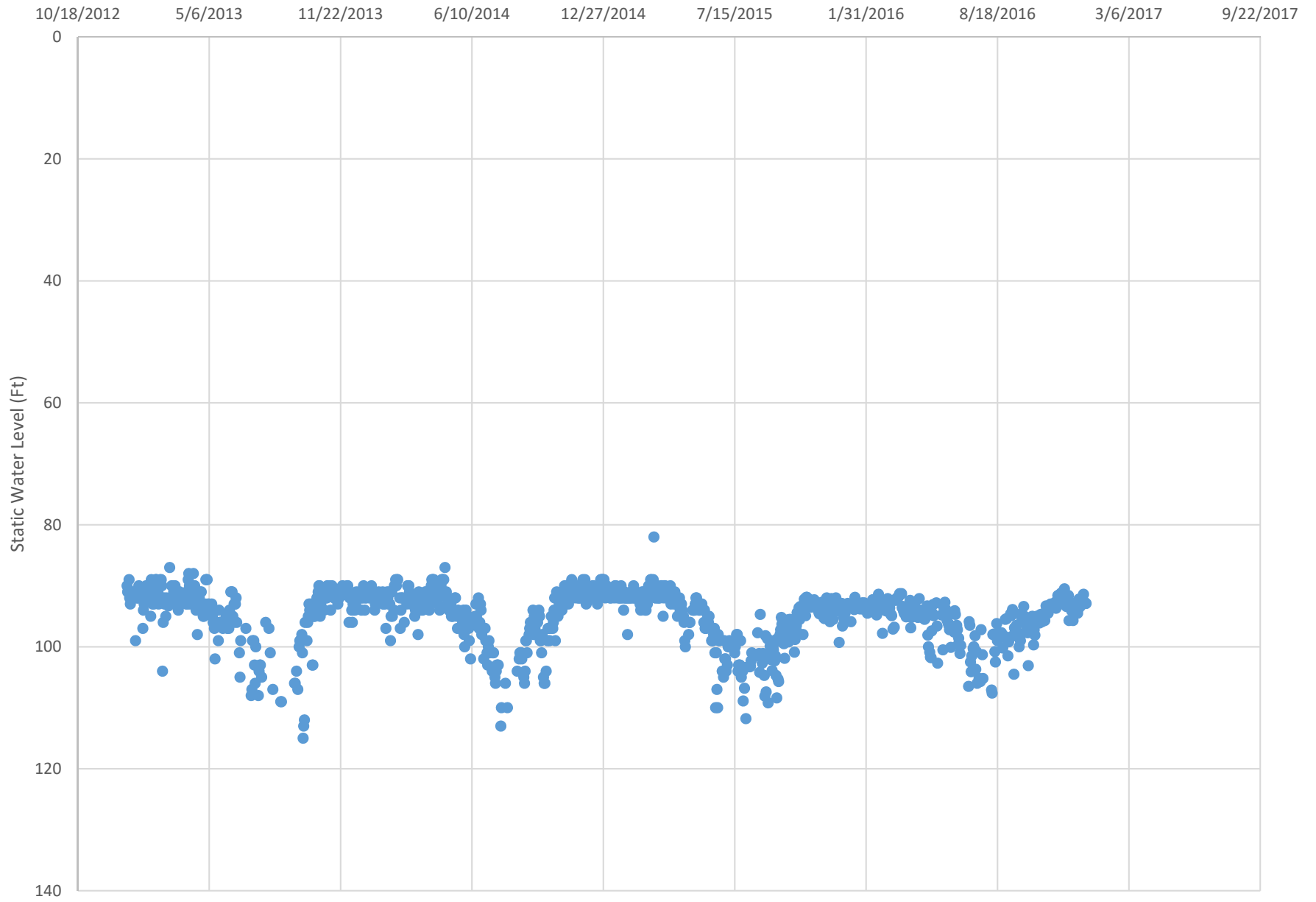
## Water Level Graphs



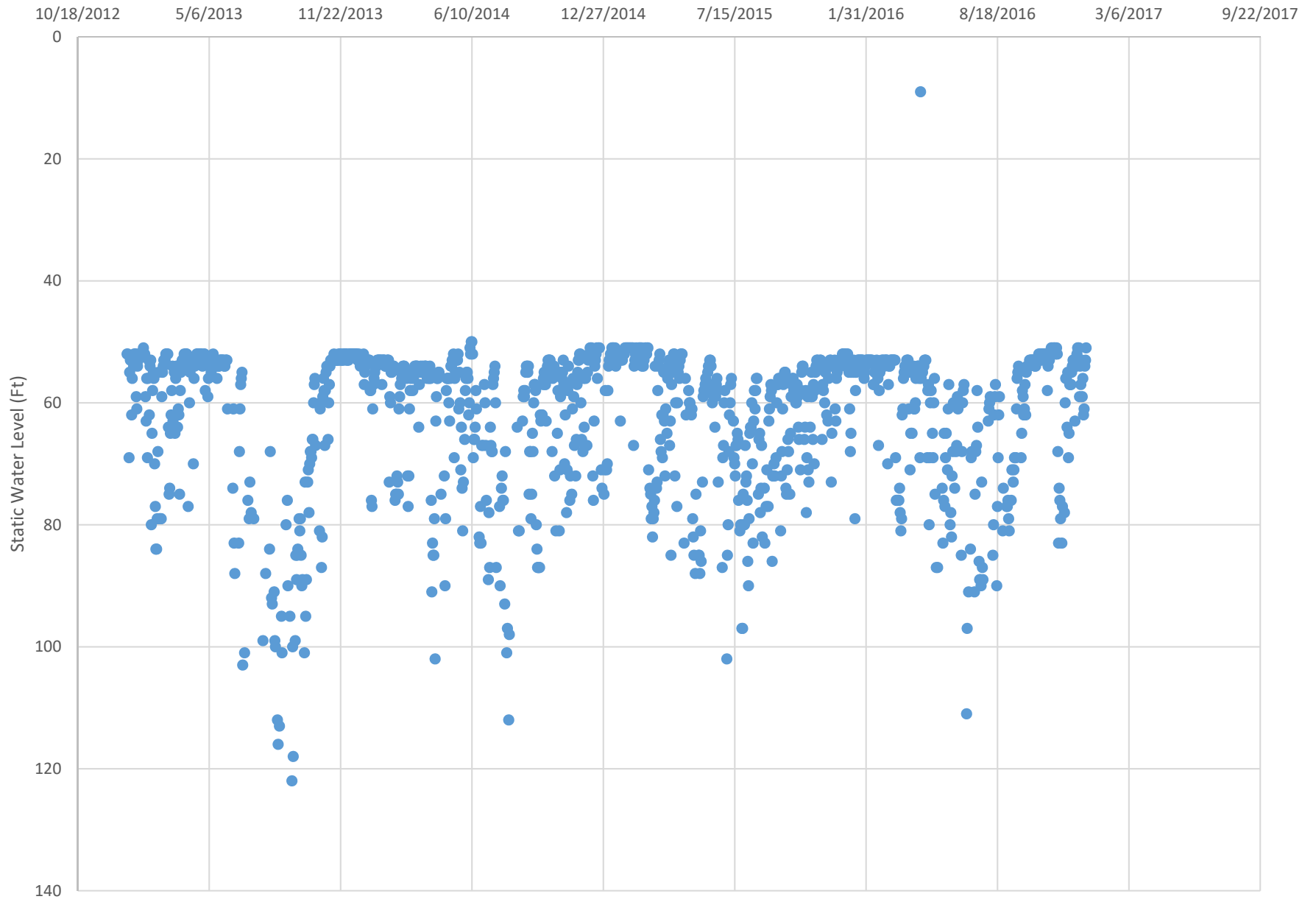
# Rogers Well 3 Monitoring



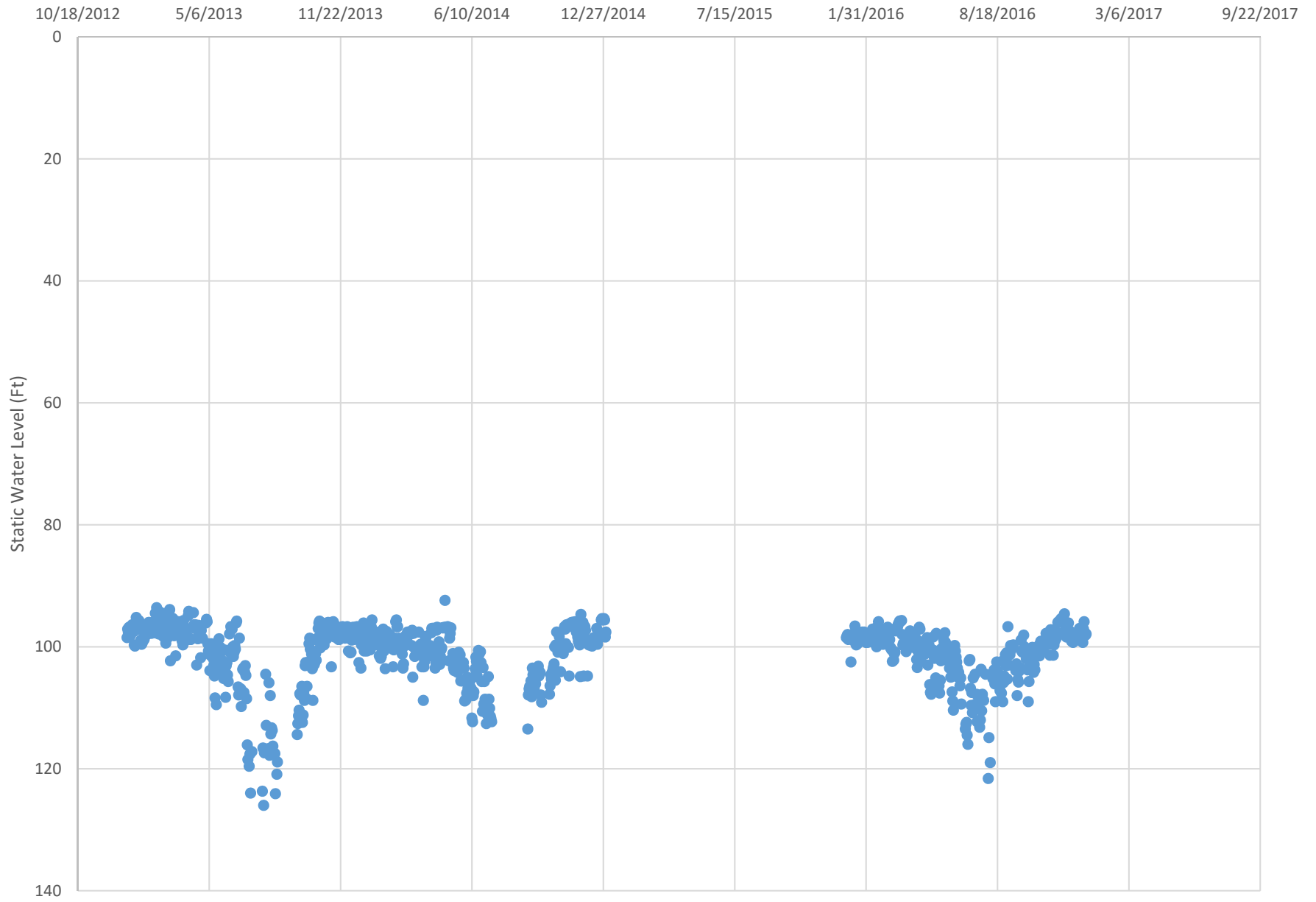
# Rogers Well 5 Monitoring



# Rogers Well 6 Monitoring



# Rogers Well 7 Monitoring



# **Appendix 4**

## Capital Improvement Plan

## 2019 ROGERS WATER ACCESS CHARGE REVIEW (WAC)

### WATER PRODUCTION PROJECTS

Description	Design Capacity	Project Number	Projected Construction Year	2017	2018	TOTAL FROM	USER
				ESTIMATE	INCREASE (2.0%)	WAC	RATES
NORTH GROUND RESERVOIR DEBT				As of 12/31/2016	\$1,285,000	\$1,285,000	
WTR TOWER & BOOSTER STATION	1,000,000 gal	07-UTL-014	2013	\$3,300,000	\$66,000	\$3,366,000	\$0
NORTH WATER TREATMENT PLANT	5 MGD	07-UTL-012	2016	\$7,600,000	\$152,000	\$3,752,000	\$4,000,000
WELL NO. 10 *	750 gpm	07-UTL-019	2017	\$1,300,000	\$26,000	\$1,326,000	\$0
WELL NO. 11	750 gpm	09-UTL-054	2020	\$925,000	\$18,500	\$943,500	\$0
SOUTH WATER TREATMENT PLANT & RESERVOIR	5 MGD	07-UTL-012	2016	\$9,000,000	\$180,000	\$4,180,000	\$5,000,000
WELL NO. 12	750 gpm	09-UTL-055	2023	\$925,000	\$18,500	\$943,500	\$0
WELL NO. 13	750 gpm	09-UTL-056	2026	\$925,000	\$18,500	\$943,500	\$0
				\$23,975,000		<b>\$16,739,500</b>	\$9,000,000

\* WITH PUMPHOUSE

### FUNDING NEEDS

PROJECT NEEDS		\$16,739,500
FUNDS AVAILABLE IN WAC ACCOUNT	8/18/2017	\$2,571,065
TOTAL NEEDED FROM WAC		\$14,168,435

	UNITS	NEEDED FUNDS	AVERAGE RATE REQUIRED
WAC Residential and C&I	4,641	\$14,168,435	\$3,053

### WAC RECOMMENDATIONS

	UNITS	Contingency %	CURRENT RATE	PROPOSED COLLECTED	PROPOSED RATE	PROPOSED COLLECTED
RESIDENTIAL - SINGLE FAMILY	3,885	3,108	\$3,275	\$10,178,700	\$3,300	\$10,256,400
RESIDENTIAL - MULTI-FAMILY	1,495	1,196	\$2,725	\$3,259,100	\$2,725	\$3,259,100
COMMERCIAL / INDUSTRIAL	422	337	\$3,275	\$1,104,548	\$3,300	\$1,112,979
	5,802	4,641		\$14,542,348		\$14,628,479

**2019 ROGERS TRUNK WATER**

	QUANTITY (LF)	PIPE SIZE	UNIT COST (\$/LF)	UNIT COST (\$/EACH)	SOFT COSTS		TOTAL FROM TRUNK FUND
					27% (\$/LF)		
<b>WATER DISTRIBUTION PROJECTS</b>							
1	6,000	12" PVC C900	95.00			25.65	\$723,900
2	9,000	12" PVC C900	15.00			4.05	\$171,450
3	8,800	12" PVC C900	15.00			4.05	\$167,640
4	2,500	12" PVC C900	15.00			4.05	\$47,625
5	850	12" PVC C900	95.00			25.65	\$102,553
6	2,000	16" PVC C905	111.00			29.97	\$281,940
7	2,500	12" PVC C900	15.00			4.05	\$47,625
9	1,400	12" PVC C900	95.00			25.65	\$168,910
10	1,900	10" PVC C900	10.00			2.70	\$24,130
12	2,800	12" PVC C900	95.00			25.65	\$337,820
13	1,500	12" PVC C900	95.00			25.65	\$180,975
14	2,500	12" PVC C900	95.00			25.65	\$301,625
15	3,000	12" PVC C900	95.00			25.65	\$361,950
17		2 EA		10,000.00		2,700.00	\$25,400
18		1 EA		450,000.00		121,500.00	\$571,500
19		1 EA		450,000.00		121,500.00	\$571,500
20		5 EA		75,000.00		20,250.00	\$476,250
20		5 EA		75,000.00		20,250.00	\$476,250
20		5 EA		75,000.00		20,250.00	\$476,250
20		5 EA		75,000.00		20,250.00	\$476,250
20		5 EA		75,000.00		20,250.00	\$476,250
21		3 EA		200,000.00		54,000.00	\$762,000
22	1,500	12" PVC C900	95.00			25.65	\$180,975
23	1,380	12" PVC C900	95.00			25.65	\$166,497
24				INCLUDED IN RR AND CSAH CROSSINGS			
25	1,075	12" PVC C900	95.00			25.65	\$129,699
26	1,450	8" PVC C900	79.00			21.33	\$145,479
27	500	8" PVC C900	79.00			21.33	\$50,165
28	1,200	8" PVC C900	79.00			21.33	\$120,396

**\$8,023,003**

**FUNDING NEEDS**

PROJECT NEEDS		\$8,023,003
FUNDS AVAILABLE	6/30/2017	\$298,324
TOTAL NEED IN AREA TRUNK CHARGE		\$7,724,679

	ACRES	NEEDED FUNDS	AVE RATE REQUIRED
WATER TRUNK	2,300	\$7,724,679	\$3,359

**TRUNK WATER RECOMMENDATIONS**

ACRES	CURRENT RATE	PROPOSED COLLECTED	PROPOSED RATE
2,300	\$2,500	\$5,750,000	\$2,600

# **Appendix 5**

## Emergency Telephone List



## Attachment Emergency Telephone List

<b>Emergency Response Team</b>	<b>Name</b>	<b>Work Telephone</b>	<b>Alternate Telephone</b>
Emergency Response Lead	Brad Feist	763-428-3500	612-328-1973
Alternate Emergency Response Lead	John Seifert	763-428-8580	612-919-3783
Water Operator	Dan Janish	763-428-8580	612-919-3839
Alternate Water Operator	Wally Knapp	763-428-8580	612-919-3427
Public Communications	Steve Stahmer	763-428-2253	612-384-6548

<b>State and Local Emergency Response Contacts</b>	<b>Name</b>	<b>Work Telephone</b>	<b>Alternate Telephone</b>
State Incident Duty Officer	Minnesota Duty Officer	800/422-0798 Out State	651-649-5451 Metro
County Emergency Director	Hennepin County Emergency Management	612-596-0252	612-596-0249
National Guard	Minnesota Duty Officer	800/422-0798 Out State	651-649-5451 Metro
Mayor/Board Chair	Rick Ihli	763-428-2253	
Fire Chief	Brad Feist	763-428-3500	612-328-1973
Sheriff	Hennepin County Sheriff	612-348-3744	
Police Chief	Jeff Beahan	763-428-3450	763-228-4930
Ambulance	North Memorial Ambulance	911	
Hospital	North Memorial Maple Grove	763-581-1000	
Doctor or Medical Facility	NW Family Physicians	763-504-6400	

<b>State and Local Agencies</b>	<b>Name</b>	<b>Work Telephone</b>	<b>Alternate Telephone</b>
MDH District Engineer	Brian Noma	651-201-4683	
MDH	Drinking Water Protection	651-201-4700	
State Testing Laboratory	Minnesota Duty Officer	800/422-0798 Out State	651-649-5451 Metro
MPCA		651-296-6300	
DNR Area Hydrologist	Jason Spiegel	651-259-5822	
County Water Planner			

<b>Utilities</b>	<b>Name</b>	<b>Work Telephone</b>	<b>Alternate Telephone</b>
Electric Company	Xcel Energy	763-493-1846	612-210-7631
Electric Company	Wright-Hennepin Electric	763-477-3100	800-245-2377
Gas Company	CenterPoint Energy	612-372-4664	612-372-5050
Telephone Company	Century Link	800-573-1311	612-214-4497
Gopher State One Call	Utility Locations	800-252-1166	651-454-0002
Highway Department	Hennepin County Public Works	612-596-0299	763-525-6220
Highway Department	MnDOT	651-234-7110	

<b>Mutual Aid Agreements</b>	<b>Name</b>	<b>Work Telephone</b>	<b>Alternate Telephone</b>
Neighboring Water System	City of Dayton	763-427-3224	612-751-8847
Emergency Water Connection	City of Dayton	763-427-3224	612-751-8847
Insurance	League of Minnesota Cities	651-281-1200	612-849-2313

<b>Technical/Contracted Services/Supplies</b>	<b>Name</b>	<b>Work Telephone</b>	<b>Alternate Telephone</b>
MRWA Technical Services	MN Rural Water Association	800-367-6792	
Well Driller/Repair	Traut Wells	320-251-5090	
Electrician	Rogers Electric	763-753-1782	
Backhoe	Meiny's Diggers	763-497-2236	763-286-5643
Laboratory	Minnesota Valley Testing Lab	800-782-3557	

Engineering firm	WSB	763-541-4800	763-287-8529
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Communications	Name	Work Telephone	Alternate Telephone
News Paper	Crow River News	763-425-3323	763-691-6001
School Superintendent	Daniel Bittman	763-241-3400	763-241-3401

Critical Water Users	Name	Work Telephone	Alternate Telephone
Nursing Home Critical Use:	The Wellstead	763-428-1981	
Nursing Home Critical Use	Heritage Place	763-420-7253	

# **Appendix 6**

## Cooperative Agreements for Emergency Services

# **Appendix 7**

## Municipal Critical Water Deficiency Ordinance

## ORDINANCE NO. 98-7

AN ORDINANCE RELATING TO RESTRICTIONS  
ON OUTSIDE WATER USAGE

The City Council of the City of Rogers, Minnesota, ordains:

Section 1. Restrictions on Outside Water Usage. Whenever the Council shall determine that a shortage of water supply threatens the City, it may, by resolution, limit the times and hours during which water may be used from municipal water supply system for lawn and garden sprinkling, irrigation, car washing, air conditioning or other uses specified therein. Notice of such resolution shall be given in such manner as the Council may determine including, but not limited to, newspaper articles, radio and television broadcasts, stating the date on which the limitation is effective. Any water customer who shall cause or permit water to be used in violation of the provisions of the resolution shall be given a warning by the City Administrator as to such violation, and thereafter successive violations shall be charged the fee set forth in Section 2 below for each day of such violation, which fee or charges shall be added to the next water bill for the premises. Continued violation after such warning shall be cause for discontinuance of water service.

Section 2. Violation of Water Sprinkling Ban Fee. The fee for violating the water sprinkling ban shall be \$50.00 for each day of violation of Section 1 above.

Section 3. Effective Date. This Ordinance shall take effect and be in full force from and after its passage and publication.

Passed by the City Council of the City of Rogers this 28th day of July, 1998.

  
\_\_\_\_\_  
Mayor

ATTEST:

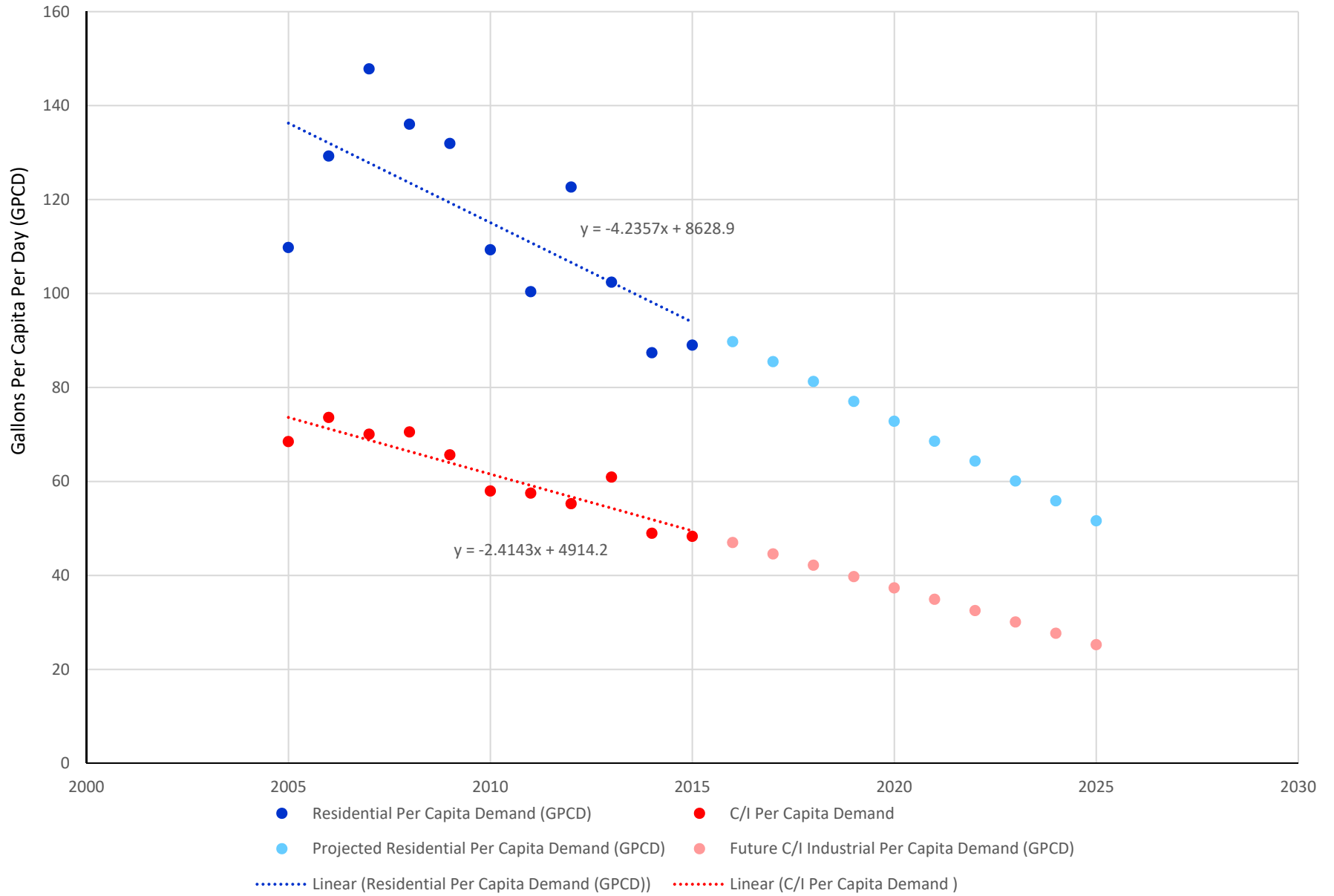
  
\_\_\_\_\_  
City Administrator/Clerk

(Publication in the North Crow River News August 17, 1998)

## **Appendix 8**

Annual Per Capita Water Demand for Customer Category

### Trend in Total Per Capita Demand



# **Appendix 9**

## Water Rate Structure



## City of Rogers Water Rate

### Fixed Charges

Meter Size (Inches)		Basic Charge (per month)
5/8		\$ 1.64
3/4		\$ 1.86
1		\$ 2.29
1 1/2		\$ 2.95
2		\$ 4.81
3		\$ 18.01
4		\$ 22.94

### Commodity Rate

Zoning	Gallons	Water Rate (per 1,000 gallons)
<b>Residential</b>		
Tier 1	0-6000	\$ 1.38
Tier 2	6001-30000	\$ 1.72
Tier 3	30001-75000	\$ 2.07
Tier 4	over 75000	\$ 2.48
<b>Commercial</b>		
Tier 1	0-47000	\$ 1.72
Tier 2	over 47000	\$ 2.07
<b>Metered Irrigation</b>		
No Tier		\$ 2.48

## **Appendix 10**

Adopted or Proposed Regulations to reduce demand or improve water efficiency

# **Appendix 11**

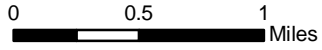
## Implementation Checklist

## City of Rogers Implementation Spreadsheet

Action	Description	Timeframe
Review City Ordinances/Codes	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	1-3 years
Review City Ordinances/Codes	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.	1-3 years
Make water system infrastructure improvements		On-Going
Conduct audience-appropriate water conservation education and outreach		On-Going
Water Audits	Offer free or reduced cost water use audits) for residential customers	1-3 years
Rebate Programs	Provide rebates or incentives for installing water efficient appliances and/or fixtures indoors (e.g., low flow toilets, high efficiency dish washers and washing machines, showerhead and faucet aerators, water softeners, etc.)	1-3 years following implementation of this plan – heavy emphasis on water softeners for efficiency
Rebate Programs	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.)	1-3 years
Consumer Confidence Reports	Report of City's water quality	Annually
Continuing GreenStep Cities Program	Update and add additional information to City's GreenStep City Program	On-Going
Train employees how to conserve water	Employee Training	On-Going
Research New Water Sources	Continue to research joint surface water plant with neighboring communities	On-Going

## Appendix D - Land Uses by Sewershed

# Appendix D: Land Uses by Sewer Service District

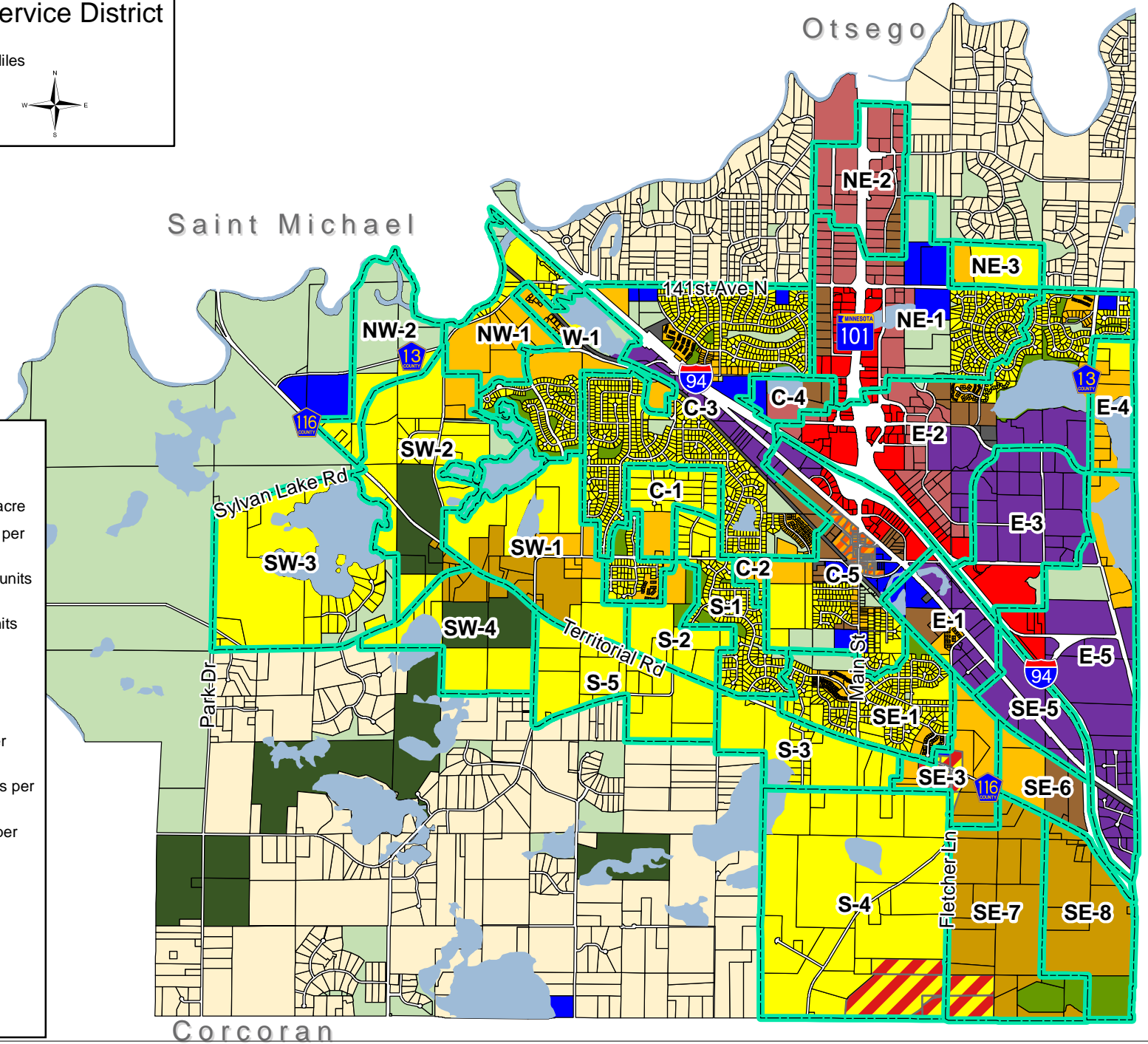


City of Rogers, Minnesota  
Comprehensive Plan 2018 Update  
Date: 01 May 2019



## Legend

- 2040 Sewer Service Districts
- Rural Residential - 0.10 to 1 unit per acre
- Low Density Residential - 2 to 6 units per acre
- Medium Density Residential - 6 to 11 units per acre
- High Density Residential - 11 to 60 units per acre
- Mixed Residential - 4 units per acre average
- Commercial
- Mixed Use Regional - 8 to 60 units per acre
- Mixed Use Neighborhood - 3 to 6 units per acre
- Mixed Use Downtown - 8 to 40 units per acre
- Industry
- Institutional
- Park & Open Space
- Protected Resources
- Agriculture Preserve
- Utility/Railroad



# Appendix E - Wastewater Flow Rates

**Existing Sewer Flows**

Sewer District	Low Density		Medium Density		High Density		Retail and Commercial		Industrial and Utility		Institutional		Total Flow Per District
	Units	Flow (GPD)	Units	Flow (GPD)	Units	Flow (GPD)	Acres	Flow (GPD)	Acres	Flow (GPD)	Acres	Flow (GPD)	Flow (GPD)
C-1	3	525		0		0		0		0		0	525
C-2	4	700		0		0		0		0		0	700
C-3	979	171325	222	38850		0		0	66.3	19878	22.9	6857	236910
C-4		0		0		0	2.5	761	8.4	2514	9.8	2945	6220
C-5	165	28875	5	875		0	54.5	16350	73.0	21904	44.9	13478	81482
E-1	2	350	38	6650		0		0	46.8	14031		0	21031
E-2	181	31675	142	24850	190	33250	137.0	41112	143.6	43081	4.3	1288	175255
E-3		0		0		0	36.9	11069	197.5	59246		0	70315
E-4		0		0		0		0		0		0	0
E-5	5	875		0		0		0	192.2	57652		0	58527
NE-1	217	37975		0		0	162.2	48672	13.0	3902	58.4	17515	108063
NE-2		0		0		0	125.2	37572	1.6	486		0	38058
NE-3		0		0		0		0		0		0	0
NW-1		0		0		0		0		0		0	0
NW-2		0		0		0		0		0		0	0
S-1	379	66325		0		0		0		0		0	66325
S-2		0		0		0		0		0		0	0
S-3		0		0		0		0		0		0	0
S-4		0		0		0		0		0		0	0
S-5		0		0		0		0		0		0	0
SE-1	305	53375	102	17850		0		0		0	5.1	1533	72758
SE-3		0		0		0		0		0		0	0
SE-5		0		0		0		0		0		0	0
SE-6		0		0		0		0		0		0	0
SE-7		0		0		0		0		0		0	0
SE-8	85	14875		0		0		0		0		0	14875
SW-1		0		0		0		0		0		0	0
SW-2		0		0		0		0		0		0	0
SW-3		0		0		0		0		0		0	0
SW-4		0		0		0		0		0		0	0
W-1	204	35700	104	18200		0		0	3.449558	1035		0	54935
W-2		0		0		0		0		0		0	0
<b>Totals</b>		<b>442575</b>		<b>107275</b>		<b>33250</b>		<b>155535</b>		<b>223728</b>		<b>43616</b>	<b>1,005,978.61</b>



	Existing Flows (GPD)	2014-2020 Flows (GPD)	2020-2030 Flows (GPD)	2030-2040 Flows (GPD)	
Rogers WWTP Flows	C-1	525		4,925	5,341
	C-2	700		4,933	
	C-3	236,910		11,214	12,001
	C-4	6,220		5,291	5,505
	C-5	81,482		43,688	35,530
	E-1	21,031	18,379		
	E-2	175,255		44,694	
	E-3	70,315		3,015	
	E-4		3,015	9,409	9,504
	E-5	58,527		17,414	15,596
	NE-1	108,063		12,018	7,980
	NE-2	38,058		39,122	
	NE-3			9,237	
	NW-1			8,855	9,295
	NW-2				2,228
	S-1	66,325	400		
	S-2			6,439	6,746
	SE-1	72,758			
	SW-1			23,187	24,052
	SW-2			8,791	8,871
	SW-3			8,616	8,697
	SW-4				3,257
	W-1	54,935		8,161	8,772
W-2			3,115	3,135	
Elm Creek Interceptor Flows	S-3			8,269	8,359
	S-4			45,236	35,892
	S-5			2,772	2,884
	SE-3			31,040	31,023
	SE-5			1,600	1,572
	SE-6			19,715	20,073
	SE-7			20,556	17,883
	SE-8	14,875	22,996	27,882	
Total Flows	1,005,979	44,790	429,194	284,196	

### Household, Employment, and Population Growth By Year

Service District		2014-2020	2020-2030	2030-2040
C-1	<i>Household</i>	-	37	40
	<i>Employment</i>	-	0	-
	<i>Population</i>	-	83	87
C-2	<i>Household</i>	-	37	-
	<i>Employment</i>	-	3	-
	<i>Population</i>	-	98	-
C-3	<i>Household</i>	-	60	67
	<i>Employment</i>	-	83	85
	<i>Population</i>	-	136	147
C-4	<i>Household</i>	-	48	50
	<i>Employment</i>	-	113	113
	<i>Population</i>	-	112	115
C-5	<i>Household</i>	-	252	263
	<i>Employment</i>	-	451	447
	<i>Population</i>	-	572	593
E-1	<i>Household</i>	140	-	-
	<i>Employment</i>	442	-	-
	<i>Population</i>	331	-	-
E-2	<i>Household</i>	-	96	-
	<i>Employment</i>	-	82	-
	<i>Population</i>	-	223	-
E-3	<i>Household</i>	-	-	-
	<i>Employment</i>	-	-	-
	<i>Population</i>	-	-	-
E-4	<i>Household</i>	-	67	68
	<i>Employment</i>	-	-	-
	<i>Population</i>	-	205	212
E-5	<i>Household</i>	-	62	64
	<i>Employment</i>	-	-	-
	<i>Population</i>	-	154	160
NE-1	<i>Household</i>	-	79	80
	<i>Employment</i>	-	78	84
	<i>Population</i>	-	192	197
NE-2	<i>Household</i>	-	84	-
	<i>Employment</i>	-	146	-
	<i>Population</i>	-	169	-
NE-3	<i>Household</i>	-	57	-
	<i>Employment</i>	-	-	-
	<i>Population</i>	-	137	-
NW-1	<i>Household</i>	-	63	67
	<i>Employment</i>	-	-1	1
	<i>Population</i>	-	164	170
NW-2	<i>Household</i>	-	-	13
	<i>Employment</i>	-	-	-

### Household, Employment, and Population Growth By Year

Service District		2014-2020	2020-2030	2030-2040
	<i>Population</i>	-	-	28
S-1	<i>Household</i>	3	-	-
	<i>Employment</i>	-	-	-
	<i>Population</i>	7	-	-
S-2	<i>Household</i>	-	37	40
	<i>Employment</i>	-	-	-1
	<i>Population</i>	-	87	91
S-3	<i>Household</i>	-	48	49
	<i>Employment</i>	-	41	40
	<i>Population</i>	-	125	129
S-4	<i>Household</i>	-	194	199
	<i>Employment</i>	-	188	180
	<i>Population</i>	-	507	522
S-5	<i>Household</i>	-	16	17
	<i>Employment</i>	-	-	-
	<i>Population</i>	-	42	43
SE-1	<i>Household</i>	-	-	-
	<i>Employment</i>	-	-	-
	<i>Population</i>	-	-	-
SE-3	<i>Household</i>	-	171	177
	<i>Employment</i>	-	41	39
	<i>Population</i>	-	395	407
SE-5	<i>Household</i>	-	-	-
	<i>Employment</i>	-	-	-
	<i>Population</i>	-	-	-
SE-6	<i>Household</i>	-	140	144
	<i>Employment</i>	-	12	12
	<i>Population</i>	-	326	336
SE-7	<i>Household</i>	-	119	122
	<i>Employment</i>	-	43	41
	<i>Population</i>	-	252	260
SE-8	<i>Household</i>	122	166	-
	<i>Employment</i>	43	57	-
	<i>Population</i>	258	356	-
SW-1	<i>Household</i>	-	141	149
	<i>Employment</i>	-	-1	1
	<i>Population</i>	-	324	369
SW-2	<i>Household</i>	-	50	51
	<i>Employment</i>	-	-	-
	<i>Population</i>	-	129	132
SW-3	<i>Household</i>	-	-	171
	<i>Employment</i>	-	-	-
	<i>Population</i>	-	-	405
	<i>Household</i>	-	-	19

### Household, Employment, and Population Growth By Year

Service District		2014-2020	2020-2030	2030-2040
SW-4	<i>Employment</i>	-	-	-
	<i>Population</i>	-	-	50
W-1	<i>Household</i>	-	61	66
	<i>Employment</i>	-	-	1
	<i>Population</i>	-	148	155
W-2	<i>Household</i>	-	21	22
	<i>Employment</i>	-	-	-
	<i>Population</i>	-	56	58

**Appendix F - Utility Agreements and Ordinances**

## ARTICLE III. - SEWERS AND SEWAGE DISPOSAL<sup>[2]</sup>

Footnotes:

--- (2) ---

**State Law reference**— Municipal sewer systems authorized, Minn. Stats. § 444.075.

### DIVISION 1. - GENERALLY

#### Sec. 46-116. - Definitions.

The following words, terms and phrases, when used in this article, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

*Approving authority* means the city council, or its duly authorized board, agent, or representative.

*Biochemical oxygen demand, carbonaceous (CBOD)* means the quantity of oxygen expressed in parts per million by weight, utilized in the biochemical oxidation of carbonaceous matter under standard laboratory conditions in five days at 20 degrees Celsius. The laboratory determinations shall be made in accordance with procedures set forth in standard methods.

*Building drain* means that part of the lowest horizontal piping of a drainage system that receives waste from inside the building and conveys it to the building sewer, beginning five feet (1.5 meters) outside the inner face of the building wall.

*Building sewer* means the extension from the building drain to the public sewer or other place of disposal. (Also called house connection.)

*City* means the area within the corporate boundaries of the city, as presently established or as amended by legal actions at a future time. The term "city" may also be used to refer to the city or any authorized person acting in its behalf.

*COD (chemical oxygen demand)* means the oxygen equivalent of that portion of the organic and inorganic matter in a sample of wastewater, expressed in parts per million by weight, that can be oxidized by a strong chemical oxidizing agent. The laboratory determinations shall be made in accordance with procedures set forth in standard methods.

*Collection system* means the system of sewers and appurtenances for the collection, transportation and pumping of domestic wastewater and industrial wastes.

*Combined sewer* means a sewer intended to receive both wastewater and stormwater or surface water. The city has no combined sewers.

*Commercial user* means any establishment listed in the Office of Management and Budget "Standard Industrial Classification Manual" (1972 edition) involved in a commercial enterprise, business or service which, based on a determination by the city, discharges primarily segregated domestic wastewater or wastewater from sanitary conveniences.

*Compatible pollutant* means biochemical oxygen demand, suspended solids, pH, and fecal coliform bacteria, plus additional pollutants identified in the city NPDES permit, if the city treatment works is capable of removing such pollutants, and in fact does remove such pollutants to a substantial degree. Examples of such additional pollutions may include: chemical oxygen demand, total organic carbon, phosphorus, phosphorus compounds, nitrogen, and/or nitrogen compounds.

*Connection* means each connection to the collection system.

*Construction cost* means the total cost incurred in the construction of sewerage works, consisting of but not limited to the sums spent for the following purposes:

- (1) Actual sums paid for construction of wastewater treatment facilities and for land acquisition.

- (2) Actual engineering fees paid for preliminary engineering studies, plans and specifications, services during construction, construction staking, operation and maintenance manuals and initial operator training.
- (3) Actual sums paid for soils investigations, wastewater sampling, and materials testing required for such construction.
- (4) Actual fees and wages paid for legal, administrative, and fiscal services required by the construction of wastewater treatment facilities.
- (5) Actual interest paid on the total amount financed by debt obligation for the construction of wastewater treatment facilities.

*Debt service charge* means the total charge levied on users for purposes of paying construction costs (principal and associated interest) of obligations incurred to finance acquisition and/or construction of sewerage works.

*Domestic wastewater* means waterborne wastes normally discharged into the sanitary conveniences of dwellings (including apartment houses and hotel), office buildings, factories and institutions, free of stormwater, surface water, and industrial wastes.

*Easement* means an acquired legal right for the specific use of land owned by others.

*Equivalent residential unit* means a unit of gallons per day per connection of normal strength domestic wastewater as established in the city's sewer service charge system, if necessary. Such assignment by the city is for the purpose of levying a charge to users that do not have a metered source of water.

*Floatable oil* means oil, fat, or grease in a physical state such that it will separate by gravity from wastewater by treatment in an approved pretreatment facility. Wastewater shall be considered free of floatable fat if it is properly pretreated and the wastewater does not interfere with the collection system.

*Garbage* means the animal and vegetable waste resulting from the handling, preparation, cooking and services of foods.

*Governmental user* means any federal, state, or local government user of the wastewater treatment facilities.

*Incompatible pollutant* means any pollutant that is not a compatible pollutant.

*Industrial user* means any nongovernmental user of the publicly owned treatment facilities identified in the 1972 Standard. Industrial Classification Manual (SICM), Office of Management and Budget as amended and supplemented under the following divisions:

- (1) Division A, Agriculture, Forestry, and Fishing;
- (2) Division B, Mining;
- (3) Division D, Manufacturing;
- (4) Division E, Transportation, Communication, Electric, Gas, and Sanitary Services;
- (5) Division 1, Services.

An industrial user is also defined as a user who discharges to the city sanitary sewer system any liquid wastes resulting from the processes employed in industry or manufacturing, or in the development of any natural resource.

*Industrial wastes*, as distinct from domestic or sanitary wastes, means the gaseous, liquid, and solid wastes resulting from industrial or manufacturing processes, trade or business or from the development, recovery and processing of natural resources.

*Infiltration* means the water entering the sanitary sewer system and service connections from the ground, through such means as, but not limited to, defective pipes, pipe joints, connections, or manhole walls. Infiltration does not include, and is distinguished from, inflow.

*Infiltration/inflow* means the total quantity of water from both infiltration and inflow without distinguishing the source.

*Inflow* means the water discharged into the sanitary sewer system from such sources as, but not limited to, roof leaders, cellar, yard, and area drains, foundation drains, cooling water discharges, drains from springs and swampy areas, manhole covers, cross connections to storm sewers, catchbasins, stormwaters, surface runoff, street wash waters, or drainage. Inflow does not include, and is distinguished from infiltration.

*Institutional user* means any establishment listed in the "SICM" involved in a social, charitable, religious, or educational function which, based on a determination by the city, discharges primarily segregated domestic wastewater or wastewater from sanitary conveniences.

*Major contributing industry* means an industrial user of the city treatment works that:

- (1) Has an equivalent wastewater flow of 50,000 gallons or more per average workday;
- (2) Has a wastewater flow greater than five percent of the flow carried by the city system receiving the wastewater;
- (3) Has in its wastewater a toxic pollutant in toxic amounts as defined in standards issued under section 307(a) of PL-92-500; or
- (4) Is found by the permit issuance authority, in connection with the issuance of an NPDES permit to the city treatment works receiving the wastewater, to have significant impact, either singly or in combination with other contributing industries, on the city treatment works or upon the quality of effluent from the city treatment works.

*Natural outlet* means any storm sewer or surface water that overflows into a watercourse, pond, ditch, lake, or other body of surface water or groundwater.

*Normal strength domestic wastewater* means wastewater for the city in which the average concentration of suspended materials is established at not greater than 430 parts per million by weight, 370 parts per million by weight CBOD. The COD of normal domestic wastewater shall not exceed 750 parts per million. Such wastewater does not include infiltration and/or inflow, and it is composed of domestic wastewater.

*NPDES permit* means the national pollutant discharge elimination system permit held by the city. This permit, which establishes limits on quality and quantity of discharges from the city treatment works, was issued by the state and federal governments in accordance with the provisions of the Federal Water Pollution Control Act, as amended, (33 USC 1251 et seq.; the "act," sections 402 and 405).

*Operation and maintenance cost* means annual expenditures made by the city in the operation and maintenance of its sewerage works, consisting of but not limited to the sums spent for each of the following purposes:

- (1) Wages and salaries of all operating, maintenance, administrative, and supervisory personnel, together with all premiums paid on such wages and salaries (state workmen's compensation coverage, for example);
- (2) Actual sums paid for electricity for light and power used for wastewater collection and treatment facilities;
- (3) Actual sums paid for chemicals, fuel and other operating supplies;
- (4) Actual sums paid for repairs to and maintenance of wastewater collection and treatment facilities and the equipment associated therewith;
- (5) Actual sums paid as premiums for hazard insurance carried on sewerage works;
- (6) Actual sums paid as premiums for insurance providing coverage against liability imposed by law for the injury to persons and/or property (including death) of any person resulting from the use and maintenance of said sewerage works;



- (7) Actual sums paid for replacement of equipment within the useful life of the wastewater treatment facilities, for example the cost to replace an electric motor or pump that fails, or a broken part in a pump.

*Parts per million* means a weight-to-weight ratio; the parts per million value multiplied by the factor 8.345 shall be equivalent to pounds per million gallons of water. Parts per million and milligrams per liter shall be synonymous terms.

*pH* means the logarithm of the reciprocal of the hydrogen ion concentration. The concentration is the weight of hydrogen ions, in grams per liter of solution. Neutral water, for example, has a pH value of 7 and a hydrogen ion concentration of 0.0000001 grams/liter, or  $10^{-7}$  grams per liter.

*Pretreatment* means the reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in wastewater to a less harmful state prior to or in lieu of discharging or otherwise introducing such pollutants into a sanitary sewer.

*Properly shredded garbage* means the wastes from the preparation, cooling, and dispensing of food that have been shredded to such a degree that all particles will be carried freely under the flow conditions normally prevailing in public sewers, with no particle greater than one-half inch (1.27 centimeters) in any dimension.

*Public sewer* means a common sewer controlled by a governmental agency or public utility.

*Rate schedule* means a published schedule of sewer service charges.

*Replacement* means expenditures for obtaining and installing equipment, accessories, or appurtenances that are necessary during the design or useful life of, whichever is longer of the sewerage works to maintain the capacity and performance for which the facilities were designed and constructed. The term "operation and maintenance cost" includes replacement costs.

*Residential user* means a user of the treatment facilities whose premises or building is used primarily as a residence for one or more persons, including dwelling units such as detached, semidetached, and row houses, mobile homes, garden and standard apartments or permanent multifamily dwellings except as follows:

- (1) Transit lodging, considered commercial in nature, is not included.
- (2) Mobile home parks and/or apartment complexes served with a single metering device for more than one dwelling will be considered commercial in nature.

*Sanitary sewer* means a sewer that carries liquid and water-carried wastes from residences, commercial buildings, industrial plants, and institutions together with minor quantities of groundwater, stormwater, and surface water (infiltration/inflow) that are not admitted intentionally.

*Sewage* means the spent water of a community. The preferred term is "wastewater," sometimes referred to as "sanitary waste."

*Sewer* means a pipe or conduit that carries wastewater or drainage water.

*Sewer service charge* means the total charge levied on users for sewer service. The sewer service charge is the sum of user charge and debt service charge.

*Sewerage works* means all facilities for collecting, pumping, treating and disposing of wastewater and industrial wastes.

*Slug* means any discharge of water or wastewater which in concentration of any given constituent or in quantity of flow exceeds for any period of duration longer than 15 minutes more than five times the average 24-hour concentration or flows during normal operation and shall adversely affect the collection system and/or performance of the wastewater treatment works.

*Standard methods* means the examination and analytical procedures set forth in the latest Edition at the time of the analysis of "Standard Methods for the Examination of Water and Wastewater" as prepared, approved and published jointly by the American Public Health Association, the Water Pollution Control Federation, and the American Water Works Association. Such standard methods shall also

conform to Federal Register Reprint 40 CFR 136, "Guidelines Establishing Test Procedures for Analysis of Pollutants (October 16, 1973).

*Storm drain (sometimes termed "storm sewer")* means a drain or sewer for conveying water, groundwater, subsurface water, or unpolluted water from any source.

*Stormwater runoff* means that portion of the rainfall that is drained into the storm sewers or storm drains.

*Sump pump* means a pump for disposing of storm drainage.

*Superintendent* means the superintendent of wastewater facilities of the city, or his authorized deputy, agent, or representative.

*Suspended solids, total suspended solids or TSS* means total suspended matter that either floats on the surface of, or is in suspension in, water, wastewater, or other liquids, and that is removable by laboratory filtering as prescribed in "Standard Methods for the Examination of Water and Wastewater" and referred to as nonfilterable residue.

*Unit.* A unit of wastewater is 1,000 gallons.

*Unpolluted water* means water of a quality equal to or better than the effluent criteria in effect or water that would not cause violation of receiving water quality standards and would not be benefited by discharge to the sanitary sewers and wastewater treatment facilities provided.

*User* means any person who discharges, causes, or permits the discharge of wastewater into the city's sanitary sewer system.

*User charge* means a charge levied on users to recover the cost of operation, maintenance, and replacement of sewerage works, pursuant to section 204(b) of the Federal Water Pollution Control Act, as amended (33 USC 1251 et seq.).

*User class* means the division of the users by wastewater characteristic or discharge similarities (example: residential, commercial, industrial, institutional, and governmental).

*Wastewater* means the spent water of a community. From the standpoint of source, it may be a combination of the liquid and water-carried wastes from residences, commercial buildings, industrial plants, and institutions, together with any groundwater, surface water, and stormwater that may be present.

*Wastewater facilities* means the structures, equipment, and processes required to collect, carry away, and treat domestic and industrial wastes and dispose of the effluent.

*Wastewater treatment facilities* means an arrangement of devices and structures for treating wastewater, industrial wastes, and sludge. Sometimes used as synonymous with the terms "waste treatment plant," "wastewater treatment plant" or "water pollution control plant."

*Watercourse* means a natural or artificial channel for the passage of water either continuously or intermittently.

(Ord. No. 94-27, subd. 1, 9-13-1994)

Sec. 46-117. - Penalties.

- (a) Any person found to be violating any provision of this article shall be served by the city with written notice stating the nature of the violation and providing a reasonable time limit for the satisfactory correction thereof. The offender shall, within the period of time stated in such notice, permanently cease all violations.
- (b) Any person who shall continue any violation beyond the time limit provided for in subsection (a) of this section, shall be guilty of a misdemeanor.

- (c) Any person violating any of the provisions of this article shall become liable to the city for any expense, loss, or damage occasioned the city by reason of such violation.

(Ord. No. 94-27, subd. 8, 9-13-1994)

Sec. 46-118. - Powers and authority of inspectors.

- (a) Duly authorized employees of the city bearing proper credentials and identification shall be permitted to enter all properties for the purposes of inspection, observation, measurement, sampling, and testing pertinent to discharge to any public sewer or natural outlet in accordance with the provisions of this article. Sampling pertaining to industry will reflect the number of days an industry is not operating as well as the days in operation and discharging waste to a public sewer.
- (b) The approving authority or other duly authorized employees are authorized to obtain information concerning industrial processes that have a direct bearing on the kind and source of discharge to the wastewater collection system. The industry may withhold information considered confidential. The industry must establish that the revelation to the public of the information in question might result in an advantage to competitors.
- (c) While performing the necessary work on private properties referred to in subsection (a) of this section, duly authorized employees of the city shall observe safety rules applicable to the premises established by the company, and the company shall be held harmless for injury or death to the city employees, and the city shall indemnify the company against loss or damage to its property by city employees and against liability claims and demands for personal injury, or property damage asserted against the company and growing out of the gauging and sampling operation, except as such may be caused by negligence or failure of the company to maintain safe conditions as required in section 46-192(h).
- (d) Duly authorized employees of the city bearing proper credentials and identification shall be permitted to enter all private properties through which the city holds a duly negotiated easement for the purposes of, but not limited to, inspection, observation, measurement, sampling, repair, and maintenance of any portion of the wastewater facilities lying within said easement. All entry and subsequent work, if any, on said easement shall be done in full accordance with the terms of the duly negotiated easement pertaining to the private property involved.

(Ord. No. 94-27, subd. 7, 9-13-1994)

Sec. 46-119. - Use of public sewers required.

- (a) It shall be unlawful for any person to place, deposit, or permit to be deposited in any unsanitary manner on public or private property within the city, or in any area under jurisdiction, any human or animal excrement, garbage or objectionable waste.
- (b) It shall be unlawful to discharge to any natural outlet within the city, or in any area under city jurisdiction, any wastewater or other polluted waters, except where suitable treatment has been provided in accordance with subsequent provisions of this article.
- (c) Except as hereinafter provided, it shall be unlawful to construct or maintain any privy, privy vault, septic tank, cesspool, or other facility intended or used for the disposal of wastewater.
- (d) The owners of all houses, buildings, or properties used for human occupancy, employment, recreation, or other purposes, situated within the city and abutting on any street, alley, or right-of-way in which there is now located or may in the future be located a public sanitary sewer of the city, is hereby required at the owner's expense to install a suitable service connection to the public sewer in accordance with the provisions of this article, within 90 days after date of official notice to do so.
- (e) In the event an owner shall fail to connect to a public sewer in compliance with a notice given under subsection (d) of this section, the city may undertake to have said connection made and shall assess

the cost thereof against the benefited property. Such assessment shall be a lien against said property. Such assessment, when levied, shall bear interest at the rate determined by the city council and shall be certified to the auditor of the county and shall be collected and remitted to the city in the same manner as assessments for local improvements. The rights of the city shall be in addition to any remedial or enforcement provisions of this article.

(Ord. No. 94-27, subd. 2, 9-13-1994)

**State Law reference**— Authority to require connections, Minn. Stats. § 312.221, subd. 31.

Sec. 46-120. - Private wastewater disposal.

- (a) Where a public sanitary sewer is not available under the provisions of section 46-119(d), the building sewer shall be connected to a private wastewater disposal system complying with chapter 18, article III.
- (b) No statement contained in this section shall be construed to interfere with any additional requirements that may be imposed by the city or the state.

(Ord. No. 94-27, subd. 3, 9-13-1994)

Secs. 46-121—46-138. - Reserved.

## DIVISION 2. - BUILDING SEWERS, CONNECTIONS AND CONNECTION CHARGES

Sec. 46-139. - Building sewers and connections.

- (a) No unauthorized person shall uncover, make any connections with or opening into, use, alter, or disturb any public sewer or appurtenance thereof without first obtaining a written permit from the approving authority.
- (b) All costs and expenses incidental to the installation and connection of the building sewer shall be borne by the owner. The owner shall indemnify the city from any loss or damage that may directly or indirectly be occasioned by the installation of the building sewer.
- (c) A separate and independent building sewer shall be provided for every building; unless written permission for an alternative is obtained from the city. The city does not and will not assume any obligation or responsibility for damage caused by or resulting from any such single connection aforementioned.
- (d) Old building sewers may be used in connection with new buildings only when they are found, on examination and test by the approving authority, to meet all requirements of this article.
- (e) The size, slope, alignment, materials of construction of a building sewer, and the methods to be used in excavating, placing of the pipe, jointing, testing, and backfilling the trench, shall all conform to the requirements of the building and plumbing code or other applicable rules and regulations of the city.
- (f) Whenever possible, the building sewer shall be brought to the building at an elevation below the basement floor. In all buildings in which any building drain is too low to permit gravity flow to the public sewer, sanitary wastewater carried by such building drain shall be lifted by an approved means and discharged to the building sewer.
- (g) No person shall make connection of roof downspouts, foundation drains, areaway drains, sump pumps, or other sources of surface runoff or groundwater to a building sewer or building drain which in turn is connected directly or indirectly to a public sanitary sewer (unless such connection is approved by the approving authority).

- (h) The connection of the building sewer into the public sewer shall conform to the requirements of the building and plumbing code or other applicable rules and regulations of the city. All such connections shall be made gastight and watertight and verified by proper testing. Any deviation from the prescribed procedures and materials must be approved by the approving authority before installation.
- (i) The applicant for the building sewer permit shall notify the approving authority when the building sewer is ready for inspection and connection to the public sewer. The connection and testing shall be made under the supervision of the approving authority.
- (j) All excavations for building sewer installation shall be adequately guarded with barricades and lights so as to protect the public from hazard. Streets, sidewalks, parkways, and other public property disturbed in the course of the work shall be restored in a manner satisfactory to the approving authority.

(Ord. No. 94-27, subd. 4, 9-13-1994)

Sec. 46-140. - Sewer connection permit and charges.

No connection to the public sewer system of the city shall be made by any person until a sewer connection permit has been issued by the city for said connection and the charge established by ordinance are paid.

(Ord. No. 1980-1, § 2, 3-11-1980; Ord. No. 1987-7, § 2, 8-11-1987)

Sec. 46-141. - Connection charge revenues.

All revenues received from the collection of said connection charge shall be deposited to the sewer and water fund.

(Ord. No. 1980-1, § 8, 3-11-1980)

Secs. 46-142—46-165. - Reserved.

DIVISION 3. - SEWAGE AVAILABILITY CHARGE

Sec. 46-166. - Recitals.

The city has determined to pay part of the cost for the improvement, modernization and expansion made of its wastewater treatment facilities, to establish a connection charge, hereinafter designated Rogers Sewage Availability Charge (RSAC) for all buildings to be constructed or connected to the city's sewage disposal system and facilities on or after January 25, 1984. The RSAC provided in this division shall be paid in addition to any other charges or fees provided by the ordinances of the city.

(Ord. No. 1976-1, § 1, 6-22-1976; Ord. No. 92-8, § 1, 7-29-1992; Ord. No. 97-7, § 1, 4-8-1997)

Sec. 46-167. - Establishment of charges.

- (a) The Rogers Sewage Availability Charge is imposed on each building or structure in the city and each connection to the city sewage disposal system. The Rogers Sewage Availability Charge shall be payable upon the issuance of a building permit or a sewer connection permit, as the case may be, but no charge shall be due upon the issuance of a connection permit if a charge was paid upon issuance of a building permit.

- (b) The Rogers Sewage Availability Charge for each building or structure shall be equal to the number of units of sewage volume that will discharge and shall be as established by ordinance.
- (c) A unit of sewage volume shall be 100,000 gallons per year and shall be assigned as follows:
- (1) Standard Rogers Sewage Availability Charge (RSAC) units for various residential dwellings.
    - a. Single-family houses, townhouses and duplex units shall each comprise one unit;
    - b. Condominiums and apartments shall each comprise 80 percent of a unit;
    - c. Mobile homes shall each comprise 80 percent of a unit;
    - d. Public housing units subsidized under any federal program for low and moderate income housing shall be counted as 75 percent of the unit equivalent for that type of housing.
  - (2) Standard Rogers Sewage Availability Charge (RSAC) units for various commercial, public, and institutional facilities.

Type of Facility	Parameter	RSAC Units
Arenas	110 seats	1
Automobile service	2 service days	1
Ballroom facility without liquor service	825 sq. ft.	1
Ballroom facility with liquor service	590 sq. ft.	1
Banquet room, food catered with dishwashing	2,060 sq. ft.	1
Banquet room, food catering with dishwashing	1,180 sq. ft.	1
Banquet room, food preparation and dishwashing	825 sq. ft.	1
Banquet room, food preparation, dishwashing, with liquor	590 sq. ft.	1
Barbershop		1
Boardinghouse	5 beds	1
Bowling alley	3 alleys	1
Car wash (self-service)	1 stall	3
Car wash (service station)		6

Car wash (requires specification on equipment flow rate and cycle time)		
Churches	275 seats	1
Cocktail lounge	23 seats	1
Fast service restaurant, minimal dishwashing (Example: pizza parlor, McDonald's, etc.)	22 seats	1
General office building	2,400 sq. ft. floor space	1
Hospitals	1 bed	1
Laundromats (requires water volume for cycle time, 8 cycles per day)		
Motels and hotels (assume 2 persons/room)	2 rooms	1
Nursing home	3 beds	1
Restaurant (drive-in)	9 parking spaces	1
Restaurant (18-24 hours service)	6 seats	1
Restaurant (12-18 hours service)	8 seats	1
Restaurant (12 hours service)	13 seats	1
Restaurant (with cocktail lounge)	10 seats	1
Retail stores	3,000 sq. ft. floor space	1
Roominghouses	7 beds	1
Schools (elementary)	18 students	1
Schools (secondary)	14 students	1
Service station (gas pumping only)		1

Service station (with service center)		2
Service station (with service center and car wash)		8
Swimming pools	900 sq. ft. pool area	1
Theater	64 seats	1
Theater (drive-in)	55 parking spaces	1
Warehouses	14 employees	1

- a. The Rogers Sewage Availability Charge (RSAC) unit for a facility not included in the above list will be determined by the public works superintendent. A request for Rogers Sewage Availability Charge unit determination should be made prior to the issuance of the building permit. One unit shall be assigned for each 100,000 gallons of flow that the council estimates will be discharged, and commercial and industrial building units shall be assigned a minimum of one unit.
- b. As part of the city's comprehensive plan, the city has adopted a Master Sewer and Water Plan and a Modified Facilities Plan of 1990, amended 1994 (collectively sometimes referred to herein as the "Comprehensive Sewer Plan"). The city has implemented the comprehensive sewer plan by constructing to date wastewater treatment facilities with a design capacity of 1,602,000 gallons per day. The comprehensive sewer plan assigns the capacity based on formulae that assign capacity based on zoning and the land use elements of the comprehensive plan of the city, to wit: 1,000 gallons per acre per day to land guided retail business or commercial business and 600 gallons per acre per day to land guided mid-density residential, multifamily residential, or limited industrial. In no event shall a building in the city be assigned under the standard unit schedules above a greater number of Rogers Sewage Availability Charge (RSAC) units than is determined by multiplying the acreage of the parcel or tract of land that the building connecting to the city's sewage system is located within, times the daily gallonage under the formula above by 365 and dividing the product by 100,000 (and rounded to the nearest half). If a parcel or tract has two or more buildings, they shall collectively be deemed one building.

(Ord. No. 1976-1, § 2, 6-22-1976; Ord. No. 84-1, § 1, 1-24-1984; Ord. No. 98-4, § 1, 4-14-1998; Ord. No. 92-8, § 2, 7-29-1992; Ord. No. 97-7, § 2, 4-8-1997; Ord. No. 1999-9, § 1, 2 3-9-1998; Ord. No. 2001-04, § 1, 7-12-2001; Ord. No. 2003-04, § 1, 3-11-2003; Ord. No. 2004-02, § 1, 2-24-2004)

Sec. 46-168. - Alterations or additions.

All building permits issued by the city for alterations and/or additions to existing buildings or structures will be subject to a Rogers Sewage Availability Charge (RSAC) unit charge if the addition or alteration will increase wastewater discharge. The RSAC unit will be determined in the same manner used to determine the RSAC unit for new buildings.



(Ord. No. 1976-1, § 3, 6-22-1976; Ord. No. 97-7, § 3, 4-8-1997)

Sec. 46-169. - Administration.

The city clerk shall prepare or revise building permit or sewage connection permit application forms to provide information necessary for the computation of the number of units assignable to the building or structure in question and shall collect the applicable charge for issuance of a permit.

(Ord. No. 1976-1, § 4, 6-22-1976)

Secs. 46-170—46-191. - Reserved.

#### DIVISION 4. - DISCHARGE RESTRICTIONS

Sec. 46-192. - Use of the public sewers.

- (a) No person shall discharge or cause to be discharged any unpolluted waters such as stormwater, groundwater, roof runoff, subsurface drainage, or cooling water to any sewer. Stormwater runoff from limited areas, which may be polluted at times, may be discharged to the sanitary sewer by permission of the approving authority.
- (b) Stormwater other than that exempted under subsection (a) of this section, and all other unpolluted drainage shall be discharged to such sewers as are specifically designated storm sewers or to a natural outlet approved by the approving authority and other regulatory agencies. Unpolluted industrial cooling water or process waters may be discharged, on approval of the approving authority and in accordance with the provisions of state and federal regulations, to a storm sewer, or natural outlet.
- (c) No person shall discharge or cause to be discharged any of the following described waters or wastes to any public sewers:
  - (1) Any gasoline, benzene, naphtha, fuel oil, or other flammable or explosive liquid, solid, or gas.
  - (2) Any waters containing toxic or poisonous solids, liquids, or gases in sufficient quantity, either singly or by interaction with other wastes, to injure or interfere with any waste treatment process, constitute a hazard to humans or animals, create a public nuisance, result in a violation of state or federal water quality standards, or create any hazard in the wastewater treatment plant or the receiving waters. Toxics are as defined in section 307(a) of the Clean Water Act.
  - (3) Any waters or wastes having a pH lower than 5.5, or higher than 9.5, or having any other corrosive property capable of causing damage or hazard to structures, equipment, and personnel of the wastewater facilities. Exceptions may be granted (by the approving authority) for short duration flows where it has been, or can be shown that high or low pH would not cause any significant wastewater facilities problems.
  - (4) Solid or viscous substances in quantities or of such size capable of causing obstruction to the flow in sewers, or other interference with the proper operation of the wastewater facilities such as, but not limited to, ashes, bones, cinders, sand, mud, straw, shavings, metal, glass, rags, feathers, tar, plastics, wood, unground garbage, whole blood, paunch manure, hair and fleshings, entrails, paper dishes, cups, milk containers, etc., either whole or after passage through garbage grinders.
  - (5) Any wastewaters or matter that would directly or indirectly result in a violation of the city's NPDES permit.
- (d) The following described substances, materials, waters, or waste shall be limited in discharges to municipal systems to concentrations or quantities which will not violate design criteria or harm either

the sewers, wastewater treatment process or equipment, will not have an adverse effect on the receiving stream, or will not otherwise endanger lives, limbs, public property, or constitute a nuisance. The approving authority may set limitations lower than the limitations established in the regulations contained in this section if in its opinion such more severe limitations are necessary to meet the objectives in subsection (c) of this section. In forming the opinion as to the acceptability, the approving authority will give consideration to such factors as the quantity of subject waste in relation to flows and velocities in the sewers, materials of construction of the sewers, the wastewater treatment process employed, capacity of the wastewater treatment plant, degree of treatability of the waste in the wastewater treatment plant, the city's NPDES permit, and other pertinent factors. The limitations or restrictions on materials or characteristics of waste or wastewater discharged to the sanitary sewer that shall not be violated without approval of the approving authority are as follows:

- (1) Wastewater having a temperature higher than 150 degrees Fahrenheit (65 degrees Celsius);
  - (2) Wastewater containing more than 25 milligrams per liter of petroleum oil, nonbiodegradable cutting oils, or product of mineral oil origin;
  - (3) Wastewater from industrial plants containing floatable oil, fat, or grease, in excess of concentrations permitted by the approving authority;
  - (4) Any garbage that has not been properly shredded. Garbage grinders may be connected to sanitary sewers from homes, hotels, institutions, restaurants, hospitals, catering establishments, or similar places where garbage originates from the preparation of food in kitchens for the purpose of consumption on the premises, or consumption elsewhere when served by caterers;
  - (5) Any waters or wastes containing iron, chromium, copper, zinc, and similar objectionable or toxic substances to such a degree that any such material received in the composite wastewater at the wastewater treatment works exceeds the limits established by the approving authority for such materials;
  - (6) Any waters or wastes containing odor-producing substances exceeding limits that may be established by the approving authority;
  - (7) Any radioactive materials of such half-life or concentration as may exceed limits established by the approving authority, or applicable state and federal regulations;
  - (8) Quantities of flow, concentrations, or both which constitute a "slug" as defined herein;
  - (9) Any waters or wastes which, by interaction with other waters or wastes in the public sewer system, release obnoxious gases, form suspended solids which interfere with the collection system, or create a condition deleterious to structures and treatment processes.
- (e) If any waters or wastes are discharged or are proposed to be discharged to the public sewers, which waters contain the substances or possess the characteristics enumerated in subsection (d) of this section, and which in the judgment of the approving authority may have a deleterious effect upon the wastewater facilities, processes, equipment, or receiving waters, or which otherwise create a hazard to life or constitute a public nuisance, the approving authority may:
- (1) Reject the wastes;
  - (2) Require pretreatment to an acceptable condition for discharge to the public sewer, pursuant to section 307(b) of the Clean Water Act as amended 33 USC 1251 et seq.;
  - (3) Require control over the quantities and rates of discharge; and/or
  - (4) Require payment to cover added cost of handling and treating the wastes not covered by existing taxes or service charges.

If the approving authority permits the pretreatment or equalization of waste flows, the design and installation of the plants and equipment shall be subject to the review and approval of the approving authority and costs shall be borne at the user's expense.

- (f) Grease, oil, and sand interceptors shall be provided when, in the opinion of the approving authority, they are necessary for the proper handling of liquid wastes containing floatable grease in excessive amounts, as specified in subsection (d)(3) of this section, or any flammable wastes, sand, or other harmful ingredients; except that such interceptors shall not be required for private living quarters or dwelling units. All interceptors shall be of a type and capacity approved by the approving authority, and shall be located as to be readily and easily accessible for cleaning and inspection. In the maintaining of these interceptors, the owner shall be responsible for the proper removal and disposal by appropriate means of the captured material and shall maintain records of the dates, and means of disposal that are subject to review by the approving authority. Any removal and hauling of the collected materials not performed by owner's personnel must be performed by currently licensed waste disposal firms.
- (g) Where pretreatment or flow-equalizing facilities are provided or required for any waters or wastes, they shall be maintained continuously in satisfactory and effective operation by the owner at his expense.
- (h) When required by the approving authority, the owner of any property serviced by a building sewer carrying industrial or domestic wastewater shall install a suitable structure together with such necessary meters and other appurtenances in the building sewer to facilitate observation, sampling, and measurement of the wastes. Such structure, when required, shall be accessible and safely located and shall be constructed in accordance with plans approved by the approving authority. The structure shall be installed by the owner at his expense and shall be maintained by him so as to be safe and accessible at all times.
- (i) An industrial user may, at the discretion of the city, be required to provide laboratory measurements, tests, or analyses of waters or wastes to illustrate compliance with this article and any special condition for discharge established by the city or regulatory agencies having jurisdiction over the discharge. The number, type, and frequency of sampling and laboratory analyses to be performed by the owner shall be as stipulated by the city. The industry must supply a complete analysis of the constituents of the wastewater discharge to assure that compliance with federal, state, and local standards are being met. The owner shall report the results of measurements and laboratory analyses to the city at such times and in such manner as prescribed by the city. The owner shall bear the expense of all measurements, analyses, and reporting required by the city. At such times as deemed necessary, the city reserves the right to take measurements and samples for analysis by an independent laboratory.
- (j) All measurements, tests and analyses of the characteristics of waters and wastes to which reference is made in this article shall be determined in accordance with the latest edition of "Standard Methods for the Examination of Water and Wastewater," published by the American Public Health Association. Sampling methods, location, times, durations and frequencies are to be determined on an individual basis subject to approval by the approving authority.
- (k) New connections to the sanitary sewer system shall be prohibited unless sufficient capacity is available in all downstream facilities, including, but not limited to, capacity for flow, CBOD, and suspended solids.
- (l) No person, unless authorized shall uncover, make any connection with or opening into, use, alter, or disturb any sanitary or storm sewer within the city or any part of the city wastewater facilities.
- (m) No sanitary or storm sewers shall be constructed in the city (except house or building service sewers) except by the city or by others in accordance with plans and specifications approved by a professional engineer. No such sewers shall be constructed or considered to be part of the public sewer system unless accepted by the city.
- (n) The size, slope, alignment, material of construction, methods to be used in excavation, placing of pipe, jointing, testing, backfilling, and other work connected with the construction of sewers shall conform to the requirements of the city.
- (o) No statement contained in this section shall be construed as preventing any special agreement or arrangement between the city and any industrial concern whereby an industrial waste of unusual

strength or character may be accepted by the city for treatment, when such city treatment can be provided in compliance with the requirements of the NPDES permit and subject to payment therefore by the industrial concern and providing that national categorical pretreatment standards are not violated.

- (p) No user shall increase the use of process water or in any manner attempt to dilute a discharge as a partial or complete substitute for adequate treatment to achieve compliance with the limitations contained in this article, the national categorical pretreatment standards, and any state or local requirements.

(Ord. No. 94-27, subd. 5, 9-13-1994)

Secs. 46-193—46-222. - Reserved.

#### DIVISION 5. - USER RATES AND CHARGES

##### Subdivision I. - In General

Sec. 46-223. - Sewer service charges.

- (a) The billable volume of normal strength domestic waste will be calculated from the volume of metered water usage. For residential users, the per quarter billable flow shall be equal to quarterly metered water usage in the first quarter of the calendar year. For nonresidential users discharging normal strength domestic wastewater, billable flow shall be equal to quarterly water usage measured throughout the year. The quarterly charge will include a user charge component to meet all costs associated with operation, maintenance, and replacement of the wastewater collection and treatment facilities. Construction debt will be retired through a new development connection charge as described in the city's sewer service charge system to meet facility construction costs.
- (b) As a share of the expenses incurred by the city in the administration, operation, maintenance, and replacement of the sewerage works, each user discharging NDSW will pay to the city a quarterly amount based upon the following formula:

$$UC=(UOMR \times BMV)$$

Where: UC=Quarterly charge per connection

UOMR=Unit Cost for Operation, Maintenance and Replacement in \$/KGAL

BWV=Billable Wastewater Volume of a Particular User in KGAL

- (c) City costs shall be computed annually and shall include operation, maintenance and replacement costs.
  - (1) Each user of the city sewer system that does not have a metered source of water may install an accurate water metering device (at the user's expense) that will serve as a basis for estimating the volume of wastewater discharged, and determining the sewer service charge.
  - (2) All users may install a separate water system and meter (one only in the same building as the main meter) to isolate and meter water that is not discharged to the city sanitary sewer system and for which no sewer charge is required. If at any time after this independent system is installed, water from this system enters the sanitary sewer system, the user will be subject to the penalties of section 46-117 and shall be ordered to eliminate the independent system if this violation is continued.
- (d) To ensure the required financial surveillance, the city administrator shall annually review the cash flows associated with providing wastewater treatment service for the city, and shall report the findings to the city council. Any inequities and/or shortages of revenue caused by unforeseen

changes in the cost revenue pattern of the wastewater treatment facilities shall be remedied immediately by a city council resolution adjusting the unit cost figures. Adjusted unit figures shall be computed in accordance with the principals of this subdivision. The city administrator will maintain records necessary for documentation of compliance with the conditions of this section.

- (e) Each user shall pay operation, maintenance, and replacement costs in proportion to the user's proportionate contribution of wastewater flows and loadings to the treatment plant with a minimum rate for loadings of CBOD and TSS being the rate established for NDSW concentrations. The charge system established in this article will not prevent the assessment of additional charges to users who discharge wastes in concentration greater than NDSW or of unusual character.
- (f) Wastewater sewer service charges provided for in this article shall be included as a separate item on the regular bill for water. Charges shall be paid at the same time that the water charges of the person become due.
- (g) Accounts that are not paid in full within 30 days will be charged a late payment penalty as established by the city council and will be subject to interest charges at a rate established by the city council. In the event a user does not pay his account in full within 90 days after billing, the city may undertake to have the water service to the property disconnected and may file a lien against the property.

(Ord. No. 94-27, subd. 9, 9-13-1994)

Sec. 46-224. - Sewer service fund.

- (a) The city hereby establishes a sewer service fund as an income fund to receive all revenues generated by the sewer service charge system, and all other income dedicated to the operation, maintenance, replacement and construction of the wastewater treatment work, including taxes, special charges, fees, and assessments intended to retire construction debt.
- (b) The city also establishes the following accounts as income and expenditure accounts within the sewer service fund:
  - (1) Operation and maintenance account.
  - (2) Equipment replacement account.
  - (3) Debt retirement account.
- (c) All revenue generated by the sewer service charge system, and all other income pertinent to the treatment system, includes taxes and special assessments dedicated to retire construction debt, shall be held by the city separate and apart from all other funds of the city. Funds received by the sewer service fund shall be transferred to the operation and maintenance account, the equipment replacement account, and the debt retirement account in accordance with state and federal regulations and the provisions of this article.
- (d) Revenue generated from the sewer service charge system sufficient to ensure adequate replacement throughout the design or useful life, whichever is longer, of the wastewater facility shall be held separate and apart in the equipment replacement account and dedicated to affecting replacement costs. Interest income generated by the equipment replacement account shall remain in the equipment replacement account.
- (e) Revenue generated by the sewer service charge system sufficient for operation and maintenance shall be held separate and apart in the operation and maintenance account.
- (f) The sewer service charge system shall be adopted by city resolution upon enactment of this article, it shall be published in the local newspaper, and shall be effective upon publication.

(Ord. No. 94-27, subd. 10, 9-13-1994)

Secs. 46-225—46-241. - Reserved.

Subdivision II. - Interim Unallotted Sewer Capacity

Sec. 46-242. - Statement of policy.

- (a) As part of the city's comprehensive plan, the city has adopted a master sewer and water plan, and a Modified Facilities Plan of 1990, amended 1994 (collectively hereafter referred to as the "comprehensive sewer plan"). The city has implemented the comprehensive sewer plan by constructing to date wastewater treatment facilities with a design capacity of 1,602,000 gallons per day.
- (b) The comprehensive sewer plan assigns the wastewater treatment facilities' capacity using certain formulae consistent with the land use designations of the tracts and parcels of land under the comprehensive plan.
- (c) Prior to the city being fully developed, sewage treatment capacity is available for users on nonpermanent basis until they can implement reduction of their wastewater discharge by developing water conservation plans.
- (d) In furtherance of the fair use of the designed capacity and to provide revenue for the costs of construction, repair and replacement of the system, it is in the best interests of the users and residents of the city to provide for interim use of such capacity. Accordingly, accepting subscriptions from persons who desire on a nonpermanent basis to discharge more wastewater into the system than their assigned capacity under the comprehensive sewer plan allows, and charging a fee for the interim utilization of unallotted capacity, furthers the public interest. A fee as provided herein shall be established for each 100,000 gallons of potential flow volume subscribed to by a user. The fee so established shall be paid in addition to any other charges or fees provided by ordinances of the city.

(Ord. No. 97-1, § 1, 1-14-1997)

Sec. 46-243. - Definitions.

The following words, terms and phrases, when used in this subdivision, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

*IASC unit* means a unit of interim allotted sewer capacity.

*Subscription* means a written contract by which a person subscribes to take and pay for one or more IASC units.

*Unit* means 100,000 gallons per year of sewage volume or potential flow volume.

*User* means any person who discharges, causes or permits the discharge of wastewater into the city's wastewater treatment facilities.

*Wastewater* means the liquid and water-carried industrial, commercial or domestic wastes from dwellings, commercial buildings, industrial facilities and institutions, together with any groundwater, surface water and stormwater that may be present, whether treated or untreated, which is discharged into or permitted to enter the city's wastewater treatment system.

*Wastewater treatment facilities or system* means any device, facility, structure, equipment or works owned or used by the city for the purpose of the transformation, storage or treatment of wastewater, including intercepting sewers, outfall sewers, wastewater collection systems, and other equipment and their appurtenances; extensions, improvements, remodeling additions and alterations thereof, and any works including land which will be an integral part of the treatment process or is used for ultimate disposal of residue resulting from such treatment.

(Ord. No. 97-1, § 2, 1-14-1997)

Sec. 46-244. - Assigned/allocated capacity.

The design capacity of the city's wastewater treatment facility is 1,602,000 gallons per day. The comprehensive sewer plan assigns this capacity to tracts and parcels of land based on formulae that allocate the capacity based on zoning and the land use elements of the comprehensive plan of the city, to wit: 1,000 gallons per acre per day to land-guided retail business or commercial business, and 600 gallons per acre per day to land-guided mid-density, residential, multifamily residential or limited industrial.

(Ord. No. 97-1, § 3, 1-14-1997)

Sec. 46-245. - Prohibition.

No person may discharge wastewater into the system in excess of the amount calculated under the applicable formula of the applicable parcel or tract of land, unless there is in force and effect a subscription for unallotted capacity covering such discharges, as assigned and allocated under section 46-244 and the comprehensive sewer plan.

(Ord. No. 97-1, § 4, 1-14-1997)

Sec. 46-246. - Administration.

- (a) *Subscription duration.* Subscription agreements for IASC units shall be issued for a specified time period not to exceed ten years. The subscriber may terminate a subscription at the end of any subscription year by giving the city 60 days' prior written notice thereof.
- (b) *Fee; reservation of right to increase.* The fee for each IASC unit shall be \$80.00 per year. The city reserves the right to increase the fee at any time; provided, however, that as to any subscription having an unexpired term in excess of one year, the increase shall not be effective until the end of 365 days after the adoption of a resolution by the city increasing the fee. New subscribers shall pay the increased fee on the effective date set forth in the resolution.
- (c) *Subscription agreement conditions.* Subscriptions for IASC units may be made expressly subject to all of the provisions of this ordinance and all other applicable regulations, user charges and fees established by the city. Subscriptions accepted by the city (and signed by the public works superintendent) may contain the following provisions:
  - (1) The IASC unit fee for the total number of units subscribed for.
  - (2) The term of the subscription.
  - (3) Limits on the maximum gallons per year of wastewater that can be discharged into the system under the subscription.
  - (4) Requirements for installation and maintenance of inspection and sampling facilities.
  - (5) Requirements for submission of technical reports or discharge reports.
  - (6) Requirements for maintaining and retaining records relating to wastewater discharge as specified by the public works superintendent, but in no case less than three years, and affording the superintendent access thereto.
  - (7) Requirements for notification to the superintendent of any due introduction of wastewater constituents or of any substantial change in the volume of the wastewater being introduced into the system.

- (8) Other conditions as deemed appropriate by the city to monitor flow within the capacity allocation of the subscriber or to otherwise ensure compliance with this article.

(Ord. No. 97-1, § 5, 1-14-1997)

Sec. 46-247. - Annual review.

The city staff shall annually review the amount of volume of sewage being discharged into the system and the amount of unutilized sewage capacity. The city administrator shall certify to the council on or before July 1 of each calendar year the amount of sewer capacity available in the system for subscriptions.

(Ord. No. 97-1, § 6, 1-14-1997)

Sec. 46-248. - Subscription transfers.

Subscriptions for IASC units are issued for a specific user or for a specific operation. The holder of the subscription shall not have the right or authority to reassign, transfer or sell the subscription to a new owner or a new user. Any succeeding owner or user of the tract or parcel of land shall request a new subscription for IASC units.

(Ord. No. 97-1, § 7, 1-14-1997)

Sec. 46-249. - Payment.

Payments for each subscription accepted by the city shall be due and payable yearly in advance for the total number of IASC units subscribed for. The first year's payments shall be paid concurrently with acceptance of the subscription by the city. The city administrator shall thereafter invoice 60 days prior to the commencement of any succeeding subscription year for any unexpired year.

(Ord. No. 97-1, § 9, 1-14-1997)

Sec. 46-250. - Forms.

The city administrator shall establish and make available subscription forms to persons desiring to subscribe to IASC units. The form shall provide a space for inclusion of the conditional use permit number relating to the use of the wastewater treatment sewage capacity.

(Ord. No. 97-1, § 10, 1-14-1997)

Secs. 46-251—46-278. - Reserved.



CITY OF ROGERS

SANITARY SEWER MAINTENANCE POLICY

**1. Purpose**

The purpose of this policy is to provide the City of Roger's procedures for maintaining its sanitary sewer system. These procedures are necessary to prevent sewer backups into homes and businesses and the natural environment. Maintenance also protects and extends the life of the City's sanitary sewer system. The City will provide such maintenance in a safe and cost effective manner, keeping in mind safety, budget, personnel and environmental concerns. The City will use city employees, equipment and/or private contractors to conduct this maintenance.

While the City fully intends to meet the guidelines established in this policy, there may be times when this is not feasible. Issues including, but not limited to, budget constraints, critical equipment failure, or weather and other emergencies may prevent the City from meeting the guidelines established herein.

**2. Routine Maintenance and Inspection**

**A. Sanitary Sewer Lines-**

**1. Scope of City's Responsibility -**

The City will maintain the components of the public sanitary sewer system. This includes sanitary sewer mains, manholes, lift stations, waste water treatment plants, and other components.

- The City will be responsible for maintaining the integrity and strength of lines running off of the City's main line to the property line. This does not include responsibility for any costs of backups that occur because of plugging of lines running from buildings because of direct negligence by the property owner (dumping or flushing of non-biodegradable materials).

**2. Schedule – The City will clean every city sanitary sewer lines on the following schedule:**

- Problem Areas – every year
- Clay Lines – every 3 years
- PVC Lines - every 5 years

**3. Equipment – Lines will be cleaned with a jetter or a rodder machine. The equipment used will depend upon the equipment availability and its effectiveness based on the location, type of line, as determined by qualified staff.**

4. Problem Areas – This is defined as an area that has had a sewer backup, blockage, or a known problem such as grease accumulation or shallow slope. This area will be cleaned every year for while it is designated as a problem area. If further problems are identified an in-depth engineering study will be commissioned to research the cause and potential solutions to the problem. Areas of persistent issues may require slip-lining.
5. Television Inspection – It is the City’s goal that the sanitary sewer mains will be inspected by television camera every 10 years. Any lines located on a street where a street maintenance project is planned will be inspected prior to those projects. The City will require the televised and inspection report on any sewer lines in a new development before the city accepts those lines as city lines. Television camera inspection will also be available to inspect lines where there are possible problems.
6. Flushing Inspection – Every dead-end manhole will be flushed annually to clean out the line and to determine if there are any problems with the flow.

**B. Sanitary Sewer Lift Stations**

1. Schedule – The City will maintain lift stations under a maintenance schedule that is reasonable and recommended. As a general guideline, all high-flow lift stations annually, and low-flow lift stations semi-annually. Maintenance schedules are reflected in the checklists developed for each lift station and may be performed by the city employees or private contractors.
2. Electrical Components – Electrical components and voltage will be checked and inspected during routine pump maintenance. All lift stations will be monitored 24/7/365 by a S.C.A.D.A. system or automatic dialer.
3. Hour Meters – The flow meters at the lift stations will be checked on a daily basis to ensure that the lift stations are working properly and to detect any problems in the system. This may be done with a S.C.A.D.A. system or manual operations.

**3. Emergency Response**

- A. Definition – An emergency response occurs in response to a call from citizens, fellow employees, or an alarm that indicates that there is a possible problem in the sanitary sewer system.
- B. Response – Refer to Emergency Response Policy

**4. Inflow/Infiltration**

- A. Definition – Inflow is where storm water is misdirected into the sanitary sewer system through intentional connections such as sump pumps and roof leaders. Infiltration is where storm and ground water get into the sanitary sewer system through cracks or leaks in the sewer pipes or manholes. Inflow and infiltration can lead to backups, overflows, and unnecessary and expensive treatment of storm water.
- B. Inflow: To reduce inflow, the City has developed a program to eliminate illegal connections to the sanitary sewer system. This includes enforcement of the ordinance banning such connections and public education to encourage voluntary compliance.
- C. Infiltration: To reduce infiltration, the city employees will annually inspect manholes and repair any that contribute to this problem. The sewer lines are maintained and inspected pursuant to Section 2 of this policy. In addition to the routine maintenance, the City has adopted a twenty-year CIP plan to replace or preform lining of sewer lines that are cracked and in need of repair.

**5. Training**

The City will provide training to on a regular basis to employees that will be involved in the routine maintenance of the sanitary sewer. The City will also train employees proper emergency response procedures and proper equipment usage.

**6. Work Schedule For City Employees**

City employees will be expected to work regularly scheduled shifts. In emergencies, employees may sometimes have to work excess of an eight-hour shift. However, because of budget and safety concerns employees may be limited in how long they work.

**7. Weather Conditions**

Sewer maintenance operations will be conducted only when weather conditions do not endanger the safety of city employees and equipment. Factors that may delay sewer maintenance operations include; severe cold, flooding, rain, snow, and wind.

**8. Documentation**

The City will document all of its inspection, maintenance and emergency responses for its sanitary sewer system. The City will also document any circumstances where something has occurred that limits its ability to comply with this policy. These records will be kept in accordance with the City's record retention schedule.



PUBLIC WORKS DEPARTMENT

(763) 428-8580

22350 SOUTH DIAMOND LAKE ROAD • ROGERS, MINNESOTA 55374

October 25, 2018

Jeannine Clancy  
Metropolitan Council  
390 North Robert Street  
St. Paul, MN 55101

Re: Approval of Resolution 2018-84 Requesting Metropolitan Council Acquire the Rogers Publically-Owned Waste Water Treatment Plant Through Acquisition Agreement

Dear Jeannine,


At Tuesday's, October 23, 2018 City of Rogers Council meeting the Council reviewed and approved the resolution requesting Metropolitan Council acquire the Rogers publically-owned waste water treatment plant through acquisition agreement.

Attached you will find the hardcopy resolution approved by the Rogers City Council and signed by the Mayor. An electronic copy will also be sent under separate cover via e-mail to those copied on this letter.

We understand that this process will need to work through the Inter-Governmental Agreement between the City of Rogers and the Metropolitan Council previously sent.

Please feel free to reply with next steps or information you would need from us to help with this process.

Sincerely,



John Seifert  
Public Works Director  
City of Rogers, MN

Cc: Anna Bessel  
Steve Stahmer

**RESOLUTION NO. 2018-84**

**RESOLUTION REQUESTING METROPOLITAN COUNCIL ACQUIRE THE ROGERS PUBLICLY-OWNED WASTE WATER TREATMENT PLANT THROUGH AN ACQUISITION AGREEMENT**

**WHEREAS,** the City of Rogers owns and operates a sanitary sewer system and a publicly owned wastewater treatment plant; and

**WHEREAS,** the City of Rogers has submitted its 2030 Comprehensive Plan and Comprehensive Sewer Plan to the Metropolitan Council; and

**WHEREAS,** the Metropolitan Council has accepted the City of Rogers' 2030 Comprehensive Plan, as amended, and has approved its Comprehensive Sewer Plan that includes the future flow of the Rogers Wastewater Treatment Plant to a new Regional Wastewater Treatment Plant near the Crow River; and

**WHEREAS,** the Metropolitan Council has adopted 2040 Water Resources Policy Plan and Thrive MSP 2040; and

**WHEREAS;** the Metropolitan Council's long-term wastewater system plan includes a new wastewater reclamation plant to serve the City of Rogers and neighboring communities, thereby replacing the need for the City's wastewater treatment plant and providing relief capacity to the Elm Creek Interceptor serving the regional wastewater needs of the area; and

**WHEREAS;** the Metropolitan Council's long-term capital improvement program, as stated in the 2040 Water Resources Policy Plan, projects construction of the Crow River wastewater reclamation plant by 2030; and

**WHEREAS,** the City of Rogers and Metropolitan Council have agreed to enter into an intergovernmental agreement that will facilitate the framework of the acquisition of the City of Rogers publicly owned treatment plant and the development of a future Metropolitan Council Environmental Services regional wastewater treatment plant.

**NOW, THEREFORE,** the City Council of the City of Rogers hereby formally requests that Metropolitan Council Environmental Services begin the acquisition process of the City of Rogers publicly owned wastewater treatment plant.

Moved by Councilmember *Klick*, seconded by Councilmember *Eiden*

The following voted in favor of said resolution: *Eiden, Gurecki, Ihl, Junkel, Klick*

The following voted against the same: *none*

The following abstained: *none*

Whereupon said resolution was declared duly passed and adopted, and was signed by the Mayor, and attested by the Clerk dated this 23<sup>rd</sup> day of October 2018.



Mayor

ATTEST:



Asst. City Administrator/City Clerk

0117

**JOINT POWERS AGREEMENT**

WHEREAS, the City of Rogers (hereinafter "Rogers") and the City of Dayton (hereinafter "Dayton") are municipal corporations under the laws of Minnesota; and

WHEREAS, Rogers has a public sewer system which is capable of providing service to property within Dayton; and

WHEREAS, Dayton has certain properties with failing on-site septic systems primarily built in the 1970's, in the area shown on Exhibit A; where it is impractical or impossible to replace the systems with another on-site system; and

WHEREAS, both the cities of Dayton and Rogers are interested and concerned about the environment, and the extension of public sewer to the area will have both the short and long-term effect of enhancing the lake quality of Diamond Lake; and

WHEREAS, Rogers is willing under the terms of this agreement to make its public sewer available to the limited amount of property in Dayton where said septic systems are failing; and

WHEREAS, both Dayton and Rogers have the power to provide sewer service to private property, and therefore, can exercise the power jointly under Minn. Stat. §471.59;

NOW, THEREFORE, IT IS HEREBY AGREED upon this 21 day of                     , 1996, pursuant to Minn. Stat. §471.59, between Rogers and Dayton as follows:

1. Purpose. The purpose of this agreement is for Rogers to provide public sewer service to a limited number of properties within the City of Dayton under the terms of this agreement.

2. Permission to Connect. Buyer will permit up to 50 single-family residential dwelling connections to its sewer system within the Service Area shown on Exhibit A (hereinafter the Service Area). Within the Service Area the properties that will connect will be determined by Dayton, with priority given to properties with failed systems. Dayton does not need to allocate all 50 connections upon construction, but may reserve some of potential connections for future use. This prohibition on connection shall continue until such time as the sewage from the Service Area no longer flows to Rogers.

3. Construction. Dayton shall be responsible for construction of all necessary pipes, leads, valves and other appurtenances to allow the Service Area to connect with the Rogers' sewer system near Mallard Drive and County Road 144. Dayton shall be responsible for all such construction cost and may assess or otherwise charge properties as deemed appropriate by Dayton. All construction shall be done to specifications consistent with the applicable standards and regulations, including any applicable Rogers' construction standards. Rogers shall review and approve construction plans before the commencement of construction and may, to the extent desired, monitor actual construction to assure compliance with applicable Rogers' standards.

*\$1800. / hook-up*

4. Charges for Service. For the sewer service provided, Dayton shall pay Rogers a connection fee of \$1,950.00 for each connection, at the time a connection to the sewer system is made. The connection charge consists of \$1,000.00 sewer access charge, \$900.00 trunk area charge, and ~~\$1,500.00 water purchase charge~~. The ~~\$1,950.00~~ connection fee, is the initial connection fee, and may be changed by the City of Rogers consistent with Paragraph 5 below. After connection, Dayton shall pay for ongoing sewer service at the same rate as Rogers charges its residents. The payment shall be made by Dayton on a quarterly basis. The payment made by Dayton shall be accompanied by a Water Use Report or estimate; provide, however, that at least once per year each meter shall be read for actual usage.

5. Regulations, Prohibitions and Rates. Property owners in Dayton using the sewer system shall be subject to the same rates, charges, fees and regulations, limitations, prohibitions and restrictions applicable to users in Rogers, existing now or hereinafter adopted by Rogers, including, but not limited to, connection charges, hook-up fees, periodic charges for service, limitations on the type of sewage which may be discharged and limitations and prohibitions on discharge of storm water or groundwater runoff, including specifically prohibition or restrictions on storm water or ground water inflow or infiltration into the sewer system. ~~Before any rate, charge, fee, regulation, limitation, restriction or prohibition is effective against property in Dayton, Rogers shall give at least four (4) months~~ notice to Dayton of the proposed change, so that Dayton will have an opportunity to appropriately amend its Ordinances and Regulations. If Dayton fails to amend its Ordinances and Regulations to conform to the prohibitions, regulations, limitations and restrictions Rogers imposes on its users within the boundaries of Rogers, Rogers may, after first giving Dayton 60 days written notice of needed changes, and Dayton's failure to make such changes, elect to terminate this Agreement. Dayton shall afford Rogers the right, during reasonable business hours, to read the meters in the lift station in Dayton.



6. Maintenance. Rogers agrees to maintain the public sanitary sewer system and the forcemain within the corporate boundaries of the City of Rogers. The City of Dayton shall maintain the sanitary sewer system and forcemain within the corporate boundaries of the City of Dayton and the Township of Hassen.

7. Rogers' Assistance. Rogers will assist Dayton by answering questions and providing information concerning maintenance, billing and other common areas of concern between the cities.

8. Dayton Ordinance. Rogers shall be provided with the opportunity to review and comment on any proposed ordinances adopted by Dayton which regulate the sanitary sewer system, its use or charges therefor. The adoption of necessary ordinances regulating use shall be done prior to the commencement of service to Dayton.

9. Arbitration. All disputes between the parties shall be resolved by arbitration pursuant to Minn. Stat. Chpt. 572. Arbitrators shall be appointed through application to the Hennepin County District Court.

10. Contingencies. This agreement is contingent upon all necessary approvals by the Minnesota Pollution Control Agency and the Metropolitan Council for the sewer service described herein.

11. Term of Agreement. This Agreement shall remain in full force and effect until the Service Area can be served by a sewer system operated by Dayton.

IN WITNESS WHEREOF, the undersigned, as of the date set forth above, being fully authorized, on behalf of the Cities of Rogers and Dayton, agree to the terms set forth above.

CITY OF ROGERS

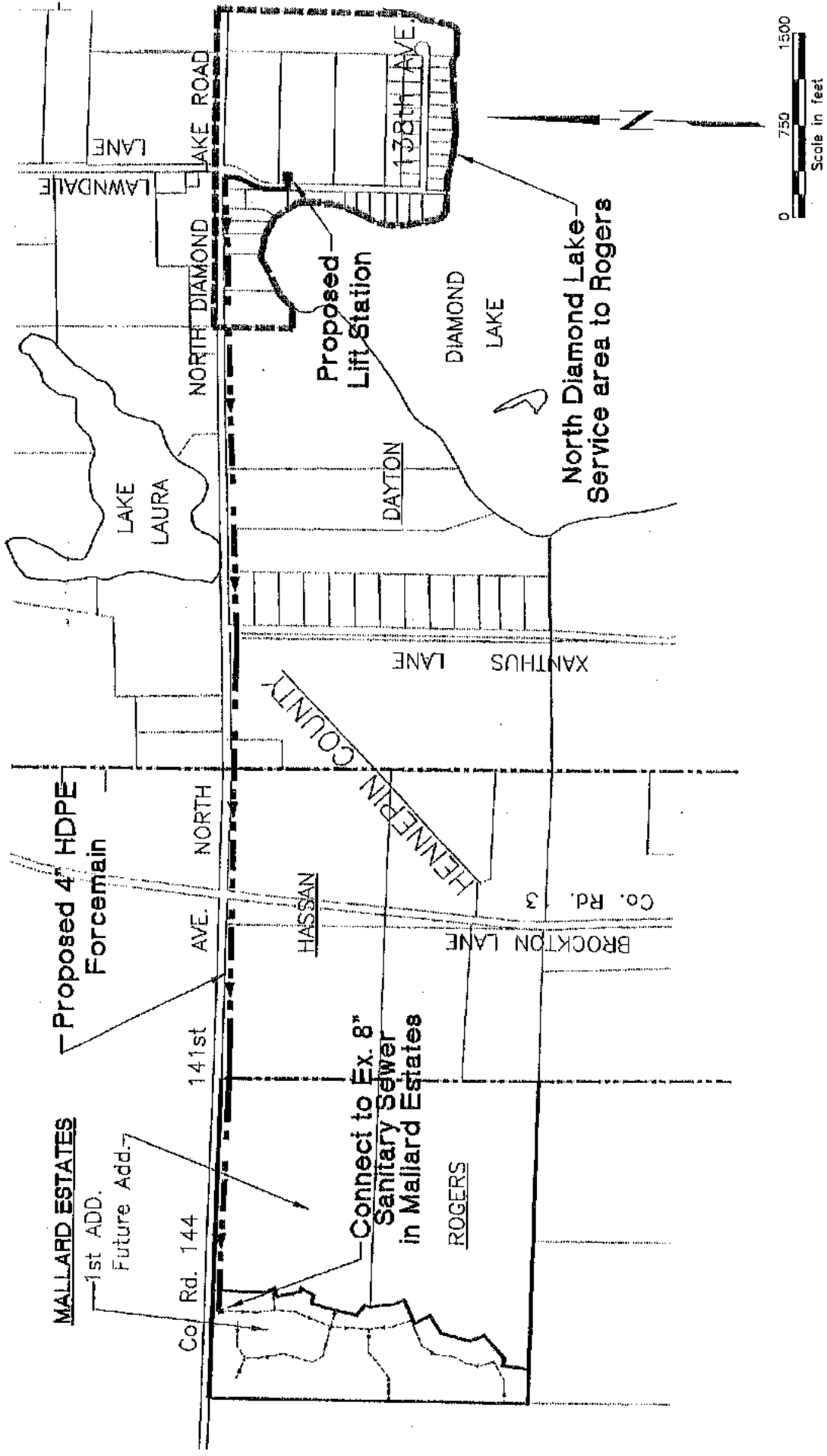
CITY OF DAYTON

By: [Signature]  
Mayor

By: [Signature]  
Mayor

Attest:  
[Signature]  
City Clerk

Attest:  
[Signature]  
City Clerk

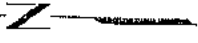
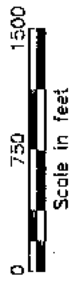


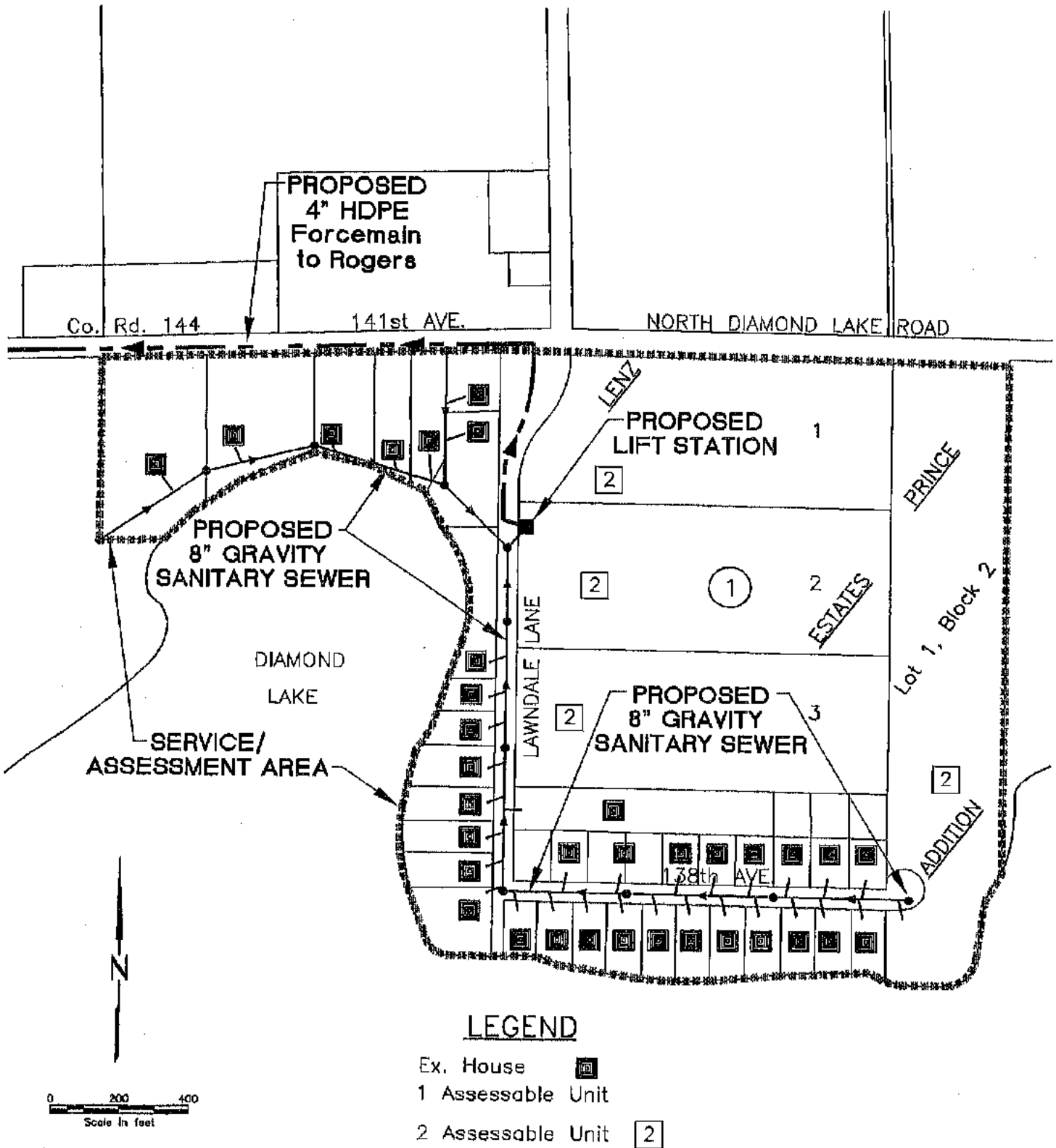
LIFT STATION/FORCEMAIN  
ROGERS CONNECTION

DAYTON, MINNESOTA  
NORTH DIAMOND LAKE SANITARY SEWER  
7455501.DWG      DECEMBER 1995      COMD. 17435



FIGURE 1



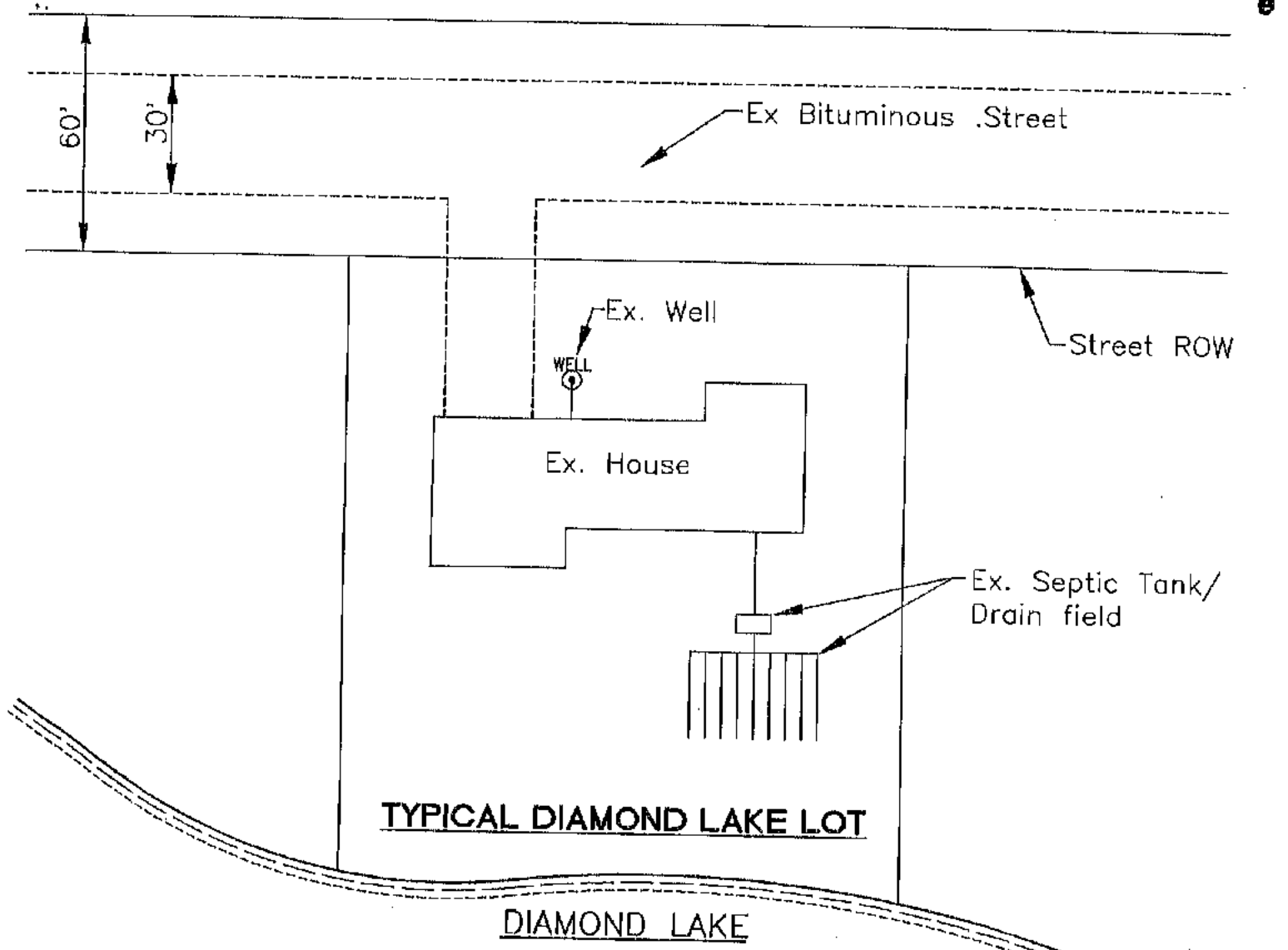


LATERAL SANITARY SEWER  
ROGERS CONNECTION

DAYTON, MINNESOTA  
NORTH DIAMOND LAKE SANITARY SEWER

FIGURE 2





<u>ON SITE TREATMENT</u>	<u>LIFT STATION/FORCEMAIN TO ROGERS</u>
Construct new septic tanks.	Construct 4" sewer service from street ROW to house.
Convert existing septic tank to pumping chamber or construct new pumping chamber if required.	Pay Sewer Access \$1,000/Lot & Trunk Area \$780/Lot to Rogers.
Construct new sewer lines/force mains as required.	Water meter on well \$150/Lot, quarterly bill \$1.15/1,000Gal. to Rogers.

**LOT IMPROVEMENTS/ROGER'S CONNECTION CHARGES (REQUIRED EACH LOT)**

DAYTON, MINNESOTA

FIGURE 4

NORTH DIAMOND LAKE SANITARY SEWER



**AMENDMENT TO THE UTILITY SERVICES AGREEMENT  
BETWEEN THE CITY OF DAYTON  
AND THE CITY OF ROGERS**

**WHEREAS**, the City of Rogers and the City of Dayton originally approved an agreement for utility services between the City of Rogers and the City of Dayton on November 13<sup>th</sup>, 2015 (“Existing Agreement”); and

**WHEREAS**, the City of Dayton has approached the City of Rogers for environmental reasons to allow for temporary connection of 29 existing homes to the City of Rogers sanitary sewer system as shown on the attached Exhibit A; and

**WHEREAS**, the route of the connection will be entirely in the City of Dayton through the Existing Agreement service area; and

**WHEREAS**, the long term permanent sewer capacity is intended to flow to the Elm Creek interceptor located in Dayton; this arrangement will be the same as described in paragraph 4(c) of the Existing Agreement; and

**WHEREAS**, all remaining fees, operating of maintenance, and frequency of payments to the City of Rogers will be identical as the Existing Agreement signed in 2015 by the parties; and

**WHEREAS**, Rogers has requested that Dayton allow Rogers a connection to the sanitary sewer system on Territorial Road to accommodate the Justen Circle Industrial Park (JCIP) as shown on the attached Exhibit A; the flow from the JCIP will pass through Dayton to the Elm Creek interceptor; each city will jointly address the access and connection to the existing system.

**NOW, THEREFORE**, Dayton and Rogers agree as follows;

- 1) Rogers agrees to provide Dayton with temporary sanitary sewer connection for 29 existing homes as shown on the attached Exhibit A.
- 2) Section 4(d) of the Existing Agreement shall be amended to state as follows:

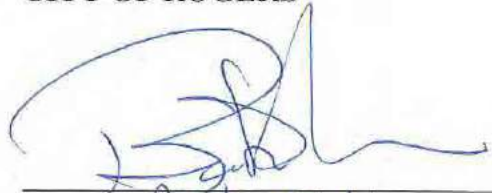
Dayton will allow a connection to the sanitary sewer system on Territorial Road to accommodate the Justen Circle Industrial Park (JCIP). The flow from the JCIP will pass through Dayton to the Elm Creek interceptor. Each city will jointly address the access and connection to the existing system.

**IN WITNESS WHEREOF**, the Cities have subscribed their names as of the day and year indicated below.


*[Signature page to follow]*

**CITY OF ROGERS**

10-11-16  
Date


  
By: Rick Thli  
Its: Mayor

10-11-16  
Date

  
By: Assist City Admin / City Clerk  
Its: Stacy Scharber

**CITY OF DAYTON**

9-27-16  
Date

  
By: Tim McNeil  
Its: Mayor

9-27-16  
Date

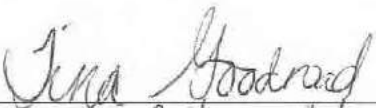
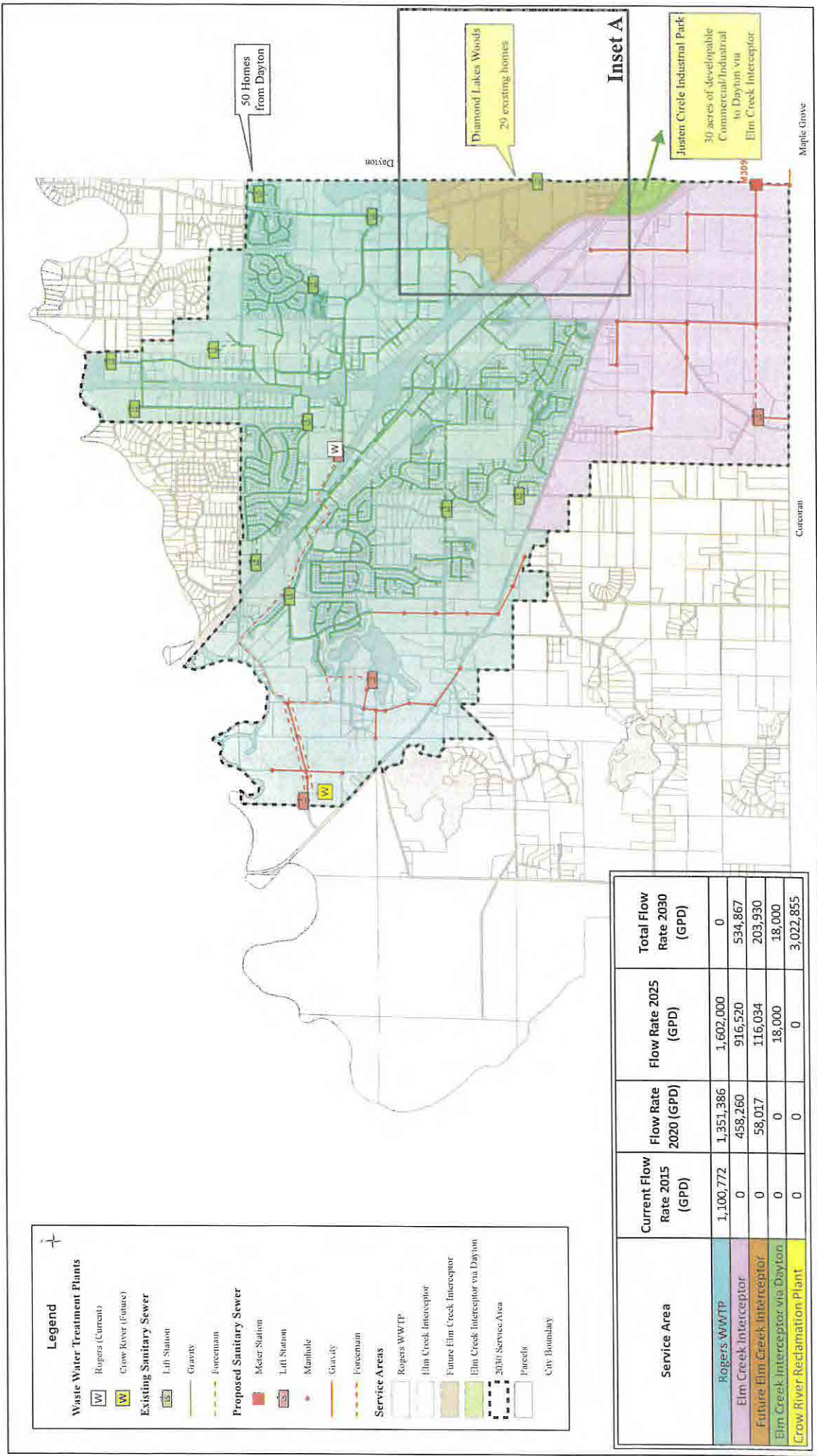
  
By: Acting City Administrator  
Its: Tina Goodroad

Exhibit A: Sanitary Sewer Service Areas within 2030 Service Area - Diamond Lake Woods Addition (City of Dayton)



**Legend**

**Waste Water Treatment Plants**

- Rogers (Current)
- Crow River (Future)

**Existing Sanitary Sewer**

- Lift Station
- Gravily
- Forcemain

**Proposed Sanitary Sewer**

- Meter Station
- Lift Station
- Manhole
- Gravily
- Forcemain

**Service Areas**

- Rogers WWTP
- Elm Creek Interceptor
- Future Elm Creek Interceptor
- Elm Creek Interceptor via Dayton
- 2030 Service Area
- Pareels
- City Boundary

Service Area	Current Flow Rate 2015 (GPD)	Flow Rate 2020 (GPD)	Flow Rate 2025 (GPD)	Total Flow Rate 2030 (GPD)
Rogers WWTP	1,100,772	1,351,386	1,602,000	0
Elm Creek Interceptor	0	458,260	916,520	534,867
Future Elm Creek Interceptor	0	58,017	116,034	203,930
Elm Creek Interceptor via Dayton	0	0	18,000	18,000
Crow River Reclamation Plant	0	0	0	3,022,855

Grid: UTM Zone 15 N  
 Projection: UTM  
 Datum: NAD 83  
 Date: 13 October 2016



Rogers, Minnesota  
 Public Works Department  
 Geographic Information Systems



**AGREEMENT FOR UTILITY SERVICES  
BETWEEN THE CITY OF ROGERS  
AND THE CITY OF DAYTON**

THIS AGREEMENT is entered into this 13<sup>th</sup> day of Nov., 2015, with an effective date as indicated in Section 15 below, by and between the **City of Dayton**, a Minnesota municipal corporation, 12260 South Diamond Lake Road, Dayton, Minnesota 55327 (hereinafter the “Dayton”) and **City of Rogers**, a Minnesota municipal corporation, 22350 South Diamond Lake Road, Rogers, Minnesota 55374 (hereinafter “Rogers”; Dayton and Rogers sometimes individually “City” and collectively “Cities”).

**WHEREAS**, Dayton desires to temporarily purchase sewer service for no more than 10 years or December, 2025 and purchase water utility services for the term of this Agreement, (hereinafter collectively “Utility Service”) from Rogers for the Property as depicted on and described on Exhibit A (hereinafter the “Property”); and

**WHEREAS**, Rogers is willing to supply Utility Service for a discreet area of Dayton on the terms set forth below; and

**WHEREAS**, Dayton has approved a development which will entail the construction of roadway and other infrastructure in the area to be served and Dayton is willing to construct certain improvements within Rogers; and

**WHEREAS**, Rogers is willing to allow construction of improvements by Dayton within its boundaries and upon right of way or other property under Roger’s control; and accept the completed improvements as public improvements; and

**WHEREAS**, nothing in this Agreement shall be construed to be annexation by Dayton of any property within Rogers;

**NOW, THEREFORE**, it is hereby agreed, by and between the Cities as follows:



1. **INCORPORATION.** The foregoing recitals are incorporated into this Agreement.
2. **TERM OF CONTRACT.** This contract shall be perpetual. Provided, however, parts of this Agreement may be modified prior to its expiration as provided herein and may be extended only upon written agreement of both Cities.
3. **WATER SERVICE.**
  - a. Rogers will provide water to Dayton from the Rogers' water works system for the area of Dayton shown on the attached Exhibit A marked Utility Service Area in a sufficient quantity to meet an average daily demand of 86,000 gallons per day.
  - b. Rogers will furnish water at the connection point shown on Exhibit A ("Water Connection Point"), at a construction/project cost to be determined and paid by the City of Dayton or their developer. Rogers will provide adequate water supply and pressure for the intended industrial/warehouse uses similar to what has been provided to comparable projects such as the Liberty Industrial Project at Diamond Lake.
4. **SANITARY SEWER SERVICE.**
  - a. Rogers will provide sanitary sewer service for the area of Dayton shown on Exhibit A marked Utility Service Area.
  - b. Rogers will provide a connection point for sanitary sewer as shown on Exhibit A ("Sewer Connection Point").
  - c. Future capacity/flow for Rogers and Dayton properties serviced in this area: In accordance with requests by Metropolitan Council Environmental Services ("MCES"), Dayton will agree to accept the flow from the Rogers lift station, located at Brockton Lane and 124<sup>th</sup> Ave, into their sanitary sewer system by December, 2025. As Dayton develops their future system, a master plan for the ultimate discharge should be completed as part of the development plan. Rogers understands that there may be oversizing in Dayton's future trunk sewer lift station, and forcemain, due to the Rogers flow, that will discharge to the existing trunk sewer system located at Troy Lane. Rogers will agree to pay for the appropriate upsizing of the liftstation pumps and/or forcemain.

- d. South of CSAH 81: Dayton will consider accepting sanitary sewer flow from the area located south of County State Aid Highway 81, west of Brockton Lane and north of I 94 through Dayton to the Elm Creek interceptor. This would occur at the time that Dayton extends sanitary sewer service to properties located adjacent to Brockton Lane at Territorial Road and the connection point would be at the intersection of Brockton Lane and Territorial Road.
5. **UTILITY SERVICE CONSTRUCTION.** Dayton will cause and pay for the construction of the Utility Service and Roadway Improvements to be done in accordance with the plans attached hereto as Exhibit B (“Preliminary Plans”). The Preliminary Plans call for construction activity and the placement of infrastructure improvements within Rogers, on the Property. Provided, however, that if any work related to the Utility Service or Roadway Improvements calls for work to be done within right of way controlled by Rogers, Rogers hereby grants Dayton, its agents, employees and contractors a license to install the Utility Services and Roadway Improvements in accordance with the Preliminary Plans and that in that event, the same may be kept in said right of way and easement areas as shown on the Preliminary Plans during the term of the Agreement. Work on the same shall not commence before April 1, 2016 and shall be completed in multiple phases as buildings are constructed.
6. **UTILITY SERVICE MAINTENANCE.** Dayton shall be responsible for the maintenance of all Utility Service lines within Dayton, facilities or appurtenances shown on the Preliminary Plans in such a manner that they will function as intended and will not cause harm to Rogers’ utility system. Following installation, the Roadway and Utility Improvements located in Rogers shall be maintained by Rogers.
7. **OPERATION.** Dayton agrees that the Utility Services provided for in this Agreement shall be governed by the applicable rules, regulations, and ordinances that Rogers has in effect, or hereinafter adopted for the operation of the Utility Services provided herein. At the request of Rogers, Dayton shall, prior to Utility Services becoming operational, adopt regulatory provisions necessary to effectuate uniform regulations with Rogers. The City of Dayton connections agree to abide by the current sewer use ordinance for rate and strength.

## 8. UTILITY SERVICE FACILITIES.

- a. Rogers shall own and operate all facilities necessary to the supply, production, storage and transmission of water to the Water Connection Point and all facilities necessary for the collection, transmission and disposal of waste to the Sewer Connection Point.
- b. Flow, transmission and distribution of water and the collection and transmission of waste from the respective Water and Sewer Connection Points and extending into Dayton shall be metered by meters read at the buildings for facilities constructed on the Property. All facilities and connections shall conform to the applicable requirements of the Minnesota Department of Health, Metropolitan Council and requirements of other regulatory agencies which have applicable regulations. Meters shall be read by Dayton and reported to Rogers.
- c. The construction of all facilities necessary to connect to the Rogers utility system, whether shown on the Preliminary Plans or not, shall be at the sole expense of Dayton.
- d. Dayton shall allow reasonable inspection by Rogers of the Utility Services in Dayton which are connected to the Rogers system, both during construction and thereafter, upon request.
- e. Dayton shall keep accurate records of construction of Utility Services as provide herein and shall provide as built drawings of the same.
- f. Dayton shall report meter flows as determined under Paragraph 8b above and shall provide quarterly reports of flows to Rogers. Books and records supporting such reports shall be available to Rogers upon request.

## 9. TRUNK FEES.

- a. **Water Trunk Fee.** Dayton shall pay a water trunk fee to Rogers in the amount charged by Rogers per acre for buildable acres in the year that the building is constructed (as prescribed in the Rogers trunk fee program). The 2015 fee schedule is shown on the attached Exhibit C.

Said amount shall be due at the time the buildable acres are approved as part of a final plat.

10. **Water Availability Charge.** At the time of building permit issuance for any building within the Utility Service Area, Dayton shall pay to Rogers the Water Availability Charge in effect in Rogers for comparable development in Rogers as calculated by the Rogers Public Works Superintendent.

b.  
c. c.

9 d. **Sanitary Sewer Trunk Fee.** All Sewer Trunk fees shall be paid to Dayton for properties developed in Dayton.

B  
C e. SAC fees will be paid to Dayton for properties developed in Dayton.

**10. RATES AND REGULATION.** Dayton shall pay Rogers on a quarterly basis or at other times as agreed upon on writing by the Cities for sewer and water service provided under this Agreement at the same rates as paid by comparable users in Rogers. Utility service to property in Dayton under this Agreement shall be subject to the same terms, conditions, ordinances and regulations as comparable users in Rogers.

**11. BILLING.** Dayton shall bill their users using Rogers current rates, including any conservation program and then send Rogers the invoiced fees, not what is actually collected, within 30 days of the end of the quarter. It will be important to Dayton users that this is completed on a monthly basis due to the rates that are charged due to the conservation calculation. Dayton shall provide a copy of utility bills with the payment that is submitted to Rogers.

**12. DEPARTMENT OF HEALTH FEE.** Dayton shall pay any applicable State mandated Department of Health fee and/or sales tax for connection to the Rogers' water system.

**13. TERMINATION/DEFAULT.** Following an initial minimum term of 3 years Dayton may choose to cancel the use of services from Rogers upon 90 days notice. Rogers may terminate Dayton's use of services only upon material breach of the terms of this Agreement by Dayton. Provided, however, that such termination by Rogers shall not be effective unless

Rogers has given Dayton 30 days notice and Dayton fails to cure the default within the 30 day notice period, or such longer period as is reasonably necessary to cure the default.

**14. NON-WAIVER.** The failure by either City to enforce any provision of this Agreement shall not constitute a waiver of its right to enforce the section not enforced, or any other section of this Agreement.

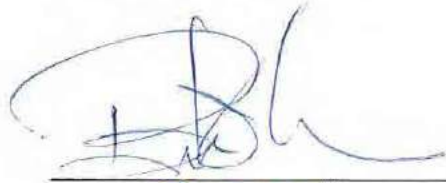
**15. EFFECTIVE DATE.** This Agreement shall be effective upon the last date signed by the Cities, as indicated below.

*Signatures to follow on next page*


IN WITNESS WHEREOF, the Cities have subscribed their names as of the day and year indicated below.

**CITY OF ROGERS**

11.20.2015  
Date

  
By: Rick Inli  
Its: Mayor

11.20.2015  
Date

  
By: Stacy Scharber  
Its: City Clerk

**CITY OF DAYTON**

11-13-15  
Date

  
By: \_\_\_\_\_  
Its: Mayor

11-13-15  
Date

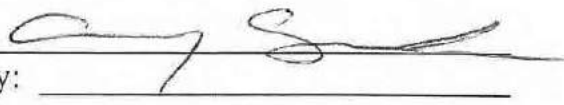
  
By: \_\_\_\_\_  
Its: Deputy clerk

EXHIBIT A

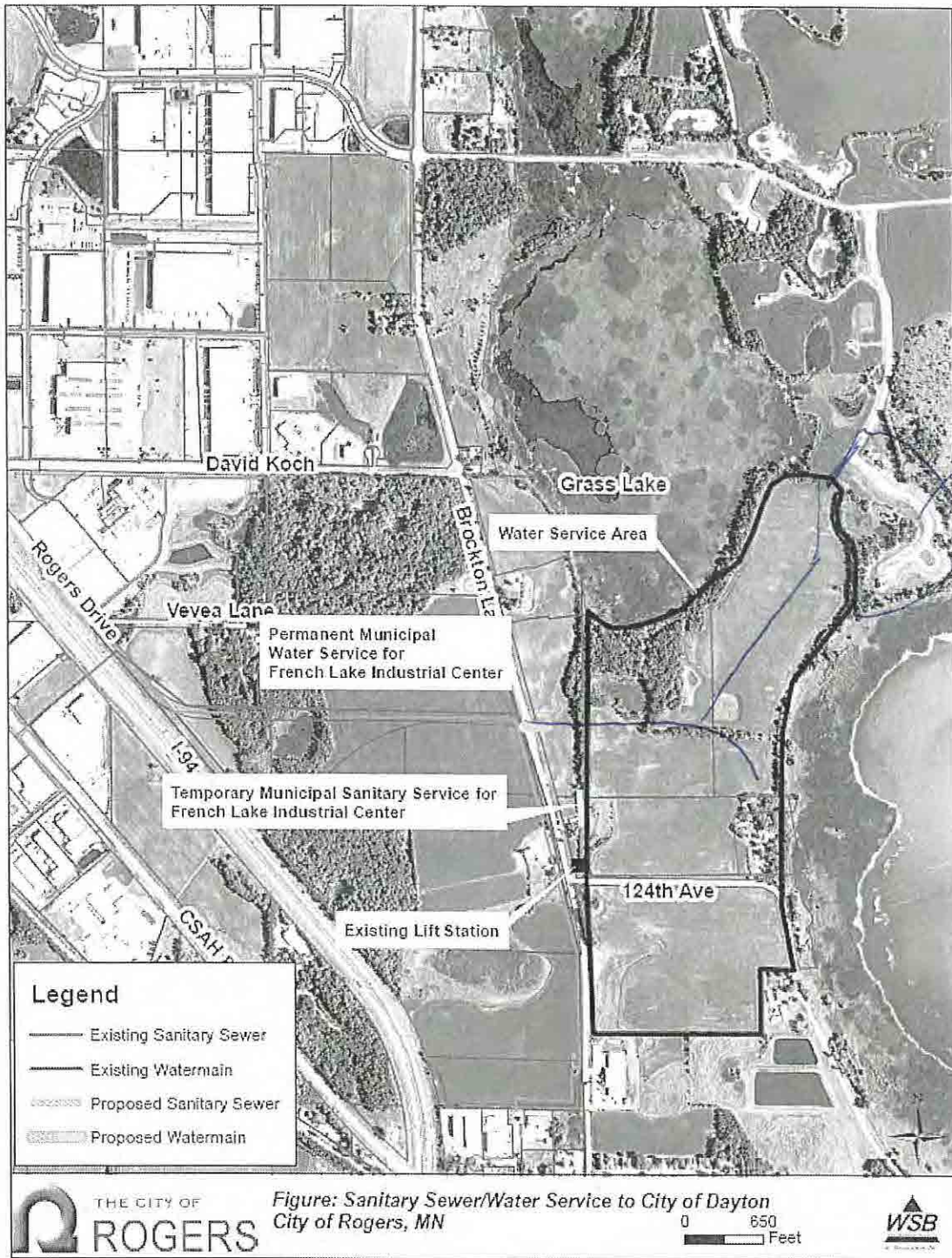






EXHIBIT C  
City of Rogers Fee Schedule

**SECTION 12  
UTILITIES - billed by UB Banyon software**

	G.L. Acct #	2013	2014	2015
<b>SEWER USAGE - per 1,000 gallons</b>				
Sewer Basic Charge per month	602-49-9490-37119772-84000	2.38	2.38	2.38
Residential usage - Tier 1, 0-30,000 gallons	602-49-9490-37119772-84000	2.31	2.31	2.31
Commercial/Industrial usage	602-49-9490-37119772-84000	2.37	2.37	2.37
<b>Sewer Penalties</b>				
Water Usage - per 1,000 gallons	601-49-9490-37119772-84000	1.27	1.27	1.27
Residential usage - Tier 1, 0-30,000 gallons	601-49-9490-37119772-84000	1.54	1.54	1.54
Residential usage - Tier 2, 30,001-75,000 gallons	601-49-9490-37119772-84000	1.82	1.82	1.82
Residential usage - Tier 3, over 75,000 gallons	601-49-9490-37119772-84000	2.29	2.29	2.29
Commercial/Industrial usage - Tier 1, 0-20,000 gallons	601-49-9490-37119772-84000	1.84	1.84	1.84
Commercial/Industrial usage - Tier 2, over 20,000 gallons	601-49-9490-37119772-84000	1.92	1.92	1.92
Commercial/Industrial basic charge	601-49-9490-37119772-84000	1.85	1.85	1.85
Fertilizer Usage	601-49-9490-37119772-84000	2.73	2.73	2.73
<b>Water Penalties</b>				
Water Meter Basic Charges				
- 0.50"	601-49-9490-37119772-84000	1.34	1.34	1.34
- 0.75"	601-49-9490-37119772-84000	1.52	1.52	1.52
- 1.00"	601-49-9490-37119772-84000	1.88	1.88	1.88
- 1.50"	601-49-9490-37119772-84000	2.41	2.41	2.41
- 2.00"	601-49-9490-37119772-84000	2.87	2.87	2.87
- 3.00"	601-49-9490-37119772-84000	4.91	4.91	4.91
- 4.00"	601-49-9490-37119772-84000	16.33	16.33	16.33
- 4.99"	601-49-9490-37119772-84000	18.75	18.75	18.75
<b>Water - State Mandated Testing Fees</b>				
Storm Water Utility Fees (based on land use)				
Av. Htg. Reg., Res., & Res. Rural Properties	603-49-9490-37119772-84000	3.57	3.57	3.57
Residential Single-Family (R1, R2, Urban Properties)	603-49-9490-37119772-84000	3.57	3.57	3.57
Residential Medium-Density Residential (RD) parcels larger than .25 acres	603-49-9490-37119772-84000	3.71	3.71	3.71
Residential Medium-Density Residential (RD) parcels smaller than .25 acres	603-49-9490-37119772-84000	3.57	3.57	3.57
Residential Multi-Family Residential (RM) parcels larger than .50 acres	603-49-9490-37119772-84000	3.72	3.72	3.72
Residential Multi-Family Residential (RM) parcels smaller than .50 acres	603-49-9490-37119772-84000	3.57	3.57	3.57
Industrial (churches, schools, post, hospitals, & nursing homes) smaller than .50 acres	603-49-9490-37119772-84000	7.45	7.45	7.45
Industrial (churches, schools, post, hospitals, & nursing homes) larger than .50 acres	603-49-9490-37119772-84000	3.72	3.72	3.72
Commercial/Industrial (B1, B2, B3, B4, B5, B6, B7, B8, B9, B10, B11, B12, B13, B14, B15, B16, B17, B18, B19, B20, B21, B22, B23, B24, B25, B26, B27, B28, B29, B30, B31, B32, B33, B34, B35, B36, B37, B38, B39, B40, B41, B42, B43, B44, B45, B46, B47, B48, B49, B50, B51, B52, B53, B54, B55, B56, B57, B58, B59, B60, B61, B62, B63, B64, B65, B66, B67, B68, B69, B70, B71, B72, B73, B74, B75, B76, B77, B78, B79, B80, B81, B82, B83, B84, B85, B86, B87, B88, B89, B90, B91, B92, B93, B94, B95, B96, B97, B98, B99, B100)	603-49-9490-37119772-84000	7.38	7.38	7.38
Commercial/Industrial (B1, B2, B3, B4, B5, B6, B7, B8, B9, B10, B11, B12, B13, B14, B15, B16, B17, B18, B19, B20, B21, B22, B23, B24, B25, B26, B27, B28, B29, B30, B31, B32, B33, B34, B35, B36, B37, B38, B39, B40, B41, B42, B43, B44, B45, B46, B47, B48, B49, B50, B51, B52, B53, B54, B55, B56, B57, B58, B59, B60, B61, B62, B63, B64, B65, B66, B67, B68, B69, B70, B71, B72, B73, B74, B75, B76, B77, B78, B79, B80, B81, B82, B83, B84, B85, B86, B87, B88, B89, B90, B91, B92, B93, B94, B95, B96, B97, B98, B99, B100)	603-49-9490-37119772-84000	4.82	4.82	4.82
Commercial/Industrial (B1, B2, B3, B4, B5, B6, B7, B8, B9, B10, B11, B12, B13, B14, B15, B16, B17, B18, B19, B20, B21, B22, B23, B24, B25, B26, B27, B28, B29, B30, B31, B32, B33, B34, B35, B36, B37, B38, B39, B40, B41, B42, B43, B44, B45, B46, B47, B48, B49, B50, B51, B52, B53, B54, B55, B56, B57, B58, B59, B60, B61, B62, B63, B64, B65, B66, B67, B68, B69, B70, B71, B72, B73, B74, B75, B76, B77, B78, B79, B80, B81, B82, B83, B84, B85, B86, B87, B88, B89, B90, B91, B92, B93, B94, B95, B96, B97, B98, B99, B100)	603-49-9490-37119772-84000	9.84	9.84	9.84

**SECTION 5  
ENGINEERING**

	G.L. Acct #	2013	2014	2015
<b>BLM CREEK WATERSHED MANAGEMENT COMMISSION</b>				
See current Blm Creek Schedule - charged directly by Blm Creek				
<b>GRAVING PERMIT</b>				
Per Schedule	399-410-1900-32172-0000	400.00	400.00	400.00
Per Schedule	399-410-1900-32172-0000	400.00	400.00	400.00
<b>CONTRACTUAL ENGINEERING SITE PLAN REVIEW FEE:</b>				
Commercial/Industrial	100-000-0000-22000-0000	At Cost	At Cost	At Cost
Res. Subdivision Development Plan Revision Request	100-000-0000-22000-0000	At Cost	At Cost	At Cost
<b>ENVIRONMENTAL PERMIT (EAW) completed by developer directly</b>				
SEWER TRUNK	100-410-3100-31212-0000	not completed by City	not completed by City	not completed by City
an existing residential prospectus/ lateral extension required for hookup	400-410-3100-31212-0000	At Cost	At Cost	At Cost
<b>STORM WATER TRUNK:</b>				
Storm Water Trunk	100-410-3100-31212-0000	2,400.00	2,400.00	2,400.00
Utility Site Coverage Determination	100-410-3100-31212-0000	not completed by City	not completed by City	not completed by City
Protons Control Enforcement	100-410-3100-31212-0000	not completed by City	not completed by City	not completed by City
<b>TELECOMMUNICATION APPLICATION FEE:</b>				
Basic Fee/Year	100-410-3100-31212-0000	50.00	50.00	50.00
Per Line	100-410-3100-31212-0000	50.00	50.00	50.00
<b>SURFACE WATER MANAGEMENT PLAN REVIEW</b>				
TRAIL TRUNK	400-410-3100-31212-0000	400.00	400.00	400.00
Per Acre (whichever is greater)	400-410-3100-31212-0000	750.00	750.00	750.00
<b>TRANSPORTATION TRUNK</b>				
Per Acre (whichever is greater)	400-410-3100-31212-0000	4,200.00	4,200.00	4,200.00
Per Acre (whichever is greater)	400-410-3100-31212-0000	7,600.00	7,600.00	7,600.00
<b>WATER TRUNK</b>				
on existing residential prospectus/ lateral extension required for hookup	400-410-3100-31212-0000	At Cost	At Cost	At Cost

**SECTION 3  
BUILDING PERMITS**

	G.L. Acct #	2013	2014	2015
<b>ACCESS CHARGES:</b>				
Water (WAC) Single Family/Com. Ind. - per unit	400-49-3900-3711940000	1,580.00	1,580.00	1,580.00
Water (WAC) Multi-Family per unit	400-49-3900-3711940000	2,725.00	2,725.00	2,725.00

	403-346-317-014-000	2,000.00	2,000.00	2,000.00	2,000.00
Water (WAC) Existing residential properties					2,000.00
Water (High Pressure Access Charge (HPAC) per unit					200.00
Sewer (SSAC) Commercial, 1st time	036-09-03306-02104-001	5,000.00	5,000.00	5,000.00	4,500.00
Sewer (SSAC) Commercial, 2nd time	036-09-03306-02104-001	5,000.00	5,000.00	5,000.00	4,500.00
Sewer (SSAC) Multi Family per unit	036-09-03306-02104-001	1,000.00	1,000.00	1,000.00	1,000.00
Sewer (SSAC) Single Family per unit	036-09-03306-02104-001	2,000.00	2,000.00	2,000.00	1,700.00
Sewer (SSAC) Existing residential properties					1,700.00
Sewer (Interm. Abolish Sewer Capacity (ISC) per unit/annually	036-09-03306-02104-001	188.00	188.00	188.00	185.00

RESOLUTION 2009 - 09

**A RESOLUTION TO TRANSFER THE JURISDICTION OF INDIVIDUAL SEPTIC TREATMENT SYSTEMS IN THE CITY OF ROGERS TO HENNEPIN COUNTY**

**WHEREAS**, The City of Rogers has provided standards for regulating individual sewage treatment systems (ISTS) in efforts to provide safe means of sewage treatment and disposal; and

**WHEREAS**, The City of Rogers from time to time amended standards through adoption of ordinances, which address design, installation and maintenance of ISTS to protect health, safety and general welfare of the public.

**NOW THEREFORE BE IT RESOLVED**, that the Rogers City Council does hereby seek to abandon their jurisdiction and transfer such jurisdiction to Hennepin County effective February 24, 2010; and

**FURTHER BE IT RESOLVED**, that the City of Rogers shall cooperate fully in providing all necessary records and documentation to Hennepin County regarding individual septic treatment systems within the City of Rogers.

Moved by Councilmember *Bunting*, seconded by Councilmember *Rauenhorst*

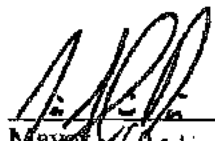
The following voted in favor of said resolution:

*Bell, Bunting, Davis, and Rauenhorst.*

The following voted against said resolution: *None.*

The following abstained: *None.*

Whereupon said resolution was declared duly passed and adopted, and was signed by the Mayor, and attested by the Clerk dated this 24<sup>th</sup> day of February, 2009.

  
\_\_\_\_\_  
Mayor (Acting)

ATTEST:

*Stacy Doboszewski*  
\_\_\_\_\_  
City Clerk



October 16, 2018

Jeannine Clancy  
Metropolitan Council  
390 North Robert Street  
St. Paul, MN 55101

Re: Draft Inter-Governmental Agreement between the City of Rogers and the Metropolitan Council

Dear Jeannine,

At Tuesday's , October 9, 2018 City of Rogers Council meeting the Council was given a presentation from staff regarding the current draft Inter-Governmental Agreement between the City of Rogers and the Metropolitan Council. The City Council received the information with a clear understanding of the significance of the future relationship between the City of Rogers and the MCES regional plans. The board asked staff to proceed with the draft through the City Attorney and then forward the revised agreement for your consideration and process. To this end, attached you will find the current hardcopy draft as reviewed by staff and the City Attorney. An electronic copy will also be sent under separate cover via e-mail to those copied on this letter.

In addition, the City Council also directed staff to begin drafting a formal resolution requesting "Metropolitan Council Acquire the Rogers Publicly-Owned Waste Water Treatment Plant Through an Acquisition Agreement". City staff expects to have a formal resolution before the board at their next regularly scheduled council meeting.

Thank you for your staff's work on this important project between the two agencies. We look forward to working cooperatively to formalize the two agreements. We will wait for communication on the timeline of your internal process.

Please feel free to contact me with any outstanding issues on this process.

Sincerely,

John Seifert  
Public Works Director  
City of Rogers, MN

CC: Anna Bessel  
Steve Stahmer

01197

**JOINT POWERS AGREEMENT**

WHEREAS, the City of Rogers (hereinafter "Rogers") and the City of Dayton (hereinafter "Dayton") are municipal corporations under the laws of Minnesota; and

WHEREAS, Rogers has a public sewer system which is capable of providing service to property within Dayton; and

WHEREAS, Dayton has certain properties with failing on-site septic systems primarily built in the 1970's, in the area shown on Exhibit A; where it is impractical or impossible to replace the systems with another on-site system; and

WHEREAS, both the cities of Dayton and Rogers are interested and concerned about the environment, and the extension of public sewer to the area will have both the short and long-term effect of enhancing the lake quality of Diamond Lake; and

WHEREAS, Rogers is willing under the terms of this agreement to make its public sewer available to the limited amount of property in Dayton where said septic systems are failing; and

WHEREAS, both Dayton and Rogers have the power to provide sewer service to private property, and therefore, can exercise the power jointly under Minn. Stat. §471.59;

NOW, THEREFORE, IT IS HEREBY AGREED upon this 21 day of August, 1996, pursuant to Minn. Stat. §471.59, between Rogers and Dayton as follows:

1. Purpose. The purpose of this agreement is for Rogers to provide public sewer service to a limited number of properties within the City of Dayton under the terms of this agreement.

2. Permission to Connect. Buyer will permit up to 50 single-family residential dwelling connections to its sewer system within the Service Area shown on Exhibit A (hereinafter the Service Area). Within the Service Area the properties that will connect will be determined by Dayton, with priority given to properties with failed systems. Dayton does not need to allocate all 50 connections upon construction, but may reserve some of potential connections for future use. This prohibition on connection shall continue until such time as the sewage from the Service Area no longer flows to Rogers.

3. Construction. Dayton shall be responsible for construction of all necessary pipes, leads, valves and other appurtenances to allow the Service Area to connect with the Rogers' sewer system near Mallard Drive and County Road 144. Dayton shall be responsible for all such construction cost and may assess or otherwise charge properties as deemed appropriate by Dayton. All construction shall be done to specifications consistent with the applicable standards and regulations, including any applicable Rogers' construction standards. Rogers shall review and approve construction plans before the commencement of construction and may, to the extent desired, monitor actual construction to assure compliance with applicable Rogers' standards.

*\$1800./hookup*

4. Charges for Service. For the sewer service provided, Dayton shall pay Rogers a connection fee of \$1,950.00 for each connection, at the time a connection to the sewer system is made. The connection charge consists of \$1,000.00 sewer access charge, \$900.00 trunk area charge, and ~~\$1,500.00 meter purchase charge~~. The ~~\$1,950.00~~ connection fee, is the initial connection fee, and may be changed by the City of Rogers consistent with Paragraph 5 below. After connection, Dayton shall pay for ongoing sewer service at the same rate as Rogers charges its residents. The payment shall be made by Dayton on a quarterly basis. The payment made by Dayton shall be accompanied by a Water Use Report or estimate; provide, however, that at least once per year each meter shall be read for actual usage.

5. Regulations, Prohibitions and Rates. Property owners in Dayton using the sewer system shall be subject to the same rates, charges, fees and regulations, limitations, prohibitions and restrictions applicable to users in Rogers, existing now or hereinafter adopted by Rogers, including, but not limited to, connection charges, hook-up fees, periodic charges for service, limitations on the type of sewage which may be discharged and limitations and prohibitions on discharge of storm water or groundwater runoff, including specifically prohibition or restrictions on storm water or ground water inflow or infiltration into the sewer system. ~~Before any rate, charge, fee, regulation, limitation, restriction or prohibition is effective against property in Dayton, Rogers shall give at least four (4) months~~ notice to Dayton of the proposed change, so that Dayton will have an opportunity to appropriately amend its Ordinances and Regulations. If Dayton fails to amend its Ordinances and Regulations to conform to the prohibitions, regulations, limitations and restrictions Rogers imposes on its users within the boundaries of Rogers, Rogers may, after first giving Dayton 60 days written notice of needed changes, and Dayton's failure to make such changes, elect to terminate this Agreement. Dayton shall afford Rogers the right, during reasonable business hours, to read the meters in the lift station in Dayton.

6. Maintenance. Rogers agrees to maintain the public sanitary sewer system and the forcemain within the corporate boundaries of the City of Rogers. The City of Dayton shall maintain the sanitary sewer system and forcemain within the corporate boundaries of the City of Dayton and the Township of Hassen.

7. Rogers' Assistance. Rogers will assist Dayton by answering questions and providing information concerning maintenance, billing and other common areas of concern between the cities.

8. Dayton Ordinance. Rogers shall be provided with the opportunity to review and comment on any proposed ordinances adopted by Dayton which regulate the sanitary sewer system, its use or charges therefor. The adoption of necessary ordinances regulating use shall be done prior to the commencement of service to Dayton.

9. Arbitration. All disputes between the parties shall be resolved by arbitration pursuant to Minn. Stat. Chpt. 572. Arbitrators shall be appointed through application to the Hennepin County District Court.

10. Contingencies. This agreement is contingent upon all necessary approvals by the Minnesota Pollution Control Agency and the Metropolitan Council for the sewer service described herein.

11. Term of Agreement. This Agreement shall remain in full force and effect until the Service Area can be served by a sewer system operated by Dayton.

IN WITNESS WHEREOF, the undersigned, as of the date set forth above, being fully authorized, on behalf of the Cities of Rogers and Dayton, agree to the terms set forth above.

CITY OF ROGERS

CITY OF DAYTON

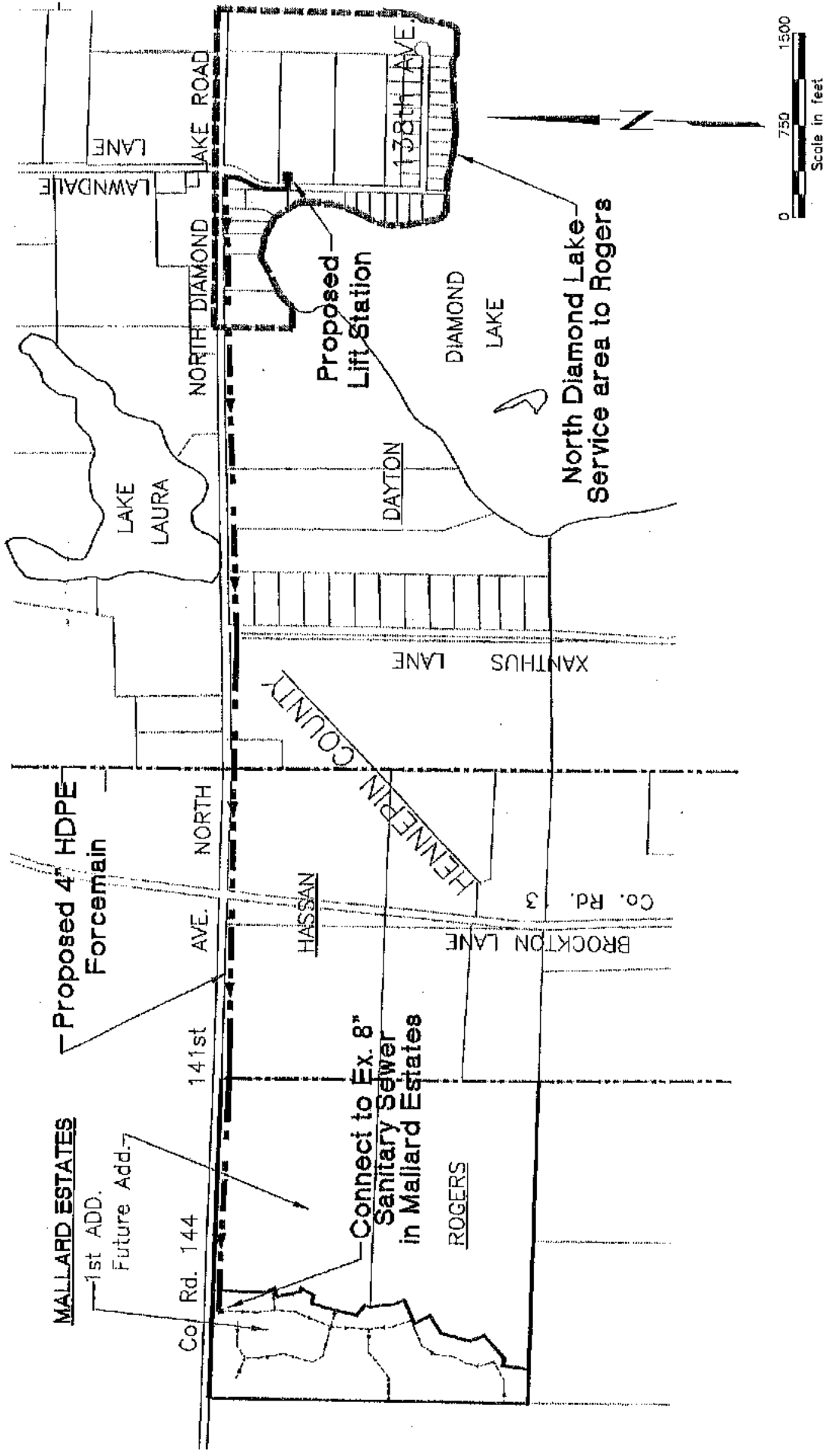
By: [Signature]  
Mayor

By: [Signature]  
Mayor

Attest:  
[Signature]  
City Clerk

Attest:  
[Signature]  
City Clerk



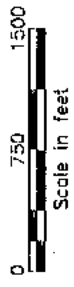


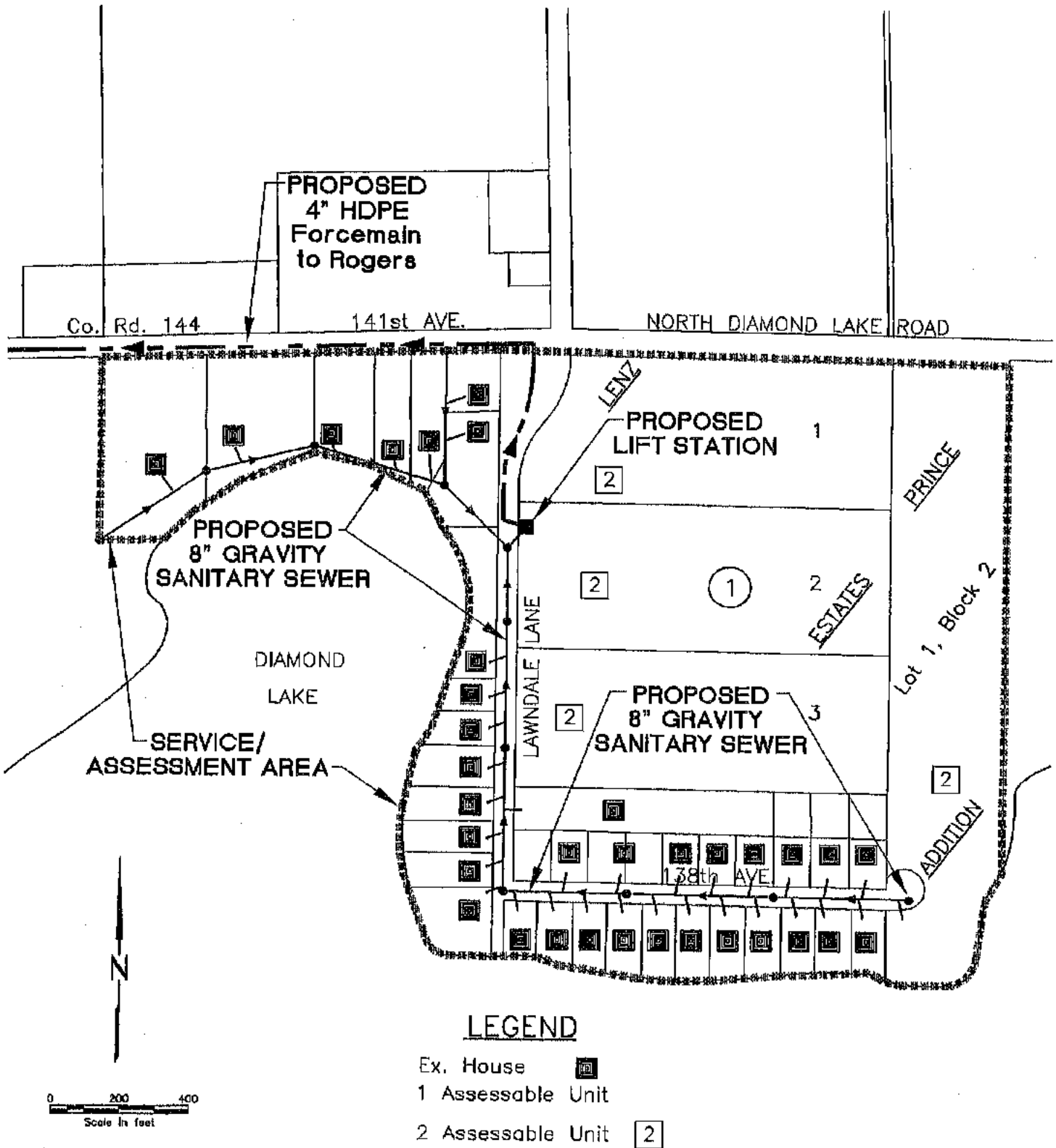
LIFT STATION/FORCEMAIN  
ROGERS CONNECTION

DAYTON, MINNESOTA  
NORTH DIAMOND LAKE SANITARY SEWER  
7455501.DWG      DECEMBER 1995      COMD. 17435



FIGURE 1





**LEGEND**

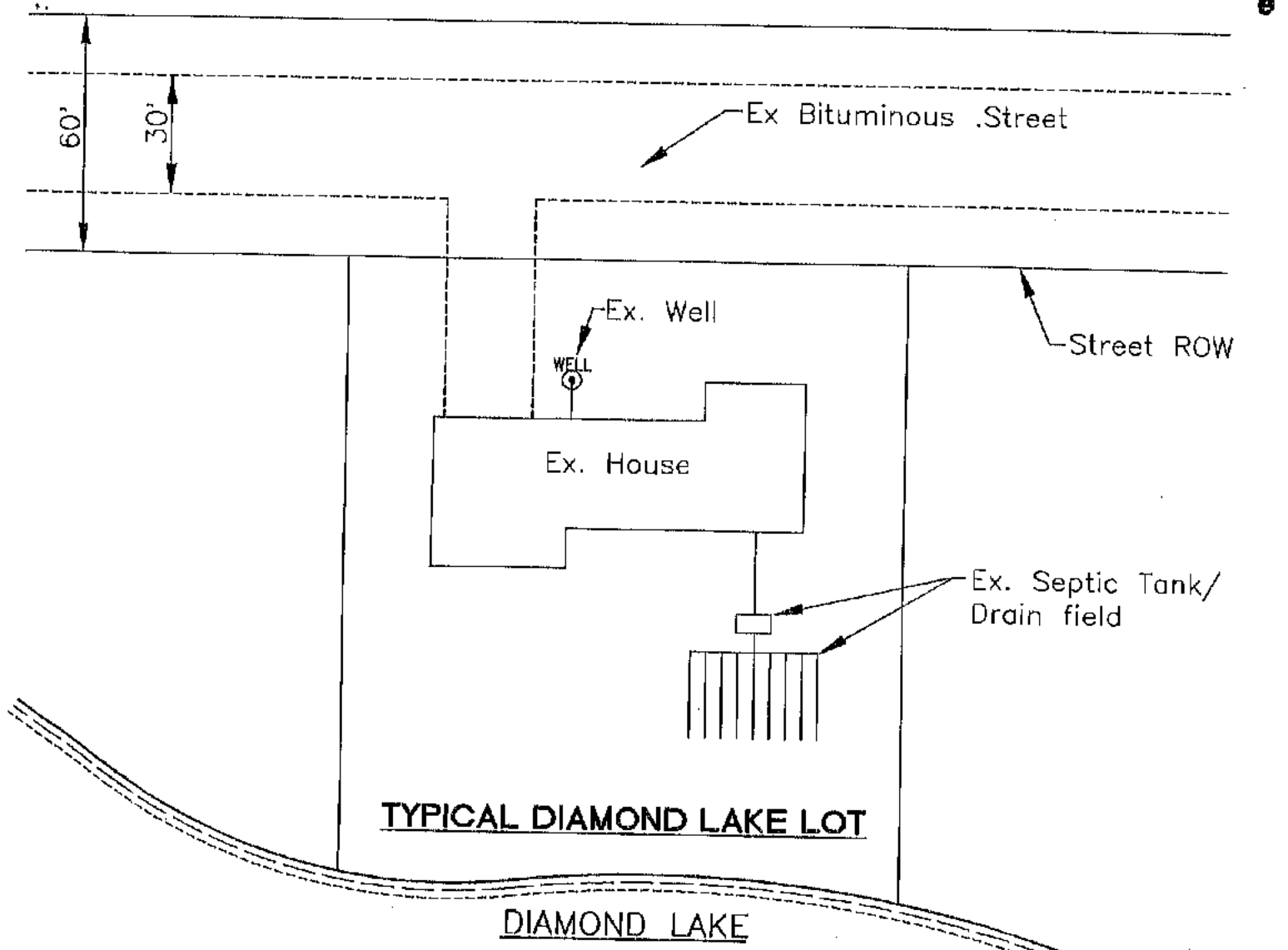
- Ex. House
- 1 Assessable Unit
- 2 Assessable Unit

**LATERAL SANITARY SEWER  
ROGERS CONNECTION**

DAYTON, MINNESOTA  
NORTH DIAMOND LAKE SANITARY SEWER

FIGURE 2





**TYPICAL DIAMOND LAKE LOT**

**DIAMOND LAKE**

<u>ON SITE TREATMENT</u>	<u>LIFT STATION/FORCEMAIN TO ROGERS</u>
Construct new septic tanks.	Construct 4" sewer service from street ROW to house.
Convert existing septic tank to pumping chamber or construct new pumping chamber if required.	Pay Sewer Access \$1,000/Lot & Trunk Area \$780/Lot to Rogers.
Construct new sewer lines/force mains as required.	Water meter on well \$150/Lot, quarterly bill \$1.15/1,000Gal. to Rogers.

**LOT IMPROVEMENTS/ROGER'S CONNECTION CHARGES (REQUIRED EACH LOT)**

DAYTON, MINNESOTA

FIGURE 4

NORTH DIAMOND LAKE SANITARY SEWER



**AMENDMENT TO THE UTILITY SERVICES AGREEMENT  
BETWEEN THE CITY OF DAYTON  
AND THE CITY OF ROGERS**

**WHEREAS**, the City of Rogers and the City of Dayton originally approved an agreement for utility services between the City of Rogers and the City of Dayton on November 13<sup>th</sup>, 2015 (“Existing Agreement”); and

**WHEREAS**, the City of Dayton has approached the City of Rogers for environmental reasons to allow for temporary connection of 29 existing homes to the City of Rogers sanitary sewer system as shown on the attached Exhibit A; and

**WHEREAS**, the route of the connection will be entirely in the City of Dayton through the Existing Agreement service area; and

**WHEREAS**, the long term permanent sewer capacity is intended to flow to the Elm Creek interceptor located in Dayton; this arrangement will be the same as described in paragraph 4(c) of the Existing Agreement; and

**WHEREAS**, all remaining fees, operating of maintenance, and frequency of payments to the City of Rogers will be identical as the Existing Agreement signed in 2015 by the parties; and

**WHEREAS**, Rogers has requested that Dayton allow Rogers a connection to the sanitary sewer system on Territorial Road to accommodate the Justen Circle Industrial Park (JCIP) as shown on the attached Exhibit A; the flow from the JCIP will pass through Dayton to the Elm Creek interceptor; each city will jointly address the access and connection to the existing system.

**NOW, THEREFORE**, Dayton and Rogers agree as follows;

- 1) Rogers agrees to provide Dayton with temporary sanitary sewer connection for 29 existing homes as shown on the attached Exhibit A.
- 2) Section 4(d) of the Existing Agreement shall be amended to state as follows:

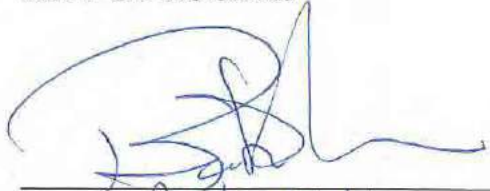
Dayton will allow a connection to the sanitary sewer system on Territorial Road to accommodate the Justen Circle Industrial Park (JCIP). The flow from the JCIP will pass through Dayton to the Elm Creek interceptor. Each city will jointly address the access and connection to the existing system.

**IN WITNESS WHEREOF**, the Cities have subscribed their names as of the day and year indicated below.


*[Signature page to follow]*

CITY OF ROGERS

10-11-16  
Date


  
By: Rick Thli  
Its: Mayor

10-11-16  
Date

  
By: Assist City Admin / City Clerk  
Its: Stacy Scharber

CITY OF DAYTON

9-27-16  
Date

  
By: Tim McNeil  
Its: Mayor

9-27-16  
Date

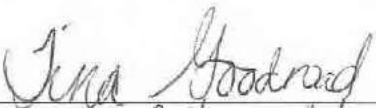
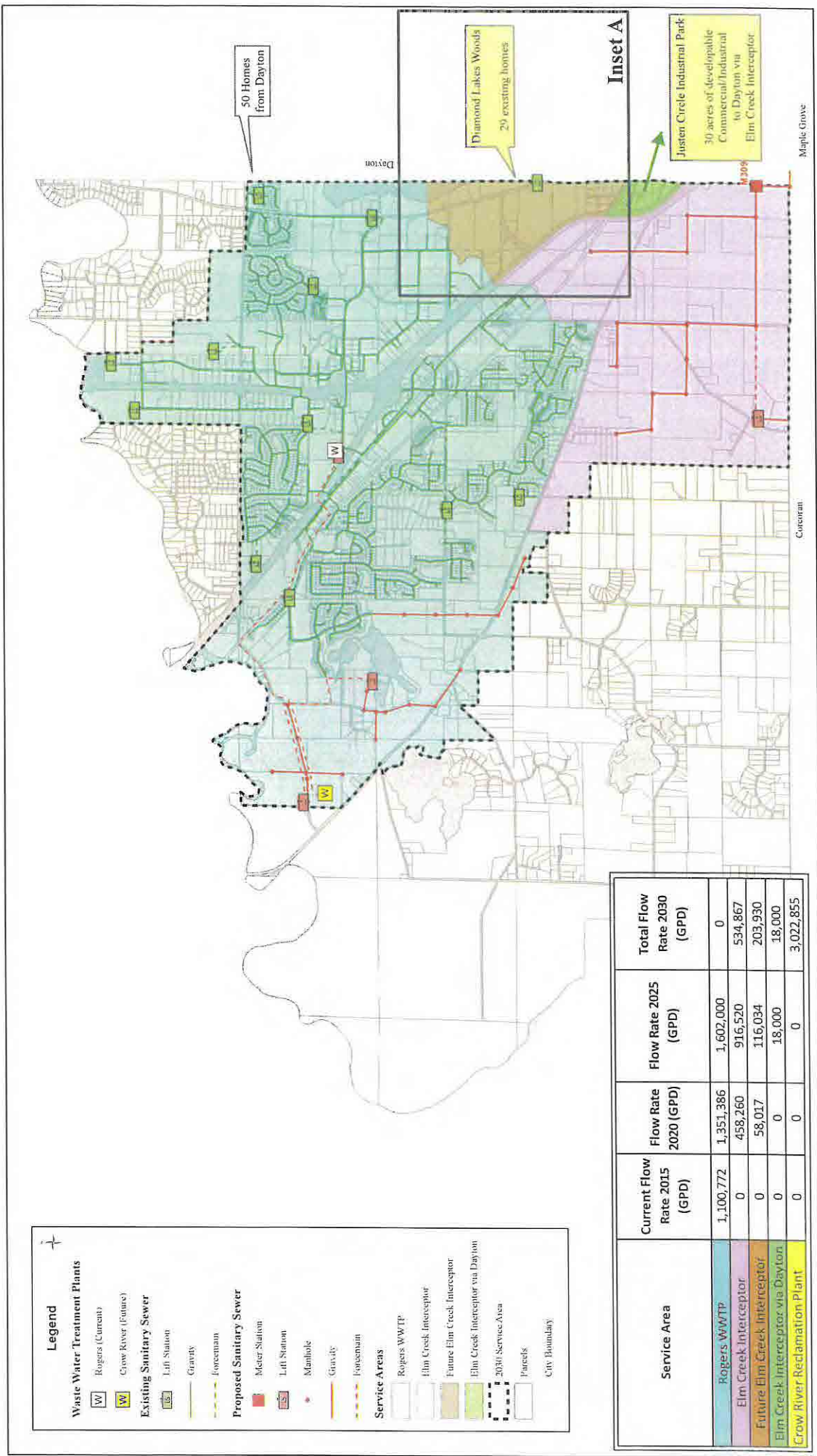
  
By: Acting City Administrator  
Its: Tina Goodroad

Exhibit A: Sanitary Sewer Service Areas within 2030 Service Area - Diamond Lake Woods Addition (City of Dayton)



**Legend**

**Waste Water Treatment Plants**

- Rogers (Current)
- Crow River (Future)

**Existing Sanitary Sewer**

- Lift Station
- Gravily
- Forcemain

**Proposed Sanitary Sewer**

- Meter Station
- Lift Station
- Manhole
- Gravily
- Forcemain

**Service Areas**

- Rogers WWTP
- Elm Creek Interceptor
- Future Elm Creek Interceptor
- Elm Creek Interceptor via Dayton
- 2030 Service Area
- Pareels
- City Boundary

Service Area	Current Flow Rate 2015 (GPD)	Flow Rate 2020 (GPD)	Flow Rate 2025 (GPD)	Total Flow Rate 2030 (GPD)
Rogers WWTP	1,100,772	1,351,386	1,602,000	0
Elm Creek Interceptor	0	458,260	916,520	534,867
Future Elm Creek Interceptor	0	58,017	116,034	203,930
Elm Creek Interceptor via Dayton	0	0	18,000	18,000
Crow River Reclamation Plant	0	0	0	3,022,855

Grid: UTM Zone 15 N  
 Projection: UTM  
 Datum: NAD 83  
 Date: 13 October 2016



**AGREEMENT FOR UTILITY SERVICES  
BETWEEN THE CITY OF ROGERS  
AND THE CITY OF DAYTON**

THIS AGREEMENT is entered into this 13<sup>th</sup> day of Nov., 2015, with an effective date as indicated in Section 15 below, by and between the **City of Dayton**, a Minnesota municipal corporation, 12260 South Diamond Lake Road, Dayton, Minnesota 55327 (hereinafter the “Dayton”) and **City of Rogers**, a Minnesota municipal corporation, 22350 South Diamond Lake Road, Rogers, Minnesota 55374 (hereinafter “Rogers”; Dayton and Rogers sometimes individually “City” and collectively “Cities”).

**WHEREAS**, Dayton desires to temporarily purchase sewer service for no more than 10 years or December, 2025 and purchase water utility services for the term of this Agreement, (hereinafter collectively “Utility Service”) from Rogers for the Property as depicted on and described on Exhibit A (hereinafter the “Property”); and

**WHEREAS**, Rogers is willing to supply Utility Service for a discreet area of Dayton on the terms set forth below; and

**WHEREAS**, Dayton has approved a development which will entail the construction of roadway and other infrastructure in the area to be served and Dayton is willing to construct certain improvements within Rogers; and

**WHEREAS**, Rogers is willing to allow construction of improvements by Dayton within its boundaries and upon right of way or other property under Roger’s control; and accept the completed improvements as public improvements; and

**WHEREAS**, nothing in this Agreement shall be construed to be annexation by Dayton of any property within Rogers;

**NOW, THEREFORE**, it is hereby agreed, by and between the Cities as follows:

1. **INCORPORATION.** The foregoing recitals are incorporated into this Agreement.
2. **TERM OF CONTRACT.** This contract shall be perpetual. Provided, however, parts of this Agreement may be modified prior to its expiration as provided herein and may be extended only upon written agreement of both Cities.
3. **WATER SERVICE.**
  - a. Rogers will provide water to Dayton from the Rogers' water works system for the area of Dayton shown on the attached Exhibit A marked Utility Service Area in a sufficient quantity to meet an average daily demand of 86,000 gallons per day.
  - b. Rogers will furnish water at the connection point shown on Exhibit A ("Water Connection Point"), at a construction/project cost to be determined and paid by the City of Dayton or their developer. Rogers will provide adequate water supply and pressure for the intended industrial/warehouse uses similar to what has been provided to comparable projects such as the Liberty Industrial Project at Diamond Lake.
4. **SANITARY SEWER SERVICE.**
  - a. Rogers will provide sanitary sewer service for the area of Dayton shown on Exhibit A marked Utility Service Area.
  - b. Rogers will provide a connection point for sanitary sewer as shown on Exhibit A ("Sewer Connection Point").
  - c. Future capacity/flow for Rogers and Dayton properties serviced in this area: In accordance with requests by Metropolitan Council Environmental Services ("MCES"), Dayton will agree to accept the flow from the Rogers lift station, located at Brockton Lane and 124<sup>th</sup> Ave, into their sanitary sewer system by December, 2025. As Dayton develops their future system, a master plan for the ultimate discharge should be completed as part of the development plan. Rogers understands that there may be oversizing in Dayton's future trunk sewer lift station, and forcemain, due to the Rogers flow, that will discharge to the existing trunk sewer system located at Troy Lane. Rogers will agree to pay for the appropriate upsizing of the liftstation pumps and/or forcemain.



- d. South of CSAH 81: Dayton will consider accepting sanitary sewer flow from the area located south of County State Aid Highway 81, west of Brockton Lane and north of I 94 through Dayton to the Elm Creek interceptor. This would occur at the time that Dayton extends sanitary sewer service to properties located adjacent to Brockton Lane at Territorial Road and the connection point would be at the intersection of Brockton Lane and Territorial Road.
5. **UTILITY SERVICE CONSTRUCTION.** Dayton will cause and pay for the construction of the Utility Service and Roadway Improvements to be done in accordance with the plans attached hereto as Exhibit B (“Preliminary Plans”). The Preliminary Plans call for construction activity and the placement of infrastructure improvements within Rogers, on the Property. Provided, however, that if any work related to the Utility Service or Roadway Improvements calls for work to be done within right of way controlled by Rogers, Rogers hereby grants Dayton, its agents, employees and contractors a license to install the Utility Services and Roadway Improvements in accordance with the Preliminary Plans and that in that event, the same may be kept in said right of way and easement areas as shown on the Preliminary Plans during the term of the Agreement. Work on the same shall not commence before April 1, 2016 and shall be completed in multiple phases as buildings are constructed.
6. **UTILITY SERVICE MAINTENANCE.** Dayton shall be responsible for the maintenance of all Utility Service lines within Dayton, facilities or appurtenances shown on the Preliminary Plans in such a manner that they will function as intended and will not cause harm to Rogers’ utility system. Following installation, the Roadway and Utility Improvements located in Rogers shall be maintained by Rogers.
7. **OPERATION.** Dayton agrees that the Utility Services provided for in this Agreement shall be governed by the applicable rules, regulations, and ordinances that Rogers has in effect, or hereinafter adopted for the operation of the Utility Services provided herein. At the request of Rogers, Dayton shall, prior to Utility Services becoming operational, adopt regulatory provisions necessary to effectuate uniform regulations with Rogers. The City of Dayton connections agree to abide by the current sewer use ordinance for rate and strength.

## 8. UTILITY SERVICE FACILITIES.

- a. Rogers shall own and operate all facilities necessary to the supply, production, storage and transmission of water to the Water Connection Point and all facilities necessary for the collection, transmission and disposal of waste to the Sewer Connection Point.
- b. Flow, transmission and distribution of water and the collection and transmission of waste from the respective Water and Sewer Connection Points and extending into Dayton shall be metered by meters read at the buildings for facilities constructed on the Property. All facilities and connections shall conform to the applicable requirements of the Minnesota Department of Health, Metropolitan Council and requirements of other regulatory agencies which have applicable regulations. Meters shall be read by Dayton and reported to Rogers.
- c. The construction of all facilities necessary to connect to the Rogers utility system, whether shown on the Preliminary Plans or not, shall be at the sole expense of Dayton.
- d. Dayton shall allow reasonable inspection by Rogers of the Utility Services in Dayton which are connected to the Rogers system, both during construction and thereafter, upon request.
- e. Dayton shall keep accurate records of construction of Utility Services as provide herein and shall provide as built drawings of the same.
- f. Dayton shall report meter flows as determined under Paragraph 8b above and shall provide quarterly reports of flows to Rogers. Books and records supporting such reports shall be available to Rogers upon request.

## 9. TRUNK FEES.

- a. **Water Trunk Fee.** Dayton shall pay a water trunk fee to Rogers in the amount charged by Rogers per acre for buildable acres in the year that the building is constructed (as prescribed in the Rogers trunk fee program). The 2015 fee schedule is shown on the attached Exhibit C.

Said amount shall be due at the time the buildable acres are approved as part of a final plat.

10. **Water Availability Charge.** At the time of building permit issuance for any building within the Utility Service Area, Dayton shall pay to Rogers the Water Availability Charge in effect in Rogers for comparable development in Rogers as calculated by the Rogers Public Works Superintendent.

b.  
c. c.

9 d. **Sanitary Sewer Trunk Fee.** All Sewer Trunk fees shall be paid to Dayton for properties developed in Dayton.

B  
C e. SAC fees will be paid to Dayton for properties developed in Dayton.

**10. RATES AND REGULATION.** Dayton shall pay Rogers on a quarterly basis or at other times as agreed upon on writing by the Cities for sewer and water service provided under this Agreement at the same rates as paid by comparable users in Rogers. Utility service to property in Dayton under this Agreement shall be subject to the same terms, conditions, ordinances and regulations as comparable users in Rogers.

**11. BILLING.** Dayton shall bill their users using Rogers current rates, including any conservation program and then send Rogers the invoiced fees, not what is actually collected, within 30 days of the end of the quarter. It will be important to Dayton users that this is completed on a monthly basis due to the rates that are charged due to the conservation calculation. Dayton shall provide a copy of utility bills with the payment that is submitted to Rogers.

**12. DEPARTMENT OF HEALTH FEE.** Dayton shall pay any applicable State mandated Department of Health fee and/or sales tax for connection to the Rogers' water system.

**13. TERMINATION/DEFAULT.** Following an initial minimum term of 3 years Dayton may choose to cancel the use of services from Rogers upon 90 days notice. Rogers may terminate Dayton's use of services only upon material breach of the terms of this Agreement by Dayton. Provided, however, that such termination by Rogers shall not be effective unless

Rogers has given Dayton 30 days notice and Dayton fails to cure the default within the 30 day notice period, or such longer period as is reasonably necessary to cure the default.

**14. NON-WAIVER.** The failure by either City to enforce any provision of this Agreement shall not constitute a waiver of its right to enforce the section not enforced, or any other section of this Agreement.

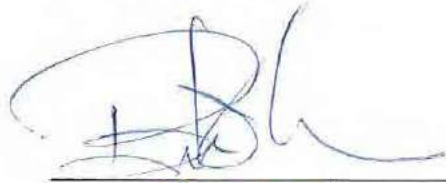
**15. EFFECTIVE DATE.** This Agreement shall be effective upon the last date signed by the Cities, as indicated below.

*Signatures to follow on next page*


IN WITNESS WHEREOF, the Cities have subscribed their names as of the day and year indicated below.

**CITY OF ROGERS**

11.20.2015  
Date

  
By: Rick Inli  
Its: Mayor

11.20.2015  
Date


  
By: Stacy Scharber  
Its: City Clerk

**CITY OF DAYTON**

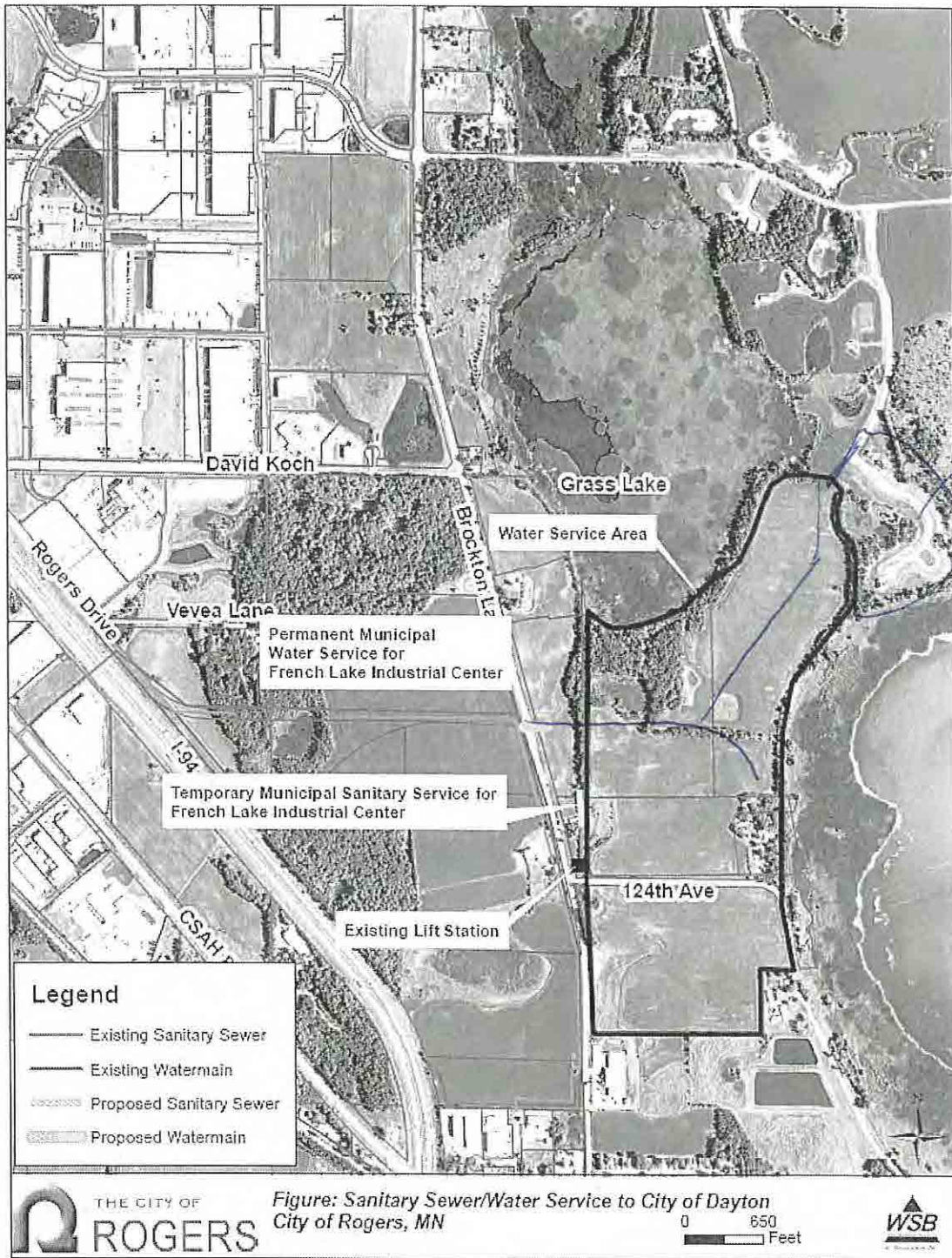
11-13-15  
Date

  
By: \_\_\_\_\_  
Its: Mayor

11-13-15  
Date

  
By: \_\_\_\_\_  
Its: Deputy clerk

# EXHIBIT A



28

# EXHIBIT B

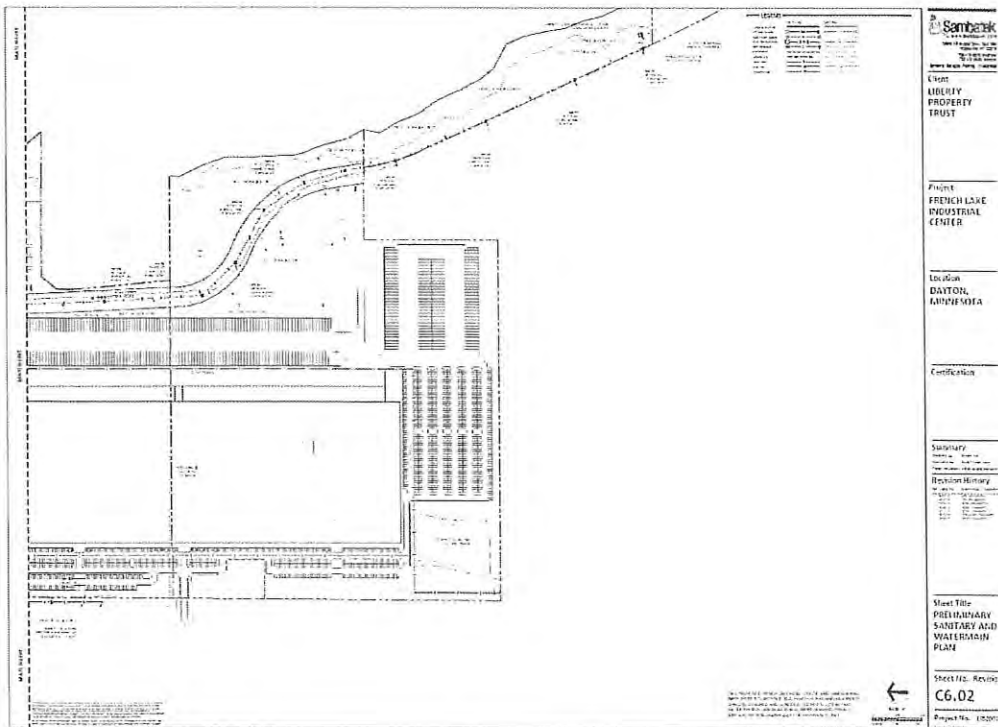
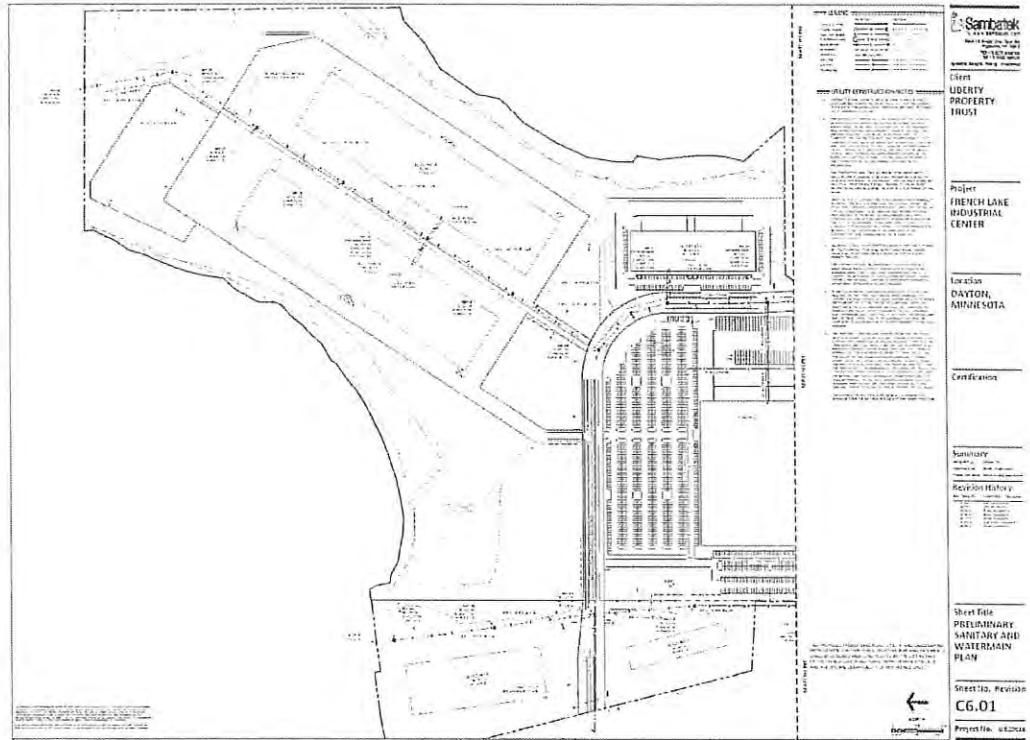


EXHIBIT C  
City of Rogers Fee Schedule



**SECTION 12  
UTILITIES - billed by UB Banyon software**

	G.L. Acct #	2013	2014	2015
<b>SEWER USAGE - per 1,000 gallons</b>				
Sewer Basic Charge per month	602-49-9490-371157125-0000	2.38	2.38	2.38
Residential usage - Tier 1, 0-30,000 gallons	602-49-9490-371157125-0000	2.31	2.31	2.31
Commercial/Industrial usage	602-49-9490-371157125-0000	2.37	2.37	2.37
<b>Sewer Penalties</b>				
Residential usage - Tier 1, 0-30,000 gallons	601-49-9490-371157125-0000	1.27	1.27	1.27
Residential usage - Tier 2, 30,001-60,000 gallons	601-49-9490-371157125-0000	1.54	1.54	1.54
Residential usage - Tier 3, 60,001-90,000 gallons	601-49-9490-371157125-0000	1.82	1.82	1.82
Residential usage - Tier 4, over 90,000 gallons	601-49-9490-371157125-0000	2.29	2.29	2.29
Commercial/Industrial usage - Tier 1, 0-27,000 gallons	601-49-9490-371157125-0000	1.84	1.84	1.84
Commercial/Industrial usage - Tier 2, over 27,000 gallons	601-49-9490-371157125-0000	1.92	1.92	1.92
Commercial/Industrial basic charge	601-49-9490-371157125-0000	1.85	1.85	1.85
Fertilizer Usage	601-49-9490-371157125-0000	2.73	2.73	2.73
<b>Water Penalties</b>				
Water Meter Basic Charges				
- 0.50"	601-49-9490-371157125-0000	1.34	1.34	1.34
- 0.75"	601-49-9490-371157125-0000	1.52	1.52	1.52
- 1.00"	601-49-9490-371157125-0000	1.88	1.88	1.88
- 1.50"	601-49-9490-371157125-0000	2.41	2.41	2.41
- 2.00"	601-49-9490-371157125-0000	3.03	3.03	3.03
- 3.00"	601-49-9490-371157125-0000	4.73	4.73	4.73
- 4.00"	601-49-9490-371157125-0000	6.53	6.53	6.53
<b>WATER - STATE MANDATED TESTING FEES</b>				
Storm Water Utility Fees (based on land use)				
AV RUG, REZ, RE-1, & RES Rural Properties	603-49-9490-371157125-0000	3.57	3.57	3.57
Residential Single-Family (R1, R2) Urban Properties	603-49-9490-371157125-0000	3.57	3.57	3.57
Residential Medium-Density Residential (RD) parcels larger than .25 acres	603-49-9490-371157125-0000	3.57	3.57	3.57
Residential Medium-Density Residential (RD) parcels smaller than .25 acres	603-49-9490-371157125-0000	3.57	3.57	3.57
Residential Multi-Family Residential (RM) parcels larger than .50 acres	603-49-9490-371157125-0000	3.57	3.57	3.57
Residential Multi-Family Residential (RM) parcels smaller than .50 acres	603-49-9490-371157125-0000	3.57	3.57	3.57
Industrial (churches, schools, post, hospitals, & nursing homes) smaller than .50 acres	603-49-9490-371157125-0000	3.57	3.57	3.57
Industrial (churches, schools, post, hospitals, & nursing homes) larger than .50 acres	603-49-9490-371157125-0000	3.57	3.57	3.57
Commercial / Industrial (B1, B2, B3, B4, B5, B6, B7) smaller than .50 acres	603-49-9490-371157125-0000	3.57	3.57	3.57
Commercial / Industrial (B1, B2, B3, B4, B5, B6, B7) larger than .50 acres	603-49-9490-371157125-0000	3.57	3.57	3.57

**SECTION 5  
ENGINEERING**

	G.L. Acct #	2013	2014	2015
<b>BLM CREEK WATERSHED MANAGEMENT COMMISSION</b>				
See current BLM Creek Schedule - charged directly by BLM Creek				
<b>GRADING PERMIT</b>				
Per Sched	399-110-1900-32172-0000	400.00	400.00	400.00
Per Sched	399-110-1900-32172-0000	400.00	400.00	400.00
<b>CONTRACTUAL ENGINEERING SITE PLAN REVIEW FEE:</b>				
Commercial/Industrial	100-000-0000-22000-0000	At Cost	At Cost	At Cost
Res. Subdivision Development Plan Revision Request	100-000-0000-22000-0000	At Cost	At Cost	At Cost
<b>ENVIRONMENTAL PERMIT (EAW) completed by developer directly</b>				
SEWER TRUNK	400-140-3131-172-000-0000	not completed by City	not completed by City	not completed by City
on existing residential properties/ lateral extension required for hookup				
<b>STORM WATER TRUNK:</b>				
Storm Water Trunk	400-140-3131-172-000-0000	At Cost	At Cost	At Cost
Utility Site Coverage Determination	100-110-1900-31110-0000	2,400.00	2,400.00	2,400.00
Proton Control Enforcement	100-110-1900-31110-0000	led in city ent. fee bldg permit escrow	led in city ent. fee bldg permit escrow	led in city ent. fee bldg permit escrow
<b>TELECOMMUNICATION APPLICATION FEE:</b>				
Basic Escrow	100-110-1900-31110-0000	50.00	50.00	50.00
Per Lot	100-110-1900-31110-0000	50.00	50.00	50.00
<b>SURFACE WATER MANAGEMENT PLAN REVIEW</b>				
TRAIL TRUNK	427-49-9490-371157125-0000	400.00	400.00	400.00
Per Acre (whichever is greater)	427-49-9490-371157125-0000	750.00	750.00	750.00
<b>TRANSPORTATION TRUNK</b>				
Per Acre (whichever is greater)	403-24-06-3131-171-000-0000	4,235.00	4,235.00	4,235.00
Per Acre (whichever is greater)	403-24-06-3131-171-000-0000	7,660.00	7,660.00	7,660.00
<b>WATER TRUNK</b>				
on existing residential properties/ lateral extension required for hookup	403-24-06-3131-171-000-0000	At Cost	At Cost	At Cost

**SECTION 3  
BUILDING PERMITS**

	G.L. Acct #	2013	2014	2015
<b>ACCESS CHARGES:</b>				
Water (WAC) Single Family/Com. Ind. - per unit	407-49-3900-371304-0000	1,580.00	1,580.00	1,580.00
Water (WAC) Multi Family per unit	407-49-3900-371304-0000	2,725.00	2,725.00	2,725.00

	419-236-3906-371-04-000	2,000.00	2,000.00	2,000.00	2,000.00
Water (WAC) Existing residential properties					2,000.00
Water (High Pressure Access Charge (HPAC)) per unit	403-946-371-04-000	2,000.00			2,000.00
Sewer (SAC) Commercial, 1st unit	0184-9833396-02104-001	5,400.00			5,400.00
Sewer (SAC) Commercial, 2nd unit	0184-9833396-02104-001	5,400.00			5,400.00
Sewer (SAC) Multi Family per unit	0184-9833396-02104-001	1,100.00			1,100.00
Sewer (SAC) Single Family per unit	0184-9833396-02104-001	4,200.00			4,200.00
Sewer (SAC) Existing residential properties	419-236-3906-371-04-000	1,200.00			1,200.00
Sewer (SAC) Existing residential properties	419-236-3906-371-04-000	185.00			185.00
Sewer (SAC) Existing residential properties	419-236-3906-371-04-000	185.00			185.00

**Appendix G - Capital Improvement Plan**

## 2018 ROGERS TRUNK SANITARY SEWER

### SANITARY SEWER PROJECTS

	PROJECT	QUANTITY	ITEM	SOFT COSTS		TOTAL FROM TRUNK FUND
				UNIT COST (\$/LF)	27% (\$/LF)	
1	I-94 TRUNK CROSSING	900	LF 24" PVC	160.00	-	\$144,000
		300	LF 30" STEEL CASING	950.00	-	\$285,000
3	NORDEN ESTATES DEVELOPMENT	1	F.M./Lift Station/Gravity Swr Main	350,000.00	-	\$350,000
4	HERITAGE DEVELOPMENT	3,600	LF 15" PVC (OVERSIZE)	25.00	-	\$90,000
		4,200	LF 12" PVC (OVERSIZE)	25.00	-	\$105,000
		3,800	LF 10" PVC (OVERSIZE)	25.00	-	\$95,000
5	GMACH / MANLEY	1,000	LF 15" PVC	85.00	-	\$85,000
		3,700	LF 15" PVC (OVERSIZE)	25.00	-	\$92,500
6	FLETCHER LANE	850	LF 10" PVC	75.00	-	\$63,750
		8,215	LF 12" PVC (OVERSIZE)	25.00	-	\$205,375
7	CSAH 81 TO ELM CREEK INTERCEPTOR	1	JACK/BORED CASINGS	90,000.00	-	\$90,000
8	BROCKTON LANE & SCLR CROSSING	1,000	LF 8" PVC	65.00	-	\$65,000
9	PULTE TRUNK	1	EXTRA DEPTH 8"	15,000.00	-	\$15,000
10	CSAH 81 UPSIZE	1,800	LF 12" PVC	80.00	-	\$144,000
		1	COMPUTER MODEL	50,000.00	-	\$50,000
11	SYSTEM MODEL	4,000	LF 15" PVC	85.00	-	\$340,000
12	STONES THROW	1	LIFT STATION	150,000.00	-	\$150,000
13	KELLY LANE LIFT STATION AND FM	1,500	LF 6" FORCEMAIN	55.00	-	\$82,500
		1	SEWER	80,000.00	-	\$80,000
14	ARTHUR STREET	1	SEWER REHAB	400,000.00	-	\$400,000
15	DOWNTOWN REHAB	1,400	10" PVC	75.00	-	\$105,000
16	TALBOT INDUSTRIAL PARK	2,700	8" PVC	50.00	-	\$135,000
			MH, Jacking, Tank Removal	150,000.00	-	\$150,000
17	JUSTEN CIRCLE SEWER TRUNK	5,330	10" PVC	75.00	-	\$399,750
18	CSAH 144 TRUNK SEWER	1	LIFT STATION	225,000.00	-	\$225,000
19	COWLEY LAKE LIFT STATION	900	LF 6" FORCEMAIN	55.00	-	\$49,500
		1	LIFT STATION	337,500.00	-	\$337,500
20	ZONE D LIFT STATION	1,885	LF 10" PVC (OVERSIZE)	25.00	-	\$47,125
21	FLETCHER - OLD TOWNE SEWER	1,200	LF 8" PVC	65.00	-	\$78,000
22	BASSWOOD LANE	1	LIFT STATION	206,250.00	-	\$206,250
23	147TH AVENUE LIFT STATION	2,735	LF 6" FORCEMAIN	55.00	-	\$150,425
		1,320	LF 8" PVC	65.00	-	\$85,800
						<b>\$4,901,475</b>

Rogers Surface Water Management Implementation Plan													
No.	Project Description	Cost Estimate	Possible Funding Sources	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
<b>Capital Improvement Projects (CIP)</b>													
1	129th Ave Wetland Outlet	\$ 850,000.00	General Fund						\$ 850,000.00				
2	Word of Peace Storm Rehab	\$ 165,000.00	General Fund			\$ 165,000.00							
3	Dahlheimer Wetland Restoration	\$ 825,000.00	General Fund, Elm Creek, Grants									\$ 825,000.00	
4	Downtown Area Regional Ponding	\$ 600,000.00	General Fund, Elm Creek, Grants					\$ 600,000.00					
5	John Deere Lane and CSAH 81 Storm Sewer	\$ 250,000.00	General Fund				\$ 250,000.00						
6	Fletcher Lane Drainage	\$ 50,000.00	General Fund		\$ 50,000.00								
7	South Community Park and CSAH 150 Ditch Stabilization	\$ 220,000.00	General Fund, Elm Creek, Grants			\$ 220,000.00							
8	Fox Creek Stream Stabilization Phase I	\$ 320,000.00	General Fund, Elm Creek, Grants	\$ 320,000.00									
9	Fox Creek Stream Stabilization Phase II	\$ 390,000.00	General Fund, Elm Creek, Grants		\$ 390,000.00								
10	Hassan Elementary Infiltration Pond	\$ 110,000.00	General Fund, Elm Creek, Grants				\$ 110,000.00						
11	South Pointe Stream Stabilization	\$ 250,000.00	General Fund, Elm Creek, Grants							\$ 250,000.00			

Rogers Surface Water Management Implementation Plan													
No.	Project Description	Cost Estimate	Possible Funding Sources	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
<b>Monitor and Studies (CIP)</b>													
12	Update City Stormwater Model	\$ 50,000.00	General Fund	\$ 50,000.00									
13	Downtown Area Regional Ponding	\$ 25,000.00	General Fund		\$ 25,000.00								
14	Norden and Shadow Wood Hydrologic Study	\$ 25,000.00	General Fund			\$ 25,000.00							
15	Fox Creek at Crow River Monitoring Station	\$ 25,000.00	General Fund				\$ 25,000.00						
16	Rush Creek at CR 117 and Valley Drive Monitoring Station	\$ 25,000.00	General Fund					\$ 25,000.00					
17	Rush Creek at CSAH 101 Monitoring Station	\$ 25,000.00	General Fund						\$ 25,000.00				
18	Sylvan Lake Subwatershed Assessment	\$ 25,000.00	General Fund, Watershed, Grants				\$ 25,000.00						
19	Cowley Lake Subwatershed Assessment	\$ 25,000.00	General Fund, Watershed, Grants					\$ 25,000.00					







# City of Rogers FMP Document - Transportation Capital Improvement Projects - Intersection Focus

Updated 6/14/2019

Map No.	Project	Year	Cost Estimates				Total
			Other Indirect Costs	ROW	Engineering	Construction	
<b>2019</b>							
4	Northdale from 141st to South Diamond Lake rd.	2019		\$50,000	\$150,000	\$750,000	\$950,000
6	Fletcher By-Pass PHASE I (1 <sup>st</sup> two lanes)	2019	\$9,000		\$1,300,000	\$6,500,000	\$7,809,000
2A	Industrial Blvd. to CSAH 144 - STAGE I	2019	\$5,000	\$30,000	\$76,500	\$425,000	\$536,500
7	Fletcher Lane Improvements	2019	\$5,000	\$0	\$61,380	\$341,000	\$407,380
-	Fletcher By-Pass ROW Acquisition	2019		\$300,000			\$300,000
-	Downtown R.O.W for Transportation	2019	\$0	\$500,000	\$0	\$0	\$500,000
			\$19,000	\$880,000	\$1,587,880	\$8,016,000	\$10,502,880
<b>2020</b>							
9	129TH AVE/ MAIN ST/ MEMORIAL DR REALIGNMENT	2020	\$0	\$50,000	\$108,000	\$600,000	\$758,000
8	Main Street Reconstruct - CSAH 81 to Rogers Elem New Entrance	2020	\$5,000		\$300,000	\$2,282,000	\$2,587,000
18	Brockton Interchange	2022	\$0	\$0	\$3,360,000	\$38,640,000	\$42,000,000
14	Main St. (CSAH 150) / Territorial Rd. (CSAH 116) Intersection	2020	\$0	\$50,000	\$163,750	\$720,500	\$934,250
			\$5,000	\$100,000	\$3,931,750	\$42,242,500	\$46,279,250
<b>2021</b>							
12/13	CSAH 144 Expansion/ CSAH 13 & 144 Intersection	2021	\$0	\$350,000	\$820,000	\$4,100,000	\$5,270,000
10	John Deere Lane Extension to 129th Avenue	2021	\$0	\$350,000	\$540,000	\$2,700,000	\$3,590,000
			\$0	\$700,000	\$1,360,000	\$6,800,000	\$8,860,000
<b>2022</b>							
16	CSAH 81 Upgrade (Relates to Fletcher Bypass)	2022	\$0	\$125,000	\$775,000	\$3,100,000	\$4,000,000
32	CSAH 116 & Tucker Road Intersection Improvements	2022		\$250,000	\$240,000	\$1,200,000	\$1,690,000
			\$0	\$375,000	\$1,015,000	\$4,300,000	\$5,690,000
<b>2022</b>							
11	129th Avenue Upgrade Phase 2 (Arthur Street to Oakwood Drive)	2022	\$6,400	\$100,000	\$390,000	\$1,950,000	\$2,446,400
33	CSAH 116 & Co Rd 203 Intersection Alignment	2022	\$0	\$250,000	\$240,000	\$1,200,000	\$1,690,000
			\$6,400	\$350,000	\$630,000	\$3,150,000	\$4,136,400
<b>2023</b>							
19/20	CSAH 13 4 Lane Expansion (CSAH 81 to Rogers Dr) Stage 1	2023	\$50,000	\$500,000	\$1,500,000	\$7,500,000	\$9,550,000
17	129th Avenue Upgrade Phase 3 (Oakwood Drive to CSAH 116)	2023	\$0	\$250,000	\$350,000	\$1,750,000	\$2,350,000
			\$50,000	\$750,000	\$1,850,000	\$9,250,000	\$11,900,000
<b>2024</b>							
2B	Industrial Blvd. from Edgewater Pkwy to CSAH 144	2024	\$0	\$250,000	\$300,000	\$1,500,000	\$2,050,000
21	Fletcher By-Pass PHASE II (2 <sup>nd</sup> two lanes)	2024	\$0	\$0	\$490,000	\$2,450,000	\$2,940,000
			\$0	\$250,000	\$790,000	\$3,950,000	\$4,990,000
<b>2025+</b>							
22	CSAH 117 to CSAH 13 (Extension from 116 to Brockton Lane)	2025+	\$0	\$500,000	\$720,000	\$4,000,000	\$5,220,000
23	CSAH 144 Expansion I-94 to Marie Ave	2025+		\$1,275,000	\$1,700,000	\$8,500,000	\$11,475,000
15	Rogers Dr. Realignment - S. of South Dia. Lk. Rd.	2025+	\$0	\$1,300,000	\$750,000	\$2,500,000	\$4,550,000
25	CSAH 144 Realignment - North Section (116 to Industrial)	2025+	\$0	\$300,000	\$620,000	\$3,100,000	\$4,020,000
26	Co RD 203 Intersections (Tucker, Hassan Pkwy, Curve Radius)	2025+	\$0	\$250,000	\$180,000	\$1,200,000	\$1,630,000
			\$0	\$3,625,000	\$3,970,000	\$19,300,000	\$26,895,000
<b>GRAND SUBTOTAL</b>			\$74,000	\$6,680,000	\$14,504,630	\$93,858,500	\$115,117,130
<b>2015 Developer</b>							
29	Edgewater Parkway from Edgewater Development to 129th Ave	2019				\$1,900,000	\$1,900,000
30	Edgewater Parkway - 129th Ave to CSAH 116	2022				\$2,000,000	\$2,000,000
<b>Subtotal 2015 Developer</b>						\$3,900,000	\$3,900,000
<b>GRAND TOTAL</b>							
						\$119,017,130	
<b>GRAND TOTAL</b>							

GRAND TOTAL

## 2019 ROGERS WATER ACCESS CHARGE REVIEW (WAC)

### WATER PRODUCTION PROJECTS

Description	Design Capacity	Project Number	Projected Construction Year	2017	2018	TOTAL FROM	USER
				ESTIMATE	INCREASE (2.0%)	WAC	RATES
NORTH GROUND RESERVOIR DEBT				As of 12/31/2016	\$1,285,000	\$1,285,000	
WTR TOWER & BOOSTER STATION	1,000,000 gal	07-UTL-014	2013	\$3,300,000	\$66,000	\$3,366,000	\$0
NORTH WATER TREATMENT PLANT	5 MGD	07-UTL-012	2016	\$7,600,000	\$152,000	\$3,752,000	\$4,000,000
WELL NO. 10 *	750 gpm	07-UTL-019	2017	\$1,300,000	\$26,000	\$1,326,000	\$0
WELL NO. 11	750 gpm	09-UTL-054	2020	\$925,000	\$18,500	\$943,500	\$0
SOUTH WATER TREATMENT PLANT & RESERVOIR	5 MGD	07-UTL-012	2016	\$9,000,000	\$180,000	\$4,180,000	\$5,000,000
WELL NO. 12	750 gpm	09-UTL-055	2023	\$925,000	\$18,500	\$943,500	\$0
WELL NO. 13	750 gpm	09-UTL-056	2026	\$925,000	\$18,500	\$943,500	\$0
				\$23,975,000		<b>\$16,739,500</b>	\$9,000,000

\* WITH PUMPHOUSE

### FUNDING NEEDS

PROJECT NEEDS		\$16,739,500
FUNDS AVAILABLE IN WAC ACCOUNT	8/18/2017	\$2,571,065
TOTAL NEEDED FROM WAC		\$14,168,435

	UNITS	NEEDED FUNDS	AVERAGE RATE REQUIRED
WAC Residential and C&I	4,641	\$14,168,435	\$3,053

### WAC RECOMMENDATIONS

	UNITS	Contingency %	CURRENT RATE	PROPOSED COLLECTED	PROPOSED RATE	PROPOSED COLLECTED
RESIDENTIAL - SINGLE FAMILY	3,885	3,108	\$3,275	\$10,178,700	\$3,300	\$10,256,400
RESIDENTIAL - MULTI-FAMILY	1,495	1,196	\$2,725	\$3,259,100	\$2,725	\$3,259,100
COMMERCIAL / INDUSTRIAL	422	337	\$3,275	\$1,104,548	\$3,300	\$1,112,979
	5,802	4,641		\$14,542,348		\$14,628,479

**2019 ROGERS TRUNK WATER**

	QUANTITY (LF)	PIPE SIZE	UNIT COST (\$/LF)	UNIT COST (\$/EACH)	SOFT COSTS		TOTAL FROM TRUNK FUND
					27% (\$/LF)		
<b>WATER DISTRIBUTION PROJECTS</b>							
1	6,000	12" PVC C900	95.00			25.65	\$723,900
2	9,000	12" PVC C900	15.00			4.05	\$171,450
3	8,800	12" PVC C900	15.00			4.05	\$167,640
4	2,500	12" PVC C900	15.00			4.05	\$47,625
5	850	12" PVC C900	95.00			25.65	\$102,553
6	2,000	16" PVC C905	111.00			29.97	\$281,940
7	2,500	12" PVC C900	15.00			4.05	\$47,625
9	1,400	12" PVC C900	95.00			25.65	\$168,910
10	1,900	10" PVC C900	10.00			2.70	\$24,130
12	2,800	12" PVC C900	95.00			25.65	\$337,820
13	1,500	12" PVC C900	95.00			25.65	\$180,975
14	2,500	12" PVC C900	95.00			25.65	\$301,625
15	3,000	12" PVC C900	95.00			25.65	\$361,950
17		2 EA		10,000.00		2,700.00	\$25,400
18		1 EA		450,000.00		121,500.00	\$571,500
19		1 EA		450,000.00		121,500.00	\$571,500
20		5 EA		75,000.00		20,250.00	\$476,250
20		5 EA		75,000.00		20,250.00	\$476,250
20		5 EA		75,000.00		20,250.00	\$476,250
20		5 EA		75,000.00		20,250.00	\$476,250
20		5 EA		75,000.00		20,250.00	\$476,250
21		3 EA		200,000.00		54,000.00	\$762,000
22	1,500	12" PVC C900	95.00			25.65	\$180,975
23	1,380	12" PVC C900	95.00			25.65	\$166,497
24				INCLUDED IN RR AND CSAH CROSSINGS			
25	1,075	12" PVC C900	95.00			25.65	\$129,699
26	1,450	8" PVC C900	79.00			21.33	\$145,479
27	500	8" PVC C900	79.00			21.33	\$50,165
28	1,200	8" PVC C900	79.00			21.33	\$120,396

**\$8,023,003**

**FUNDING NEEDS**

PROJECT NEEDS		\$8,023,003
FUNDS AVAILABLE	6/30/2017	\$298,324
TOTAL NEED IN AREA TRUNK CHARGE		\$7,724,679

	ACRES	NEEDED FUNDS	AVE RATE REQUIRED
WATER TRUNK	2,300	\$7,724,679	\$3,359

**TRUNK WATER RECOMMENDATIONS**

ACRES	CURRENT RATE	PROPOSED COLLECTED	PROPOSED RATE
2,300	\$2,500	\$5,750,000	\$2,600

<b>Rogers Sanitary Sewer CIP</b>			
<b>#</b>	<b>Project</b>	<b>Description</b>	<b>Estimated Budget</b>
1	I-94 Trunk Crossing	Trunk Sewer Crossing of I-94	\$ 544,830.00
2	Norden Estates Development	Forcemain, Lift Station, and Gravity Sewer	\$ 444,500.00
3	Heritage Development	Trunk Sewer Oversize	\$ 368,300.00
4	Gmach/Manley	Trunk Sewer Oversize	\$ 225,425.00
5	Fletcher Lane	Trunk Sanitary for Fletcher Lane	\$ 80,962.00
6	CSAH 81 to Elm Creek Interceptor	Trunk Oversize	\$ 260,826.00
7	Brockton Lane and South Diamond Crosing	Road Crossing	\$ 114,300.00
8	Brockton Lane Development	Trunk Oversize and Extra Depth	\$ 101,600.00
9	CSAH 81 Upsize	Trunk Oversize	\$ 182,880.00
10	System Model	Sanitary System Model	\$ 50,000.00
11	Stones Throw	Trunk Oversize	\$ 431,800.00
12	kelly Lane Lift station and Forcemain	Lift Station and Force Main	\$ 295,275.00
13	Arthur Street	Sewer	\$ 101,600.00
14	Downtown Rehab	Trunk Sewer Replacement	\$ 641,350.00
15	Talbot Industrial Park	Trunk Sewer	\$ 171,450.00
16	Justen Circle Sewer Trunk	Trunk Sewer	\$ 698,182.00
17	CSAH 144 Trunk Sewer	Lift Station	\$ 285,750.00
18	Cowley Lake Lift Station	Forcemain	\$ 62,865.00
19	Zone D Lift Station	Lift Station Trunk Sewer	\$ 488,743.00
20	Fletcher - Old Town Sewer	Trunk Sewer	\$ 99,060.00
21	Basswood Lane	Lift Station	\$ 261,937.00
22	147th Ave Lift Station	Lift Station Forcemain	\$ 561,943.00
23	Annual I/I Maintenance	Annual I/I Maintenance and Sewer Cleaning	\$ 65,000.00




## Rogers Park and Open Space CIP

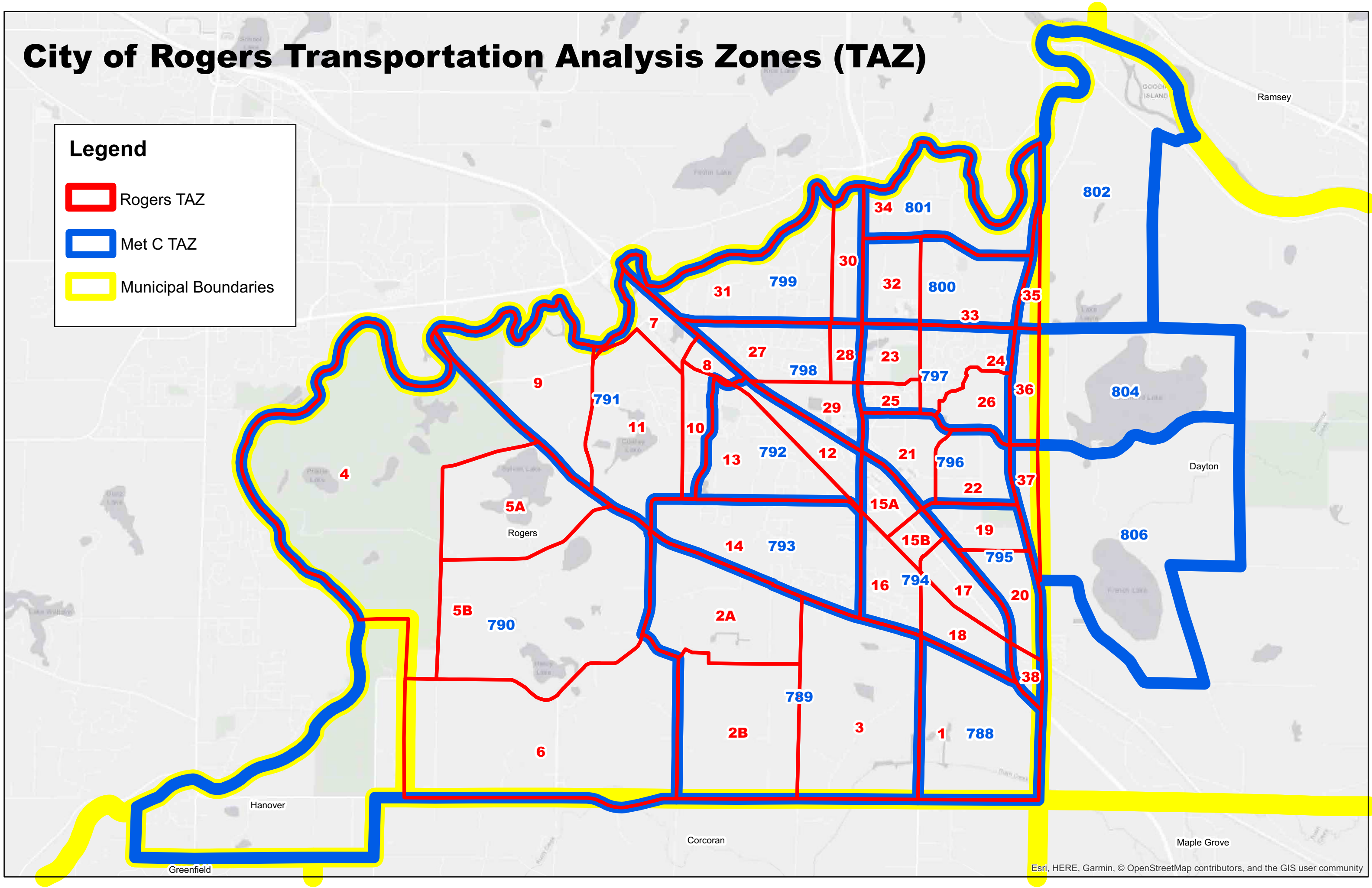
#	Project Name	Cost
1	Lions Triangle Park Building	\$ 2,000,000.00
2	NCP Dugout Covers	\$ 50,000.00
3	RAC Parking Lot and Expansion	\$ 100,000.00
4	SCP Outdoor Rinks	\$ 150,000.00
5	Tennis Center Parking Lot	\$ 250,000.00
6	Aquatics	\$ 2,000,000.00
7	Edgewtaer Neighborhood Park Phase II	\$ 150,000.00
8	Ground Storage Reservoir Fields	\$ 300,000.00
9	Old Hassan Park Equipment Upgrades	\$ 100,000.00
10	Brockton Meadows Park Equipment Phase III	\$ 150,000.00
11	Lions Triangle Park Splash Pad	\$ 1,000,000.00
12	SCP Fields Phase I	\$ 1,300,000.00
13	Community Center Site Improvements	\$ 2,000,000.00
14	Multi Purpose Indoor Turf	\$ 3,500,000.00
15	Walker Park Improvements	\$ 30,000.00
16	Lynch Park Town Ball Park	\$ 1,250,000.00
17	NCP Full Park Buildout	\$ 250,000.00
18	RAC 2nd Sheet of Ice	\$ 3,600,000.00
19	SCP Phase II	\$ 1,450,000.00
20	Campground	\$ 300,000.00
21	Cowley Lake Improvements	\$ 500,000.00

# Appendix H - Socio-Economic Data by Traffic Analysis Zone

# City of Rogers Transportation Analysis Zones (TAZ)

**Legend**

-  Rogers TAZ
-  Met C TAZ
-  Municipal Boundaries



Rogers TAZ	2014 Allocation					2020 Allocation					2030 Allocation					2040 Allocation				
	Population	Household	Retail Employment	Non-Retail Employment	Total Employment	Population	Household	Retail Employment	Non-Retail Employment	Total Employment	Population	Household	Retail Employment	Non-Retail Employment	Total Employment	Population	Household	Retail Employment	Non-Retail Employment	Total Employment
1	41	12	0	5	5	325	149	35	22	57	813	377	91	48	138	1,320	613	143	72	215
2A	126	43	0	7	7	150	53	0	7	7	200	71	0	7	7	252	91	0	7	7
2B	118	40	0	4	4	118	41	0	4	4	125	43	0	4	4	133	46	0	4	4
3	144	49	0	11	11	438	165	94	35	130	950	359	242	72	314	1,481	560	382	106	488
4	12	4	2	0	2	12	4	2	0	2	12	4	2	0	2	12	4	2	0	2
5A	222	73	0	0	0	320	117	0	0	0	502	192	0	0	0	693	271	0	0	0
5B	101	33	0	0	0	109	37	0	0	0	130	44	0	0	0	151	52	0	0	0
6	297	98	0	29	29	303	103	2	26	28	333	114	6	17	22	365	126	9	8	17
7	246	74	0	110	110	255	81	0	118	118	288	93	0	113	113	323	107	0	110	110
8	0	0	0	110	110	0	0	0	118	118	0	0	0	113	113	0	0	0	110	110
9	33	10	0	110	110	56	20	0	118	118	99	38	0	113	113	142	56	0	110	110
10	740	221	0	110	110	756	236	0	118	118	835	265	0	113	113	919	298	0	110	110
11	608	181	0	110	110	802	261	0	118	118	1174	398	0	113	113	1,562	541	0	110	110
12	45	15	79	592	671	154	65	81	735	817	342	150	73	869	942	538	237	66	1002	1,068
13	1470	479	2	0	2	1511	513	2	0	2	1682	581	1	0	1	1,863	657	1	0	1
14	1758	628	0	69	69	1855	687	0	74	74	2140	799	0	71	71	2,442	923	0	69	69
15A	33	14	171	529	700	126	56	186	721	907	288	126	183	941	1124	456	199	182	1154	1,336
15B	239	100	0	300	300	250	107	4	346	350	285	121	10	372	382	322	136	15	400	415
16	626	262	2	0	2	665	286	2	6	8	775	331	2	15	17	890	381	2	24	26
17	9	4	61	8	69	9	4	80	22	102	9	4	101	43	144	9	4	121	63	184
18	0	0	2	0	2	255	112	13	0	13	689	298	29	0	29	1,140	490	45	0	45
19	22	7	250	66	316	21	7	329	112	441	22	7	415	173	588	22	7	498	232	730
20	0	0	94	66	160	0	0	90	254	344	0	0	68	539	607	0	0	49	809	858
21	3	1	211	1854	2065	37	15	278	2063	2342	94	37	352	2110	2461	154	61	423	2171	2,594
22	3	1	114	0	114	3	1	146	0	146	3	1	178	0	178	3	1	210	0	210
23	0	0	284	70	354	6	3	313	75	388	17	7	315	72	387	28	12	320	70	390
24	1399	466	0	0	0	1359	462	0	0	0	1385	465	0	0	0	1,418	474	0	0	0
25	417	139	81	1337	1418	431	149	89	1434	1523	484	170	90	1383	1473	540	192	92	1347	1,439
26	250	84	86	0	86	250	87	92	0	92	268	93	89	0	89	287	100	86	0	86
27	1701	491	10	0	10	1651	486	13	0	13	1682	490	15	0	15	1,720	499	18	0	18
28	0	0	68	564	632	78	31	81	627	708	210	84	90	640	730	347	138	100	657	757
29	17	5	445	107	552	86	35	534	133	667	205	86	606	158	764	328	139	679	182	861
30	0	0	42	137	179	65	29	191	194	385	176	77	417	262	679	292	126	632	328	960
31	705	235	0	137	137	678	232	0	147	147	680	233	0	141	141	685	236	0	137	137
32	13	4	34	747	781	60	28	56	825	881	140	68	86	834	920	224	109	114	850	964
33	303	88	0	0	0	326	101	0	0	0	386	125	0	0	0	450	150	0	0	0
34	354	114	1	81	82	348	118	1	122	123	362	128	0	174	174	378	140	0	224	224
35	21	8	0	0	0	22	9	0	0	0	26	10	0	0	0	30	11	0	0	0
36	149	53	0	8	8	237	83	0	9	9	398	135	0	8	8	566	188	0	8	8
37	3	1	0	0	0	73	30	0	0	0	192	77	0	0	0	317	126	0	0	0
38	0	0	18	66	84	0	0	17	86	103	0	0	13	107	120	0	0	10	127	137



**Appendix I - Zoning Map and Zoning District  
Descriptions**

# Zoning Map and Zoning District Descriptions

## Zoning Districts

Symbol	District Name
AG	Agricultural
B-3	Highway business
B-C	Business campus
RE-2	Rural estate 2-acre
RE-5	Rural estate 5-acre
R-2	Single-family residential
R-2A	Guided single-family residential
R-3	Mid-density residential
R-4	Multifamily residential

Symbol	District Name
B-1	Retail business
B-2	Commercial business
L-1	Limited industrial
S-I	Special industrial
HCO	Highway corridor overlay
MU-D	Mixed-use downtown
MU-N	Mixed-use neighborhood
MU-R	Mixed-use regional

## Primary Zoning Districts

District	Purpose
RE-2	Rural Estate The rural estate two acre district is a residential district established for the purpose of providing for residential development while affording the enjoyment of the rural life style.
RE-5	Rural Estate The rural estate five acre district is a residential district established for the purpose of providing for residential development while affording the enjoyment of the rural life style.
AG	Agricultural This district is established where urban services such as sewers are not present or planned requiring a large lot development control.
R-2	Single-Family Residential The major purposes of this district is to allow the continuation of existing residential development and infilling of existing lots in the older residential area of the city.
R-2A	Guided Single-Family Residential The purpose of this district is to allow smaller lots in areas that are not developed but are guided single family residential and for areas that this type of development will not be disruptive to the character of the existing neighborhoods.
R-3	Mid-Density Residential The mid-density residential district is intended to provide a district that will allow alternative forms of housing development opportunity and a mixture of housing types.
R-4	Multifamily Residential An R-4 district is established to allow multiple-family dwellings in areas that are provided with community water and sewer.
B-1	Retail Business The retail business district is intended to provide a district that will allow general retail and commercial uses to serve the existing population.
B-2	Commercial Business The commercial business district is established to allow commercial and mixed use development in areas with community sewer and water.
L-1	Limited Industry The limited industry districts is established to allow industrial uses at a limited scale.

## Primary Zoning Districts (Continued)

District		Purpose
S-I	Special Industrial	An S-I district is intended to provide for special industrial uses that may suitably be located in the areas of relative close proximity to other industrial development, freeways or other highly traveled highways and as transitional uses until otherwise developed. As such, industries or uses that benefit from good vehicular access or exposure, or entail temporary land usage until served by extension of public utilities to the site are appropriate in this district.
R-2	Single-Family Residential	The major purposes of this district is to allow the continuation of existing residential development and infilling of existing lots in the older residential area of the city.
R-2A	Guided Single-Family Residential	The purpose of this district is to allow smaller lots in areas that are not developed but are guided single family residential and for areas that this type of development will not be disruptive to the character of the existing neighborhoods.
R-3	Mid-Density Residential	The mid-density residential district is intended to provide a district that will allow alternative forms of housing development opportunity and a mixture of housing types.
R-4	Multifamily Residential	An R-4 district is established to allow multiple-family dwellings in areas that are provided with community water and sewer.
B-1	Retail Business	The retail business district is intended to provide a district that will allow general retail and commercial uses to serve the existing population.
MU-D	Mixed-Use Downtown	Mixed use downtown is intended to encourage a mix of uses that are typically found in traditional downtown areas of small towns, including retail, services, entertainment, civic, institutional, offices and mid and high density housing. The core downtown area along Main Street and the main east-west cross street are intended to have multi-story mixed-use buildings with retail and service uses at street level and residential or office uses above. The areas surrounding the core downtown area are intended to have high density residential, civic, office and institutional uses. The density range for residential uses in this mixed-use category is eight to 20 dwelling units per acre.
MU-N	Mixed-Use Neighborhood	Mixed use neighborhood is intended to provide a flexible land use category that would accommodate residential or a node of service commercial where market forces might present such an opportunity and retain desirable traits of existing communities. The scale of neighborhood nodes should not exceed ten to 15 acres. Residential uses consisting of small-lot single-family and limited attached housing with densities ranging from three to six units per net acre should be considered in mixed use-neighborhood nodes. Proximity of mixed use neighborhood nodes should generally be at key roadway intersections that would support good roadway access. The nodes should also be connected by the regional trail system to support pedestrian access to services from nearby neighborhoods.

## Primary Zoning Districts (Continued)

District		Purpose
MU-R	Mixed-Use Regional	Mixed use regional is intended to be more of a commercial- and office oriented land use pattern that tailors not only to the community but to the larger metropolitan region. These districts should have excellent accessibility and visibility from the regional highway system. Uses may include institutional, limited mid and high density residential at densities from eight to 12 unit per net acre, and park uses. Development may be either vertically or horizontally designed in order to offer flexibility within the marketplace. Emphasis should be placed on land use efficiency by encouraging a vertical orientation to development resulting in a critical mass of uses, greater tax base, greater job base and a smaller footprint on the land. Such a development pattern also ensures a more sustainable, enduring approach to commercial development.
B-3	Highway Business	The B-3 district was established for the purpose of allowing for the development of limited business uses, which are compatible with residential neighborhoods. This district may be used as a transitional or buffer district between residential and commercial uses.
B-C	Business Campus	The business campus district is established for the purpose of providing for high quality development with an emphasis on job creation, tax base, and amenities.

## Overlay Districts

District		Purpose
HCO	Highway Corridor Overlay District	<p>The Interstate 94 and Highway 101 corridors and the development within it will be major factors influencing the visual and environmental quality of the community as a whole. Due to the intensity of land uses, these corridors are the dominating image of those passing through the community. Development in the corridor must be designed with greater sensitivity to the environment and generally higher quality than might have occurred in the absence of specific standards. The purpose of the district is to:</p> <ul style="list-style-type: none"> <li>• Protect wetlands and significant stands of mature trees through use of careful site design, protective easements, sensitive alignment and design of roadways and utilities, incorporation of natural features, landscaping and massing of trees that enhance existing natural features and views, and the practices delineated in the city's best management practices handbook.</li> <li>• Promote high quality architectural and site design through improvement development standards within the corridor. Those standards governing site planning, placement of building masses, use of materials, and the like enable the city to enhance what otherwise might result in low quality strip development.</li> <li>• Create a unified, harmonious, and high quality visual environment throughout the corridor, thereby identifying it as a special place with a unique identity within both the city and the Twin Cities region as a whole.</li> <li>• Foster a distinctive and positive community image, for the city as a whole and especially for the Interstate 94 and Highway 101 corridors, which function as the city's main entrances.</li> </ul>

## Overlay Districts (Continued)

District		Purpose
FP	Floodplain Overlay District	<ul style="list-style-type: none"> <li>• This section regulates development in the flood hazard areas of the City of Rogers. These flood hazard areas are subject to periodic inundation, which may result in loss of life and property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, and impairment of the tax base. It is the purpose of this section to promote the public health, safety, and general welfare by minimizing these losses and disruptions.</li> <li>• National Flood Insurance Program Compliance. This section is adopted to comply with the rules and regulations of the National Flood Insurance Program codified as 44 Code of Federal Regulations Parts 59—78, as amended, so as to maintain the community’s eligibility in the National Flood Insurance Program.</li> <li>• This section is also intended to preserve the natural characteristics and functions of watercourses and floodplains in order to moderate flood and stormwater impacts, improve water quality, reduce soil erosion, protect aquatic and riparian habitat, provide recreational opportunities, provide aesthetic benefits and enhance community and economic development.</li> </ul>
--	Open Space Development Overlay District	<p>The “OSD”, open space development overlay district is established to encourage development of rural housing clusters that meet the following purposes:</p> <ul style="list-style-type: none"> <li>• Provide efficient use of the land while maintaining contiguous blocks of economically viable agricultural land, mature woodlands, and open space; and preserving historical features, scenic views, natural drainage systems and other desirable features of the natural environment.</li> <li>• Allow housing to be concentrated on sites that have low agricultural potential and/or high natural housing appeal.</li> <li>• Create neighborhoods with direct access to open space, distinct identities, and sense of community.</li> <li>• To encourage innovation and promote flexibility, economy, and creativity in residential development.</li> <li>• To provide commonly owned open space areas for passive and/or active recreational use by a variety of age and income groups.</li> <li>• To provide for diversity of lot sizes, housing choices and building densities to accommodate a variety of age and income groups.</li> <li>• To preserve scenic views and elements of the community’s rural character by minimizing views of new development from existing roads.</li> </ul>

# ZONING 2017

## City of Rogers, MN



Rogers, Minnesota  
Public Works Department  
Geographic Information Systems  
04 January 2018

### Legend

- AG - Agriculture
- AP - Agriculture Preserve
- AG-PUD - Agriculture PUD
- RE-5 - Rural Estate 5 Acre
- RE-2 - Rural Estate 2 Acre
- R-2 - Single Family Residential
- R2-A - Single Family Residential
- R-3 - Mid Density Residential
- R-3-PUD - Mid Density Res PUD
- R-4 - Multi-Family Residential
- MU-N - Mixed Use Neighborhood
- B-1 - Retail Business
- B-2 - Commercial Business
- B-3 - Highway Business
- B-C - Business Campus
- SI - Special Industry
- LI - Limited Industry
- LI-PUD - Limited Industry PUD
- PUD - Planned Unit Development
- Railroad

