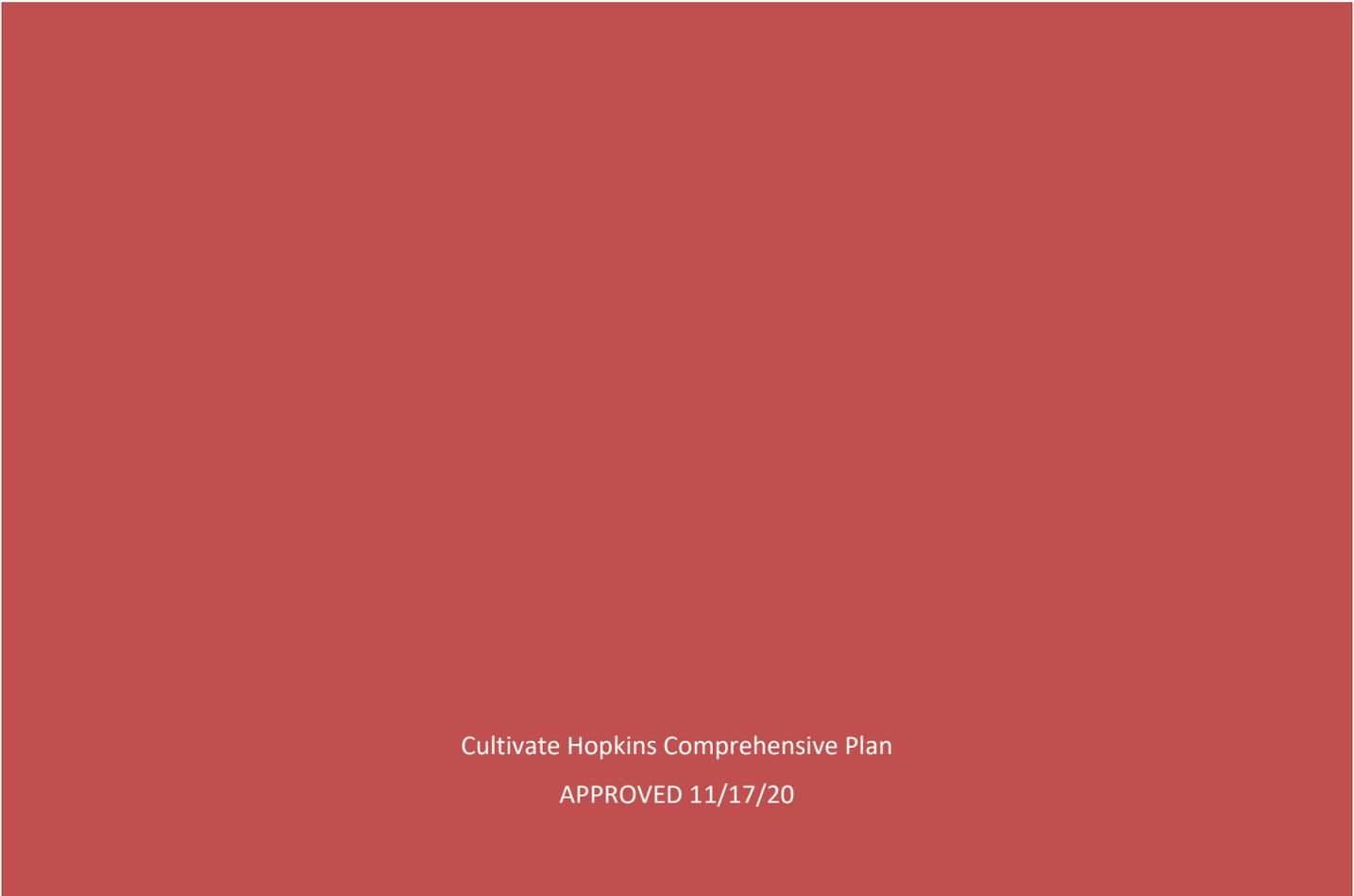




APPENDIX WR1: WATER RESOURCES MANAGEMENT PLAN



Cultivate Hopkins Comprehensive Plan

APPROVED 11/17/20

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Summary

The City of Hopkins (City) has developed this Water Resources Management Plan (WRMP) to meet regulatory requirements, and to plan for future alterations in the existing drainage system due to redevelopment activities. The City is completely developed with a mix of commercial, industrial, residential and open space uses. Redevelopment activities within the City are also occurring as the population of the surrounding area continues to grow.

The City has no lakes and only several public water wetlands that are identified on the Department of Natural Resources Protected Waters and Wetlands map. Portions of Minnehaha Creek meander through the City and it is the headwaters for Nine Mile Creek. The City is within the Minnehaha Creek Watershed District (MCWD) and the Nine Mile Creek Watershed District (NMCWD). All critical storm water flows and elevations within the City of Hopkins can be found within those comprehensive plans. The MCWD updated its Comprehensive Water Resources Management Plan in 2018, and the NMCWD updated its Water Management Plan in 2017. Minnesota Rules Part 8410.0160, Subpart 1 states:

- Each local water plan must, at a minimum, meet the requirements for local water management plans in Minnesota Statutes, Section 103B.235, except as provided by the watershed management organization plan under Part 8410.0105, Subpart 9.

The City of Hopkins will utilize this plan, the accompanying rules, and existing and new ordinances as the basis for managing wetlands, surface, storm, flood, and groundwater within the municipal boundary. The City will continue to work to ensure that its' goals and policies and development standards are consistent with both Watershed Districts as the plans and rules are revised.

1. Water Resource Management Related Agreements

The City of Hopkins will be assuming regulatory authority for land use development while recognizing the role of other local, state, and federal entities. Several entities will have administrative responsibilities within the planning area. For a local water management effort to be successful, each entity's commitment and role must be clearly understood.

The agencies currently having some level of administration responsibility include the City, MCWD, NMCWD, Minnesota Department of Natural Resources (MNDNR), Minnesota Pollution Control Agency (MPCA), the U.S. Army Corps of Engineers (USACE), the Minnesota Board of Water and Soil Resources (BWSR), and Hennepin County. It has been recognized that regulatory agencies can achieve common goals by joining together to combine already scarce financial and regulatory resources.

The City of Hopkins is required to meet the conditions of its National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) permit and to implement its' Storm Water Pollution Prevention Program (SWPPP). The City continues to actively engage the MPCA and others to keep its permit and implementation up to date regarding new technology and regulations.

2. Amendment Process

For the Plan to remain a dynamic, effective document, a system must be identified and available to update information and implement new ideas, methods, standards, management practices, and any other changes, which may affect the intent and/or results of the Plan. This Plan shall remain in effect, unless an amended Plan is adopted, not to exceed 10 years from the date of initial adoption. Any person or persons either residing or having business within the City can request amendment proposals at any time. The City itself may amend this Plan at any time if changes are required or if issues or opportunities arise that are not currently addressed. All amendments shall be in accordance with Minnesota Rules 8410.0160 Subp. 4 and Minnesota Statutes 103b.235 Subd. 5.

3. Physical Environment and Land Use

3.1. Land Use

Downtown Hopkins

The City of Hopkins lies in southeast Hennepin County. The City contains 2,760 acres of land and water resources within its corporate boundaries, and is bounded by the cities of Minnetonka, Edina, and St. Louis Park. The City is essentially fully developed.

Existing Land Use

Most of the existing land is residential, including both single family dwellings and multi-family units. There is a significant industrial area along the railroad tracks. Commercial development exists primarily along the major roadways, including Mainstreet, County Road 3, Blake Road, Shady Oak Road and some parts along Highway 7. In addition, there are several open areas which are occupied by parks, golf courses and wetlands. The existing land use as defined in the 2018 Comprehensive Plan is shown within the land use elements of the plan, see Figure B1.2 in Appendix B1: Land Use.

Future Land Use

The City of Hopkins is fully developed. The future land use as defined in the 2018 Comprehensive Plan is shown within the land use elements of the plan, see Figure B1.6 in Appendix B1: Land Use. The future land use changes will be a result of redevelopment activities. Future redevelopment activities should not have a significant impact on regional storm water conveyance systems provided existing development runoff rates are adhered to through the development of stormwater management improvements with the redevelopment. In the coming years, redevelopment will be the focus in Hopkins for growth, since only a very few undeveloped parcels of land remain. Redevelopment plans focus on several key opportunity areas in the city, namely the Green Line Extension station areas, including adjacent areas in Downtown Hopkins and the Blake Road Corridor. Currently the City has no acquisition plans for parkland. The only land acquisition plans forecasted would be for roadway or trail improvements that would require acquisition of right-of-way.

3.2. Shoreland

The City of Hopkins has not adopted a shoreland ordinance. At this time, the Minnesota Department of Natural Resources (MNDNR) does not require a shoreland ordinance, and we do not see the need to implement one in the near future.

3.3. Floodplain

The City participates in the National Flood Insurance Program (NFIP). The City administers a floodplain ordinance based upon the effective Flood Insurance Study (FIS) for the City of Hopkins (dated September 2, 2004). There are two flooding sources (Minnehaha Creek and Nine Mile Creek) shown in the FIS. The following link leads to the flood map panels for Hopkins: <https://msc.fema.gov/portal/search?AddressQuery=hopkins%20mn#searchresultsanchor>

Flooding in the City results from both summer rainstorms and spring snowmelt runoff. Nine Mile

Creek's headwaters begin in Hopkins, just north of Excelsior Boulevard. The land use adjacent to Nine Mile Creek in Hopkins is predominantly urban in nature. Natural drainage in the community is not well defined, and the City has constructed an extensive storm sewer system as a result. Nine Mile Creek is very responsive to short-duration, high-intensity rainstorms which rapidly flow from the highly impervious area through the constructed storm sewer system. Existing land cover from available LiDAR data is shown in **Figure SW-05**.

Minnehaha Creek crosses through the City along the far northern border and in the northeast corner. In the spring and early summer of 2014, the MCWD experienced a record amount of rainfall resulting in various flooding throughout the watershed. The district had a report prepared that summarized the flooding associated with this event. The Minnehaha Creek corridor through Hopkins did not experience any substantial flooding issues that were reported in the 2014 flood report.

Flood Insurance Rate Map Numbers 27053C033F, 27053C0341F and 27053C0342F show the base flood elevations for the floodway areas in zone AE for Minnehaha Creek and Nine Mile Creek within the City limits. Zone AE is an area where the base flood has been determined. The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% (100-year) annual chance flood can be carried without substantial increases in flood heights. A majority of the City is in zone X, which is an area determined to be outside the 0.2 percent annual chance floodplain.

The City of Hopkins, MCWD and the NMCWD currently regulate development in the floodplains along Minnehaha Creek and Nine Mile Creek.

3.4. Permitting

The City of Hopkins reviews, approves and permits storm water management plans for land disturbing activities on projects that meet the City's ordinance requirements.

MCWD and the NMCWD have permitting authority for development and redevelopment projects that meet the District's rules requirements. District staff reviews development proposals and make recommendations consistent with their requirements for water quality, volume control, flooding, rate control, wetland protection, waterbody crossings and structures, streambank stabilization and erosion control.

Development and redevelopment projects in the city must meet the city's ordinances as well as the MCWD and NMCWD rules. The city defers its permitting authority over to the MCWD and NMCWD for projects that meet their rule thresholds. MCWD and NMCWD will continue to exercise regulatory authority in accordance with Minnesota Statute 103B.211, Subd. 1 (a) (3) (ii).

Table 3.1 lists the contacts at the city who are responsible for development review and their role in the process, depending on the type of development or project proposed. The City will notify private development applicants of their need to contact the appropriate watershed district when permits are applied for, if applicable.

| Table 3.1: City Contact Information | | | | |
|-------------------------------------|-----------------------------------------|--------------|------------------------------------------------------------------------|---------------------------------|
| Name | Title | Phone | Email | Coordination |
| Nate Stanley | City Engineer | 952-548-6356 | nstanley@hopkinsmn.com | Public Improvements Projects |
| Eric Klingbeil | Assistant City Engineer | 952-548-6357 | eklingbeil@hopkinsmn.com | Public Improvements Projects |
| Jason Lindahl | City Planner | 952-548-6342 | jlindahl@hopkinsmn.com | Redevelopment & New Development |
| Kersten Elverum | Dir. of Economic Development & Planning | 952-548-6340 | kerverum@hopkinsmn.com | Redevelopment & New Development |

4. Hydrologic Setting

4.1. Regional Climate

The climatology of Minnesota is described in the United States Geological Survey (USGS) Water-Supply Paper 2375 as follows:

Minnesota is affected by a variety of air masses. In winter, the weather is dominated by cold, dry, and polar continental air masses from northwestern Canada. In summer, the weather is dominated by dry, tropical continental air masses from the desert southwest or by warm, moist, tropical maritime air masses from the Gulf of Mexico. In spring and fall, the weather is transitional and is affected by alternating intrusions from these three air masses.

Almost 45 percent (about 12 inches) of Minnesota’s annual precipitation is received from June through August, when moisture from the Gulf of Mexico is most available. Only 8 percent of the annual precipitation is received from December through February.

Cyclonic and convective storms are the two major types of storms that bring moisture into Minnesota. Cyclonic storms are large-scale, low-pressure systems associated with frontal systems that approach the State from the northwest or southwest. Cyclonic storms that approach from the northwest are common in winter and produce small quantities of precipitation. Cyclonic storms that approach from the southwest occur in the fall, winter, and spring and can bring substantial quantities of rain or snow by drawing moisture northward from the Gulf of Mexico. Cyclonic storms in combination with unstable conditions can produce severe weather and excessive precipitation.

In late spring and summer, thunderstorms are common. These small-scale convective storms typically form because of the presence of unstable, warm, tropical air near the surface and colder air above.

Floods in Minnesota are of two forms, large-scale floods in late winter and early spring, and small-scale flash floods in late spring and summer. Large-scale floods generally result from a combination of deep, late winter snowpack, frozen soil that prevents infiltration, rapid snowmelt due to an intrusion of tropical air, and widespread precipitation caused by cyclonic storms that approach the State from the southwest. Flash floods result from powerful, slow-moving thunderstorms.

Average annual values for various weather data components for the Hopkins area are listed below in **Table 4.1: Average Annual Weather Data**.

| Table 4.1: Average Annual Weather Data | |
|----------------------------------------|---------------------|
| Weather Data | Value |
| Annual Normal Temperature | 43° |
| Annual Normal Precipitation | 29 inches |
| Annual Runoff Depth | 4.7 inches |
| Storm Duration | 6 hours |
| Storm Intensity | 1.4 inches per hour |
| Time Between Storm Midpoints | 89 hours |

Additional description of the climate of the area is provided in the MCWD Water Resources Management Plan.

4.2. Major Watersheds

A northern and eastern portion of the city drains to Minnehaha Creek, while the southern portion of the city drains to Nine Mile Creek, both through natural drainage channels and a constructed storm sewer system.

The City of Hopkins was divided into four major watersheds called the Northern, Eastern, Central and Southern districts. These are discussed in more detail later in this report.

The Northern District is defined as the area in the City which drains to Minnehaha Creek upstream of Highway 7. The Eastern District is defined as the area which drains into Minnehaha Creek downstream of Highway 7. The Central District naturally drains to Nine Mile Creek upstream of the Chicago Northwestern Transportation (C.N.W.T.) railroad tracks. The Southern District drains to Nine Mile Creek downstream of the C.N.W.T. railroad tracks.

5. Surface Water Resources

Figure SW-04 shows a map of significant resources within the City of Hopkins.

5.1. Wetlands

The National Wetland Inventory Map shows the location of wetlands within the City of Hopkins (see **Figures SW-01 and SW-07**). In addition to these basins, there are several storm water detention basins within the City limits which provide some of the benefits of a natural wetland basin.

There are four Minnesota Department of Natural Resources (MNDNR) Protected Waters and Wetlands (MNDNR Nos. 27-717W, 27-719P, 27-777P, and 27-779W) within the City. Part of MN/DNR No. 27-084P is located in the northern section of the City. This protected water is also located in the cities of St. Louis Park and Minnetonka.

5.2. Creeks

Minnehaha Creek

Minnehaha Creek is a direct tributary to the Mississippi River. Lake Minnetonka is the headwater for the creek. It is a MNDNR watercourse and flows east at the north end of Hopkins and southeast on the east side of the City.

Nine Mile Creek

The headwater of the north fork of Nine Mile Creek is at the southern edge of Excelsior Boulevard in the southwest portion of Hopkins. Nine Mile Creek flows southeast to the Minnesota River, and is a MNDNR protected watercourse.

Ditches

Much of the surface water is routed through an existing storm sewer system within the City of Hopkins. This includes a system of storm sewer pipes, ponds, ditches, and culverts.

General Drainage Patterns

The City of Hopkins lies within the MCWD and the NMCWD. The northern and eastern portions of the City drain to Minnehaha Creek, and the southern and central portions of the City drain to Nine Mile Creek. The City has been delineated into 61 subwatersheds, which are shown on **Figure SW-08**. The City of Hopkins has numerous points of discharge from and to the cities of Minnetonka, Edina, and St. Louis Park.

The City of Hopkins contains several land-locked areas. A land-locked area is one which will not drain naturally on the ground surface. An outlet for each of these areas should be considered to decrease the flooding potential. **Figure SW-06** shows the topography for the City of Hopkins.

5.3. Modeling & Studies

Hydrologic Modeling

MCWD and NMCWD have developed regional hydraulic modeling in Hopkins. The City has adopted these models by reference.

An Autodesk™ Storm and Sanitary Analysis (SSA) model has been created for specific projects within the City of Hopkins. The City created these models in the past decade that correspond to the annual street reconstruction projects and other miscellaneous projects the City has undertaken. The City does not currently have a model that encompasses the entire City limits.

Figure SW-10 shows the areas within the City that have been fully modeled and areas that have been partially modeled. There are two different types of models that have been created, the Rational Method and the SCS TR-20 hydrology method. The Rational Method is typically used to determine the peak rate of runoff for sizing storm sewer and the SCS TR-20 method is typically used to determine peak rates and volumes of runoff when ponding needs to be taken into account.

The rates and volumes of stormwater runoff have been shown for two locations within the City where the SCS TR-20 models have been developed (**Figure SW-10**). The City will continue to work towards completing an overall model as annual reconstruction projects occur. The existing storm sewer system is depicted in **Figure SW-02**.

For ease of organization in this report, the City has been broken into four drainage districts based on watershed drainage pattern. The boundaries of each district are depicted in **Figure SW-02** and generally bounded as:

1. Central District – area north of Excelsior Blvd, south of Hwy 7, and west of 5th Ave N
2. Northern District – Area north of Highway 7
3. Eastern District – All area east of Highway 169, but also including the Park Ridge and Hobby Acres neighborhoods
4. Southern District – Area south of Excelsior Blvd, west of Highway 169

Water Resource Studies

The following table is a list of important studies that have been completed in the City of Hopkins. For additional information, please see the listed studies and reports in **Table 5.3: Summary of Water Resources Studies Feasibility**.

Additional studies completed in the Minnehaha Creek and Nine Mile Creek Watersheds can be found at the districts web site:

Minnehaha Creek Watershed: <https://www.minnehahacreek.org/project>

Nine Mile Creek Watershed: <https://www.ninemilecreek.org/resource-library/?rt=technical-reports>

| Table 5.3: Summary of Water Resources Studies, 2007 - 2018 | | | |
|----------------------------------------------------------------------------------------------------------------------|----------------------------------|---------------------------------------|-------------|
| Study Name | Study Type | Prepared By | Year |
| MCWD H/H and Pollutant Loading Study | H & H Report | MCWD | 2003 |
| Functional Assessment of Wetlands (FAW) | Assessment & Inventory | MCWD | 2003 |
| 2008 Minnetonka Mills Road Improvements | Feasibility Report | Bolton & Menk | 2007 |
| 2009 Street & Utility Improvements (Park Ridge Neighborhood) | Feasibility Report | Bolton & Menk | 2008 |
| 2011 Street & Utility Improvements (14th Ave N, 15th, Ave N, 16th Ave N) | Feasibility Study | Bolton & Menk | 2010 |
| 2012 Street & Utility Improvements (Minnetonka Mills Rd, W of 5th Ave) | Feasibility Report | Bolton & Menk | 2011 |
| 2013 Street & Utility Improvements (South Presidents Neighborhood) | Feasibility Report | Bolton & Menk | 2012 |
| 13th Ave N Drainage Study | Letter Report & Figures | Bolton & Menk | 2014 |
| 2016 Street & Utility Improvements (18th – 21st Ave N, 2nd – 4th St N) | Feasibility Report | Bolton & Menk | 2015 |
| 2017 Street & Utility Improvements (Park Valley Neighborhood) | Feasibility Report | Bolton & Menk | 2016 |
| 8th Avenue Artery Improvements | Volume Baking Agreement & Design | Bolton & Menk, NMCWD, City of Hopkins | 2017 |
| 2018 Street & Utility Improvements (Lake St NE, Texas Ave, Cambridge, Oxford, Division) | Feasibility Report | Bolton & Menk | 2017 |
| 2019 Street & Utility Improvements (Lake St NE, Tyler Ave, Cambridge St, Van Buren Ave, Hiawatha Ave, Oak Park Lane) | Feasibility Report | Bolton & Menk | 2018 |

In the vast majority of studies noted above, the City evaluated the feasibility and cost effectiveness of drainage improvements, and implemented them through its annual pavement management projects. The 13th Ave N Drainage Study was commissioned in response to localized flooding following a severe rainfall event, however. At some point within the next decade, improvements to 13th Ave N may be reconsidered at the time of street and utility reconstruction.

13th Ave N Drainage Study

The 13th Ave N Drainage Study was completed by Bolton & Menk in early 2014 following heavy rain events in July, 2013 caused flash flooding along 13th Avenue N, south of 3rd Street N. The property at 238 13th Avenue N experienced some storm water inflows to their house. The land-locked low area in the backyard of this home also experienced unusually high water levels. The study analyzed the storm water conveyance system through the bulk of the Central drainage district.

Analysis of the existing system concluded there would be surcharging of the system along 3rd St N during events as small as a 2-year storm. The study analyzed three alternatives with varying benefits and impacts. Essentially, the City's storm sewer system upstream of Maetzold Field is constrained (during a 10-year event) along 15th Ave N and along 13th Ave N to varying degrees. Improvements were considered to alleviate the excess flow in the storm sewer, which during surcharging will flow above ground along roadways. However, this would shift water to Maetzold Field.

Ultimately, some upsizing of storm sewer along 3rd St N was implemented in 2014. Some improvements were limited due to sanitary sewer and funding constraints. It is recommended this drainage study be revisited when 13th Ave N near 3rd Street is scoped for improvements in conjunction with the City's Pavement Management Plan.

8th Avenue Artery Volume Banking

In 2017 the City and NMCWD established a volume bank for stormwater management credits. These credits are intended for use in support of City projects and for sale to developers along or near the 8th Avenue corridor where those developers cannot easily achieve compliance with stormwater management requirements. The City maintains a spreadsheet which tracks volume credits created and expended.

6. Design Criteria

6.1. Design Storm

In 2013, the National Weather Service (NWS) released NOAA Atlas 14, Volume 8, which updated the 1961 TP-40 precipitation frequency estimates for Midwestern states. The 24-hour duration, TP-40 Type II rainfall distribution was previously used for overall subwatershed planning within the City of Hopkins. For future development purposes the Atlas 14 distribution MSE 3 rainfall depths will be used for quantifying stormwater runoff.

Table 6.1 shows the difference between the TP-40 and Atlas 14 24-hour rainfall amounts in Hopkins. This criterion is consistent with the MCWD Water Resources Management Plan, the NMCWD 509 Plan, and guidance from the NRCS.

| Table 6.1: Rainfall Depths for a 24-hr Event | | | | | | |
|----------------------------------------------|-----------------|-----------------|-----------------|------------------|------------------|-------------------|
| Precipitation Data Source | 1-Year (inches) | 2-Year (inches) | 5-Year (inches) | 10-Year (inches) | 50-Year (inches) | 100-Year (inches) |
| TP-40 Rainfall | 2.3 | 2.7 | 3.5 | 4.1 | 5.3 | 5.9 |
| Atlas 14 Rainfall | 2.50 | 2.87 | 3.59 | 4.29 | 6.38 | 7.46 |

Projects within the MCWD require stormwater rate control for the 1, 10 and 100-year storm events and volume control for 1 inch of runoff from a sites impervious surface. Projects within the NMCWD require stormwater rate control for the 2, 10 and 100-year storm events and volume control for 1.1 inches of runoff from regulated impervious surfaces.

6.2. Rain Gages

The City of Hopkins has a rain gauge on the public works building, which is owned and operated by NMCWD. There are other rain gages in the surrounding area that can be used to obtain rainfall data, such as the web based Community Collaborative Rain, Hail & Snow Network (CoCoRaHS); the Twin Cities National Weather Service Station in Chanhassen. The National Oceanic and Atmospheric Administration (NOAA) also has stations in the cities of Crystal, Golden Valley, Robbinsdale and Plymouth.

6.3. Storm Sewer Collection System

The minimum design storm for the future local collection system evaluation and design will be a 10-year return period event. Design of local storm sewer systems will generally be designed using the Rational Formula.

The choice of a design storm is largely an economic rather than a technical decision. The City should deliberately consider the level of service desired when it chooses the recurrence interval used in any construction project.

6.4. Other City Requirements

Any new construction of development has the potential of increasing runoff rates and volumes. The development or redevelopment of land must include facilities to provide water quality treatment and control runoff at existing or reduced rates.

Variances from plan standards will be allowed if computations that demonstrate no adverse upstream or downstream effects will result from the proposed system can be provided to the City Engineer.

7. Establishment of Goals and Policies

The primary goal of the City's Plan and associated Rules is to provide the framework for the management of all forms of surface water as development and redevelopment occurs within the City. This Plan provides clear guidance on how the City will manage surface water both in terms of quantity and quality. The goals and policies stated in this Plan are complimentary to the goals and policies stated in the CWRMP and VRWMP.

Resource education and increasing regulation of surface water at the State, County, and Federal levels necessitate that the City's surface water management goals evolve over time with increased awareness.

The goals and policies detailed in this Plan focus on future redevelopment as much as the existing infrastructure. The City only conducts plan reviews "as development occurs" as part of the preliminary plat submittal and approval process. This emphasis on future requirements ensures that future development augments the City's amenities rather than diminishes the complex environments that the City is located within.

7.1. Goal 1: Stormwater Management

The purpose of this goal is to control flooding and minimize related public capital and maintenance expenditure necessary to control excessive volumes and rates of surface water runoff, in accordance with the MCWD and the NMCWD. Traditional surface water management deals with just one component of the hydrologic cycle; surface runoff. Large amounts of energy are directed towards alleviating significant negative impacts of surface runoff and flooding for the cultural, water, and natural resources.

The primary management strategy is shifting from detention in both existing natural and constructed basins, to Low Impact Development (LID) techniques and Green Infrastructure Techniques that emphasize reduction of runoff volume and on-site runoff control via infiltration or small volume storage to mimic predevelopment hydrology for more frequent rainfall events. This trend will help remedy the negative impact of stormwater runoff on water quality and downstream flooding. With increased value placed on natural wetlands, the number and extent to which wetlands can be used for detention is already in decline. The approach to sound water quantity management relates directly to water quality, wetland management, erosion control, and land development strategies. By comprehensively managing the quantity and quality of surface water runoff, the other goals of this Plan are more efficiently achieved.

Subject: Surface Water Runoff (Rate and Volume) Management.

Purpose: Control post-development stormwater runoff.

Goal: Control flooding, protect human life, protect public and private property, mimic existing runoff conditions, minimize related public capital and maintenance expenditure necessary to control excessive volumes and rates of surface water runoff from entering streams and wetlands in the watershed, and maintain or improve the downstream conveyance system.

7.1.1. Surface Water Quantity Policies

Policy 1.1: Utilize LID site design and alternative landscape techniques where applicable, along with conventional constructed on-site detention ponds for large, infrequent rainfall events. Pre-developed peak flow rates for the 1-yr, 10-yr, and 100-yr, 24-hour, storm events cannot be exceeded by new development in MCWD. Pre-developed peak flow rates for the 2-yr, 10-yr, and

100-yr, 24-hour, storm events cannot be exceeded by new development in NMCWD. These design techniques will be relied upon to help mimic pre-development hydrology and to control downstream flooding.

The NOAA Atlas 14 rainfall depths using a NRCS MSE 3 distribution shall be used for calculating peak flow rates.

Policy 1.2: The City will encourage and enforce volume reduction standards throughout the City and where site conditions are feasible. The City will strive to reduce or minimize impervious surface coverage where practical or feasible.

Policy 1.3: The City shall maintain and periodically inspect stormwater management facilities and structures to assure they function as originally designed according to the Storm Water Pollution Prevention Plan requirements. There are approximately 42 stormwater ponds in the City. A majority of these are privately owned stormwater ponds or facilities, See **Figure SW-08**. In the future, if private stormwater ponds or facilities are part of a development, the developer will be required to enter into a stormwater management agreement that lays out the owner's responsibilities for future costs of inspection, repair and maintenance of the stormwater pond or facilities.

7.2. Goal 2: Water Quality

The purpose of this goal is to achieve water quality standards in lakes, creeks, and wetlands consistent with the intended use and classification. Water quality is often directly related to the level of nutrients in the water body. While nutrients comprise only one category of substances that can affect water quality, nutrients, principally phosphorous, must be controlled to achieve the water quality goals of this Plan. Phosphorous is generally the limiting factor to plant growth. An increase in phosphorous will cause the plant species dominating the lakeshore, open water, or marsh to shift in favor those plants that can best take advantage of the increased supply of the nutrient.

Controlling nutrients through housekeeping practices are a way for City residents to make a difference. According to the Minneapolis Chain of Lakes Clean Water Partnership, many people do not realize that organic materials like leaves, grass clippings, fertilizers, pesticides, and pet waste can disrupt the fragile ecosystem of a lake or creek.

Subject: Water quality in lakes, rivers, creeks, and wetlands.

Purpose: To protect and enhance water quality.

Goal: Achieve water quality standards in lakes, creeks, and wetlands consistent with their intended use and established classification.

7.2.1. Water Quality Policies

Policy 2.1: Proposed developments must identify all reasonable steps taken to avoid water quality impacts. They must also mitigate unavoidable impacts with appropriate BMPs to prevent water quality in receiving waters from falling below established standards including TMDLs, and to meet City erosion control ordinance standards.

Policy 2.2: The City shall promote the reduction or minimization of hard surfaced areas, where applicable.

Policy 2.3: The City will balance protection of natural wetlands and utilization of constructed

wetlands to protect the water quality of other water resources (i.e., wetlands, lakes, creeks) based on MnRAM wetland classification.

Policy 2.4: It essential that the condition of water bodies in the Watershed included on the MPCA impaired waters 303(d) list be improved so that these waterbodies can be removed from that list.

Policy 2.5: Use of existing natural retention and detention areas for stormwater management to maintain or improve existing water quality will be achieved to the extent possible.

Policy 2.6: The City supports land use planning, policies and controls that maintain sustainable, high-quality surface water resources and ensure that development causes no adverse or cumulative impacts.

Policy 2.7: Adopt policies to appropriately apply the least amount of chlorides necessary for winter road maintenance to provide safe driving conditions.

Policy 2.8: The City will implement its MS4 SWPPP and work with NMCWD towards meeting the chloride reduction goals in the Nine Mile Creek Chloride TMDL, the water quality goals identified in the MCWD and NMCWD Water Management Plans and the *Twin Cities Metropolitan Area Chloride Total Maximum Daily Load Study* (MPCA, 2016).

Policy 2.9: The City of Hopkins is aware of NMCWD's chloride management education and training efforts, as well as the chloride-reduction requirement added to NMCWD's rules in 2018. The City intends to participate in implementation of chloride reduction BMPs established by the local watersheds.

7.3. Goal 3: Erosion Control

The purpose of this goal is to minimize soil erosion through increased education and enforcement, in accordance with the MCWD and NMCWD. Water quality problems are frequently linked to high phosphorus concentrations. Phosphorus is often transported to surface water through soil erosion but can also be transported to waters in a variety of other mechanisms. Nevertheless, erosion control is an important factor in the effort to improve surface water quality. Soil erosion and sediment deposition can also impact pond and drainage-way performance and create maintenance issues.

Ponds and drainage facilities may be impacted by erosion and sedimentation from a variety of sources including construction sites and winter street sanding. The coarse sediment accumulates in ditches and ponds where runoff velocities are low. When a sand delta appears at a storm sewer outfall that is a visible indication of the effectiveness of erosion and sediment control measures and road maintenance activities of the past winter. As the sediment builds up over time, it reduces the capacity of the drainage system and the pollutant removal capabilities of ponds by reducing storage volume below the outlet. This also reduces the infiltration rates for stormwater facilities.

Extending the life of facilities involves source control and elimination of the material that causes the problem. Regulatory actions will control a major portion of the sediment. Street maintenance and an effective sweeping program will also have a positive impact on sediment accumulation.

Subject: Erosion control.

Purpose: To control erosion and sedimentation.

Goal: Minimize soil erosion through increased education, enforcement and management of

stormwater.

7.3.1. Erosion Control Policies

Policy 3.1: Erosion and Sedimentation Control Plans shall be reviewed and enforced by the City for all grading activities. These plans shall conform to the general criteria set forth by the City's policies and applicable NPDES /SDS Permit (MPCA Permit MN R100001) requirements.

Policy 3.2: The City will implement its erosion control ordinance to control erosion and sediment to extend the effective life of water resource facilities and reduce pollutant loading to streams, lakes, and wetlands.

Policy 3.3: The City will develop proactive measures such as education, and recognition of erosion control efforts to prevent soil erosion and encourage responsible site development.

Policy 3.4: Construction site inspection by the City must be completed prior to commencing earthwork activities to ensure the proper BMPs are in place and operational.

Policy 3.5: Best management practices shall be used at all construction sites per the MPCA's MS4 general permit to discharge stormwater associated with construction activities.

Policy 3.6: The City will maximize the use of bioengineering approaches whenever possible for all slope stabilization and permanent erosion control projects.

7.4. Goal 4: Wetlands

The purpose of this goal is to maintain or increase the amount of wetland acreage, and increase the wetland functions and values within the City, in accordance with the MCWD and NMCWD rules. The watershed districts are the LGU for the Wetland Conservation Act (WCA). The City has not completed a Comprehensive Wetland Management Plan. The wetland inventory is based on the wetlands on the National Wetland Inventory (NWI), Minnesota Department of Natural Resources (MNDNR) and MCWD records, which may not include all of the wetlands and aquatic resources in the City. Field delineation, assessment of hydrology, identification of plant species, characterizations of soils, MnRAM assessment and restoration are generally completed and reviewed on an "as development occurs" basis. This approach places the financial burden for identification, delineation, and possible restoration on the land developer.

The policies below will be used to achieve the City's wetland goals. The strategies will apply to new development and redevelopment projects submitted to the City for review and approval. Any wetland habitat on property to be developed will be subject to the following management strategies, as well as the rules and requirements of the WCA and other City, State, and Federal regulations.

Proper implementation of wetland buffers during developments is paramount. Without proper implementation of buffers; creek and wetland water temperatures increase, sediment deposition increases, stream bank erosion and collapse are more severe, and riparian habitats are destroyed.

Subject: Wetland Management

Purpose: To utilize, protect, preserve, and enhance existing natural wetlands.

Goal: Maintain or increase the amount of wetland acreage, and increase the wetland functions and values within the City.

7.4.1. Wetland Policies

Policy 4.1: The MCWD and NMCWD shall administer wetland protection and mitigation as the LGU in accordance with the Minnesota WCA.

Policy 4.2: Pretreatment of runoff shall be provided for runoff directly discharged into a wetland.

Policy 4.3: The City may utilize the available technical resources of outside agencies, such as the Minnesota DNR, USACE, Scott SWCD, the Board of Water and Soil Resources and/or the MCWD and NMCWD, for review of private developments and City-proposed projects that may affect wetland resources.

Policy 4.4: A protective buffer strip of natural vegetation, at least 16.5 feet in width, must be retained around wetlands; or in accordance with the standards in the City's Engineering Design Guidelines, MCWD rules, and NMCWD rules.

Policy 4.5: Where feasible, the duration and magnitude of water level fluctuation in wetlands from stormwater runoff shall be minimized to prevent adverse habitat changes.

Policy 4.6: Replacement for unavoidable wetland impacts will be provided (if possible, within the same subwatershed), in accordance with the requirements of the MCWD, the NMCWD and the WCA.

7.5. Goal 5: Groundwater Management

The City's groundwater resources are identified in the City's Wellhead Protection Plan. The City's aquifers have been assigned a "Vulnerable" rating. This rating indicates "there is a hydraulic connection between surface waters and the aquifer serving the water supply system for the City".

The City of Hopkins Wellhead Protection Plan currently outlines requirements for continued groundwater protection and well management. The report is obtainable from the City.

Subject: Groundwater Management

Purpose: To protect groundwater quality and improve groundwater supplies through effective management.

Goal: Provide clean and safe drinking water for the City while managing increased development and population.

7.5.1. Groundwater Management Policies

Policy 5.1: Promote ongoing evaluation of land use impacts on groundwater quality and quantity.

Policy 5.2: Provide information to the public by revising and updating the City Wellhead Protection Plan as required by the Minnesota Department of Health.

Policy 5.3: Support identification and reduction of groundwater contamination from both point and non-point sources.

Policy 5.4: Promote water conservation efforts to reduce water use and conserve the City's groundwater resources.

Policy 5.5: Infiltration of stormwater and resulting groundwater recharge will be promoted where

feasible and if it does not pose a threat to groundwater quality.

Policy 5.6: The City will continue to implement its Wellhead Protection Plan.

7.6. Goal 6: Floodplain Management

The Minnehaha Creek and Nine Mile Creek corridors are shown on the Flood Insurance Rate Map (FIRM) for the City of Hopkins that are identified as Zone AE floodplains (see **Figure SW-01**). Base flood elevations have been determined for these floodplains. The City's ordinance will regulate development adjacent to the floodplain districts.

Moderate flood hazard areas, labeled Zone X (shaded) are also shown on the FIRM, and are the areas between the limits of the base flood (100-year) and the 0.2-percent-annual-chance (or 500-year) flood. Unshaded Zone X areas are those areas determined to be outside the 100-year and 500-year floodplains.

These areas have been identified on the FIRM as areas of moderate or minimal hazard from the principal source of flood in the area. However, buildings in these zones could be flooded by severe, concentrated rainfall coupled with inadequate local drainage systems.

Subject: Floodplain Management

Purpose: To provide flood protection for people and property.

Goal: Manage and protect the floodplains from encroachment.

7.6.1. Floodplain Management Policies

Policy 6.1: Protect the natural function of a floodwater storage area in a floodplain from encroachment.

Policy 6.2: Work to maintain no net loss of floodplain storage.

Policy 6.3: Manage floodplains to maintain critical 100-year flood storage volumes.

Policy 6.4: Restrict construction of new structures to sites above flood prone areas.

Policy 6.5: Maximize upstream floodwater storage areas and require mitigation for any fill within a floodplain.

Policy 6.6: Prohibit stormwater runoff volume increases to landlocked areas due to development or redevelopment activity, unless analyzed, documented and acceptable by the City engineer.

Policy 6.7: Administer review and approval of development and redevelopment consistent with MCWD and NMCWD floodplain rules.

7.7. Goal 7: Public Participation, Information & Education

The purpose of this goal is to increase public participation and knowledge in management of the City's water resources, in accordance with the MWCD and the NMCWD. Public involvement is a strategy that recognizes people want to be involved in decisions that affect any facet of their life. It provides opportunities for the public to participate in the processes that lead to decision-making.

As part of the NPDES/SDS Phase II requirements the City was required to prepare a Surface Water Pollution Prevention Plan (SWPPP). There are two minimum control measures in the SWPPP that deal

with public education and participation. Measure number one is: Public Education and Outreach on Storm Water Impacts. Measure number two is: Public Participation and Involvement. To meet the permit requirements the City must educate its citizens on six minimum control measures in the SWPPP. The City must also hold at least one public meeting per year to address the annual report regarding the SWPPP to receive public input. The activities described in the SWPPP will be the guiding document that will be followed to increase public awareness of the storm water related issues.

The website is an alternative medium to provide municipal information to both City residents and those people who live outside of Hopkins. The following is a link to the City's storm water management website: <http://www.hopkinsmn.com/446/Storm-Water-Management>

The City will continue to distribute information on pertinent stormwater management issues via the City weekly newsletter "Connections". The newsletter will periodically promote opportunities for residents to participate in water resources management activities. The City will make an ongoing effort on both a City-wide and watershed level toward educating the public by distributing information to its residents on responsible practices they should employ to protect water resources within the community.

Subject: Enhancement of Public Participation, Information and Education

Purpose: Encourage active community involvement in water resources management.

Goal: Increase public participation and knowledge in management of the water resources of the community.

7.7.1. Public Involvement Policies

Policy 7.1: The City will use a public involvement process in resource management decision-making (i.e., the Park Board and the Planning and Zoning Commission).

Policy 7.2: The City will use a variety of media, including newsletters, and the City's Website, to inform the community about water resource issue programs including illicit discharges, storm water grants, fertilizers, etc.

Policy 7.3: The City will work with all available resources to increase public participation in water resources management.

Policy 7.4: The City will follow the best management practices outlined in the City's Storm Water Pollution Prevention Plan (SWPPP) that address public education and outreach and public participation/involvement. Educational goals and activities have been identified in the SWPPP to make the public more informed of the impact storm water discharges and pollutants have on receiving waters.

Policy 7.5: The City will hold an annual coordination meeting to review the City's Capital Improvement Program and/or potential development projects with MCWD and NMCWD if initiated and coordinated by MCWD or NMCWD.

Policy 7.6: The City's MS4 Annual Report will be transmitted if required by the SWPPP or if requested by the MCWD or NMCWD.

Policy 7.7: The City will continue to engage the Watersheds in land use planning, where appropriate, and consider collaborative roles with the Watersheds in implementing programs and

capital improvements (see Table 9.4 and the City's CIP). Information will be coordinated consistent with the City's adopted zoning ordinance and all applicable regulations.

Policy 7.8: Upon receipt of redevelopment or development plans for City approval, the City will notify and share such plans with the MCWD or NMCWD as applicable, prior to such approvals being made by the City.

8. Assessment of Problems

An assessment was done of the water resource problems in Hopkins. These problems include both existing problems and potential problems. The existing problems are issues that currently exist in Hopkins from past natural events, development, or pollution. The potential problems are issues that may happen if actions are not taken to improve current issues or prevent new issues from arising. These problems are summarized below:

8.1. Surface Water Quantity

Any new construction has the potential of increasing runoff rates and volumes. The City should review stormwater concerns in its construction permitting process, as part of its MS4 program. The detail of each review can be related to the potential the project has to affect downstream areas.

Several types of modifications can affect the existing runoff conditions. Below is a list of some activities which could significantly affect flooding. Proposed construction which meets any of these conditions should be subject to a more detailed runoff analysis before it is approved:

- a. The construction increases the amount of impervious area.
- b. The construction changes any stormwater flow path (on surface or sewer).
- c. The construction is within a local low area.
- d. The construction reduces existing stormwater detention in any local low area.
- e. The construction includes a land area of more than a few acres.

Climate change is increasing the intensity and frequency of storm events. Sizing of ponds and conveyance systems to current standards is critical to prevent the worsening of downstream flooding. Also, protecting existing surface overflow locations and elevations during redevelopment is vital.

8.2. Water Quality in Local Creeks, Lakes and Other Bodies of Water

Water quality can be affected by runoff, animals, and climate change, as well as a wide variety of other sources. One of the main designations of poor water quality in a body of water is if it is considered an impaired water. It will be a goal of the City to preserve the current quality of their water resources as well as improve them where applicable. The Environmental Protection Agency (EPA) requires that the Minnesota Pollution Control Agency (MPCA) have standards to assess the quality of Minnesota waters under the federal Clean Water Act (CWA). The MPCA declares that any body of water that does not meet one or more of the quality pollution control standards is considered to be an impaired body of water. The MPCA is responsible for protecting the bodies of water in Minnesota from pollutants and restoring impaired waters to a higher quality of water to preserve their beneficial uses. Under Section 303(d) of the CWA, states have to identify their impaired waters and submit a list every two years. Along with a published list of the impaired waters for the state, a Total Maximum Daily Load (TMDL) Study is also required for approval by the EPA.

Surface waters are assessed for several beneficial uses. The uses include aquatic life, drinking water and aquatic consumption (human health-based), aquatic consumption (wildlife-based), aquatic recreation, and limited value resource waters. The pollutants for each of these uses ranges widely. The pollutants assessed are low dissolved oxygen, pH, total suspended solids (TSS), temperature, trace metals, and bacteria, along with many others. The impaired waters in Hopkins and information about

each can be found in Table 8.2. An illustration of the locations of existing impaired waters in Hopkins is shown in **Figure SW-01**.

Impaired Waters

Total Maximum Daily Load (TMDL) represents the maximum amount of a pollutant that a water body can receive and still meet federal and state water quality standards. TMDL also refers to the process of allocating pollutant loadings among point and non-point sources.

Minnehaha Creek, from Grays Bay to the Mississippi River, was initially added to the list of 303d impaired waters in 2004. It is currently listed for impairments due to aquatic macroinvertebrate bio assessments, fishes bioassessments, and dissolved oxygen.

Nine Mile Creek, from the headwaters to Metro Boulevard, was initially added to the list of 303d impaired waters in 2004 for fishes bioassessments as a stressor/pollutant.

In the 2018 draft 303d impaired waters list (see Figure SW-03) the stressor/pollutant for aquatic macroinvertebrate bioassessments has been added. In 2002 Nine Mile creek was listed as impaired for turbidity from the headwaters to the Minnesota River, but has been delisted for this pollutant in 2010.

Minnehaha Creek and Nine Mile Creek are identified in the 2018 draft list of impaired waters for the following impairments:

| Table 8.2: Impaired Waters List | | | | | |
|---------------------------------|-------------------------|----------------------------------------|-------------|------------------------------|---------------------|
| Waterbody | Affected Designated Use | Pollutant or Stressor | Year Listed | TMDL Study Target Completion | TMDL Study Approved |
| Nine Mile Creek | Aquatic Life | Chloride | 2004 | --- | 2010 |
| | Aquatic Life | Fish Bioassessments | 2004 | 2019 | --- |
| Minnehaha Creek | Aquatic Recreation | E. coli | 2008 | --- | 2014 |
| | Aquatic Life | Chloride | 2008 | --- | 2016 |
| | Aquatic Life | Fishes Bioassessments | 2004 | 2025 | --- |
| | Aquatic Life | Aquatic Intervertebrate Bioassessments | 2014 | 2025 | --- |
| | Aquatic Life | Dissolved Oxygen | 2010 | 2025 | --- |

The City looks forward to working with the MPCA, Minnehaha Creek and Nine Mile Creek Watershed Districts in the TMDL study planning process.

Minnesota Rules address the antidegradation requirements, which are equivalent with the Federal EPA antidegradation policy. Antidegradation requirements promote the protection of water quality that exceeds the minimum water quality standards relevant to a waterbody according to its designated use. The City of Hopkins was not a selected community that had to prepare a Nondegradation Report as per Appendix D of the 2006 MS4 Permit (MNR040000).

8.3. Erosion Control

Erosion Control is an area that the City has put forth considerable effort. With the adoption of the Erosion Control Ordinance in October 2008, the City has the regulatory mechanism in place to promote and enforce actions that reduce soil erosion and sedimentation.

8.4. Wetlands

The City's wetlands, in general, are affected by stormwater runoff discharged into the wetlands. The City recognizes the benefits of healthy wetlands and when projects are proposed in the vicinity of wetlands actions will be taken to treat water prior to discharge into existing wetlands.

8.5. Groundwater Management

A majority of the City is located within a Drinking Water Surface Management Area (DWSMA) which necessitates increased land use controls to protect groundwater-based drinking supplies from contamination. Potential sources of contaminants within 200 feet of the system's water sources are identified in the City's Wellhead Protection Plan (WHP).

The WHP provides an assessment of water use and land use issues, problems, opportunities the City can and has taken to support wellhead protection efforts. See Appendix B for further information.

While the City normally promotes infiltration as a stormwater best management practice, it may not be appropriate on all sites. The City's management of stormwater with regards to its impact on groundwater is guided by the City's Stormwater Pollution Prevention Plan, MS4 permit and ordinances.

8.6. Floodplain Management

The City will need to continue to address localized flooding areas to protect life and property and reduce the burden of maintaining the storm sewer system. The City requires all stormwater infrastructure, development and redevelopment projects to use updated Atlas 14 rainfall frequency data in their analysis and design process to account for the latest weather trends. Evaluating the existing drainage system as part of the annual street improvement program will be an essential element of the City's efforts to manage and reduce localized flooding.

8.7. Public Education

Continued public education regarding storm water related issues for residents, developers and City staff.

8.8. NPDES MS4 Permit

The City of Hopkins is a mandatory Municipal Separate Storm Sewer System (MS4) community and has obtained an MS4 permit from the MPCA. As a condition of the permit the City was required to prepare a SWPPP. The SWPPP identifies structural and non-structural controls that will be put into place to minimize negative impacts caused by stormwater discharges to the environment. Best management practices (BMPs) have been identified and are used to meet the six minimum control measure requirements of the permit.

A map was created of City owned property, see **Figure SW-09**. BMPs have been developed in the City's SWPPP that are designed to prevent or reduce the storm water impacts from these City owned sites. Practices that will help prevent pollution within the City's jurisdiction can be found in the City's

SWPPP, which is in Appendix A.

9. Implementation Program and Associated Costs

The overall implementation program includes a mixture of capital improvement projects, studies, ongoing maintenance, inspection, and other recommended management activities over the next 10 years. As with all improvements, there is a cost associated with prudent storm water management. The Stormwater Utility Fund (SUF) is used for expenses associated with maintaining and improving the City’s stormwater system. It is anticipated that projects will be paid for using the SUF, the general fund and grants that may be obtained for special projects.

The City of Hopkins is a MS4 (Municipal Separated Storm Sewer System) community and is subject to those rules of the Minnesota Pollution Control Agency (MPCA). To accomplish the water resource goals created by this plan and in the MS4 SWPPP, the City will work with local and statewide agencies.

- The City will seek opportunities to incorporate runoff control, infiltration, and other best management practices into infrastructure and redevelopment projects as a means to improve stormwater management within a highly developed city.
- Use development review and approval process to ensure that minimum standards are met and explore achievement of higher standards through BMPs to achieve water resource goals.
- Work closely with MCWD and NMCWD for future TMDL studies affecting Minnehaha Creek and Nine Mile Creek.

Private development that consists of stormwater facilities to be maintained by the developer will be required to enter into a stormwater management agreement that spells out the maintenance requirements for the stormwater facility.

9.1. Ordinances and Official Controls

Ordinances have been established to prevent land disturbing activities from washing soil and sediment into public waters and protect natural resources. Table 9.1 summarizes the ordinances and controls the City utilizes to comply with their MS4 permit:

| Table 9.1: Ordinance and Official Controls | |
|--------------------------------------------|----------------------------------------------------|
| Ordinance Number/Permit | Ordinance/Official Control |
| 545.01 | Zoning: Flood Plain District |
| 546.04 Subd. 2 | Storm Water Management Plan |
| 546.06 Subd. 6 | Site Erosion Control |
| 546.06 Subd. 8 | Design Standards – Stormwater detention facilities |
| 546.03 Subd. 9 | Wetlands, buffers |
| 555.19 Subd. 2 | Landscaping, Site Plan Review (Tree Preservation) |
| 720.01 | Storm Sewer Drainage Utility |
| 725.01 | Illicit Discharge and Connections |

| Table 9.1: Ordinance and Official Controls | |
|--------------------------------------------|----------------------------|
| Ordinance Number/Permit | Ordinance/Official Control |
| MNR040000 | MS4 SWPPP program |

9.2. Financial Considerations

The cost of implementing the Water Resource Management Plan will be supported by several revenue sources. Table 9.2 includes several of the sources that will be used to implement the plan.

| Table 9.2: Water Resource Management Plan Funding | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Potential Funding Source | Revenue Produced |
| <p><u>City’s Storm Sewer Utility Fee</u> The City has implemented a storm sewer fee that charges home owners \$5.00/month. The funds generated from this fee are used to finance the storm water management program. Commercial and multi-family residential property is charged on a per acre basis.</p> | Approximately \$810,000/year. |
| <p><u>Special Assessments</u> The idea behind this assessment method is that generally the benefited properties pay in relation to the benefits received. The benefit would be realized by an increase in market value of the property that resulted from the improvement.</p> | Variable depending on the projects undertaken. |
| <p><u>Grants</u> State and Federal grants are available for surface water management and non-point source pollution. Grants can be a good way to help fund special projects that meet grant eligibility criteria, but are not a good finance source to depend upon for an annual income source.</p> | Variable depending on the projects undertaken. |
| <p><u>Land Development Fees</u> As new development occurs, each building permit requires a total valuation fee per building.</p> | Variable depending upon the amount of development that occurs on an annual basis. |

9.3. Capital Improvement Program

The City of Hopkins is responsible for maintaining its stormwater system, including storm sewer pipes, ponds, and channels. The City implements a five-year Capital Improvement Program (CIP), which is updated annually, to meet the continuing need of public infrastructure maintenance and repair. The CIP is intended to serve as a planning tool and is therefore structured to present a meaningful, long-range perspective of the city’s capital programming needs. The CIP is used as the implementation of the City’s stormwater infrastructure needs. The following link provides a copy of the City’s current Capital Improvement Program:

<http://www.hopkinsmn.com/ArchiveCenter/ViewFile/Item/258>

The CIP also provides the five-year forecast of major capital needs for the following City programs:

- Utilities Program
- Transportation Program
- Parks, Forestry and Pavilion Program
- General Public Buildings Program
- Economic Development Program

9.4. Implementation Priorities

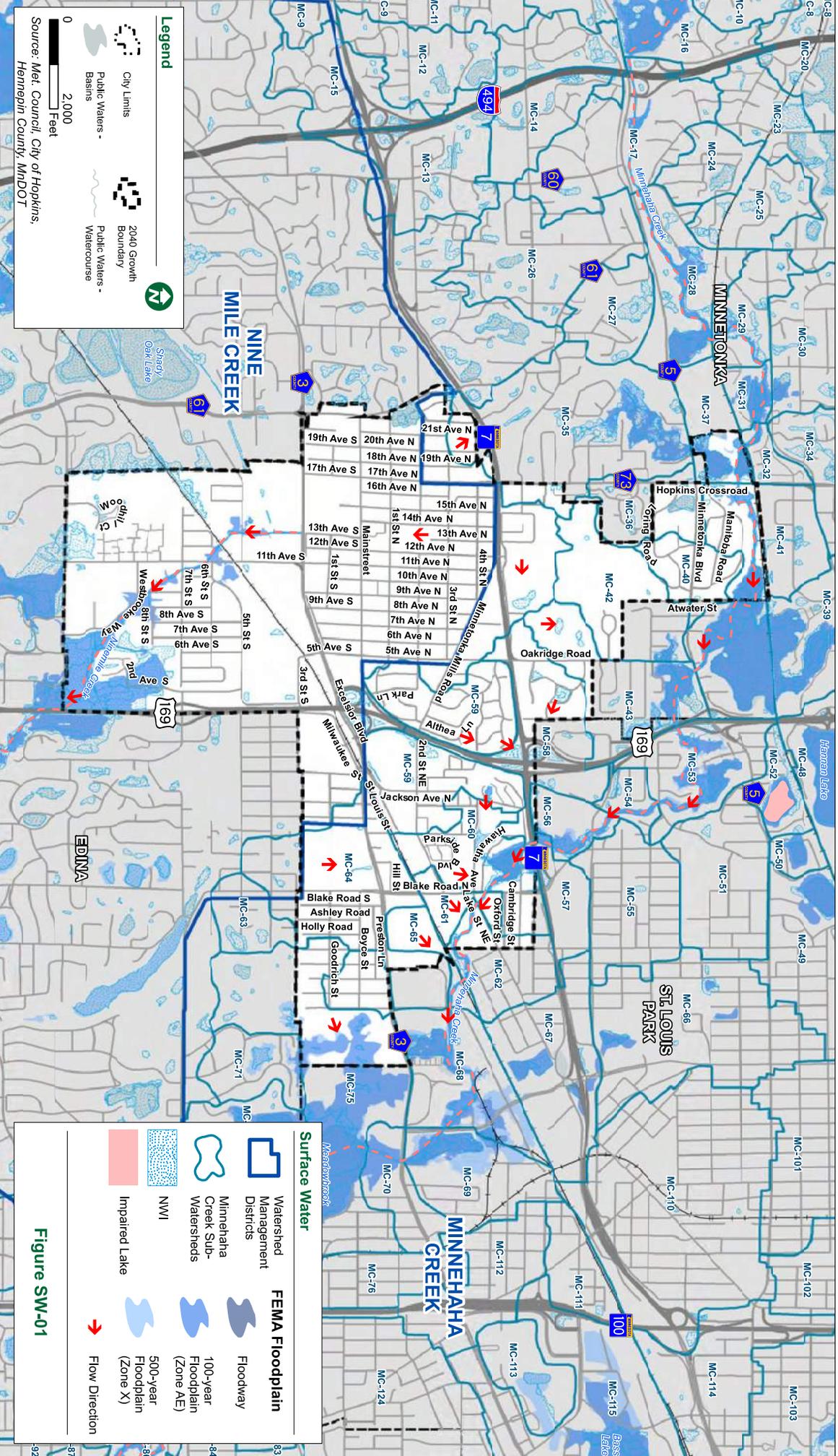
Recommended projects, timing, cost and funding sources that are applicable in order to achieve the plan goals are summarized in implementation Table 9.4. The City will finance these goals either directly or by specific development related review and construction inspection budgets.

| Table 9.4: Proposed Implementation Program | | | | |
|--------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|----------------|---------------------------------------------------------------------------------------|
| Priority | Project Description | Timing | Estimated Cost | Funding Source |
| Medium | Storm sewer reconstruction | Annual | \$200,000 | SUF |
| High | Storm sewer maintenance program to ensure the successful operation of the drainage system. | On-going | \$15,000 | SUF |
| High | Enforcement of the erosion and sedimentation control ordinance for new developments. | On-going, as development projects are submitted to the City for approval | | Funding by developer's fees, building permits and fines collected for non-compliance. |
| High | High water elevations governing building finish floor elevations adjacent to ponding areas and floodplains to be established per this Plan, Rules, and Ordinance. | On-going, as development projects are submitted to the City for approval | | Funding by developer's fees and building permits. |
| High | Inspect stormwater ponds (100% per permit cycle). | On-going | \$2,000 | SUF |
| High | Storm sewer pond maintenance & clean out. | On-going | \$25,000 | SUF |
| High | Inspect 20% of all outfalls 24" and larger. | On-going | \$1,000 | SUF |
| High | Inspect erosion control BMP's on all construction sites. | On-going | \$10,000 | Funding by developer's fees and building permits. |
| High | Street sweeping at 2 times per year. | On-going | \$25,000 | SMF |
| High | Continue active participation in the activities of the watershed districts located within the city. | On-going | | SUF |
| High | On-going channel maintenance of Minnehaha Creek and Nine Mile Creek. | On-going | Varies | SUF/Cost Share Grants |
| Medium | Implement education program on stormwater education for City residents, staff and development community. | On-going | \$2,500 | SUF |
| High | Implement illicit discharge education, detection, and elimination tasks included in SWPPP. | On-going | \$3,000 | SUF |
| Medium | Work towards completing an overall City stormwater model. | On-going | | SUF |
| Medium | Maintain city website with stormwater management issues. | On-going | | SUF |
| High | Revise City ordinances as necessary to stay compliant with the latest NPDES and MS4 permits. | Every 5 years | \$5,000 | SUF |
| High | Continued implementation of the City's Wellhead Protection Program | On-going | \$2,000 | SUF |
| Medium | Update storm sewer system mapping in the City's GIS and other databases. | On-going | \$5,000 | SUF |
| High | Stormwater plan review for new development projects. | On-going | Varies | Development fees |
| Low | Review stormwater utility fee for sufficient operating funds. | Every 5 years | \$5,000 | SUF |

GF = General Fund, SUF = Stormwater Utility Fund

Note: Cost estimates are based upon present day dollar amounts, and do not account for inflation.

Figures



0 2,000 Feet

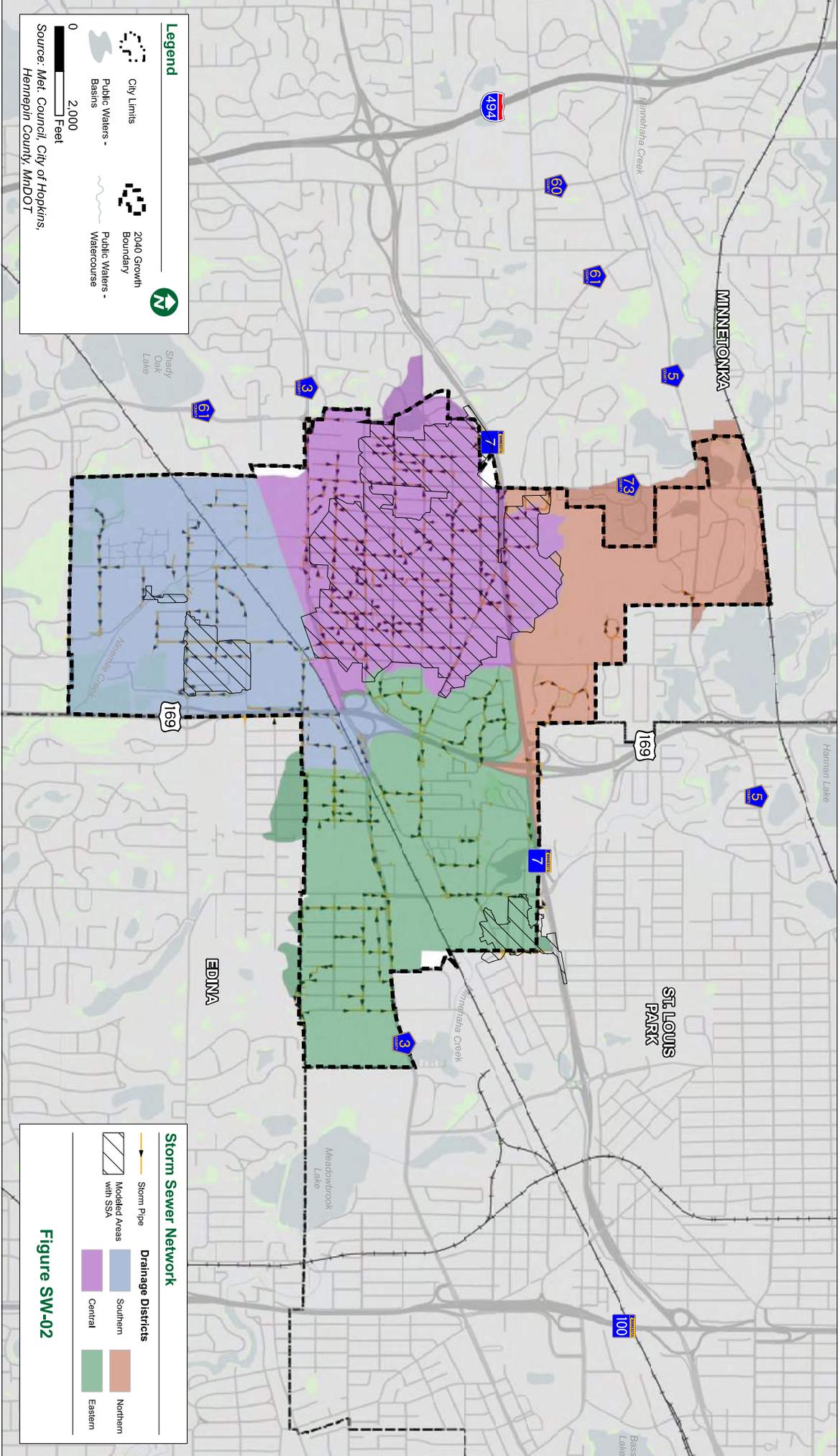
Source: Met. Council, City of Hopkins, Hennepin County, MNDOT

Surface Water

- Watershed Management Districts
- Minnehaha Creek Sub-Watersheds
- NWI
- Impaired Lake

FEMA Floodplain

- Floodway
- 100-year Floodplain (Zone AE)
- 500-year Floodplain (Zone X)
- Flow Direction



Legend

-  City Limits
-  Public Waters - Basins
-  2040 Growth Boundary
-  Public Waters - Watercourse

Scale: 0 to 2,000 Feet

Source: Met. Council, City of Hopkins, Hennepin County, MnDOT

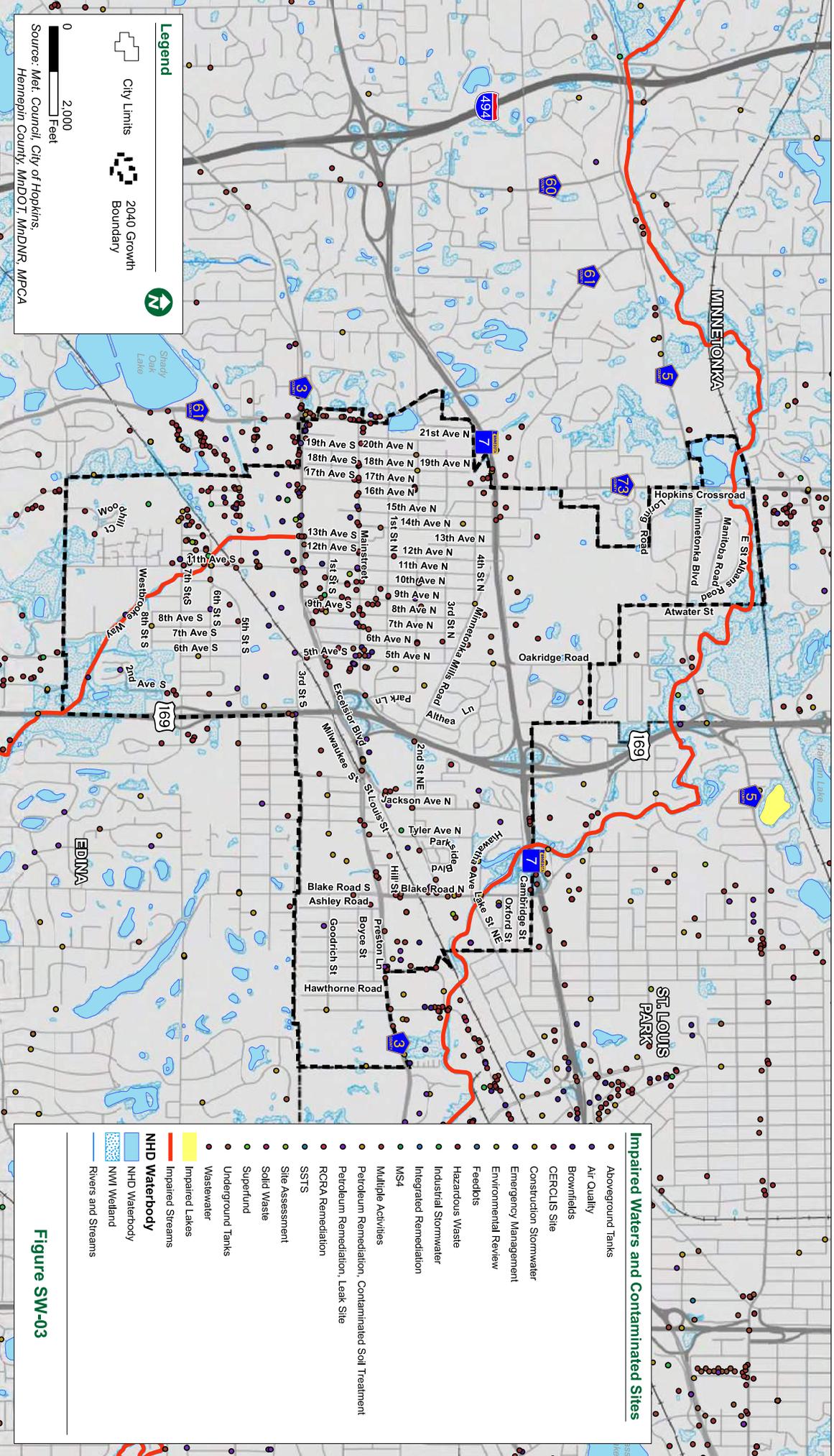
Storm Sewer Network

-  Storm Pipe
-  Modified Areas with SSA

Drainage Districts

-  Southern
-  Central
-  Northern
-  Eastern

Figure SW-02



Legend

- City Limits
- 2040 Growth Boundary

0 2,000 Feet

Source: Met. Council, City of Hopkins, Hennepin County, MNDOT, MNDNR, MPCA

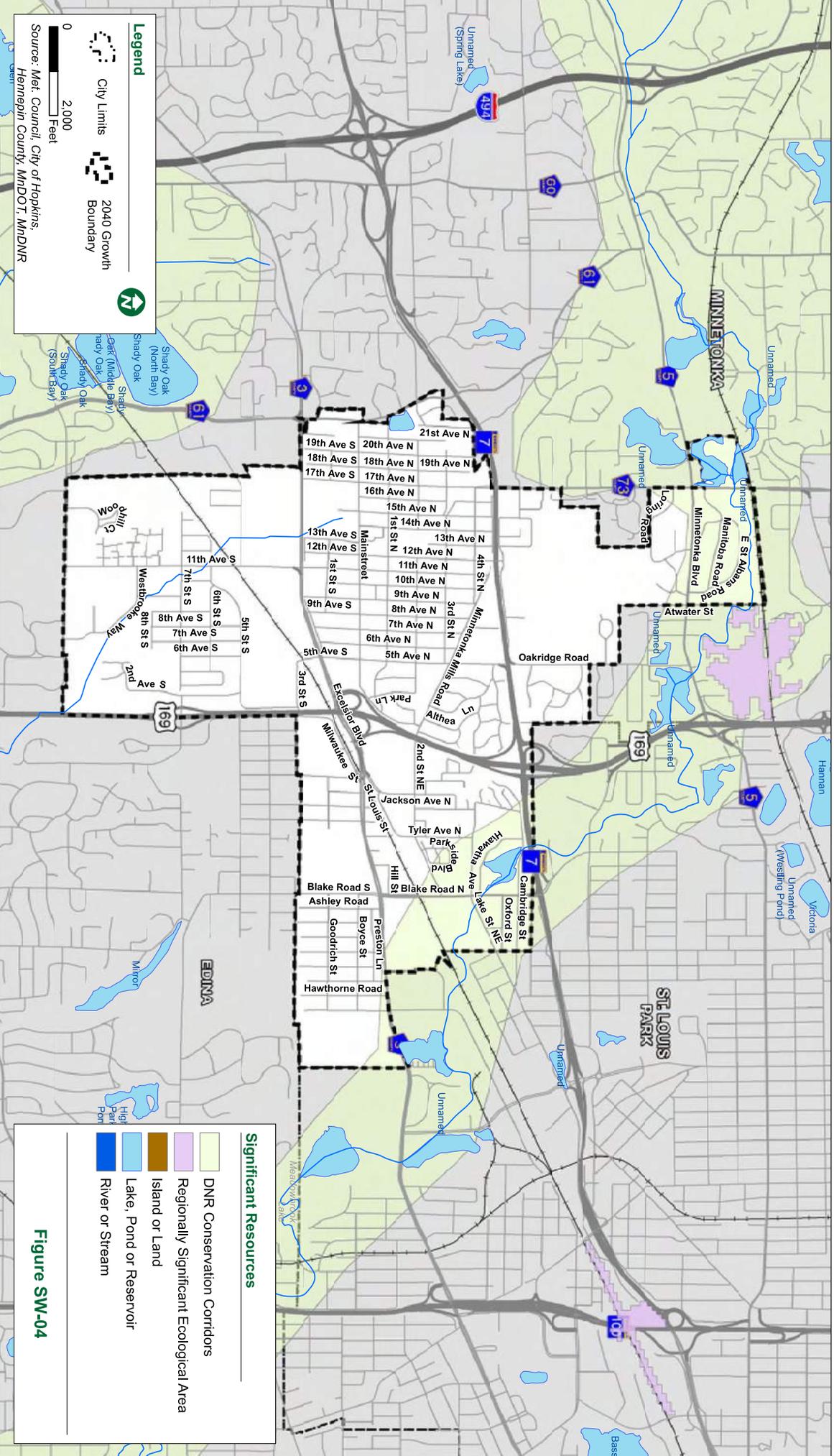
Impaired Waters and Contaminated Sites

- Aboveground Tanks
- Air Quality
- Brownfields
- CERCLIS Site
- Construction Stormwater
- Emergency Management
- Environmental Review
- Feedlots
- Hazardous Waste
- Industrial Stormwater
- Integrated Remediation
- MS4
- Multiple Activities
- Petroleum Remediation, Contaminated Soil Treatment
- Petroleum Remediation, Leak Site
- RCRA Remediation
- SSTS
- Site Assessment
- Solid Waste
- Superfund
- Underground Tanks
- Wastewater
- Impaired Lakes
- Impaired Streams

NHD Waterbody

- NHD Waterbody
- NMI Wetland
- Rivers and Streams

Figure SW-03



Legend

- City Limits
- 2040 Growth Boundary
-

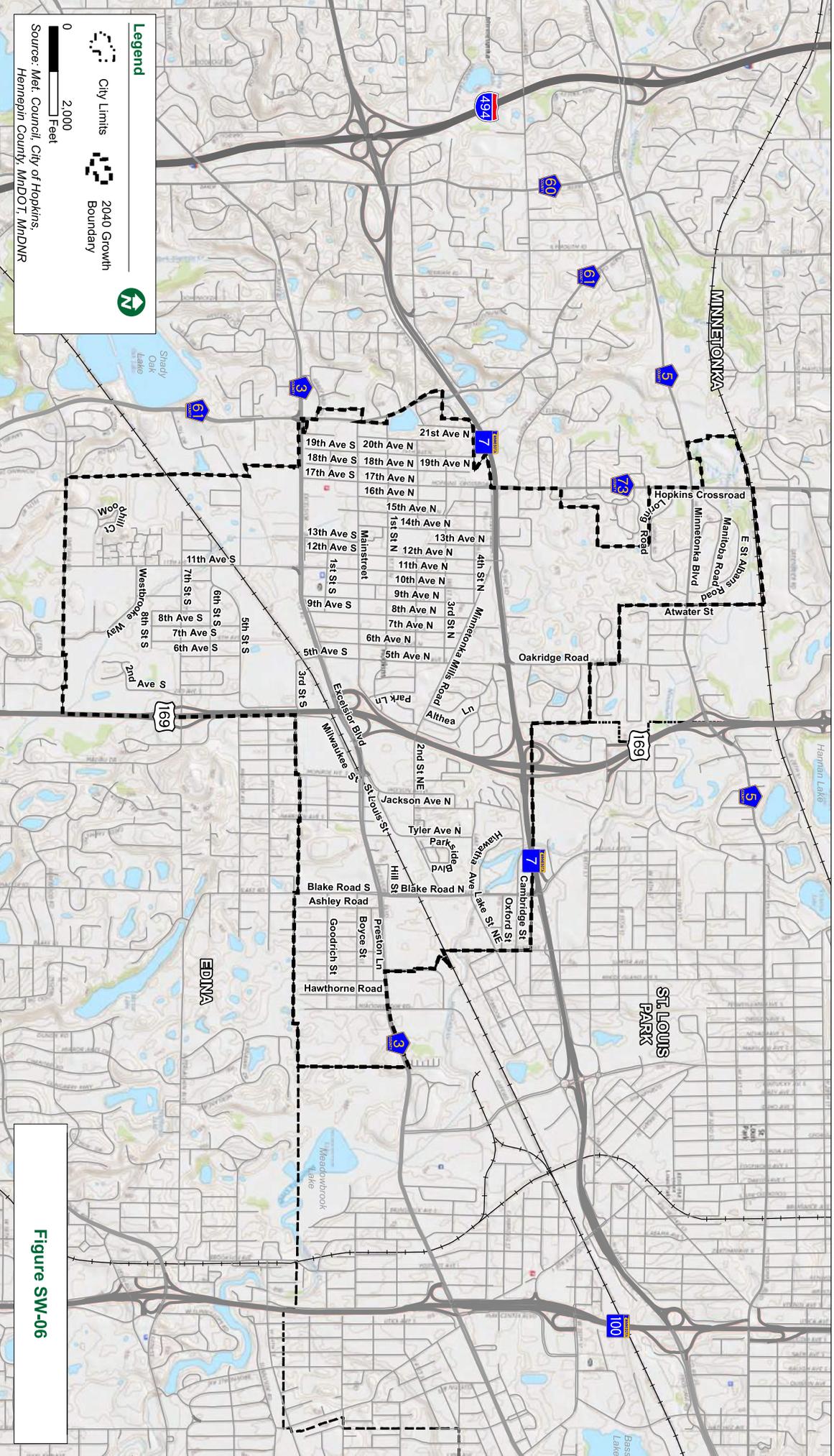
0 2,000 Feet

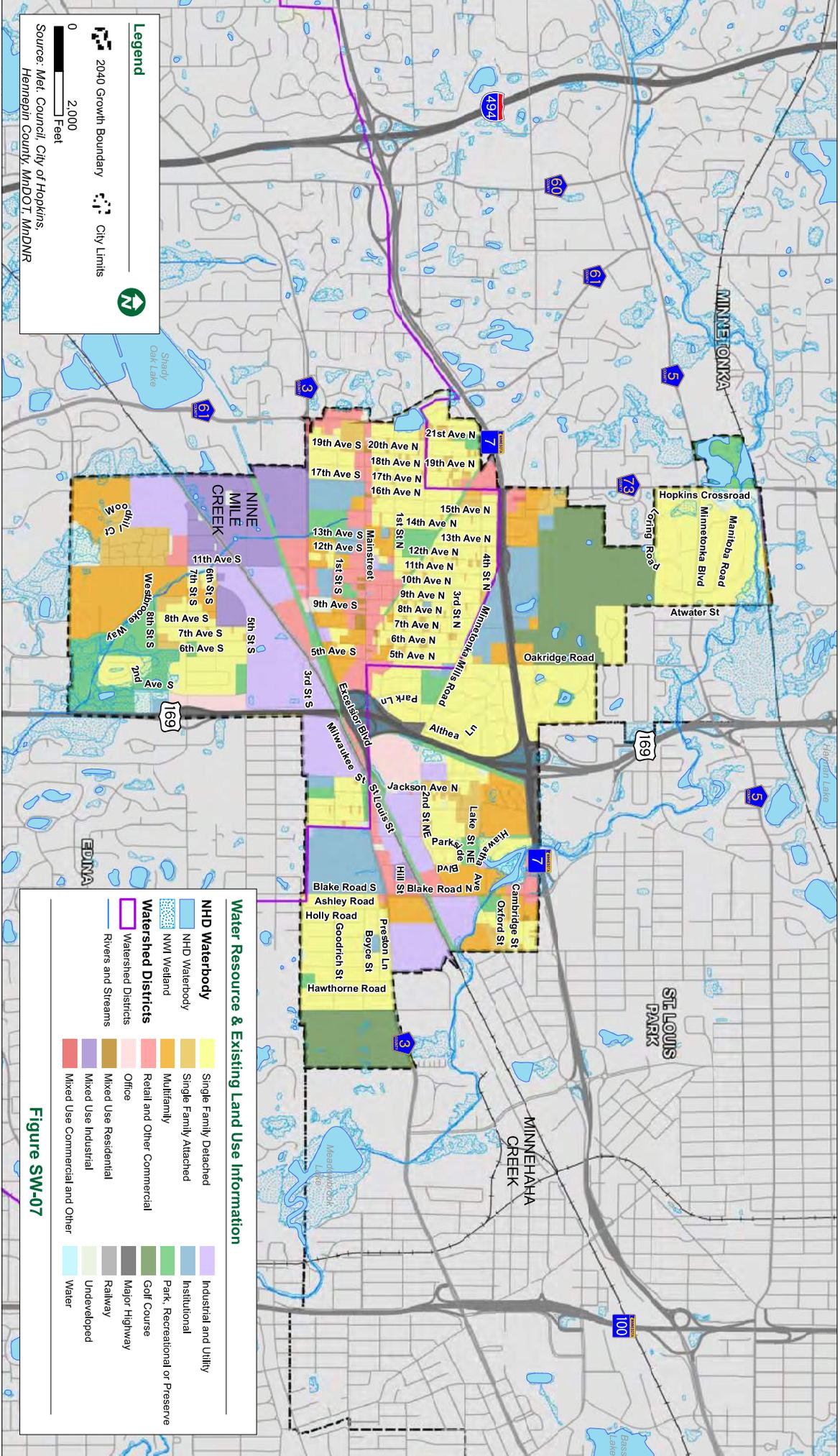
Source: Met. Council, City of Hopkins, Hennepin County, MNDOT, MNDNR

Significant Resources

- DNR Conservation Corridors
- Regionally Significant Ecological Area
- Island or Land
- Lake, Pond or Reservoir
- River or Stream

Figure SW-04





Legend

- 2040 Growth Boundary
- City Limits

0 2,000 Feet

Source: Met. Council, City of Hopkins, Hennepin County, MnDOT, MnDNR

Water Resource & Existing Land Use Information

| | | |
|---------------------|--------------------------------|--------------------------------|
| NHD Waterbody | Single Family Detached | Industrial and Utility |
| NHD Waterbody | Single Family Attached | Institutional |
| NHD Wetland | Multifamily | Park, Recreational or Preserve |
| Watershed Districts | Retail and Other Commercial | Golf Course |
| Rivers and Streams | Office | Major Highway |
| | Mixed Use Residential | Railway |
| | Mixed Use Industrial | Undeveloped |
| | Mixed Use Commercial and Other | Water |

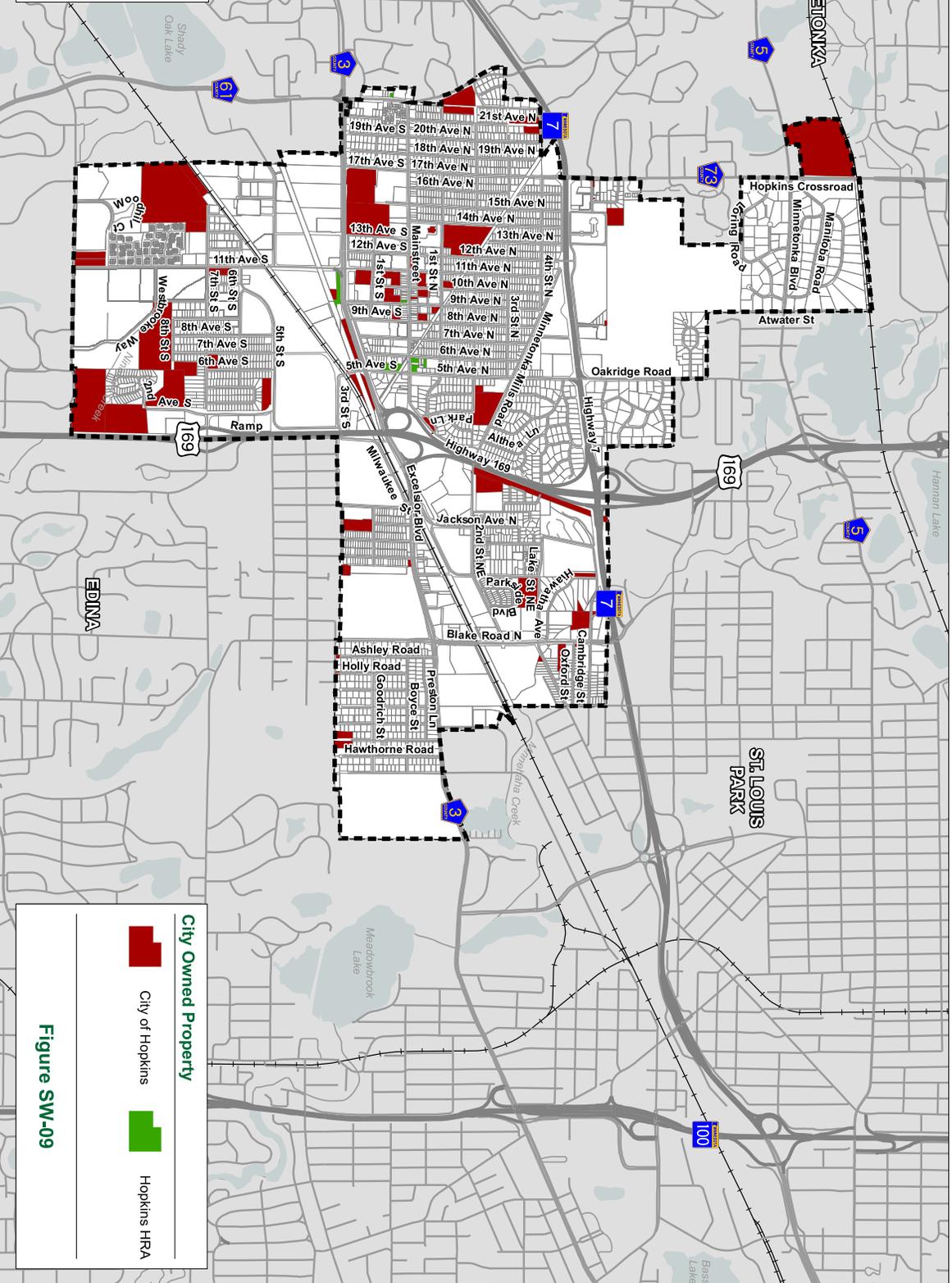
Figure SW-07

Legend

-  City Limits
-  County Boundary
-  2040 Growth Boundary

0 2,000 Feet

Source: Met. Council, City of Hopkins, Hennepin County, MNDOT



City Owned Property

-  City of Hopkins
-  Hopkins HRA

Figure SW-09

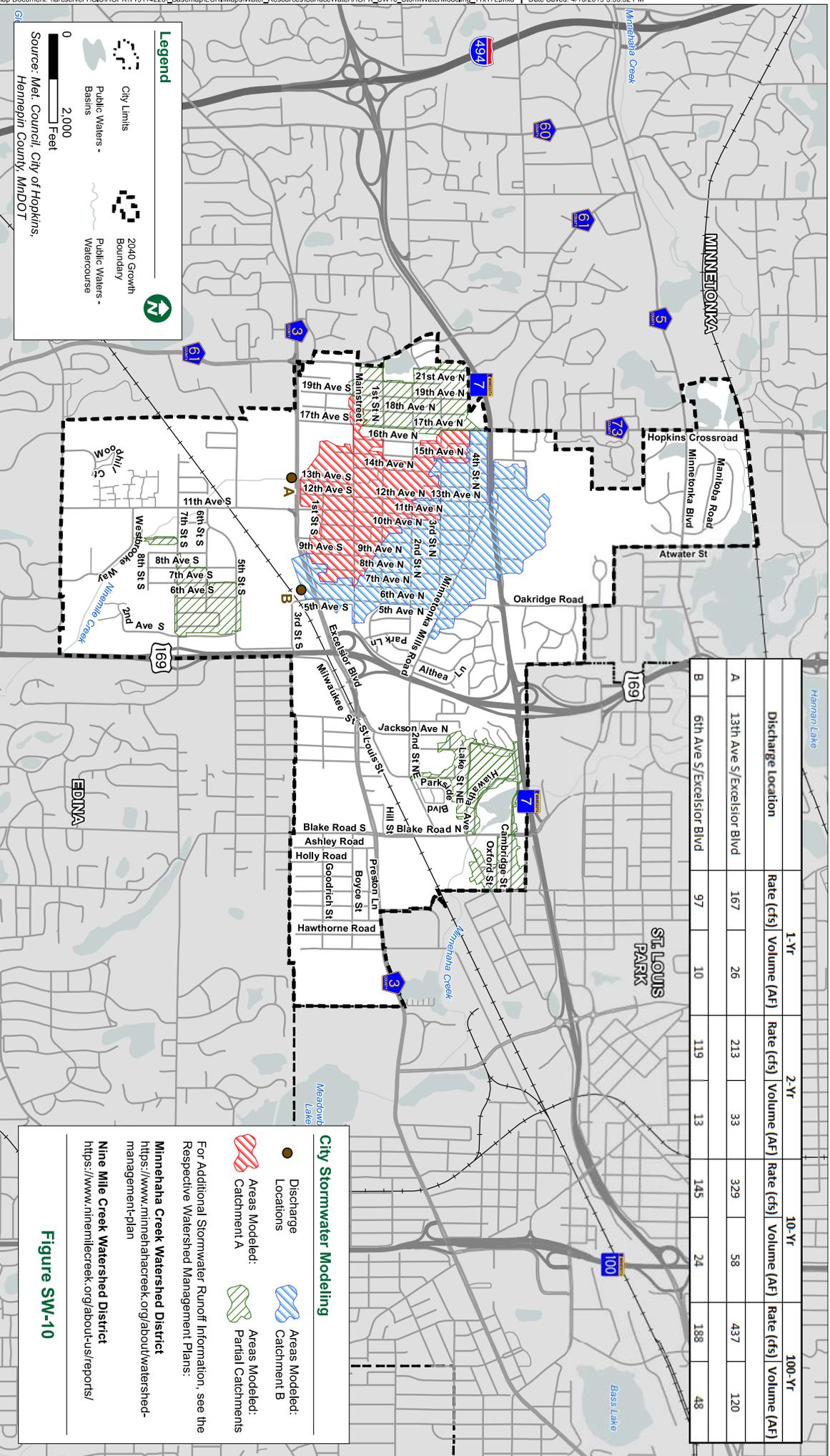


Figure SW-10

Appendix A:

City of Hopkins Stormwater Pollution Prevention Plans (SWPPP)



Minnesota Pollution Control Agency

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

MS4 SWPPP Application for Reauthorization

for the NPDES/SDS General Small Municipal Separate Storm Sewer System (MS4) Permit MNR040000 reissued with an effective date of August 1, 2013 Stormwater Pollution Prevention Program (SWPPP) Document

Doc Type: Permit Application

Instructions: This application is for authorization to discharge stormwater associated with Municipal Separate Storm Sewer Systems (MS4s) under the National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) Permit Program. No fee is required with the submittal of this application. Please refer to "Example" for detailed instructions found on the Minnesota Pollution Control Agency (MPCA) MS4 website at http://www.pca.state.mn.us/ms4.

Submittal: This MS4 SWPPP Application for Reauthorization form must be submitted electronically via e-mail to the MPCA at 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 Claudia Hochstein at 651-757-2881 or claudia.hochstein@state.mn.us, Dan Miller at 651-757-2246 or daniel.miller@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 Hopkins *County: Hennepin
(city, county, municipality, government agency or other entity)
*Mailing address: 1010 First Street South
*City: Hopkins *State: MN *Zip code: 55343
*Phone (including area code): 952-548-6350 *E-mail: sstadler@hopkinsmn.com

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

*Last name: Stadler *First name: Steve
(department head, MS4 coordinator, consultant, etc.)
*Title: Public Works Director
*Mailing address: 1010 First Street South
*City: Hopkins *State: MN *Zip code: 55343
*Phone (including area code): 952-548-6350 *E-mail: sstadler@hopkinsmn.com

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

Last name: Peters First name: Jeff
(department head, MS4 coordinator, consultant, etc.)
Title: WSB & Associates
Mailing address: 701 Xenia Ave South Suite 300
City: Minneapolis State: MN Zip code: 55416
Phone (including area code): (763) 287-7150 E-mail: jpeters@wsbeng.com

Verification

- 1. I seek to continue discharging stormwater associated with a small MS4 after the effective date of this Permit, and shall submit this MS4 SWPPP Application for Reauthorization form, in accordance with the schedule in Appendix A, Table 1, with the SWPPP document completed in accordance with the Permit (Part II.D.). [X] Yes
2. I have read and understand the NPDES/SDS MS4 General Permit and certify that we intend to comply with all requirements of the Permit. [X] 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 assure 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 in the following box, 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: Steve Stadler
(This document has been electronically signed)

Title: Public Works Director Date (mm/dd/yyyy): 12/30/2013

Mailing address: 1010 First Street South

City: Hopkins State: MN Zip code: 55343

Phone (including area code): 952-548-6350 E-mail: sstadler@hopkinsmn.com

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

No partnerships with regulated small MS4s

| 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, with the following file naming convention: *MS4NameHere_Partnerships*.

The City doesn't currently have any written agreements with other MS4s for Partnerships. The City will continue to pursue other ways to incorporate program components with partners.

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

Illicit discharges

- A. 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

1. If yes:

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

Ordinance Contract language
 Policy/Standards Permits
 Rules
 Other, explain: _____

- b. Provide either a direct link to the mechanism selected above or attach it as an electronic document to this form; or if your regulatory mechanism is either an Ordinance or a Rule, you may provide a citation:

Citation:

City Code: Section 725 - Illicit Discharge and Connections

Direct link:

<http://www.hopkinsmn.com/weblink8/DocView.aspx?id=82938&searchid=10ff97a9-2dc5-420f-b51f-5079828ce53e&dbid=1>

Check here if attaching an electronic copy of your regulatory mechanism, with the following file naming convention: *MS4NameHere_IDDEreg*.

2. If no:

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

City Ordinance needs to be reviewed and evaluated. If changes are necessary they will be completed within 12 months of the date permit coverage is extended.

Construction site stormwater runoff control

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

1. If **yes**:

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

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

- b. Provide either a direct link to the mechanism selected above or attach it as an electronic document to this form; or if your regulatory mechanism is either an Ordinance or a Rule, you may provide a citation:

Citation:

City Code: Section 546 - Zoning: Stormwater management

Direct link:

<http://www.hopkinsmn.com/weblink8/DocView.aspx?id=78456&searchid=edeb0054-e06d-4311-9557-e2229712b134&dbid=1>

- Check here if attaching an electronic copy of your regulatory mechanism, with the following file naming convention: *MS4NameHere_CSWreg*.

- B. Is your regulatory mechanism at least as stringent as the MPCA general permit to Discharge Stormwater Associated with Construction Activity (as of the effective date of the MS4 Permit)? Yes No

If you answered **yes** to the above question, proceed to C.

If you answered **no** to either of the above permit requirements listed in A. or B., describe the tasks and corresponding schedules that will be taken to assure that, within 12 months of the date permit coverage is extended, these permit requirements are met:

The City's construction site stormwater runoff control regulatory mechanism will be updated to be at least as stringent as the MPCA CSW permit. This effort will be completed within 12 months of the date permit coverage is extended.

- C. 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 as described in the Permit (Part III.D.4.a.(1)-(8)), and as listed below:

- | | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|-----------------------------|
| 1. Best Management Practices (BMPs) to minimize erosion. | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| 2. BMPs to minimize the discharge of sediment and other pollutants. | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| 3. BMPs for dewatering activities. | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| 4. Site inspections and records of rainfall events | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| 5. BMP maintenance | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| 6. Management of solid and hazardous wastes on each project site. | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| 7. Final stabilization upon the completion of construction activity, including the use of perennial vegetative cover on all exposed soils or other equivalent means. | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| 8. Criteria for the use of temporary sediment basins. | <input checked="" type="checkbox"/> Yes | <input 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 assure that, within 12 months of the date permit coverage is extended, these permit requirements are met:

Post-construction stormwater management

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

1. If **yes**:

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

- Ordinance Contract language
 Policy/Standards Permits
 Rules
 Other, explain: Watershed rules

- b. Provide either a direct link to the mechanism selected above or attach it as an electronic document to this form; or if your regulatory mechanism is either an Ordinance or a Rule, you may provide a citation:

Citation:

Maintenance agreements:

City Code: Section 546 - Zoning: Stormwater management

Direct link:

<http://www.hopkinsmn.com/weblink8/DocView.aspx?id=78456&searchid=edeb0054-e06d-4311-9557-e2229712b134&dbid=1>

Check here if attaching an electronic copy of your regulatory mechanism, with the following file naming convention: *MS4NameHere_PostCSWreg*.

- B. 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):

1. **Site plan review:** Requirements those 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
2. **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):
 - a. For new development projects – no net increase from pre-project conditions (on an annual average basis) of: Yes No
 - 1) Stormwater discharge volume, unless precluded by the stormwater management limitations in the Permit (Part III.D.5.a(3)(a)).
 - 2) Stormwater discharges of Total Suspended Solids (TSS).
 - 3) Stormwater discharges of Total Phosphorus (TP).
 - b. For redevelopment projects – a net reduction from pre-project conditions (on an annual average basis) of: Yes No
 - 1) Stormwater discharge volume, unless precluded by the stormwater management limitations in the Permit (Part III.D.5.a(3)(a)).
 - 2) Stormwater discharges of TSS.
 - 3) Stormwater discharges of TP.
3. **Stormwater management limitations and exceptions:**
 - a. Limitations
 - 1) 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 infiltration structural stormwater BMP will receive discharges from, or be constructed in areas: Yes No
 - a) Where industrial facilities are not authorized to infiltrate industrial stormwater under an NPDES/SDS Industrial Stormwater Permit issued by the MPCA.
 - b) Where vehicle fueling and maintenance occur.
 - c) 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.
 - d) Where high levels of contaminants in soil or groundwater will be mobilized by the infiltrating stormwater.
 - 2) 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: Yes No
 - a) With predominately Hydrologic Soil Group D (clay) soils.
 - b) Within 1,000 feet up-gradient, or 100 feet down-gradient of active karst features.
 - c) Within a Drinking Water Supply Management Area (DWSMA) as defined in Minn. R. 4720.5100, subp. 13.
 - d) Where soil infiltration rates are more than 8.3 inches per hour.
 - 3) 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 Yes No

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.

4. **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:
- a. Mitigation project areas are selected in the following order of preference: Yes No
 - 1) Locations that yield benefits to the same receiving water that receives runoff from the original construction activity.
 - 2) Locations within the same Minnesota Department of Natural Resource (DNR) catchment area as the original construction activity.
 - 3) Locations in the next adjacent DNR catchment area up-stream
 - 4) Locations anywhere within the permittee's jurisdiction.
 - b. 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. Yes No
 - c. Routine maintenance of structural stormwater BMPs already required by this permit cannot be used to meet mitigation requirements of this part. Yes No
 - d. Mitigation projects shall be completed within 24 months after the start of the original construction activity. Yes No
 - e. The permittee shall determine, and document, who will be responsible for long-term maintenance on all mitigation projects of this part. Yes No
 - f. 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). Yes No
5. **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:
- a. Allow the permittee to conduct inspections of structural stormwater BMPs not owned or 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. Yes No
 - b. 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
 - c. 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 assure that, within twelve (12) months of the date permit coverage is extended, these permit requirements are met:

B.2. A review of those standards and the cities standards will be completed and changes if necessary will be made to city ordinances within 12 months of permit coverage being granted.

B.3.a.1: The City will amend the ordinance and/or City Design Standards to include prohibiting the use of infiltration techniques for post-construction stormwater management as described in the Permit (Part III.D.5.a(3)(a).1). The ordinance will be amended on the same schedule as the items in B.2.a and B.2.b.

B.3.a.2: The City will amend the ordinance and/or City Design Standards to include restricting the use of infiltration techniques for post-construction stormwater management as described in the Permit (Part III.D.5.a(3)(a).2). This will occur on the same schedule as the items above.

B.3.a.3: The City will amend the ordinance and/or City Design Standards to include the exceptions for linear projects as

described in the Permit (Part III.D.5.a(3)(b)). This will occur on the same schedule as the items above.

B.4.a.: The City will amend the ordinance and/or City Design Standards to include order of preference for selecting mitigation project areas as described in the Permit (Part III.D.5.a(4)(a)). This will occur on the same schedule as the items above.

B.4.b.: The City will amend the ordinance and/or City Design Standards to include requirements for the creation of mitigation projects as described in the Permit (Part III.D.5.a(4)(b)). This will occur on the same schedule as the items above.

B.4.c.: The City will amend the ordinance and/or City Design Standards to include the restriction from using routine maintenance of structural BMPs to meet the requirements for mitigation projects as described in the Permit (Part III.D.5.a(4)(c)). This will occur on the same schedule as the items above.

B.4.d.: The City will amend the ordinance and/or City Design Standards to include the requirement to complete mitigation projects within 24 months after the start of the original construction activity as described in the Permit (Part III.D.5.a(4)(d)). This will occur on the same schedule as the items above.

B.4.e.: The City will amend the ordinance and/or City Design Standards to include the requirement to determine, and document, who will be responsible for long-term maintenance on all mitigation projects as described in the Permit (Part III.D.5.a(4)(e)). This will occur on the same schedule as the items above.

B.4.f.: The City will amend the ordinance and/or City Design Standards to mandate that money received from an owner/operator of construction activity, in lieu of meeting the conditions for post-construction stormwater management, shall be used for a public stormwater project as described in the Permit (Part III.D.5.a(4)(f)). This will occur on the same schedule as the items above.

B.5.a.: The City will amend the ordinance and/or City Design Standards to include the requirement to allow the permittee to conduct inspections, perform maintenance, and assess maintenance cost of structural stormwater BMPs not owned or operated by the permittee as described in the Permit (Part III.D.5.a(5)(a)). This will occur on the same schedule as the items above.

B.5.b.: The City will amend the ordinance and/or City Design Standards to include conditions that require maintenance responsibility for structural stormwater BMPs through transfer of ownership as described in the Permit (Part III.D.5.a(5)(b)). This will occur on the same schedule as the items above.

B.5.c.: The City will amend the ordinance and/or City Design Standards to include conditions to address BMP modification in the future as described in the Permit (Part III.D.5.a(5)(c)). This will occur on the same schedule as the items above.

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

A. Do you have existing ERPs that satisfy the requirements of the Permit (Part III.B.)? Yes No

1. If **yes**, attach them to this form as an electronic document, with the following file naming convention: *MS4NameHere_ERPs*.
2. If **no**, describe the tasks and corresponding schedules that will be taken to assure that, with twelve (12) months of the date permit coverage is extended, these permit requirements are met:

B. Describe your ERPs:

<http://www.hopkinsmn.com/archives/pdf/code/section546-stormwatermanagement.pdf>

546.08:

Penalty Any person firm or corporation violating any provision of this ordinance shall be fined not less than five dollars no more than five hundred dollars for each offence and a separate offence shall be deemed committed on each day during or on which a violation occurs or continues

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

A. Describe how you manage your storm sewer system map and inventory:

New developments are required to provide electronic as-build data in accordance with the GIS Information Requirements located in the City Design Standard. The City GIS specialist updates and maintains all of the City's GIS Information.

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:

1. 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
2. Outfalls, including a unique identification (ID) number assigned by the permittee, and an associated geographic coordinate. Yes No
3. Structural stormwater BMPs that are part of the permittee's small MS4. Yes No
4. 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 assure that, within 12 months of the date permit coverage is extended, these permit requirements are met:

- C. 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:
1. 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
 2. All wetlands and lakes, within the permittee's jurisdiction, that collect stormwater via constructed conveyances. Yes No
- D. Answer **yes** or **no** to indicate whether you have completed the following information for each feature inventoried.
1. A unique identification (ID) number assigned by the permittee. Yes No
 2. A geographic coordinate. Yes No
 3. Type of feature (e.g., pond, wetland, or lake). This may be determined by using best professional judgment. Yes No

If you have answered **yes** to all above requirements, and you have already submitted the Pond Inventory Form to the MPCA, then you do not need to resubmit the inventory form below.

If you answered **no** to any of the above permit requirements, describe the tasks and corresponding schedules that will be taken to assure that, within 12 months of the date permit coverage is extended, these permit requirements are met:

- E. 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>, according to the specifications of Permit (Part III.C.2.b.(1)-(3)). Attach with the following file naming convention: *MS4NameHere_inventory*. Yes No

If you answered **no**, the inventory form must be submitted to the MPCA MS4 Permit Program within 12 months of the date permit coverage is extended.

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

A. MCM1: Public education and outreach

1. The Permit requires that, within 12 months of the date permit coverage is extended, existing permittees revise their education and outreach program that 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**:

The public education program has been developed to distribute educational materials to the community or conduct equivalent outreach activities. The BMPs identified will focus on the impact of storm water discharges on streams, rivers, and wetlands, and the steps that the public can take to reduce pollutants in storm water runoff.

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 first table for categories of BMPs that you have established and the second table for categories of 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 U.S. Environmental Protection Agency's (EPA) *Measurable Goals Guidance for Phase II Small MS4s* (<http://www.epa.gov/npdes/pubs/measurablegoals.pdf>).

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

| Established BMP categories | Measurable goals and timeframes |
|----------------------------|---------------------------------|
| | |

| | |
|-----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Education Activity Implementation Plan</i> | <i>The City will provide stormwater education and outreach programs for residents within the City. The City will complete and outline of the education program and implementation schedule for the upcoming permit.</i> |
| <i>City Web Page</i> | <i>The City updates their web page by providing information on high priority storm water pollution prevention topics and effects of illicit discharge to City residents and business owners. The goal will be to add new material as it becomes available and record the number of website hits annually.</i> |
| <i>City Newsletter</i> | <i>City staff will develop then distribute stormwater related articles in the City newsletter. This goal will be met by distributing a minimum of two storm water related articles in the City newsletter each year.</i> |
| <i>Coordination of Education Program</i> | <i>The City will collaborate and coordinate the development and implementation of the City's educational activities schedule with the Minnehaha Creek Watershed District.</i> |
| BMP categories to be implemented | Measurable goals and timeframes |
| | |
| | |

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

Administration / Asst. City Engineer

B. MCM2: Public participation and involvement

1. The Permit (Part III.D.2.a.) requires that, within 12 months of the date permit coverage is extended, existing permittees shall revise their current program, as necessary, and continue to implement a public participation/involvement program to solicit public input on the SWPPP. Describe your current program:
- Under this minimum control measure, the City provides measures to receive public input and opinion on the adequacy of the SWPPP. This input can be received from public meetings, oral testimony, and written correspondence.*
2. List the categories of BMPs that address your public participation/involvement program, including solicitation and documentation of public input on the SWPPP. Use the first table for categories of BMPs that you have established and the second table for categories of 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://www.epa.gov/npdes/pubs/measurablegoals.pdf>). **If you have more than five categories**, hit the tab key after the last line to generate a new row.

| Established BMP categories | Measurable goals and timeframes |
|--------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Comply with Public Notice Requirements</i> | <i>Provide public notice of meeting to provide input on the SWPPP in accordance with City public hearing notification requirements.</i> |
| <i>Annual Meeting</i> | <i>Hold annual public meeting combined with City Council Meeting or other public participation/involvement event to solicit public input on the SWPPP.</i> |
| <i>Consider Public Input</i> | <i>The City will conduct a public meeting and host a web page on the City's Storm Water Pollution Prevention Program. City staff will respond to all public comments and statements received from the public meeting, and document any proposed changes to the SWPPP for final approval by City Engineer (if applicable). The goal of this BMP will be met by documenting all written and oral input into the record of decision and submitted in conjunction with the annual report to the MPCA.</i> |
| BMP categories to be implemented | Measurable goals and timeframes |
| <i>Online Availability of Stormwater Pollution Prevention Program Document</i> | <i>Provide an electronic document of Stormwater Pollution Prevention Program document online, to allow anytime, easier access to these documents.</i> |

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 assure that, within 12 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:

Administration / Asst. City Engineer

C. MCM 3: Illicit discharge detection and elimination

1. The Permit (Part III.D.3.) requires that, within 12 months of the date permit coverage is extended, existing permittees revise their current program as necessary, and continue to implement and enforce a program to detect and eliminate illicit discharges into the small MS4. Describe your current program:

The City has an ordinance that prohibits illicit discharges and connections. City Staff and public works employees are trained to look for any signs of an illicit discharge while on the job. ERPs guide what actions the City can take after an illicit discharge has been identified.

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, the permittee shall use the ERPs 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 assure that, within 12 months of the date permit coverage is extended, these permit requirements are met:

C.2.b. The City will incorporate procedures into the IDDE program for detecting and tracking the source of illicit discharges using visual inspections as described in the permit (Part III.D.3.d). Procedures will be in place within 12 months following the date permit coverage is extended..

C.2.d. The City will incorporate procedures into the IDDE program for prioritization of areas likely to have illicit discharges as described in the permit (Part III.D.3.f). Procedures will be in place within 12 months following the date permit coverage is extended.

3. List the categories of BMPs that address your illicit discharge, detection and elimination program. Use the first table for categories of BMPs that you have established and the second table for categories of 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://www.epa.gov/npdes/pubs/measurablegoals.pdf>).

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

| Established BMP categories | Measurable goals and timeframes |
|-----------------------------------|------------------------------------------------------------------------------------------------------------|
| <i>Storm Sewer System Mapping</i> | <i>The goal of this BMP will be met by annually updating changes to the City's storm sewer system map.</i> |

| | |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Illicit Discharge Detection and Elimination (IDDE) and Enforcement Ordinance</i> | <i>The City will review and update (as necessary) the City's ordinance to prohibit illicit and non-stormwater discharges into the City's storm sewer and surface/ground waters. The goal of this BMP will be met by reviewing existing city ordinances and implementing updates related to illicit/non-stormwater discharges (if necessary).</i> |
| <i>Illicit Discharge Detection and Elimination (IDDE) Program</i> | <i>The City will develop and implement a program to detect and reduce non-stormwater discharges, including illegal dumping. Procedures for detection may consist of visual inspections for non-stormwater discharges on City owned land and private property (as requested). Inspection frequency may be conducted concurrent with the outfall inspections and implementation schedule of the public works activities. <i>The City will notify the MPCA state duty officer of any hazardous material spills or discharges (within 24 hours of receipt, if applicable, per NPDES Phase II requirements).</i></i> |
| BMP categories to be implemented | Measurable goals and timeframes |
| <i>IDDE Program Updates</i> | <i>Develop written procedures for illicit discharge inspections, investigations, and response actions. Develop a process to document information as described in the Permit (Part III.3.h) within 12 months following the date permit coverage is extended.</i> |
| <i>Illicit Discharge Inspections</i> | <i>In Year 1, the City will map out areas that are identified as high-priority outfalls and around high-risk establishments (fast food restaurants, dumpster, car washes, mechanics, and oil changes.) in years 2-5, the City will those integrate those sites into its annual inspection MS4 activities.</i> |
| <i>Illicit Discharge Investigation</i> | <i>As needed, City staff or a consultant will be used to televise a section of the sewer system, collect grab samples or perform other effective testing procedures to find illicit connection identified in the system.</i> |

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 12 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:
- Streets / Public Works Supervisor*

D. MCM 4: Construction site stormwater runoff control

1. The Permit (Part III.D.4) requires that, within 12 months of the date permit coverage is extended, existing permittees shall revise their current program, as necessary, and continue to implement and enforce a construction site stormwater runoff control program. Describe your current program:
- The City requires review of construction site erosion and sediment control (ESC) plans before projects begin, and work with contractors to ensure appropriate and correct use of erosion and sediment control BMPs on sites. The building inspectionis department are primarily responsible for checking compliance with construction site ESC plans.*
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? Yes 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*? Yes 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? Yes 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? Yes No
- 2) Does your program identify a frequency at which you will conduct construction site inspections? Yes No
- 3) Does your program identify the names of individual(s) or position titles of those responsible for conducting construction site inspections? Yes No
- 4) Does your program include a checklist or other written means to document construction site inspections when determining compliance? Yes No
- e. Does your program document and retain construction project name, location, total acreage to be disturbed, and owner/operator information? Yes No
- f. Does your program document stormwater-related comments and/or supporting information used to determine project approval or denial? Yes No
- g. Does your program retain construction site inspection checklists or other written materials used to document site inspections? Yes No

If you answered **no** to any of the above permit requirements, describe the tasks and corresponding schedules that will be taken to assure that, within 12 months of the date permit coverage is extended, these permit requirements are met.

D.2.d., City will develop written procedures for conducting site ESC inspections as described in the Permit (Part III.D.4.d). Procedures will be in place within 12 months following the date permit coverage is extended.

3. List the categories of BMPs that address your construction site stormwater runoff control program. Use the first table for categories of BMPs that you have established and the second table for categories of 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://www.epa.gov/npdes/pubs/measurablegoals.pdf>). **If you have more than five categories**, hit the tab key after the last line to generate a new row.

| Established BMP categories | Measurable goals and timeframes |
|-------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Construction Site Stormwater Runoff Ordinance</i> | <i>The City will annually review and update (as necessary) the City's erosion control ordinance.</i> |
| <i>Construction Site Erosion and Sediment Control Inspections</i> | <i>City staff will continue to implement and enforce the construction site inspection program for erosion control on construction sites one acre or larger. The goal of this BMP is to document the number of site inspections conducted annually.</i> |
| <i>Waste Controls for Construction Site Operators</i> | <i>The goal will be met by enforcing the NPDES Phase II permit requirements through the City's construction site inspection program.</i> |
| <i>Construction Site Plan Review</i> | <i>The City will require every applicant for a building permit, subdivision approval, or grading permit that disturbs one acre or more to submit a project specific stormwater management plan (if applicable). This goal will be met by only issuing City permits to applicants that have submitted project specific stormwater management plans (if applicable).</i> |
| <i>Establishment of Procedures for the Receipt and Consideration of Reports of Stormwater Noncompliance</i> | <i>The City will establish a phone line and web page links for the public to report potential construction site erosion control and waste disposal infractions. The goal of this BMP will achieved by completing the timeline/implementation.</i> |
| <i>Establishment of Procedures for Site Inspections and Enforcement</i> | <i>The City will inspect construction sites for conformance to NPDES construction permit standards and applicable City standards. This goal will be met by enforcing the City's erosion control and waste disposal standards.</i> |
| BMP categories to be implemented | Measurable goals and timeframes |
| <i>Permit Update</i> | <i>Update the City Grading, Building, and ROW permits and Construction Site Stormwater Runoff ordinance to meet the new permit requirements within 12 months following the date permit coverage is extended.</i> |
| <i>Prioritize Inspections</i> | <i>The City will develop a process to determine the frequency for inspecting high priority inspection sites (e.g., near sensitive receiving waters, projects larger than 5 acres).</i> |
| <i>Permit Application System</i> | <i>Develop written procedures to improve tracking and archiving all</i> |

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

Asst. City Engineer / Public Works Director / Building inspection staff

E. MCM 5: Post-construction stormwater management

1. The Permit (Part III.D.5.) requires that, within 12 months of the date permit coverage is extended, existing permittees shall revise their current program, as necessary, and continue to implement and enforce a post-construction stormwater management program. Describe your current program:

The City has a surface water management ordinance to address storm water runoff from new development and redevelopment projects that disturb equal to or greater than one acre. This program insures that controls are in place that would prevent or minimize water quality impacts from development activities.

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 have the following listed procedures for documentation of post-construction stormwater management according to the specifications of 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 assure that, within 12 months of the date permit coverage is extended, these permit requirements are met.

E.3., The City will develop written procedures for documentation of post-construction stormwater management mitigation as described in the Permit (Part III.D.5.c.). Procedures will be in place within 12 months following the date permit coverage is extended.

4. List the categories of BMPs that address your post-construction stormwater management program. Use the first table for categories of BMPs that you have established and the second table for categories of 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://www.epa.gov/npdes/pubs/measurablegoals.pdf>). **If you have more than five categories**, hit the tab key after the last line to generate a new row.

| Established BMP categories | Measurable goals and timeframes |
|--------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Site Plan Review Program | The City will review and revise (if necessary, during the plan review process) permanent BMP designs and criteria for post-construction stormwater management associated with new development and redevelopment projects of one acre or more. The City will also actively look for non-structural opportunities where prudent and feasible. The goal of this BMP will be met if the City conducts plan reviews on new development and redevelopment projects of one acre or more. |
| Surface Water Management Ordinance | Completed ordinance defining standards, review procedures and enforcement response procedures for erosion and sediment control at construction sites, and post construction runoff from new development and redevelopment in 2007. |
| Stormwater Management Plan | Completed SWMP and ensured goals and policies were consistent with the NPDES General and Construction Permits. |
| BMP categories to be implemented | Measurable goals and timeframes |
| Update ordinance to meet new permit requirements | Complete Ordinance updates for post construction runoff from new development and redevelopment Within 12 months of extension of permit coverage. |

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

Asst City Engineer

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

- The Permit (Part III.D.6.) requires that, within 12 months of the date permit coverage is extended, existing permittees shall revise their current program, as necessary, and continue to 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 currently inspects its structural pollution control devices on an annual basis and inspects all of its outfalls, sediment basins and ponds every 5 years. The City inspects stockpiles, storage and material handling areas at the maintenance yard for potential discharges and maintenance of BMPs. The City is evaluating the use of road salt for winter road maintenance activities to reduce chlorides entering surface waters. The City sweeps streets once in the fall after leaf drop and once in the spring to get snowmelt. Maintenance staff is trained annually on various topics related to pollution prevention during maintenance activities.

- Do you have a facilities inventory as outlined in the Permit (Part III.D.6.a.)? Yes No
- If you answered **no** to the above permit requirement in question 2, describe the tasks and corresponding schedules that will be taken to assure that, within 12 months of the date permit coverage is extended, this permit requirement is met:

F.3. The City will complete a facilities inventory as described in the Permit (Part III.D.6.a.). Inventory will be completed within 12 months following the date permit coverage is extended.

- List the categories of BMPs that address your pollution prevention/good housekeeping for municipal operations program. Use the first table for categories of BMPs that you have established and the second table for categories of 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://www.epa.gov/npdes/pubs/measurablegoals.pdf>).

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

| Established BMP categories | Measurable goals and timeframes |
|-----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Street Sweeping | <i>The City will continue recording the frequency of streets that are swept, per sweeping occurrence. The goal of this BMP will be met if the City conducts two street sweeping occurrences per year.</i> |
| Strom Sewer Inspection Program | <i>Conduct one inspection of all City-owned ponds and outfalls prior to expiration date of this permit. Annual inspection of 100% of structural pollution control devices (Sumps, Water Quality Manholes, etc.).</i> |
| Inspection of All Exposed Stockpile, Storage and Material Handling Areas | <i>City staff will quarterly locate and inspect all exposed stockpiles and storage/material handling areas on City owned properties. All existing onsite BMP's will be inspected for conformance to NPDES Phase II permit requirements. Any identified erosion control issues will be corrected and documented per NPDES Phase II standards.</i> |
| Structural Stormwater BMP Maintenance Program | <i>Based on storm sewer inspection findings determine if repair, replacement, or maintenance measures are necessary to ensure structures proper function and treatment effectiveness. Document annually number or structures repaired or scheduled for maintenance.</i> |
| Recording, Reporting, and Retention of All Inspections and Responses to the Inspections | <i>The City will retain all records of inspection, maintenance, and corrective actions of the City's stormwater system. The goal of this BMP will be met if the City retains these records for a period of three years past the expiration of this permit.</i> |

| | |
|------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Evaluation of Inspection Frequency</i> | <i>Evaluate inspection records and determine if inspection frequency needs to increase or decrease.</i> |
| <i>Landscaping and Lawn Care Practices Review</i> | <i>The City will continue to annually review its landscaping and lawn care practices and adjust its current methods if necessary.</i> |
| <i>Road Salt Application Review</i> | <i>The City will record the annual activities of the salt distribution program and adjust current practices as necessary.</i> |
| <i>Evaluation of Proposed Storm Water Infiltration Projects for Impacts within Source Water Protection Areas</i> | <p>1. <i>The City will use the Minnesota Department of Health's document "Evaluating Proposed Storm Water Infiltration Projects in Vulnerable Wellhead Protection Areas" (Draft-July 19, 2006) and other pertinent information as guidance in evaluating all infiltration projects within or adjacent to vulnerable DWSMA's.</i></p> <p>2. <i>The City will prohibit the construction of the infiltration area or incorporate specific BMPs to reduce pollutants from infiltrating within vulnerable DWSMA's.</i></p> <p>3. <i>The City will annually record the evaluation, denial, and implemented BMP's, of all proposed infiltration projects within and/or adjacent to vulnerable DWSMA's.</i></p> |
| BMP categories to be implemented | Measurable goals and timeframes |
| <i>Park and Open Space Training Program</i> | <i>Training focused on fertilizer application, pesticide/herbicide application, and mowing discharge.</i> |
| <i>Fleet and Building Maintenance Training Program</i> | <i>Training focused on automotive maintenance program (automotive inspections and washing), spill cleanup training, hazardous materials training, building leak prevention and inspection training.</i> |
| <i>Stormwater Systems Maintenance Training Program</i> | <i>Training focused on parking lot and street cleaning, storm drain systems cleaning, road salt materials management.</i> |
| <i>Spill Prevention & Control Plans for Municipal Facilities</i> | <i>Ensure that plans describing spill prevention and control procedures are consistent among all departments. Conduct annual spill prevention and response training sessions to all municipal employees. Distribute education materials to each municipal facility by the end of year 2.</i> |
| <i>Facility Inventory</i> | <i>Develop facilities inventory to include potential pollutants as each site. Create a map of all identified facilities.</i> |
| <i>Pond Assessment Procedures & Schedule</i> | <i>In year 1, develop procedures for determining TSS and TP treatment effectiveness of city owned ponds use for treatment of stormwater. Implement schedule in year 2-5.</i> |

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**, the Minnesota Department of Health (MDH) is in the process of mapping the following items. Maps are available 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:
- 1) 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
- 2) Source water protection areas for surface intakes identified in the source water assessments conducted by or for the Minnesota Department of Health under the federal Safe Drinking Water Act, U.S.C. §§ 300j – 13? Yes No
- c. Have you developed and implemented BMPs to protect any of the above drinking water sources? Yes No
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
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 Yes No

handling areas?

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
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 you answered **no** to any of the above permit requirements listed in **Questions 5 – 9**, then describe the tasks and corresponding schedules that will be taken to assure that, within 12 months of the date permit coverage is extended, these permit requirements are met:

F.6. The City will develop a procedure for assessing ponds to determine TSS and TP effectiveness as described in the Permit (Part III.D.6.d) This study will develop procedures for determining TSS and TP treatment effectiveness of city-owned ponds used for treatment of stormwater. A schedule will be implemented in years 2 thru 5.

F.7., The City will develop written procedures for inspection of structural stormwater BMPs, ponds and outfalls, and stockpile, storage and material handling areas as described in the Permit (Part III.D.6.f.). Procedures will be in place within 12 months following the date permit coverage is extended.

F.8., The City will develop and implement a stormwater management training program commensurate with each employees job duties as described in the Permit (Part III.D.6.g.). Procedures will be in place within 12 months following the date permit coverage is extended.

F.9., The City will develop written procedures to document inspections, maintenance, and training as described in the Permit (Part III.D.6.h.). Procedures will be in place within 12 months following the date permit coverage is extended.

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

Asst. City Engineer / Public Works Supervisor

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
1. If **no**, continue to section VII.
 2. If **yes**, fill out and attach the MS4 Permit TMDL Attachment Spreadsheet with the following naming convention: *MS4NameHere_TMDL*.

This form is found on the MPCA MS4 website: <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 to this document, with the following naming convention: *MS4NameHere_TreatmentSystem*.

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

VIII. Add any Additional Comments to Describe Your Program

TMDL Wasteload Allocation Excel Spreadsheet PART II.D.6.a.-e.

Copy and paste from the Master List MS4 TMDL Spreadsheet for your MS4 to the space below:

Attach this completed form with your SWPPP Document at the time of submittal. At a minimum, provide all of the information "" items (TMDL Project Name, Type of WLA, Numeric WLA, Unit, Flow Condition, and Pollutant of Concern).

| Permittee name | Preferred ID | TMDL project name* | Wasteload ID | Type of WLA* | Numeric WLA* | Unit* | Percent reduction | Flow condition* | Wasteload name | Pollutant of concern* | Date approved |
|----------------|--------------|----------------------------------------------------------|--------------|--------------|--------------|----------|-------------------|-----------------|----------------|-----------------------|---------------|
| Hepburns CW | MS40024 | Nitrate Creek, Impaired Braid, Turbidity & Chloride TMDL | 070300125-18 | Constructed | 5.154 | cans/day | 62% | | Nitrate Creek | Chloride | 11/29/2010 |

Compliance Schedule PART II.D.6.f.-g.

Is your MS4 currently meeting its WLA for any approved TMDLs?

- 1. NO (Complete Table 1, Strategies for continued BMP implementation beyond the term of this permit, and Table 2 below)
- 2. YES (Provide the following information below)

If YES, indicate the WLAs (may be grouped by TMDL Project) you believe are reasonably being met. For each WLA, list the implemented BMPs and provide a narrative strategy for the long-term continuation of meeting each WLA. PART II.D.6.g.(1)-(2)

Ninemile Creek: Impaired Biota, Turbidity & Chloride TMDL - The city is meeting its requirements of the TMDL by completing the following tasks on a regular basis:

1. The city provides stormwater education to employees and the public.
2. The city provides water resource education materials to contractors, builders, developers, and the general public.
3. The city performs inspections for the cities illicit discharge detection and elimination program.
4. The city references and makes permittees comply with watershed requirements for post-construction BMP performance.
5. The city continues to monitor and maintain the existing stormwater ponds and other BMPs to sustain removal effectiveness.
6. The city has established maintenance agreements with private owners of permanent BMPs.
7. The city has an established street sweeping program. It sweeps streets at a minimum of two times per year.
8. The city annually inspects and cleans all structural pollution control devices.

Go to:

[Table 1](#)

Go to:

[Strategies...](#)

Go to:

[Table 2](#)

Table 1

Fill in the following table with your Interim Milestones, BMP IDs, and Implementation Dates. Replace "TMDL Project Name & Pollutant" Columns with each TMDL Project Name and the corresponding pollutant. Then put an "X" in the boxes for the TMDL that corresponds with each BMP. PART II.D.6.i.(1)-(2)

NOTE:

It is recommended to assign each Interim Milestone (BMP) a BMP ID. You will be required to report on the status of each Interim Milestone and include a BMP ID for all structural BMPs as part of the MS4 Annual Report (see Part III.E.), so including those ID numbers at the time of application may be useful in tracking implementation efforts. If a pond that will be included in the pond inventory (Part III.C.2.) is to be applied toward a WLA, use the same ID for both the pond inventory and TMDL tracking. Non-structural BMPs are not required to have an ID, but it may be useful to assign it an ID for internal MS4 recordkeeping.

MPCA recommends the Implementation Dates align with the submittal of MS4 Annual Reports. Dates selected may not reflect the actual date a BMP is implemented, but shall indicate a BMP will be implemented on that date or before for that reporting year.

| Interim Milestone (Best Management Practice) | BMP ID | Implementation Date | TMDL Project Name & Pollutant |
|----------------------------------------------|--------|---------------------|-------------------------------|
| | | | |

Strategies for continued BMP implementation beyond the term of this permit. PART II.D.6.i.(3)

The City will continue to: Identify potential projects, Conduct a feasibility study for proposed projects, Identify funding options for proposed projects and if feasible construct projects to help meet TMDL goals

Table 2

Target dates the applicable WLA(s) will be achieved, PART II.D.6.f.(4)

| WLA Project | Target Date to Achieve WLA |
|--------------|----------------------------|
| IMDL Project | |

Appendix B:
City Wellhead Protection Plan



Wellhead Protection Plan Part 2

2017

Prepared for

City of Hopkins
1010 1st Street South | Hopkins, MN 55343

WSB project no. 1474-220



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PUBLIC WATER SUPPLY PROFILE

PUBLIC WATER SUPPLY

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GENERAL INFORMATION

| |
|----------------------------------------------------------------------------------------------------------------------------------------------|
| Unique Well Number(s): 204573, 204068, 204570, and 112228 Size of Population Served by Municipal Water: 19,227 County: Hennepin County |
|----------------------------------------------------------------------------------------------------------------------------------------------|

PUBLIC WATER SUPPLY WELLS

| Local Well Name | Unique Number | Type | Casing Depth (ft) | Well Depth (ft) | Date Constructed | Aquifer |
|------------------------|----------------------|-------------|--------------------------|------------------------|-------------------------|----------------|
| Well No. 1 | 204573 | Emergency | 286 | 482 | 1905 | OPCJ |
| Well No. 4 | 204068 | Primary | 410 | 548 | 1954 | OPCJ |
| Well No. 5 | 204570 | Primary | 382 | 495 | 1967 | OPCJ |
| Well No. 6 | 112228 | Primary | 354 | 545 | 1977 | OPCJ |

DOCUMENTATION LIST

| Step | Date Performed |
|-----------------------------------------------------------------------------------------------|-----------------------|
| Part I Approval Notice Received from MDH | August 2016 |
| Scoping 2 Meeting Held (4720.5349, subp. 1) | August 24, 2016 |
| Scoping Decision Notice Received (4720.5340, subp. 2) | September 28, 2016 |
| Remaining Portion of Plan Submitted to Local Government Units (LGUs) (4720.5350, subp. 1 & 2) | July 1, 2017 |
| Review Considered (4720.5350, subp. 3) | July-September 2017 |
| Public Hearing Conducted (4720.5350, subp. 4) | September 5, 2017 |
| Remaining Portion WHP Plan Submitted (4720.5360, subp. 1) | September 15, 2017 |
| Approved Review Notice Received | December 15, 2017 |

ACRONYM LIST

| | |
|--------|------------------------------------------------------|
| AST | Aboveground Storage Tank |
| BCWMC | Bassett Creek Watershed Management Commission |
| BMS | Brownfield Site |
| CCR | Consumer Confidence Report |
| CWI | County Well Index |
| DWSMA | Drinking Water Supply Management Area |
| ISTS | Individual Sewage Treatment System |
| IWMZ | Inner Wellhead Management Zone |
| LGU | Local Government Unit |
| MCWD | Minnehaha Creek Watershed District |
| MDA | Minnesota Department of Agriculture |
| MDH | Minnesota Department of Health |
| MGS | Minnesota Geological Survey |
| MnDNR | Minnesota Department of Natural Resources |
| MnDOT | Minnesota Department of Transportation |
| MPCA | Minnesota Pollution Control Agency |
| MRWA | Minnesota Rural Water Association |
| MS4 | Municipal Separate Storm Sewer System |
| NMCWD | Nine Mile Creek Watershed District |
| NPDES | National Pollutant Discharge Elimination System |
| OPCJ | Prairie du Chien Group and Jordan Sandstone Aquifers |
| PCSI | Potential Contaminant Source Inventory |
| RCRA | Resource Conservation & Recovery Act Cleanup |
| RPBCWD | Riley Purgatory Bluff Creek Watershed District |
| UST | Underground Storage Tank |
| WHP | Wellhead Protection |
| WHPA | Wellhead Protection Area |
| WIMN | What's In My Neighborhood |

EXECUTIVE SUMMARY

The Wellhead Protection Plan (the Plan) for the City of Hopkins (City) addresses the three municipal water supply wells used by the City (Wells No. 4, 5, and 6) and the associated source water aquifers (Prairie du Chien Aquifer and Jordan Aquifer – the aquifers from which the municipal wells pump water).

Part 1 of the Plan (**Appendix C**) was completed and approved in March of 2015 by Leggette, Brashears & Graham, Inc. Part 1 presented: the delineation of the Wellhead Protection Areas (WHPA); the drinking water supply management area (DWSMA); and the vulnerability assessments for the system's wells and aquifers within the DWSMA. The boundaries of the WHPA/DWSMA are shown in **Figure 1**. Water supply wells covered by this delineation and this Part 2 Plan Amendment are listed on page 4.

The *vulnerability assessment* for the aquifers within the DWSMA was performed using available information and indicates that the vulnerability of the aquifers used by the system varies from high to moderate. The results of the aquifer vulnerability assessment determined for the City what types of potential contamination sources must be managed within the DWSMA as determined by the Minnesota Department of Health (MDH):

- Low vulnerability areas – wells
- Moderate vulnerability areas – wells and tanks
- High vulnerability areas – all land uses and potential contaminant sources (including wells and tanks)

This document includes the following information:

- A review of data elements identified by the MDH as applicable to the DWSMA.
- Results of an inventory of potential contaminant sources within the DWSMA.
- Review of changes, issues, problems, and opportunities related to the public water supply and the identified potential contaminant sources.
- A discussion of potential contaminant source management strategies and the goals, objectives, and action plans associated with these management strategies.
- A review of the wellhead and source water protection evaluation program and the City's alternative water supply contingency strategy.

The goals and objectives of this Plan focus on: managing potential contaminant sources within the DWSMA; reducing the potential contaminant pathways to the source water aquifer that may be provided by private wells; and educating property owners and water supply users.

The City's WHP team has identified the following goals for implementation of this Plan:

Goal 1: The City will work to maintain or improve the current level of water quality so that the municipal water supply will continue to meet or exceed all applicable state and federal water quality standards.

Goal 2: The City will work to continue to supply sufficient water quantity for system users and emergency needs.

Goal 3: The City will provide and promote activities that protect the source water aquifer which provides water to the municipal system. This will include increased public education of the Wellhead and Source Water Protection Program and groundwater-related issues, as well as management of the identified potential contaminant sources and conveyance mechanisms within the DWSMA.

Goal 4: The City will continue to collect data to support future wellhead and source water protection efforts.

Implementation of these goals will be achieved through direct management efforts within the following areas to prevent future contamination of the aquifer and increase awareness of groundwater protection:

- A. Well Management**
- B. Public Education**
- C. Storage Tank Management**
- D. Data Collection**
- E. Water Conservation**
- F. Land Use Planning and Zoning**
- G. Implementation**
- H. Evaluation**

The effectiveness of the Plan must be evaluated to determine whether the implementation activities are consistent with the Plan's intent. Monitoring will be on-going and a written evaluation of the Plan and associated activities will be conducted every two and one-half years that the Plan is in effect.

CHAPTER ONE

DATA ELEMENTS AND ASSESSMENT (4720.5200)

I. REQUIRED DATA ELEMENTS

In accordance with Minnesota Rules Chapter 4720.5200, the following data elements are considered for evaluation in a WHP Plan. Those elements required for evaluation are determined by the MDH based on the Drinking Water Supply Management Area (DWSMA) vulnerability as described in the MDH Scoping 2 Decision letter received by the City on September 28, 2016.

A. Physical Data Elements

1. Precipitation

Due to a portion of the City's DWSMA (**Figure 1, Appendix B**) being classified as highly vulnerable, precipitation must be evaluated. **Table 1, Appendix A** shows the two nearest gauging station to the City. The station is located in New Hope and Chanhassen and is managed by the State Climatology Office. Each gauge has complete monthly data. The average precipitation in the City is approximately 34.97 inches annually, when considering data collected between 2010 and 2016.

2. Geology

A complete description of the geologic conditions in the WHPA is provided in Part 1 of this plan (**Appendix C**). In summary, the geology in the DWSMA consists of Quaternary-age glacial and post-glacial deposits that are underlain by Ordovician and Cambrian-aged bedrock. Clay and sand deposits are predominant throughout the study area. Platteville and Glenwood formations make up the uppermost bedrock. These are underlain, in order of depth, by the St. Peter Sandstone, the Prairie du Chien Group, the Jordan Sandstone, the St. Lawrence Formation, the Tunnel City Group, the Wonewoc Sandstone, the Eau Claire Formation and the Mt. Simon Sandstone.

The City's production wells are within the Prairie du Chien Group and Jordan Sandstone. These two aquifers are referred to in this report as the Prairie du Chien and Jordan Aquifers. The St. Lawrence Formation, which lies below the Jordan, is a dolomitic siltstone and acts as a regional aquitard and confining layer. The presence of this aquitard directly below the Jordan Aquifer isolates the Jordan Aquifer and Prairie du Chien Aquifers from deeper bedrock aquifers.

3. Soil Conditions

Because of the high vulnerability classification of the DWSMA, soil conditions must be reviewed and considered. Much of the DWSMA is covered by unknown surfaces illustrated in **Figure 2, Appendix B**. Other soil coverage within the highly vulnerable portions of the DWSMA includes course-loamy and loam soils with moderate infiltration. The other highly vulnerable portion of the DWSMA is covered by sandy and loamy soils which tend to have a high infiltration rate. The area of the DWSMA with moderate vulnerability is covered in combination of course-loamy to fine-loamy soils.

Figure 3, Appendix B illustrates erodible lands. While most of the DWSMA is covered in non-highly erodible land, but there are also areas of potentially high and highly erodible soils. In addition, some of the potentially high erodible lands are in highly vulnerable portions of the DWSMA. Potential contaminant sources in the highly erodible areas, in particular those in the high vulnerability portions of the DWSMA, should be monitored more closely than those in other areas.

4. Water Resources

The bedrock source water aquifer used by the City's wells exhibits confined hydrogeologic conditions. For this reason there is not a direct hydrologic connection with the land surface or surface water. Soil characteristics and precipitation infiltration rates have not been evaluated or assessed in this plan due to the lack of a defined direct hydrogeologic connection between the land surface and the bedrock source water aquifer.

B. Land Use Data Elements

1. Land Use

The DWSMA cross political boundaries as it extends from Hopkins to the eastern edge of Lake Minnetonka. It includes parts of the City of Minnetonka, the City of Woodland, the City of Wayzata, the City of Edina, and the City of St. Louis Park in addition to the City of Hopkins. As with most first and second ring suburbs, the land within the DWSMA is almost fully developed with small pockets of undeveloped land spread out (**Figure 4, Appendix B**). Single family residential makes up the majority of the land use but there are some other land uses. The southeast corner of the DWSMA is made up of downtown Hopkins and the adjacent industrial areas. Land use in this corner is mostly commercial and industrial. The northwest corner of the DWSMA includes Wayzata Bay and Grays Bay. Sections of Trunk Highway (TH) 7, TH 5, Interstate 494, U.S. Route (US) 12, and US 169 all run through DWSMA.

2. Public Utility Services

Public utilities were evaluated to determine their potential influence and impact on the City's drinking water supply. Storm sewers, sanitary sewers, public drainage systems, public water supply, and gas and oil pipelines were considered and are included in the Part 2 Plan.

Transportation Routes and Corridors

The major roadways through the DWSMA are Interstate Highway 494, Minnesota State Highway 7, Minnesota State Highway 5, U.S. Route 169, and U.S. Route 12. Two rail lines run through the DWSMA as well. The Burlington Northern Santa Fe Railroad runs east to west along in the northern portion of the DWSMA. The Canadian-Pacific Railway (formerly the SOO line) runs southeast to northwest through in the southeast corner of the DWSMA.

Storm Sewer System

The City of Hopkins, City of Minnetonka, and City of St. Louis Park storm sewer networks within the DWSMA are shown in **Figure 5, Appendix B**. The DWSMA is within four sub-watersheds: Basset Creek, Minnehaha Creek, Nine Mile Creek, and Riley-Purgatory Bluff Creek. The various storm sewer networks outlet into surrounding surface water bodies.

Sanitary Sewer System

Figure 6, Appendix B depicts the City of Hopkins, City of Minnetonka, and City of St. Louis Park sanitary sewers within the DWSMA. The majority of the DWSMA is within the Metropolitan Urban Service Area served by the Metro Council. The remaining portions are served by Individual Sewage Treatment Systems.

Public Water System

The watermain utilities within the DWSMA are shown in **Figure 7, Appendix B**. Most of the DWSMA's users are connected to the municipal water supply. The remaining portions are served by private wells.

Oil and Gas Pipelines

There is one pipeline in the DWSMA. A Centerpoint gas transmission pipeline starts in the middle of the DWSMA and runs southwest. A map of the gas transmission pipeline has not been included for security reasons. However, the location is known to emergency services and public works in the area.

3. Potential Contaminant Source Inventory

Land use is closely related to the potential contaminant source inventory (PCSI) for the DWSMA, as these contamination sites are typically related to the type and intensity of use of the property. A PCSI was completed within the DWSMA boundaries. Data was extracted from the existing databases—the Minnesota Pollution Control Agency’s (MPCA) What’s in My Neighborhood (WIMN), the Minnesota Department of Agriculture’s (MDA) Priorities List and the County Well Index (CWI)— and then was verified by aerial photography.

Data points collected from the MPCA WIMN database were first properly located through aerial photography and additional research. The list of sites was reduced by assigning the vulnerability of the DWSMA to each data point and removing those sites that did not match the criteria for the vulnerability setting. Next, potential contaminant and material codes were added to the sites, and a table and map (**Table 2, Appendix A** and **Figure 8, Appendix B**) were produced to display the locations and types of potential contaminants throughout the DWSMA.

Data points were also collected from the CWI and the MDH Well and Old Municipal Well databases. Wells retrieved were included in all vulnerability types. **Figure 7, Appendix B** includes the location of the water distribution system. **Figure 9, Appendix B** includes public and private wells within the DWSMA. A table of wells, including unique numbers, use codes, and other pertinent information is attached in **Appendix A** as **Table 3**.

In addition, the MDH completed and provided survey results for the Inner Wellhead Management Zone (IWMZ) that surrounds each municipal well at a 200-foot-radius. Results of this survey remain as submitted by the MDH and are included in **Appendix D**.

Potential threats to the water supply were determined by analyzing the location of water supply wells, land use, potential contaminant sources, and the following findings are made:

- Public and Private Wells. There are 25 public and 512 private wells located within the DWSMA. Of the private wells, 506 are currently active and five are inactive. The status of the remaining one well is currently unknown.
- Leak Sites. There are currently 150 leaking underground storage tank (LUST) sites in the DWSMA, three of which are active.
- Storage Tanks. There are 161 UST sites and 14 aboveground storage tank (AST) sites in the DWSMA. Of the UST sites, 41 are active and all contain(ed) waste, fuel, gases, or oils. Of the AST sites, nine are active and all contain(ed) waste, chemicals, fuel, gases, or oils.
- Investigation/Cleanup Sites. There are 89 known investigation/cleanup sites, where 12 are active. There are 20 Petroleum Brownfield Sites (BMS) within the DWSMA, where one is active. There is one inactive Resource Conservation & Recovery Act Cleanup (RCRA) site and one active Superfund project.
- MDA Priority List. There are 14 sites listed on the MDA priorities list that is located within the DWSMA. Three of the site were small spills and investigations. Eleven of the sites were old emergency incidents. All sites have been closed out.
- IWMZ Results. Located within 200-feet of the municipal wells are buried sanitary sewer pipes, stormwater drain pipes, and a portable toilet.

The activities in **Chapter 5** of this Part 2 Plan outline management activities to address the results of the PCSI.

C. Water Quantity Data Elements

Based on the data available for the required data elements, present and future implications of the data elements are described below for the use of the wells, quality and quantity of water supplying the public water supply wells, and the land and groundwater uses in the DWSMA.

1. Surface Water Quantity

There are many ponds, lakes, streams and wetlands within Hopkins's DWSMA. To the City's knowledge, there are no known water-use conflicts within the DWSMA.

2. Groundwater Quantity

Groundwater quantity was analyzed as part of the WHP Plan Part 1 (**Appendix C**). From 2010 to 2014, the City pumped an average of 803 million gallons of water, less than the 1 billion gallons permitted for use. Summaries of the City's water appropriations are on file at the City. No substantial changes in water use were observed between 2010 and 2014. Maximum pumping volumes over the five year timeframe occurred in 2011, with an annual total of 820 million gallons. Pumping data is summarized in on file at the City. In addition to the four municipal wells, there were 11 high-capacity wells included in the Part 1 Plan model. The 11 wells are within two miles of the City's municipal wells. Eight of the wells are either City of Edina's or the City of Minnetonka's municipal/public supply wells. One is the City of St. Louis Park's pollution containment well. The other two wells are golf course irrigation wells. There are no known well interference problems or water-use conflicts with these or other users, to the City's knowledge.

D. Water Quality Data Elements

Based on the data available for the required data elements, present and future implications of the data elements are described below for the use of the wells, quality and quantity of water supplying the public water supply wells, and the land and groundwater uses in the DWSMA.

1. Surface Water Quality

Surface water quality is especially important in highly vulnerable areas of the DWSMA due to the potential direct hydraulic connections between surface water and the source water aquifer. Portions of Lake Minnetonka lie within the moderate DWSMA boundary indicating a direct connection between Lake Minnetonka and the source water aquifer are unlikely.

2. Groundwater Quality

Groundwater pumped from the Prairie Du Chien-Jordan aquifer by the municipal wells is currently free of pathogens and disease-causing organisms. In addition, the City of Hopkin's water supply currently meets state and federal water quality requirements. No contaminants were detected at levels that violated federal drinking standards. To comply with MDH rules, the City adds fluoride to the water and tests water daily. The City also adds chlorine to control taste and odor and to keep the water system bacterially clean. LPC-9 Corrosion Inhibitor is added to create a barrier inside the plumbing that reduces the transfer of the lead from the pipes into the drinking water systems. The City's Consumer Confidence Reports for 2013, 2014, and 2015 can be found in **Appendix E**.

II. ASSESSMENT OF DATA ELEMENTS

Based on the data available for the required data elements, present and future implications of the data elements are described below for the use of the wells, quality and quantity of water supplying the public water supply wells, and the land and groundwater uses in the DWSMA.

A. Use of the Well

The City currently operates three active water supply wells (Wells No. 3, 4, and 5) (**Figure 9, Appendix B**). Additional information about the City's water supply system in general is present in the City's Comprehensive Plan – The Plan for Public Facilities and Services. Well construction details, well logs, and pumping rates are included in the WHP Plan Part 1 (**Appendix C**) document.

B. Quality and Quantity of Water Supplying the Public Water Supply Well

Part 1 of the Plan outlines the vulnerability of the public supply wells based on DNR geologic sensitivity, casing integrity, casing depth, pumping rate, isolation distance from contaminants, and chemical and isotopic information. City Wells No. 3 through 5 were determined to be vulnerable.

In addition, tritium has been detected above 1 Tritium Unit. While tritium itself is non-toxic, it indicated a surface-groundwater connection. To more fully understand this connection as well as the transfer of contaminants to the water source, more specific information is required. A better understanding of the connection between City well water, surface water, and precipitation, can be achieved via stable isotope analysis. Localized hydraulic conductivity and observation well data can be used to better characterize the vertical hydraulic connection and gradient between the Prairie du Chien and Jordan Aquifers. Opportunities and objectives to achieve these initiatives are outlined in **Chapters 3 and 5** of this plan.

Significant changes in water quantity may occur over the life of this plan. The City regularly withdraws water below the amount appropriated by the Minnesota Department of Natural Resources (MnDNR). However, continued water conservation measures will help to maintain water use over the course of this Plan. It is not anticipated that physical, land-use, or water quality or quantity changes will greatly affect the water supplying the public water supply well.

C. The Land and Groundwater Uses in the Drinking Water Supply Management Area

Land use and development practices have potential to impact groundwater in several ways. Use and storage of toxic materials, usually found in industrial and commercial uses, have the potential to spill and enter the groundwater. It is critical to locate and document where these potential contaminants exist in order to monitor those uses, provide opportunities to educate the businesses, and consider policies regarding stricter monitoring of potential new land uses. The existing land uses and zoning maps can be found in **Figure 4** and **Figure 10, Appendix B**.

CHAPTER TWO

IMPACT OF CHANGES ON PUBLIC WATER SUPPLY WELLS (4720.5220)

In accordance with Minnesota Rules 4720.5220 a wellhead protection plan must identify and describe expected changes that may occur during the next ten years to:

1. The physical environment
2. Land use
3. Surface water
4. Groundwater

I. POTENTIAL CHANGES IDENTIFIED

Considering a 10-year life of the Plan, potential changes to the physical environment and land use were identified.

A. Physical Environment

There are no significant changes to the precipitation, geology, soils or water resources anticipated during the 10-year time frame of this plan within the DWSMA.

B. Land Use

The area comprising the DWSMA is largely fully developed, and the City is unaware of any significant land use or population changes planned within the DWSMA during the 10-year planning time frame. However, at the time of this plan development all municipalities in the Twin Cities metropolitan area are in the process of updating their comprehensive land use plans for the 2018 planning cycle. In the event that any major land use changes are identified within the DWSMA that might impact the groundwater supply, appropriate monitoring and protective measures should be taken into account in order to minimize the risk of contamination.

C. Surface Water

No significant changes in surface water are expected by the City in the next ten years.

D. Groundwater

It is unlikely that the City will need additional wells to meet demand in the next ten years.

II. IMPACT OF CHANGES

A. Changes Identified Above Influence of Existing Water and Land Government Programs and Regulations

The primary impacts associated with changes in physical, land use, and groundwater supply is the need to add infrastructure to accommodate increasing commercial and residential demand. In **Chapter 5**, a series of policies and programs are proposed to balance the growth increases with the infrastructure needs to mitigate the negative impact of growth and minimize potential sources of contamination to the DWSMA.

Federal and State Regulations

All tank operators and owners must comply with both federal and state regulations for USTs. At the federal level, tank operators and owners for USTs must comply with 40 CFR Part 280-282. At the state level, operators and owners must comply with Minnesota Rules, Chapter 7150. Enforcement of state and federal regulations is the responsibility of the MPCA. The existing federal and state regulations provide adequate controls to manage USTs within the DWSMA.

ASTs which store liquid substances that may pollute the waters of the state are regulated by Minnesota Rules, Chapter 7151, if the site capacity is less than one million gallons. AST regulations are also enforced by the MPCA. Existing regulations provide adequate controls to manage storage tanks within the DWSMA. In addition to the MPCA, the state and local fire marshal also regulate tanks.

Hennepin County Regulations

Hennepin County is an extremely urban county. As such, they leave most of the ordinance control to the cities that lie within the county. There are no pertinent ordinances in Hennepin County.

City of Hopkins

The City of Hopkins has ordinances in place regulating the water system, sanitary sewer system, storm sewer system, illicit discharge and connections, and erosion and sediment control. These ordinances are in place to protect groundwater and surface water resources from contamination. The City also has educational information available on its website related to proper disposal of yard waste, household hazardous waste, and planting rain gardens. The City has developed a Water Resources Management Plan to meet regulatory requirements and to plan for future alterations in the existing drainage system to do redevelopment activities. The plan is available on the City's website.

City of Minnetonka

A portion of the DWSMA lies within the City of Minnetonka. The City of Minnetonka has ordinances in place regarding the regulation of the water system, sanitary sewer system, storm sewer system, illicit discharge and connections, and erosion and sediment control. These ordinances are in place to protect groundwater and surface water resources from contamination. The City of Minnetonka's Water Resources Management Plan is also available for viewing online and is intended to provide proper management of surface water and groundwater by protecting, preserving, and using natural surface and groundwater systems.

City of St. Louis Park

A portion of the DWSMA lies within the City of St. Louis Park. The City of St. Louis Park has ordinances in place regulating the water system, sanitary sewer system, storm sewer system, illicit discharge and connections, and erosion and sediment control. These ordinances are in place to protect groundwater and surface water resources from contamination. The City of St. Louis Park also has a variety of links on its website related to storm water resources and education.

City of Wayzata

A portion of the DWSMA lies within the City of Wayzata. Wayzata has ordinances in place to address the water system, sewer system, storm water, and urban runoff pollution control, and erosion and sediment control. These ordinances are in place to protect groundwater and surface water resources from contamination. The City of Wayzata's Surface Water Management Plan is on its website and aims to provide clear guidance on how the City of Wayzata intends to manage its surface water.

City of Woodland

A portion of the DWSMA lies within the City of Woodland. Woodland has ordinances in place regulating the water system, sanitary sewer system, storm sewer system, illicit discharge and connections, and erosion and sediment control. These ordinances are in place to protect groundwater and surface water resources from contamination. The city also has educational information available on its website related to storm water management and protecting groundwater and surface water, including links to the Minnehaha Creek, MnDNR, and Lake Minnetonka Conservation District websites. The City of Woodland Surface Water Management plan, which is intended to provide the City of Woodland and its residents with direction concerning the administration and implementation of surface water management activities within the community, is also available for viewing on the City of Woodland's website.

City of Edina

A portion of the DWSMA lies within the City of Edina. The City of Edina has ordinances in place regarding the regulation of the water system, sanitary sewer system, storm sewer system, illicit discharge and connections, and erosion and sediment control. These ordinances are in place to protect groundwater and surface water resources from contamination. The City of Edina's Comprehensive Water Resource Management Plan serves as a guiding document for water resource management and addresses runoff management, flood control and clean creeks, ponds and wetlands. The Comprehensive Water Resource Management Plan is available for viewing on the City of Edina's website.

Minnehaha Creek Watershed District

A portion of the DWSMA falls under the jurisdiction of the Minnehaha Creek Watershed District (MCWD). The MCWD is a local unit of government responsible for managing and protecting the water resources in one of the largest and most heavily-used urban watersheds in Minnesota. The MCWD uses scientific research and monitoring, public education, grant programs, permitting, and collaborative initiatives with local governments, agencies and residents to protect the region's lakes, rivers, and streams. In 2007, the MCWD Board of Managers approved the Comprehensive Water Resources Management Plan, which serves as the guiding document for the organization for the period covering 2007-2017. Rules for development have been adopted that ensure protection of water and surrounding resources and serve to implement the goals and policies of the Comprehensive Water Resources Management Plan. The Minnehaha Creek Watershed District offers grants to residents and businesses in its watershed to construct rain gardens and install pervious pavement or other features that infiltrate storm water runoff into the ground.

Bassett Creek Watershed Management Commission

A portion of the DWSMA falls under the jurisdiction of the Bassett Creek Watershed Management Commission (BCWMC), which works with residents, organizations, and its member cities to protect and improve water resources like Bassett Creek and its tributaries, wetlands, ponds, and lakes such as Medicine, Wirth, Twin, Sweeney, Northwood, Turtle, Westwood, Parkers, and others. The BCWMC adopted its most current Watershed Management Plan in September of 2015 with the vision of "stewardship of water resources to protect and enhance our communities". Rules and standards regulating development have been adopted and are intended to carry out the goals and policies outlined in the Watershed Management Plan.

Nine Mile Creek Watershed District

A portion of the DWSMA falls under the jurisdiction of the Nine Mile Creek Watershed District (NMCWD), which is a public entity that works to protect and restore the water and natural resources in the land area draining to Nine Mile Creek. NMCWD has state authority to protect and manage water resources within the district. The Nine Mile Creek Watershed District Management Plan sets the vision, guidelines, and proposed tasks for managing surface water within the NMCWD. The NMCWD's current plan was adopted in 2007 and is required to be updated in 2017. Rules for development have been adopted that ensure protection of water and surrounding resources and serve to implement the goals and policies of the Nine Mile Creek Watershed District Management Plan. Grant funds are also available to residents, associations,

nonprofits, schools, businesses, and cities for projects that protect and improve water and natural resources within the district.

Riley Purgatory Bluff Creek Watershed District

The Riley Purgatory Bluff Creek Watershed District (RPBCWD) works with citizens, government bodies, and organizations to improve water quality and support the conservation ethic that has evolved over the district's 40-year history. The function of the district is to protect and manage the water resources within the district, which is approximately 50 square miles in surface area. The Riley Purgatory Bluff Creek Watershed District Management Plan was adopted in 2011 and lays out the RPBCWD's vision for the next ten years through various goals, objectives, and policies. The RPBCWD has developed rules for floodplain management and drainage alterations, erosion and sediment control, wetland and creek buffers, dredging and sediment removal, shoreline and streambank stabilization, waterbody crossings and structures, appropriation of public surface waters, appropriation of groundwater, and storm water management.

B. Administrative, Technical, and Financial Considerations

With existing cost-share programs and grant opportunities, the City will have resources available to regulate the public water supply's source water and implement the management strategies found herein. Funds to support ongoing wellhead and source water protection efforts will come from the City's water utility fund and MDH grants. Wellhead and source water protection activities will be evaluated on an annual basis, and any changes in the focus of the tasks will also be evaluated to determine if additional funding will be necessary to accommodate the changes.

The City intends to work in conjunction with Hennepin County, MCWD, BCWMC, NMCWD, and RPBCWD to protect the surface water and source water resources as much as possible when it is beneficial and logistically feasible.

CHAPTER THREE

ISSUES, PROBLEMS, AND OPPORTUNITIES (4720.5230)

Issues, problems, and opportunities in relation to the source water aquifer, groundwater quality, and DWSMA are discussed below.

I. WATER USE AND LAND USE ISSUES, PROBLEMS, AND OPPORTUNITIES

A. Source Water Aquifer

The Part 1 Plan (**Appendix C**) determined that the WHPA and corresponding DWSMA for the source aquifer range from low to high vulnerability, where high vulnerability areas are more likely to be affected by land use activities. An issue identified by MDH is uncertainty surrounding the hydraulic connection and gradient between the Prairie du Chien and Jordan Aquifers. Area-specific hydraulic conductivity data around City wells is also desired. As a result, the City has an opportunity to improve knowledge about the source water aquifer by assisting MDH in collecting data using observation wells. Specific objectives and related activities are included in **Chapter 5**.

Land use and zoning regulations can protect the quality of the aquifers by discouraging types of construction or activity that may cause contamination. Though the City of Hopkins is largely developed, and redevelopment is expected throughout the City. The City has a Comprehensive Plan in place that includes policies for managing development, allowable land uses, water supplies, and wells. Policies identified in the Comprehensive Plan will help protect the City's source water aquifer. Additionally, the City has land use and zoning ordinances in place that could be revised in the future if needed to address potential contaminant sites. The challenge to the City is that large portions of the DWSMA are located outside the City and outside their control. Cooperative participation in the management of the local aquifers to help assure sustainable water supplies for all users is a challenge and an opportunity.

B. Groundwater Quality

Currently, the groundwater pumped from the Prairie du Chien and Jordan Aquifers by the municipal wells is free of pathogens and disease-causing organisms. In addition, the City's water supply currently meets state and federal water quality requirements. To comply with MDH rules, the City adds fluoride to the water and tests water daily. The presence of Tritium in the City's wells is not a health risk but is an indication of the vulnerability of the aquifer. The City's Consumer Confidence Reports (CCR) for 2013-2015 can be found in **Appendix E**.

The City will continue to improve its groundwater model by collecting water samples from well water, surface water, and precipitation. Using the water collected, stable isotope analyses can be conducted to gain a more thorough understanding of the surface and groundwater mixture.

Well water quality sampling will need to continue so that possible contamination can be identified. There are numerous private wells located within the DWSMA that should continue to be tested regularly, as recommended by the MDH. Coordination with the City of Minnetonka, City of Woodland, City of Wayzata, City of St. Louis Park, City of Edina, MDH, MPCA, MnDNR, and Hennepin County to share and maintain information on wells and potential contaminants will be a challenge and an opportunity.

Education of landowners, especially those with private wells, septic systems, or other potential contaminant sources will be important in the control of contamination affecting the groundwater quality.

C. Drinking Water Supply Management Areas

Land uses found within the DWSMA include single and multi-family residential, parks and recreational space, commercial and industrial. Potential contaminant sources identified, particularly within the highly vulnerable portions of the DWSMA, should be monitored.

As previously mentioned, a concern for the City will be that it does not have legal capabilities to regulate activities within its DWSMA that are outside the City's boundaries. Some opportunities identified include:

- Working with the Cities of Minnetonka, Woodland, Wayzata, St. Louis Park, and Edina, as well as other government entities to share information and create policies that protect the aquifers.
- Tracking and updating the list of potential contaminant sources as new information becomes available.
- Educating landowners on proper well management and spill prevention.
- Routinely monitoring for land use and potential contaminant source changes within the Inner Wellhead Management Zone (IWMZ), a 200-foot-radius around the wells, in consideration of State Well Code requirements.
- Placing high priority on new and existing wells and potential contaminant sources identified in the IWMZ and One Year Time of Travel Area for the implementation of best management practices.

II. ASSESSMENT OF WATER USE AND LAND USE ISSUES, PROBLEMS, AND OPPORTUNITIES

A. Issues, Problems, and Opportunities Disclosed at Public Meetings and in Written Comments

At the beginning of the WHP amendment process, the City sent a notification to other Local Government Units (LGUs) of its intention to amend their wellhead and source water protection efforts. After approval by the MDH, the City sent copies of the results of the Part 1 Plan to LGUs. The City sent notification to LGUs of Part 2 of the Plan and will hold a public hearing before submittal to MDH. The City has not been informed of any issues, problems, or opportunities by the LGUs at this time. If any comments are received by the City, they will be listed here.

B. Issues, Problems, and Opportunities Related to the Data Elements

Part 1 and Part 2 of the Plan have utilized current local and regional information available for compiling and assessing data elements. At a minimum, this Plan will be revised or updated every 10 years as required by the WHP Rules and the most recent and accurate data will be utilized at that time. To support on-going wellhead protection efforts, the City will collect data on wells, water quality and land use within its DWSMA. Due to limited resources to independently collect the full range of data and recreate the necessary databases, the City will continue to mainly rely on databases maintained by the State and County agencies to obtain and verify data, as needed.

C. Issues, Problems, and Opportunities Related to Status & Adequacy of Official Controls, Plans, and Other Local, State, and Federal Programs

Numerous controls, plans and programs exist that may be used to achieve the WHP Plan goals are identified in this Part 2 Plan. State and LGUs currently enforce land use ordinances, zoning laws, sewer ordinances, well permits, and groundwater use appropriation permits. The City will continue to work with neighboring communities to ensure proper management of the portion of the DWSMA that extends into their respective municipality. It is anticipated that most local issues may be adequately addressed through these existing processes and adopting of best management practices.

No additional regulations are recommended to be imposed at this time. However, it is recommended that overall regional coordination of WHP efforts be initiated.

CHAPTER FOUR

WELLHEAD PROTECTION GOALS (4720.5240)

In accordance with Minnesota Rules 4720.5240 this section must address goals for present and future water use and land use to provide a framework for determining plan objectives and related actions.

Goals outlined in this part were selected based on the information gathered and compiled from the data elements, delineations of the WHPAs and DWSMAs, results of the vulnerability assessments, results of the PCSI, expected changes in land and water uses, identified issues, problems, and opportunities, and evaluation of this information.

The public water supply is considered to be moderately, highly, and very highly vulnerable. Therefore, the goals and objectives of this Plan will focus on managing potential contaminant sources within the DWSMA, reducing the potential contaminant pathways to the source water aquifer that may be provided by private wells, educating property owners and water supply users, and considering policies that control future siting of potential contaminants.

The City's WHP team has identified the following goals for implementation of this Plan:

Goal 1: The City will work to maintain or improve the current level of water quality so that the municipal water supply will continue to meet or exceed all applicable state and federal water quality standards.

Goal 2: The City will work to continue to supply sufficient water quantity for system users and emergency needs.

Goal 3: The City will provide and promote activities that protect the source water aquifer that provides water to the municipal system. This will include increased public awareness of the wellhead and source water protection program and groundwater-related issues, and management of the identified potential contaminant sources and conveyance mechanisms within the DWSMA.

Goal 4: The City will continue to collect data to support future wellhead and source water protection efforts.

CHAPTER FIVE

OBJECTIVES AND PLANS OF ACTION (4720.5250)

I. OBJECTIVES

Given the issues, problems, and opportunities discussed in **Chapter Three** and the goals stated in **Chapter Four**, the Plan delegates direct management efforts to the following areas to prevent future contamination of the aquifer and increase awareness of groundwater protection:

- A. *Well Management*
- B. *Public Education*
- C. *Storage Tank Management*
- D. *Data Collection*
- E. *Water Conservation*
- F. *Planning and Zoning*
- G. *Implementation*
- H. *Evaluation*

II. PLAN OF ACTION

A. Well Management

Objective A1: Take measures to promote proper sealing of abandoned, unused, unmaintained, or damaged wells.

Action A1.1: Make property owners aware of potential technical and financial resources that are available to assist them in securing grant funding for properly sealing wells.

| | |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Who: | City Staff |
| Cooperators: | Hennepin County |
| Time Frame: | Quarterly, beginning Year 1 and ending Year 10 following the adoption of this Plan. |
| Estimated Cost: | Varies |
| Goal Achieved: | Goal 3: Source water aquifer protection |
| How: | Use the City’s website, newsletters, or direct mailings to make owners aware of well sealing cost-share programs. Provide information to realtors to pass along to property owners preparing to sell and during disclosure process. |

Action A1.2: Seek funds when available and feasible to locate and/or seal wells.

| | |
|-----------------|----------------------------------------------------------------------------------------------------------|
| Who: | City Staff |
| Cooperators: | Hennepin County, MDH, Consultant |
| Time Frame: | Ongoing throughout Years 1 – 10 of this Plan, when grant funding is available or wells are located. |
| Estimated Cost: | \$1,000 (grant application); additional cost for sealing TBD |
| Goal Achieved: | Goal 3: Source water aquifer protection |
| How: | If wells are discovered on City owned property, grant funding shall be sought to properly seal the well. |

Objective A2: Take measures to identify and inform properties with abandoned, unused, unmaintained, or damaged wells and potential cross connections between private wells and the City’s water system.

Action A2: Identify and inform properties with potential supply cross connections or wells that pose a hazard to the public water supply.

| | |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Who: | City Staff or Consultant |
| Cooperators: | MDH, Hennepin County, City of Minnetonka, City of Woodland, City of Wayzata, City of St. Louis Park, City of Edina |
| Time Frame: | Years 1 – 2, following the implementation of this Plan. |
| Estimated Cost: | \$5,000 per mailing |
| Goal Achieved: | Goal 1: Maintain or improve current water quality |
| How: | Provide residents information on lost wells when changing water meters. Ask residents for permission to check basement for wells during this process. |

Objective A3: Educate the public about proper well management.

Action A3: Using public events, City's website, newsletter, or other direct mailings, provide information to the public on proper well management.

| | |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Who: | City Staff or Consultant |
| Cooperators: | MDH, Minnesota Rural Water Association (MRWA) |
| Time Frame: | Year 1 following the adoption of this Plan, updating biannually. |
| Estimated Cost: | Varies |
| Goal Achieved: | Goal 3: Promote activities to raise awareness |
| How: | Use the City's website, CCR, newsletter, or social media sites to provide education on proper well management by linking the MDH's Well Owner's Handbook. |

Objective A4: Identify new high-capacity wells within the DWSMA.

Action A4: The City will work with MnDNR and MDH to address implications of high capacity well construction or appropriation permitting changes on the City's drinking water supply or DWSMA boundary.

| | |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Who: | City Staff, Consultant |
| Cooperators: | MnDNR, MDH |
| Time Frame: | Year 2 following the adoption of this Plan, or as needed. |
| Estimated Cost: | Varies |
| Goal Achieved: | Goal 2: Continue to supply sufficient water quantity for system users |
| How: | The MnDNR is currently sending out notices to interested parties before new large capacity well construction. If the City receives a notice, it will work with MnDNR and MDH to determined implications for the DWSMA or the vulnerability of the aquifer. If the changes result in a required amendment to this Plan, the City will seek grant funding for assistance. |

Objective A5: Continue to monitor water quality and quantity from the City's to ensure high quality.

Action A5: Examine and review the annual water quantity and quality reports to identify changes in groundwater levels, aquifer hydraulics, and concentrations of constituents.

| | |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Who: | City Staff |
| Cooperators: | Consultant, MDH |
| Time Frame: | Monthly – groundwater levels; When available – quality reports. |
| Estimated Cost: | No additional cost – staff time |
| Goal Achieved: | Goal 1: Maintain or improve the current level of water quality; Goal 2: Continue to supply sufficient water quantity |
| How: | The City will continue to receive water quality reports, at which time the reports will be compared to previous years to evaluate trends or changes. Groundwater levels and quality shall be recorded monthly within the City's water supply wells. Staff will review annual water quality reports and provide summaries about changes over time. If new contaminant sources are found, the City will ensure wells meet isolation distance requirements. |

Objective A6: Monitor the IWMZ areas for the addition of or changes to potential contaminant sources.

Action A6: City staff will review and update IWMZ survey form for all wells in cooperation with MDH to determine if there have been additions or changes to potential contaminant sources

| | |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Who: | City Staff |
| Cooperators: | MDH |
| Time Frame: | Every 5 years following the adoption of this Plan. |
| Estimated Cost: | None, MDH cost and City Staff time |
| Goal Achieved: | Goal 1: Work to maintain or improve current water quality |
| How: | If changes are made to the items identified in the IWMZ, the City will update with the approval of MDH to survey the IWMZ every five years. The City will notify property owners if any well setback distances are violated. Seek grant funding to cooperate with MDH to complete the next IWMZ survey. |

Objective A7: Minimize the potential contaminant sources in order to reduce the DWSMA area.

Action A7: City staff will consider construction methods to exclude the upper portion of the Jordan Sandstone formation.

| | |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Who: | City Staff |
| Cooperators: | MDH |
| Time Frame: | As needed |
| Estimated Cost: | Variable |
| Goal Achieved: | Goal 1: Work to maintain or improve current water quality. |
| How: | If new City wells are proposed or existing wells require significant rehabilitation the city will consider construction methods to exclude the upper portion of the Jordan Sandstone formation. |

B. Public Education

Objective B1: Develop a public support and understanding for the WHP planning through public events and the use of websites, newsletters, and handouts.

Action B1.1: Include information about WHP and groundwater protection in the City newsletter, perhaps in conjunction with the City's Municipal Separate Storm Sewer System (MS4) permitting requirements.

| | |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Who: | City Staff |
| Cooperators: | MDH |
| Time Frame: | Year 1 and Year 5 following the adoption of this Plan |
| Estimated Cost: | \$5,000 each mailing/posting |
| Goal Achieved: | Goal 3: Make information available to promote wellhead and source water protection |
| How: | Identify and obtain existing educational materials available from MDH and MRWA. Write newsletter articles describing WHP and include contact information and website addresses for existing educational resources. |

Action B1.2: Provide information about the WHP Plan and links to other WHP related resources on the City's website.

| | |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Who: | City Staff |
| Cooperators: | MDH |
| Time Frame: | Year 5 following the adoption of this Plan |
| Estimated Cost: | \$1,000 each year of posting |
| Goal Achieved: | Goal 3: Make information available to promote wellhead and source water protection |
| How: | Provide a summary of WHP goals and implementation. Provide links to WHP related websites including MDH, MDA, and the Environmental Protection Agency (EPA). |

Objective B2: Educate emergency management officials of the importance of spills/clean-up within the DWSMA due to its sensitivity.

Action B2: Send a summary memo to the Fire Department, County Emergency Manager, County Engineer, and Minnesota Department of Transportation (MnDOT) regarding the DWSMA location, sensitivity, and importance of spill cleanup within the management area.

| | |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Who: | City Staff |
| Cooperators: | MDH, Fire Department, MnDOT, Hennepin County |
| Time Frame: | Year 2 following the adoption of this Plan. |
| Estimated Cost: | \$1,000 |
| Goal Achieved: | Goal 3: Make information available to promote wellhead and source water protection. |
| How: | Develop a summary memo for transportation corridors with local emergency management officials on the DWSMA location and importance of spill cleanup within the management areas. |

Objective B3: Provide information on preventing leaks and proper tank maintenance to tank owners in WHP areas.

Action B3: Send reminder notices to new and old tank owners about tank regulations and the importance of early leak detection.

| | |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Who: | City Staff |
| Cooperators: | MDH, Fire Department, MnDOT, Hennepin County |
| Time Frame: | Year 2 following the adoption of this Plan |
| Estimated Cost: | \$2,000 |
| Goal Achieved: | Goal 3: Make information available to promote wellhead and source water protection |
| How: | City can assist owners on methods to use to check for leaks and how to keep records by sending out information through mailings, City's website, social media, etc. The City could also require the use of certified contractors for installation and removal of unregulated USTs. |

C. Storage Tank Management

Objective C1: Notify owners of storage tanks located within the DWSMA that the tank is in a source water protection area, and educate owners of properties containing the storage tanks of the importance of spill prevention.

Action C1: Update list of storage tank owners, contact each property owner, and make them aware of their placement within the City's DWSMA.

| | |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Who: | City Staff, consultant |
| Cooperators: | MDH, MPCA, Consultant |
| Time Frame: | Within Year 1 following the adoption of this Plan |
| Estimated Cost: | \$1,500 |
| Goal Achieved: | Goal 1: Maintain or improve the current level of water quality; Goal 3: Increase awareness of wellhead and source water protection |
| How: | Send mailings to the property owners notifying them about the DWSMA delineation and the importance of spill prevention. Provide contact numbers for the appropriate government agencies to each property owner. Provide tank owners information and resources to acquire the appropriate spill clean-up materials (sorberent materials, etc.) and have these located on site. |

D. Data Collection**Objective D1: Continue to cooperate with and support future data collection efforts by other agencies.**

Action D1: Provide data from additional pumping tests on City wells or other high capacity wells if funding is available to the agencies listed below. The City will also assist in the data collection efforts by other agencies when feasible.

| | |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Who: | City Staff |
| Cooperators: | MPCA, MnDNR, MDH, MRWA, RCWD, Minnesota Geological Survey (MGS) |
| Time Frame: | Ongoing throughout Years 1 – 10 of this Plan, when requested |
| Estimated Cost: | Varies |
| Goal Achieved: | Goal 4: Continue to collect data to support wellhead and source water protection |
| How: | Provide assistance to agencies as requested when reasonable and economical. As requested, the City will complete additional pumping tests on City wells or other high capacity wells if funded by the above agencies. If the City conducts pumping tests independently of this Plan, the results will be submitted to MDH. The City will allow regional and state agencies to access well water, surface water, precipitation and, if possible, water specifically from the Prairie du Chien aquifer near the City to conduct stable isotope analyses. |

Objective D2: Conduct stable isotope tests on all public water supply wells, surface water and precipitation.

Action D2: The City will request that MDH conduct stable isotope testing once during the lifetime of this Plan.

| | |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Who: | City Staff |
| Cooperators: | MDH |
| Time Frame: | Year 7 following the adoption of this Plan |
| Estimated Cost: | City staff time |
| Goal Achieved: | Goal 1: Work to maintain or improve the current level of water quality; Goal 4: Continue to collect data to support future wellhead and water protection efforts |
| How: | The City will request that MDH conduct Tritium or other stable isotope testing on each public water supply well during the seventh year of this Plan. |

Objective D3: Maintain up-to-date information about wells and potential contaminant sources within the DWSMA.

Action D3: In cooperation with existing state or local agencies and programs, maintain the database of wells, and storage tanks within the DWSMA that was developed as part of this Part 2 Plan.

| | |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| Who: | City Staff |
| Cooperators: | Property owners, MDH, Consultant |
| Time Frame: | Ongoing throughout Years 1 – 10 of this Plan, as new information becomes available |
| Estimated Cost: | Varies |
| Goal Achieved: | Goal 4: Continue data collection to support future wellhead and source water protection |
| How: | A PCSI was performed as part of the development of this Plan. The database will be reviewed periodically and updated as information becomes available. |

Objective D4: Continue to collect and maintain local geologic and hydrogeological data in order to improve and augment information and to provide additional data for future amendments to this plan.

Action D4.1: Monitor static and pumping levels in municipal wells.

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|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Who: | City Staff |
| Cooperators: | MnDNR, Consultant |
| Time Frame: | Annually following the adoption of this Plan. |
| Estimated Cost: | Staff time |
| Goal Achieved: | Goal 4: Continue data collection to support future wellhead and source water protection. |
| How: | Conduct routine collection of groundwater levels in municipal wells, which will provide data for evaluation of groundwater elevation trends over time. This data can also be used to verify the groundwater flow field in the source water aquifer, while also evaluating if a cross connection between the Mississippi River and groundwater levels exists. |

Action D4.2: Obtain more area-specific hydraulic conductivity data in the area of the City wells to reduce groundwater modeling uncertainty.

| | |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Who: | City Staff |
| Cooperators: | MnDNR, MGS, Consultant |
| Time Frame: | Year 6 following the adoption of this Plan |
| Estimated Cost: | Varies depending on request |
| Goal Achieved: | Goal 4: Continue data collection to support future wellhead and source water protection |
| How: | Conduct pumping test on City wells and/or other existing high capacity wells, if determined to be needed by the MDH area hydrologist and grant funding is available. |

Action D4.3: Characterize the vertical hydraulic connection between the Prairie du Chien and Jordan aquifers.

| | |
|-----------------|-------------------------------------------------------------------------------------------------------------------|
| Who: | City Staff |
| Cooperators: | MnDNR, MGS, Consultant |
| Time Frame: | Year 7 following the adoption of this Plan |
| Estimated Cost: | Varies depending on request |
| Goal Achieved: | Goal 4: Continue data collection to support future wellhead and source water protection |
| How: | If grant funding is available identify existing or new observation wells at strategic locations within the DWSMA. |

E. Water Conservation

Objective E1: Implement a community-wide water conservation program.

Action E1.1: Update conservation measures included in various plans within the City.

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|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Who: | City Staff |
| Cooperators: | Consultant, MDH |
| Time Frame: | Year 3 following the adoption of this plan |
| Estimated Cost: | \$6,000 |
| Goal Achieved: | Goal 2: Continue to supply sufficient water quantities to consumers |
| How: | Educate the public to encourage users to voluntarily incorporate water saving habits and tools into their lifestyles; improve the existing water system's operation and maintenance procedures, incorporate costs associated with water conservation programs; and ensure that all customers are paying for the water they use through audits, leak detection, and meter replacement or calibration as they occur or as needed. |

Action E1.2: Implement water conservation measures and outreach.

| | |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------|
| Who: | City Staff |
| Cooperators: | Consultant, MDH |
| Time Frame: | Year 7 following the adoption of this plan |
| Estimated Cost: | \$8,000 |
| Goal Achieved: | Goal 2: Continue to supply sufficient water quantities to consumers |
| How: | Encourage the public to conserve water through a variety of tools. Have information and kits available at community events. |

F. Planning and Zoning

Objective F1: Incorporate WHP initiatives into City Plans.

Action F1.1: The City will use this WHP Plan as a resource when updating its Comprehensive Plan, Local Water Management Plan, Water Supply Plan, normal zoning and planning review plans, and other relevant plans.

| | |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Who: | City Staff or consultant |
| Cooperators: | MnDNR, MDH, Consultant |
| Time Frame: | When other plans are revised |
| Estimated Cost: | Varies per plan |
| Goal Achieved: | Goal 3: Promote activities that protect the source water aquifer |
| How: | WHP initiatives will be addressed and incorporated into the City's various plan updates. Copies of this Plan will be distributed to City planning staff. |

Action F1.2: Collaborate with other jurisdictions within the DWSMA to identify land use changes outside the City limits.

| | |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Who: | City Staff |
| Cooperators: | City of Minnetonka, City of Woodland, City of Wayzata, City of St. Louis Park, and City of Edina |
| Time Frame: | First year following the adoption of this plan |
| Estimated Cost: | \$500 |
| Goal Achieved: | Goal 4: Continue to collect data to support wellhead and source water protection |
| How: | Set up conference call as well as distribute copies of this Plan to other jurisdictions within the DWSMA. Review and comment on land use plans and activities outside city boundaries. |

G. Implementation

Objective G1: Track and report completed WHP activities.

Action G1: Organize and file completed WHP activities in the City's WHP 3-ring binder.

| | |
|-----------------|-----------------------------------------------------------------------------------------|
| Who: | City Staff |
| Cooperators: | Consultant |
| Time Frame: | Annually following the adoption of this Plan. |
| Estimated Cost: | \$500 each year |
| Goal Achieved: | Goal 4: Continue to collect data to support wellhead and source water protection. |
| How: | Update WHP records of completed implementation activities within the WHP 3-ring binder. |

H. Evaluation

Objective H1: Evaluate Plan

Action H1: Complete an evaluation report every 2.5 years.

| | |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Who: | City Staff |
| Cooperators: | Consultant |
| Time Frame: | Every 2.5 years following the adoption of this Plan |
| Estimated Cost: | \$2,000 per evaluation |
| Goal Achieved: | Goal 1: Work to maintain or improve the current level of water quality; Goal 2: Work to continue to supply sufficient water quantity; Goal 3: Provide and promote activities that protect the source water aquifer. |
| How: | Prepare a written evaluation using the MDH WHP Program Evaluation form or a format selected by the City. Provide report to the MDH Source Water Protection Unit. |

CHAPTER SIX

EVALUATION PROGRAM (4720.5270)

The success of the Plan must be evaluated in order to determine whether the implementation activities are accomplishing the intent of the Plan. Monitoring will be ongoing and a written evaluation of the Plan and associated activities will be conducted every two and a half years that the Plan is in effect. The evaluation activities will include the following items:

- Track the implementation of the goals, objectives, activities, and tasks discussed in **Chapter Five** of this Plan;
- Determine the effectiveness of specific management strategies regarding the protection of City's municipal water supply;
- Identify possible changes to these strategies which may improve their effectiveness; and
- Determine the adequacy of financial resources and staff availability to carry out the management strategies planned for each year.

The City will continue to coordinate with the MDH in the annual monitoring of the City's municipal water supply to determine if the management strategies presented in this Plan are having an impact on water quality. In addition, water quality problems that may still be occurring will be identified.

At the end of each evaluation period (every two and a half years) City staff will make a written report regarding progress in implementing the Plan, as well as an evaluation of the costs and benefits of the Plan activities. This report may be completed using the MDH Wellhead Protection Program Evaluation form. A copy of the report will be sent to the MDH Source Water Protection Unit in St. Paul. The City will also keep a copy of the report in its records. The intent of the evaluation is to compile a complete and comprehensive study of the implementation of the source management strategies for use when the City updates or revises this Plan. As required by the Wellhead Protection Rules, this Plan will be updated every ten years at a minimum.

CHAPTER SEVEN

ALTERNATIVE WATER SUPPLY CONTINGENCY STRATEGY (4720.5280)

A contingency plan is put into effect to establish, provide, and keep updated certain emergency response procedures and information for the public water supply, which may become vital in the event of a partial or total loss of public water supply services as a result of a natural disaster, chemical contamination, civil disorder, or human-caused disruption.

In 2009, the City completed its Water Emergency and Conservation Plan as part of its Comprehensive Plan update. As required, the plan was submitted to the MnDNR Waters-Water Permit Programs and the Metropolitan Council for review and approval. The plan has been adopted by the City and incorporated in the City's 2030 Comprehensive Plan. Copies of the Water Emergency and Conservation Plan and the 2030 Comprehensive Plan are available from the City.

APPENDIX A
Tables

Table 1: Precipitation

| Month | Average Precipitation (2010 - 2015) [in] |
|------------------|---------------------------------------------------------|
| January | 0.66 |
| February | 1.21 |
| March | 1.38 |
| April | 3.47 |
| May | 5.17 |
| June | 5.46 |
| July | 5.09 |
| August | 4.14 |
| September | 2.77 |
| October | 2.18 |
| November | 1.67 |
| December | 1.77 |
| Total | 34.97 |

Data from Minnesota Climatology Working Group

http://www.dnr.state.mn.us/climate/historical/acis_stn_meta.html

Table 2 - Potential Contaminant Source Inventory

| Figure ID | Parcel ID | Owner Name | Address | City | Zip Code | Activity | PCS Code | Material Code | Status | MPCA ID | Total | Vulnerability |
|-----------|---------------|------------------------------------------|-------------------------------------|----------------|----------|-----------------------------------|----------|---------------|--------|--------------|-------|---------------|
| 1 | 2411722430236 | KLOOT DEVELOPMENT LLC | 815 1st Ave S | Hopkins | 55343 | Petroleum Brownfield | PCS | BMS | I | 4090 | 1 | Moderate |
| 2 | 211722230053 | MORRIE'S PROPERTIES LLC | 12550 Wayzata Blvd | Minnetonka | 55305 | Tank Site | UST | F000 | A | 2434 | 1 | Moderate |
| 3 | 2411722440055 | SOO LINE RR | 3rd Ave S & 3rd St S | Minneapolis | 0 | Leak Site | LUST | F000 | I | 4055 | 1 | Moderate |
| 4 | 2411722430186 | JOCELYN M ANDRES | 704-724 Main St & 15 - 8th Ave S | Hopkins | 55343 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP16130 | 1 | Moderate |
| 5 | 1311722420245 | OAKRIDGE MANOR (CO-OP) | 3412 Oak Ridge Rd | Minnetonka | 55305 | Tank Site | UST | F000 | A | 18983 | 1 | Moderate |
| 6 | 1211722340101 | Greenbier Condo | 10531 Cedar Lake Rd | Minnetonka | 55305 | Tank Site | UST | F000 | A | 14321 | 6 | Moderate |
| 7 | 1211722340251 | ELENA ALEX LUCHANSKAYA | 10401 Cedar Lake Rd | Minnetonka | 55305 | Leak Site | LUST | F000 | I | 11686 | 1 | Moderate |
| 8 | 1211722420026 | JOHN M HILBELINK | 10301 Cedar Lake Rd | Minnetonka | 55305 | Tank Site | UST | F000 | A | 17266 | 1 | Moderate |
| 9 | 1511722140010 | ST DAVID'S CENTER | 3395 Plymouth Rd | Minnetonka | 55305 | Tank Site | UST | F000 | I | 3295 | 1 | Moderate |
| 10 | 1511722240031 | Bollig & Sons Inc | 11401 County Road 3 | Minnetonka | 55343 | Tank Site | UST | F000 | R | 11119 | 7 | Moderate |
| 11 | 1511722410006 | Minnetonka Mills Investors LLC | 12924, 12934, & 12940 Minnetonka Bl | Minnetonka | 55305 | Voluntary Investigation & Cleanup | PCS | VIC | A | VP32790 | 1 | Moderate |
| 12 | 1511722410051 | Kraig A Lungstrom | 13008 Minnetonka Blvd | Minnetonka | 55305 | Leak Site | LUST | F000 | I | 1648 | 1 | Moderate |
| 13 | 1511722410062 | Glenr Seutter | 12908 Minnetonka Blvd | Minnetonka | 55305 | Leak Site | LUST | F000 | C | 3034 | 1 | Moderate |
| 14 | 1511722420050 | JOANN HAUGEN | 13314 Invernes Rd | Minnetonka | 55305 | Leak Site | LUST | F000 | I | 14735 | 1 | Moderate |
| 15 | 1611722310015 | City of Minnetonka | 11522 Minnetonka Blvd | Minnetonka | 55305 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP1490 | 1 | Moderate |
| 16 | 1611722330009 | WILLIAM O MARUSKA | 3739 Tonkawood Rd | Minnetonka | 55345 | Tank Site | UST | F000 | I | 19957 | 1 | Moderate |
| 17 | 1611722340002 | MINCO REALTY PARTNERS LLC | 15305 Minnetonka Blvd | Minnetonka | 55345 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP12930 | 1 | Moderate |
| 18 | 1611722340002 | MINCO REALTY PARTNERS LLC | 15225 Minnetonka Boulevard | Minnetonka | 55345 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP0075 | 1 | Moderate |
| 19 | 1611722410003 | City of Minnetonka | 14600 Minnetonka Blvd | Minnetonka | 55345 | Tank Site | UST | F000 | R | 2488 | 1 | Moderate |
| 20 | 1611722410003 | City of Minnetonka | 14550 Minnetonka Blvd | Minnetonka | 55345 | Tank Site | UST | F000 | R | 17258 | 1 | Moderate |
| 21 | 1611722420003 | MINN CONF OF 7TH ADV | 3500 Williston Rd | Minnetonka | 55345 | Leak Site | LUST | F000 | A | 19212 | 1 | Moderate |
| 22 | 1611722430010 | A M MINNESOTA FUNDING CO INC | See location description | Minnetonka | 55345 | Voluntary Investigation & Cleanup | PCS | VIC | A | VP15280 | 1 | Moderate |
| 23 | 1611722430010 | A M MINNESOTA FUNDING CO INC | See location description | Minnetonka | 55345 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP0073 | 1 | Moderate |
| 24 | 1611722430011 | CCL-B MINNETONKA LLC | 15000 Minnetonka Industrial Blvd | Minnetonka | 55345 | Superfund Project | PCS | PLP | A | SR177 | 1 | Moderate |
| 25 | 1611722430011 | CCL-B MINNETONKA LLC | See location description | Minnetonka | 55345 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP0071 | 1 | Moderate |
| 26 | 1611722430011 | Honeywell International Inc | 15102 Minnetonka Industrial Rd | Minnetonka | 55345 | Tank Site | UST | C000 | R | 2365 | 3 | Moderate |
| 27 | 1611722430014 | CREEKWOOD INVESTMENTS LLC | 15115 Minnetonka Industrial Rd | Minnetonka | 55345 | Tank Site | AST | F000 | A | 55134 | 9 | Moderate |
| 28 | 1611722430014 | CREEKWOOD INVESTMENTS LLC | See location description | Minnetonka | 55345 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP0076 | 1 | Moderate |
| 29 | 1611722430014 | CREEKWOOD INVESTMENTS LLC | 15115 Minnetonka Boulevard | Minnetonka | 55345 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP0072 | 1 | Moderate |
| 30 | 1611722430018 | A M MINNESOTA FUNDING CO INC | See location description | Minnetonka | 55345 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP22150 | 1 | Moderate |
| 31 | 1611721340011 | BP | 8900 Highway 7 | St. Louis Park | 55426 | Tank Site | UST | F000 | C | 16033 | 1 | Moderate |
| 32 | 1611721430002 | Bridgestone Firestone Inc | 8530 W Highway 7 | St. Louis Park | 55426 | Leak Site | LUST | F000 | C | 9466 | 1 | Moderate |
| 33 | 1611721430002 | LINDSAY-KNOLLWOOD Z LLC | 8500 W 37th St | St. Louis Park | 55426 | Leak Site | LUST | F000 | I | 6174 | 1 | Moderate |
| 34 | 1611721430028 | Kohf's Corp | 8440 Highway 7 | St. Louis Park | 55426 | Leak Site | LUST | F000 | C | 5726 | 1 | Moderate |
| 35 | 1611721430037 | Mister Car Wash | 8650 Highway 7 | St. Louis Park | 55426 | Leak Site | LUST | F000 | C | 1776 | 1 | Moderate |
| 36 | 1911721120018 | Metropolitan Council | 1131 NE Lake St | Hopkins | 55343 | Leak Site | LUST | F000 | C | 1249 | 1 | Moderate |
| 37 | 1911721120023 | HOLIDAY STATIONSTORES INC | 530 Blake Rd N | Hopkins | 55343 | Leak Site | LUST | F000 | C | 17907 | 1 | Moderate |
| 38 | 1911721130008 | SECOND STREET STATION LLC | 1005 1015 1121 2nd St NE | Hopkins | 55343 | Tank Site | UST | F000 | I | 121742 | 2 | Moderate |
| 39 | 1911721210008 | RAMSGATE APARTMENTS LLC | 700 Cambridge St | Hopkins | 55343 | Leak Site | LUST | F000 | I | 8321 | 1 | Moderate |
| 40 | 1911721210008 | RAMSGATE APARTMENTS LLC | 725 NE Lake St | Hopkins | 55343 | Leak Site | LUST | F000 | I | 8323 | 1 | Moderate |
| 41 | 1911721210008 | RAMSGATE APARTMENTS LLC | 725 NE Lake St | Hopkins | 55343 | Tank Site | UST | F000 | A | 2206 | 6 | Moderate |
| 42 | 1911721210009 | AUBURN LIMITED PARTNERSHIP | 421 N Van Buren | Hopkins | 55343 | Leak Site | LUST | F000 | I | 8274 | 1 | Moderate |
| 43 | 1911721210009 | AUBURN LIMITED PARTNERSHIP | 421 S Van Buren | Hopkins | 55343 | Leak Site | LUST | F000 | I | 3619 | 1 | Moderate |
| 44 | 1911721240244 | Alliant Integrated Defense Co LLC | 600 2nd St NE | Hopkins | 55343 | Hazardous Waste | PCS | CERCL | I | MND001970334 | 1 | Moderate |
| 45 | 1911721240244 | Northern States Power a MN Corp dba Xcel | 600 2nd St NE | Hopkins | 55343 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP15660 | 1 | Moderate |
| 46 | 1911721310002 | HENN CTY REGIONAL RR AUTH | SE Quadrant | Hopkins | 55343 | Tank Site | UST | F000 | R | 19272 | 1 | Moderate |
| 47 | 1911721310017 | Precious Metal Plasters Inc | 149 Jackson Ave N | Hopkins | 55343 | Voluntary Investigation & Cleanup | PCS | VIC | I | HP8700 | 1 | Moderate |
| 48 | 1911721310058 | HOPKINS MAINSTREET II LLC | 802 Saint Louis St | Hopkins | 55343 | Leak Site | LUST | F000 | I | 3625 | 1 | Moderate |
| 49 | 1911721310058 | HOPKINS MAINSTREET II LLC | 802 Saint Louis St | Hopkins | 55343 | Tank Site | UST | F000 | R | 14374 | 1 | Moderate |
| 50 | 1911721310058 | Citrus Systems Inc | 125 Jackson Ave N | Hopkins | 55343 | Tank Site | AST | C000 | C | 125398 | 1 | Moderate |
| 51 | 1911721320033 | COLFIN MIDWEST NNN INV LLC | See location description | Hopkins | 55343 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP21590 | 1 | Moderate |
| 52 | 1911721320033 | COLFIN MIDWEST NNN INV LLC | 8971 Excelsior Blvd | Hopkins | 55343 | Leak Site | LUST | F000 | I | 13426 | 1 | Moderate |
| 53 | 1911721320033 | COLFIN MIDWEST NNN INV LLC | Highway 169 & Excelsior Blvd | Hopkins | 55343 | Leak Site | LUST | F000 | I | 13157 | 1 | Moderate |
| 54 | 1911721330027 | SUPER VALU INC | 101 Jefferson Ave S | Hopkins | 55343 | Voluntary Investigation & Cleanup | PCS | VIC | A | VP32550 | 1 | Moderate |
| 55 | 1911721330027 | SUPER VALU STORES INC | Highway 169 & Excelsior Blvd | Hopkins | 55343 | Leak Site | LUST | F000 | I | 8473 | 1 | Moderate |
| 56 | 1911721340140 | SUPER VALU STORES INC | 125 Monroe Ave S | Hopkins | 55343 | Tank Site | UST | F000 | R | 3096 | 1 | Moderate |
| 57 | 2111722110075 | DIANE BLAU/EUGENE DABROWSKI | 3909 Williston Rd | Minnetonka | 55345 | Tank Site | UST | F000 | R | 14291 | 1 | Moderate |
| 58 | 2111722430035 | Youngstedt Inc | 15114 Highway 7 | Minnetonka | 55345 | Leak Site | LUST | F000 | C | 7764 | 1 | Moderate |
| 59 | 2111722430055 | Youngstedt Auto Service | 14950 Highway 7 | Minnetonka | 55345 | Leak Site | LUST | F000 | C | 8894 | 1 | Moderate |
| 60 | 2111722430068 | Oasis Market | 14820 Highway 7 | Minnetonka | 55345 | Tank Site | UST | F000 | R | 2631 | 6 | Moderate |
| 61 | 2211722120009 | ISD 270 | 3830 Baker Rd | Minnetonka | 55305 | Leak Site | LUST | F000 | C | 7434 | 1 | Moderate |
| 62 | 2211722430023 | RB Broadway Development Group | 4400 Baker Rd | Minnetonka | 55343 | Leak Site | LUST | F000 | C | 16933 | 1 | Moderate |
| 63 | 2311722110004 | CROIX OIL COMPANY | 3864 Hopkins Crossroads | Minnetonka | 55305 | Leak Site | LUST | F000 | C | 6565 | 1 | Moderate |
| 64 | 2311722110009 | Hopkins Motors LLC/Town & Country Dodge | 1710 Highway 7 | Hopkins | 55343 | Voluntary Investigation & Cleanup | PCS | VIC | C | VP23770 | 1 | Moderate |
| 65 | 2311722410102 | RHONDA LEE BENGTON | 2011 Main St | Hopkins | 55343 | Tank Site | UST | F000 | A | 3197 | 1 | Moderate |
| 66 | 2311722410102 | RHONDA LEE BENGTON | 2021 Mainstreet | Hopkins | 55343 | Leak Site | LUST | F000 | I | 2293 | 1 | Moderate |
| 67 | 2311722410135 | 1821 MAINSTREET LLC | 1821 Main St | Hopkins | 55343 | Tank Site | UST | F000 | R | 3106 | 2 | Moderate |
| 68 | 2311722410157 | Dale Feste Automotive Inc | 1801 Main St | Hopkins | 55343 | Leak Site | LUST | F000 | I | 1638 | 1 | Moderate |
| 69 | 2311722430002 | Conoco 23314 | 4548 Shady Oak Rd | Minnetonka | 55343 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP10130 | 1 | Moderate |
| 70 | 2311722430002 | ERICKSON OIL PRODUCTS INC | 4548 Shady Oak Rd | Minnetonka | 55343 | Leak Site | LUST | F000 | I | 11477 | 1 | Moderate |
| 71 | 2311722430003 | LEANDER J & JULIA O MASON | 4540 Shady Oak Rd | Minnetonka | 55343 | Voluntary Investigation & Cleanup | PCS | VIC | A | VP31610 | 1 | Moderate |
| 72 | 2311722430016 | Dorholt Inc | 20 Shady Oak Rd | Hopkins | 55343 | Petroleum Brownfield | PCS | BMS | I | 4495 | 1 | Moderate |
| 73 | 2311722430017 | Syndicate Sales | 24 Shady Oak Rd | Hopkins | 55343 | Voluntary Investigation & Cleanup | PCS | VIC | A | VP30880 | 1 | Moderate |
| 74 | 2311722430022 | Mokabaka Development | 108, 112, and 120 Shady Oak Rd | Hopkins | 55343 | Petroleum Brownfield | PCS | BMS | I | 4498 | 1 | Moderate |
| 75 | 2311722440011 | VIOLET D TWEED | 11500 Excelsior Blvd | Minnetonka | 55343 | Petroleum Brownfield | PCS | BMS | I | 3056 | 1 | Moderate |
| 76 | 2311722440036 | Tbg Properties | 1702 Main St | Hopkins | 55343 | Leak Site | LUST | F000 | I | 14951 | 1 | Moderate |
| 77 | 2311722440160 | G P PATTERSON & S PATTERSON | 11524 Excelsior Blvd | Minnetonka | 55343 | Leak Site | LUST | F000 | I | 13922 | 1 | Moderate |
| 78 | 2311722440160 | G P PATTERSON & S PATTERSON | 11500 Excelsior Blvd | Minnetonka | 55343 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP12110 | 1 | Moderate |
| 79 | 2411722120002 | SELA INVESTMENTS LTD LLP | 640 Oak Ridge Rd | Hopkins | 55305 | Tank Site | UST | F000 | R | 126165 | 1 | Moderate |
| 80 | 2411722120006 | GETHSEMANE EV LTH CH HOPKINS | 715 Minnetonka Mills Rd | Hopkins | 55343 | Tank Site | UST | F000 | R | 18149 | 2 | Moderate |
| 81 | 2411722120007 | ROSEWOOD WEST | 460 5th Ave N | Hopkins | 55343 | Tank Site | UST | F000 | A | 20001 | 1 | Moderate |
| 82 | 2411722120010 | IND SCHOOL DIST NO 274 | 801 Minnetonka Mills Rd | Hopkins | 55343 | Tank Site | UST | F000 | R | 3087 | 1 | Moderate |
| 83 | 2411722120013 | KOREAN EVANGELICAL UN METH C | 717 Highway 7 | Hopkins | 55305 | Leak Site | LUST | F000 | I | 3229 | 1 | Moderate |
| 84 | 2411722130004 | Augustana HealthCare Center | 615 Minnetonka Mills Rd | Hopkins | 55343 | Tank Site | UST | F000 | R | 2993 | 2 | Moderate |
| 85 | 2411722130089 | CHURCH OF THE CROSS | 201 9th Ave N | Hopkins | 55343 | Tank Site | UST | F000 | R | 125014 | 1 | Moderate |
| 86 | 2411722210033 | ISD 270 | 1001 Highway 7 | Hopkins | 55305 | Leak Site | LUST | F000 | I | 1035 | 1 | Moderate |
| 87 | 2411722220007 | Troy Mathwig Development Co | 1501 Highway 7 | Hopkins | 55305 | Leak Site | LUST | F000 | C | 7039 | 1 | Moderate |
| 88 | 2411722220025 | CITY CENTER VENTURES LLC | 415 17th Ave N | Hopkins | 55343 | Leak Site | LUST | F000 | I | 17053 | 1 | Moderate |
| 89 | 2411722220025 | Ray Johnson | 415 17th Ave N | Hopkins | 55343 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP24041 | 1 | Moderate |
| 90 | 2411722220025 | Ray Johnson | 415 17th Ave N | Hopkins | 55343 | Tank Site | UST | F000 | R | 1807 | 1 | Moderate |
| 91 | 2411722220073 | Crossroads Union 76 | 1675 Highway 7 | Hopkins | 55305 | Leak Site | LUST | F000 | I | 12413 | 1 | Moderate |
| 92 | 2411722310059 | J & L Tire And Auto | 1201 Main St | Hopkins | 55343 | Tank Site | UST | F000 | R | 18877 | 1 | Moderate |
| 93 | 2411722310131 | Qwest Corp dba CenturyLink QC | 10 11th Ave N | Hopkins | 55343 | Tank Site | UST | F000 | R | 2831 | 1 | Moderate |
| 94 | 2411722310142 | Metropolitan Corp | 1100 Mainstreet | Hopkins | 55343 | Leak Site | LUST | F000 | I | 7191 | 1 | Moderate |
| 95 | 2411722310142 | CITY OF HOPKINS | 11th & Main | Hopkins | 0 | Leak Site | LUST | F000 | I | 14393 | 1 | Moderate |
| 96 | 2411722320056 | Hopkins Auto Service | 1701 Main St | Hopkins | 55343 | Tank Site | UST | F000 | R | 10182 | 6 | Moderate |
| 97 | 2411722320074 | Unknown | CSAH 3 between 9th Ave | Hopkins | 55343 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP9860 | 1 | Moderate |
| 98 | 2411722320101 | Jeffs Auto Service | 1505 Mainstreet | Hopkins | 55343 | Tank Site | UST | F000 | R | 21319 | 2 | Moderate |
| 99 | 2411722320131 | City of Hopkins | 33 14th Ave N | Hopkins | 55343 | Tank Site | UST | F000 | R | 2285 | 1 | Moderate |
| 100 | 2411722330003 | TWIN CITY DEVELOPMENT INC | 1404-1432 Mainstreet | Hopkins | 55343 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP22270 | 1 | Moderate |
| 101 | | | | | | | | | | | | |

Table 2 - Potential Contaminant Source Inventory

| Figure ID | Parcel ID | Owner Name | Address | City | Zip Code | Activity | PCS Code | Material Code | Status | MPCA ID | Total | Vulnerability |
|-----------|---------------|----------------------------------------|---------------------------------|------------|----------|-----------------------------------|----------|---------------|--------|---------|-------|---------------|
| 106 | 2411722340004 | HOPKINS AUTO MALL LLC | 525 Excelsior Ave SW | Hopkins | 55343 | Tank Site | UST | F000 | R | 1748 | 6 | Moderate |
| 107 | 2411722340004 | HOPKINS AUTO MALL LLC | 10417 Excelsior Boulevard | Hopkins | 55343 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP10610 | 1 | Moderate |
| 108 | 2411722340006 | UNITED STATES POSTAL SERVICE | 910 1st S | Hopkins | 55343 | Leak Site | LUST | F000 | I | 4638 | 1 | Moderate |
| 109 | 2411722340045 | Cemstone | 70 10th Ave S | Hopkins | 55343 | Leak Site | LUST | F000 | I | 5914 | 1 | Moderate |
| 110 | 2411722340093 | NOMA & POPS LLC | 1300 2nd St S | Hopkins | 55343 | Tank Site | UST | F000 | R | 13064 | 1 | Moderate |
| 111 | 2411722340103 | NIKI MOELLER/SCOTT M MOELLER | 1144 7th St | Hopkins | 55343 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP2310 | 1 | Moderate |
| 112 | 2411722340105 | J M CLASSON & W S CLASSON TR | 1027 2nd St S | Hopkins | 55343 | Tank Site | UST | F000 | R | 11389 | 1 | Moderate |
| 113 | 2411722340105 | Midwest Management Inc | 1015 2nd St S | Hopkins | 55343 | Leak Site | LUST | F000 | C | 9032 | 1 | Moderate |
| 114 | 2411722340129 | CITY OF HOPKINS | 1010 1st St S | Hopkins | 55343 | Leak Site | LUST | F000 | C | 1143 | 1 | Moderate |
| 115 | 2411722410003 | THE LUTHER COMPANY LLLP | 499 Mainstreet | Hopkins | 55343 | Leak Site | LUST | F000 | C | 18951 | 1 | Moderate |
| 116 | 2411722410003 | THE LUTHER COMPANY LLLP | 314 Main St | Hopkins | 55343 | Tank Site | UST | F000 | R | 2271 | 5 | Moderate |
| 117 | 2411722410003 | THE LUTHER COMPANY LLLP | 36 5th Ave N | Hopkins | 55343 | Leak Site | LUST | F000 | I | 9782 | 1 | Moderate |
| 118 | 2411722420009 | Hopkins Doran LLC | 501 Mainstreet | Hopkins | 55343 | Leak Site | LUST | F000 | C | 19153 | 1 | Moderate |
| 119 | 2411722420017 | HSG/REDEVE AUTH CITY HOPKINS | See location description | Hopkins | 55343 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP23061 | 1 | Moderate |
| 120 | 2411722420065 | CITY OF HOPKINS | 5th and Main St | Hopkins | 55343 | Petroleum Brownfield | PCS | BMS | I | 3673 | 1 | Moderate |
| 121 | 2411722420074 | Snyder Drug Inc - Corporate Office | 15 9th Ave N | Hopkins | 55343 | Voluntary Investigation & Cleanup | PCS | VIC | A | VP31470 | 1 | Moderate |
| 122 | 2411722420166 | HSG & RDVLT ATHY HOPKINS | See location description | Hopkins | 55343 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP23060 | 1 | Moderate |
| 123 | 2411722420166 | HSG & RDVLT ATHY HOPKINS | 525 W Main St | Hopkins | 55343 | Petroleum Brownfield | PCS | BMS | I | 4775 | 1 | Moderate |
| 124 | 2411722420172 | myHealth for Teens and Young Adults | 15 8th Ave S | Hopkins | 55343 | Tank Site | UST | F000 | R | 18150 | 1 | Moderate |
| 125 | 2411722420173 | MARKETPLACE HOLDINGS INC | 701 Mainstreet | Hopkins | 55343 | Leak Site | LUST | F000 | C | 11927 | 1 | Moderate |
| 126 | 2411722430143 | E & E MAXWELL | 5 S 6th Ave | Hopkins | 55343 | Tank Site | UST | F000 | R | 11383 | 3 | Moderate |
| 127 | 2411722430151 | 5501 BUILDING COMPANY | 215 E Excelsior Blvd | Hopkins | 55343 | Leak Site | LUST | F000 | I | 574 | 1 | Moderate |
| 128 | 2411722430151 | SUPERVALUE INC | 215 E Excelsior Ave | Hopkins | 55343 | Leak Site | LUST | F000 | C | 9739 | 1 | Moderate |
| 129 | 2411722430151 | Stonebridge Construction Inc. | 611 & 701 Mainstreet | Hopkins | 55343 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP21691 | 1 | Moderate |
| 130 | 2411722430154 | THE LUTHER COMPANY LLLP | 704 & 706 Main St | Hopkins | 55343 | Leak Site | LUST | F000 | I | 14952 | 1 | Moderate |
| 131 | 2411722440003 | WALSER REAL ESTATE LLLC | 450 Main St | Hopkins | 55343 | Leak Site | LUST | F000 | I | 14421 | 1 | Moderate |
| 132 | 2411722440003 | WALSER REAL ESTATE LLLC | 426 Main St | Hopkins | 55343 | Tank Site | UST | F000 | R | 2135 | 1 | Moderate |
| 133 | 2411722440046 | THE LUTHER COMPANY LLLP | 201 3rd St S | Hopkins | 55343 | Tank Site | UST | F000 | R | 123275 | 1 | Moderate |
| 134 | 2411722440050 | HENN COUNTY REGIONAL RR AUTH | 250 5th Ave S | Hopkins | 0 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP16160 | 1 | Moderate |
| 135 | 2411722440050 | The Luther Co Ltd Partnership | 250 5th Ave S | Hopkins | 55343 | Leak Site | LUST | F000 | I | 14893 | 1 | Moderate |
| 136 | 2511722110003 | Hennepin County Property Services | 320 Washington Ave S | Hopkins | 55343 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP9940 | 1 | Moderate |
| 137 | 2511722110003 | Hennepin County Property Services | 320 Washington Ave S | Hopkins | 55343 | Petroleum Brownfield | PCS | BMS | I | 2814 | 1 | Moderate |
| 138 | 2511722110003 | SUPERVALUE INC | 509 2nd Ave S | Hopkins | 55343 | Leak Site | LUST | F000 | I | 605 | 1 | Moderate |
| 139 | 2511722120003 | Hopkins Car Care Center Ltd | 404 Main St | Hopkins | 55343 | Leak Site | LUST | F000 | C | 7700 | 1 | Moderate |
| 140 | 2511722120013 | THE LUTHER COMPANY LTD PTRSH | btwn 5th Ave & 11th Ave S | Hopkins | 0 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP16640 | 1 | Moderate |
| 141 | 2511722120013 | THE LUTHER COMPANY LTD PTRSH | Excelsior Blvd | Hopkins | 0 | Leak Site | LUST | F000 | I | 229 | 1 | Moderate |
| 142 | 2511722130118 | HINES REIT MPLS IND LLC | 801 6th Ave S | Hopkins | 55343 | Leak Site | LUST | F000 | I | 4936 | 1 | Moderate |
| 143 | 2511722140125 | 2075 FORD PARKWAY LLC | 601 2nd Ave S | Hopkins | 55343 | Tank Site | UST | F000 | R | 2015 | 2 | Moderate |
| 144 | 2511722140127 | CREEK VALLEY PROPERTIES LLC | 509 2nd Ave S | Hopkins | 55343 | Voluntary Investigation & Cleanup | PCS | F000 | I | VP3580 | 1 | Moderate |
| 145 | 2511722210005 | UGORETS 410 LLC | 410 11th Ave S | Hopkins | 55343 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP11741 | 1 | Moderate |
| 146 | 2511722210005 | Hopkins Eleventh Avenue LLC | 410 11th Ave S | Hopkins | 55343 | Voluntary Investigation & Cleanup | PCS | F000 | I | VP11740 | 1 | Moderate |
| 147 | 2511722210023 | DUKE REALTY LTD PARTNERSHIP | 401 11th Ave S | Hopkins | 55343 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP6670 | 1 | Moderate |
| 148 | 2511722210023 | Lathrop Spray Division | 401 11th Ave S | Hopkins | 55343 | Leak Site | LUST | F000 | I | 9075 | 1 | Moderate |
| 149 | 2511722210023 | Citrus Systems Inc | 415 11th Ave S | Hopkins | 55343 | Tank Site | UST | C000 | A | 11929 | 1 | Moderate |
| 150 | 2511722210024 | Holiday Companies Inc | 300 11th Ave S | Hopkins | 55343 | Leak Site | LUST | F000 | C | 5093 | 1 | Moderate |
| 151 | 2511722210025 | JUSTUS LUMBER CO | 330 11th Ave S | Hopkins | 55343 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP9720 | 1 | Moderate |
| 152 | 2511722220004 | VENTURIAN PLACE LLC | 1600 2nd St S | Hopkins | 55343 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP2010 | 1 | Moderate |
| 153 | 2511722220005 | HOPKINS TECH CENTER LLC | 1620 S 2nd St | Hopkins | 55343 | Leak Site | LUST | F000 | I | 7950 | 1 | Moderate |
| 154 | 2511722220008 | Thermotech Inc | 1302 5th St S | Hopkins | 55343 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP21771 | 1 | Moderate |
| 155 | 2511722220012 | Unknown | 1600 2nd St S | Hopkins | 55343 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP1973 | 1 | Moderate |
| 156 | 2511722220012 | STIELE & BAKKEN INVEST LLC | 10921 Excelsior Blvd | Hopkins | 55343 | Tank Site | UST | F000 | R | 19422 | 2 | Moderate |
| 157 | 2511722220012 | STIELE & BAKKEN INVEST LLC | 1300 Excelsior Blvd | Hopkins | 55343 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP1972 | 1 | Moderate |
| 158 | 2511722230028 | 1321 7TH ST LLC | 1321 7th St S | Hopkins | 55343 | Voluntary Investigation & Cleanup | PCS | VIC | A | VP30340 | 1 | Moderate |
| 159 | 2511722230029 | Barber Construction Co Inc - Shop | 635 14th Ave S | Hopkins | 55343 | Leak Site | LUST | F000 | C | 8459 | 1 | Moderate |
| 160 | 2511722230045 | ARI | 560 16th Ave S | Hopkins | 55343 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP13090 | 1 | Moderate |
| 161 | 2511722230046 | UMI REAL ESTATE INC | See location description | Hopkins | 55305 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP22170 | 1 | Moderate |
| 162 | 2511722240027 | Autotech Inc | 1215 7th St S | Hopkins | 55343 | Voluntary Investigation & Cleanup | PCS | VIC | A | VP27860 | 1 | Moderate |
| 163 | 2511722240028 | Eltch Inc | 643 13th Ave S | Hopkins | 55343 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP18391 | 1 | Moderate |
| 164 | 2511722240039 | D&R REAL ESTATE INVMT GROUP | 632 11th Ave S | Hopkins | 55343 | Tank Site | UST | F000 | R | 2167 | 1 | Moderate |
| 165 | 2511722240044 | Murphy Oil Usa Inc | 602 E Excelsior Blvd | Hopkins | 55343 | Leak Site | LUST | F000 | I | 3311 | 1 | Moderate |
| 166 | 2511722240077 | TRJ Dry Cleaning dba Icy Cleaners | 612 11th Ave S | Hopkins | 55343 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP21950 | 1 | Moderate |
| 167 | 2511722310699 | RABIE YOUSFI | 1120 7th St S | Hopkins | 55343 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP13880 | 1 | Moderate |
| 168 | 2611722110001 | HOPKINS TECH CENTER LLC | 1620 S 2nd St | Hopkins | 55343 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP2070 | 1 | Moderate |
| 169 | 2611722110002 | RADER FAMILY PARTNERSHIP LP | 11303 Excelsior Blvd | Hopkins | 55343 | Tank Site | UST | F000 | A | 11121 | 6 | Moderate |
| 170 | 2611722110025 | ROTH CORPORATION | 11300 W 47th St | Minnetonka | 55343 | Petroleum Brownfield | PCS | BMS | I | 3579 | 1 | Moderate |
| 171 | 2611722110026 | THE SIERRA CORPORATION | 11401 47th St W | Minnetonka | 55343 | Tank Site | AST | F000 | A | 54723 | 17 | Moderate |
| 172 | 2611722110031 | Sierra Corp | 11400 47th St W | Minnetonka | 55343 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP5570 | 1 | Moderate |
| 173 | 2611722110035 | STONEBROOK INVESTMENTS LLC | 11421 W 47th St | Minnetonka | 55343 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP2930 | 1 | Moderate |
| 174 | 2611722140002 | INTAGLIO PROP GROUP II LLC | 11370 K Tel Dr | Minnetonka | 55343 | Tank Site | UST | F000 | R | 1533 | 1 | Moderate |
| 175 | 2611722140003 | INTAGLIO PROP GRP II, LLC | 11400 K Tel Dr | Minnetonka | 55343 | Leak Site | LUST | F000 | I | 5903 | 1 | Moderate |
| 176 | 2611722140013 | NAPCO INTERNATIONAL INC | 11545 Encore Circle | Minnetonka | 0 | Tank Site | AST | F000 | R | 19626 | 1 | Moderate |
| 177 | 2611722210064 | FAITH PRESS CHURCH OF MTKA | 12007 Excelsior Blvd | Minnetonka | 55343 | Leak Site | LUST | F000 | I | 4673 | 1 | Moderate |
| 178 | 211722310004 | Carson Pirie Scott - Ridgedale | 12441 Wayzata Blvd | Minnetonka | 55305 | Leak Site | LUST | F000 | C | 8183 | 1 | Moderate |
| 179 | 211722320002 | Sindair Ridgedale Station | 12415 Wayzata Blvd | Minnetonka | 55305 | Leak Site | LUST | F000 | C | 18933 | 1 | Moderate |
| 180 | 211722320002 | JC Penney Corp Inc | 12421 Wayzata Blvd | Minnetonka | 55305 | Tank Site | UST | F000 | A | 15322 | 1 | Moderate |
| 181 | 211722320003 | General Growth Properties Inc | 12401 Wayzata Blvd | Minnetonka | 55305 | Leak Site | LUST | F000 | C | 7839 | 1 | Moderate |
| 182 | 211722330001 | Macy's North Division of Macy's Retail | 12411 Wayzata Blvd | Minnetonka | 55305 | Leak Site | LUST | F000 | C | 5894 | 1 | Moderate |
| 183 | 211722330001 | Firestone | 12425 Wayzata Blvd | Minnetonka | 55305 | Leak Site | LUST | F000 | C | 6382 | 1 | Moderate |
| 184 | 211722330004 | HENNEPIN COUNTY | 1260 Ridgedale Dr | Minnetonka | 55305 | Tank Site | UST | F000 | A | 20790 | 1 | Moderate |
| 185 | 211722340006 | SEARS ROEBUCK AND CO | 124314 Wayzata Blvd | Minnetonka | 55305 | Leak Site | LUST | F000 | I | 10150 | 1 | Moderate |
| 186 | 211722340006 | SEARS ROEBUCK AND CO | 12431 Wayzata Blvd | Minnetonka | 55305 | Leak Site | LUST | F000 | C | 7049 | 1 | Moderate |
| 187 | 311722130052 | D SEARS & E SEARS CO-TRSTES | 13500 Wayzata Blvd | Minnetonka | 55305 | Leak Site | LUST | F000 | C | 16357 | 1 | Moderate |
| 188 | 311722130053 | Morris Minnetonka Ford | 13400 Wayzata Blvd | Minnetonka | 55305 | Leak Site | LUST | F000 | C | 6611 | 1 | Moderate |
| 189 | 311722140059 | S & B HENDRICKSON | 12812 Wayzata Blvd | Minnetonka | 55305 | Leak Site | LUST | F000 | C | 696 | 1 | Moderate |
| 190 | 311722240002 | Minnetonka Motor Car Sales Inc | 13700 Wayzata Blvd | Minnetonka | 55305 | Tank Site | UST | F000 | R | 2435 | 3 | Moderate |
| 191 | 311722240004 | D & M 55TH STREET LLC | 13820 Wayzata Blvd | Minnetonka | 55305 | Leak Site | LUST | F000 | C | 12633 | 1 | Moderate |
| 192 | 311722410011 | RIDGEHAVEN MALL INC | 13513 Ridgehaven Dr | Minnetonka | 55305 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP9440 | 1 | Moderate |
| 193 | 411722130004 | CARLSON REAL ESTATE CO | 801 Carlson Pkwy | Minnetonka | 55305 | Petroleum Brownfield | PCS | BMS | I | 3707 | 1 | Moderate |
| 194 | 411722240015 | CLS PROPERTIES IV LLC | 15320 Wayzata Blvd | Minnetonka | 55391 | Voluntary Investigation & Cleanup | PCS | VIC | A | VP27890 | 1 | Moderate |
| 195 | 411722240021 | TWELVE OAKS LTD PTRNSHP | 6001-1001 Twelve Oaks Center Dr | Wayzata | 55391 | Voluntary Investigation & Cleanup | PCS | VIC | A | VP29680 | 1 | Moderate |
| 196 | 411722420012 | YUJIN HAN | 1617 Liner Rd | Minnetonka | 55391 | Leak Site | LUST | F000 | I | 7525 | 1 | Moderate |
| 197 | 511722340005 | ROBERT J KEITH JR | 262 Bushaway Rd | Wayzata | 55391 | Leak Site | LUST | F000 | A | 17943 | 1 | Moderate |
| 198 | 511722340011 | COUNTY OF HENNEPIN | 500 Bushaway Rd | Wayzata | 55391 | Leak Site | LUST | F000 | I | 9365 | 1 | Moderate |
| 199 | 611722320023 | BOATWORKS II LLC | 294 Grove Ln | Wayzata | 55391 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP14490 | 1 | Moderate |
| 200 | 611722320023 | Wayzata Buy Management | 294 E Grove Ln | Wayzata | 55391 | Leak Site | LUST | F000 | C | 8222 | 1 | Moderate |
| 201 | 811722110026 | R P LARSON & A C LARSON | 2030 Crosby Road | Minnetonka | 55391 | Leak Site | LUST | F000 | I | 8620 | 1 | Moderate |
| 202 | 81172230001 | A M & D C MILLER | 639 Bushaway Rd | Wayzata | 55391 | Leak Site | LUST | F000 | I | 9831 | 1 | Moderate |
| 203 | 811722340017 | STATE OF MINNESOTA | 2831 County Road 101 S | Minnetonka | 55391 | Leak Site | LUST | F000 | I | 14041 | 1 | Moderate |
| 204 | 811722340017 | STATE OF MINNESOTA | 2831 Highway 101 | Wayzata | 55391 | Tank Site | AST | F000 | A | 20787 | 1 | Moderate |
| 205 | 811722420011 | | | | | | | | | | | |

Table 2 - Potential Contaminant Source Inventory

| Figure ID | Parcel ID | Owner Name | Address | City | Zip Code | Activity | PCS Code | Material Code | Status | MPCA ID | Total | Vulnerability |
|-----------|---------------|------------------------------------------|-------------------------------------|----------------|----------|-----------------------------------|----------|---------------|--------|---------|-------|---------------|
| 211 | 911722340002 | GREENDALE ASSOCIATES LLC | 15407 McGinity Rd W | Wayzata | 55391 | Leak Site | LUST | F000 | I | 6599 | 1 | Moderate |
| 212 | 1111722110049 | OMEGON INC | 2000 Hopkins Crossroads | Minnetonka | 55305 | Leak Site | LUST | F000 | I | 5315 | 1 | Moderate |
| 213 | 1111722210061 | Charles Berry | 2001 Dwight Ln | Minnetonka | 55305 | Leak Site | LUST | F000 | I | 13427 | 1 | Moderate |
| 214 | 1111722240014 | M C MYERS & G S MYERS | 12117 Hilloway Rd | Minnetonka | 55305 | Leak Site | LUST | F000 | I | 17272 | 1 | Moderate |
| 215 | 1111722420022 | STEPHEN L & NANCY G GORDON | 2551 Mayflower Ave | Minnetonka | 55305 | Leak Site | LUST | F000 | I | 7397 | 1 | Moderate |
| 216 | 1111722440014 | Hedberg & Sons Co | 11303 W Cedar Lake Rd | Minnetonka | 55305 | Leak Site | LUST | F000 | I | 7273 | 1 | Moderate |
| 217 | 1211722240004 | ISD 270 | 2400 Lindbergh Dr | Minnetonka | 55305 | Tank Site | UST | F000 | A | 3090 | 1 | Moderate |
| 218 | 1211722240006 | ISD 270 | 10901 Hillside Ln | Minnetonka | 55305 | Leak Site | LUST | F000 | I | 7645 | 1 | Moderate |
| 219 | 1211722240006 | SCHOOL DISTRICT NO 270 | 10700 Cedar Lake Rd | Minnetonka | 55305 | Tank Site | UST | F000 | A | 3089 | 1 | Moderate |
| 220 | 1211722330001 | A JAMES SPIELMANN | 2711 Hopkins Crossroad | Minnetonka | 55305 | Leak Site | LUST | F000 | I | 1890 | 1 | Moderate |
| 221 | 1211722330001 | A JAMES SPIELMANN | Cedar Lake & Hopkins Crosswood | Minnetonka | 55305 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP4300 | 1 | Moderate |
| 222 | 1211722330003 | HOLIDAY STATIONSTORES INC | 2801 Hopkins Crossroad | Minnetonka | 55305 | Leak Site | LUST | F000 | I | 8871 | 1 | Moderate |
| 223 | 1211722330006 | ACKY-MINNETONKA LTD PRTSHP | 2863 Hedberg Dr | Minnetonka | 55305 | Petroleum Brownfield | PCS | BMS | I | 3071 | 1 | Moderate |
| 224 | 1211722420221 | CEDAR RIDGE CONDO ASSOC | 10201 Cedar Lake Rd | Minnetonka | 0 | Tank Site | UST | F000 | R | 15159 | 2 | Moderate |
| 225 | 1211722420221 | CEDAR RIDGE CONDO ASSOC | 10311 Cedar Lake Rd | Minnetonka | 0 | Leak Site | LUST | F000 | I | 8812 | 1 | Moderate |
| 226 | 1211722420223 | SELA INVTMTS-CEDAR RIDGE LLC | 10101 Cedar Lake Rd | Minnetonka | 55305 | Tank Site | UST | F000 | I | 15161 | 1 | Moderate |
| 227 | 1211722420223 | SELA INVTMTS-CEDAR RIDGE LLC | 10211 Cedar Lake Rd | Minnetonka | 55305 | Tank Site | UST | F000 | A | 17268 | 1 | Moderate |
| 228 | 1211722420224 | Cedar Ridge Of Minnetonka Apts | 10111 Cedar Lake Rd | Minnetonka | 55305 | Leak Site | LUST | F000 | I | 9861 | 1 | Moderate |
| 229 | 1311722140005 | CITY OF MINNETONKA | 10000 Minnetonka Blvd | Minnetonka | 0 | Leak Site | LUST | F000 | I | 566 | 1 | Moderate |
| 230 | 1311722140011 | Boulevard Sinclair | 9800 Minnetonka Blvd | Minnetonka | 55305 | Leak Site | LUST | F000 | I | 4273 | 1 | Moderate |
| 231 | 1311722220021 | AGCO INC | 2823 Hedberg Dr | Minnetonka | 55305 | Tank Site | UST | F000 | R | 1458 | 1 | Moderate |
| 232 | 1311722310002 | OAK RIDGE COUNTRY CLUB | 700 Oak Ridge Rd | Hopkins | 55305 | Leak Site | LUST | F000 | I | 12014 | 1 | Moderate |
| 233 | 1411722240005 | GCC PROPERTY MANAGEMENT LLC | 12201 Minnetonka Blvd | Minnetonka | 55305 | Tank Site | UST | F000 | R | 2772 | 7 | Moderate |
| 234 | 2711722110069 | Carworks Auto Care Inc | 13125 Excelsior Blvd | Minnetonka | 55343 | Leak Site | LUST | F000 | I | 4155 | 1 | Moderate |
| 235 | 2711722110076 | BAUER CAPITAL CORPORATION | 13118 Excelsior Blvd | Minnetonka | 55343 | Leak Site | LUST | F000 | I | 8205 | 1 | Moderate |
| 236 | 2411722430236 | KLQDT DEVELOPMENT LLC | 815 1st Ave S | Hopkins | 55343 | Voluntary Investigation & Cleanup | PCS | VIC | A | VP28110 | 1 | Moderate |
| 237 | 2117222300053 | MORRIE'S PROPERTIES LLC | 12550 Wayzata Blvd | Minnetonka | 55305 | Tank Site | UST | F000 | A | 2434 | 3 | Moderate |
| 238 | 1511722240031 | Bolig & Sons Inc | 11401 County Road 3 | Minnetonka | 55343 | Tank Site | UST | F000 | A | 11119 | 2 | Moderate |
| 239 | 1511722410006 | Minnetonka Mills Investors LLC | 12924, 12934, & 12940 Minnetonka Bl | Minnetonka | 55305 | Petroleum Brownfield | PCS | BMS | I | 4822 | 1 | Moderate |
| 240 | 1511722410051 | TONKA MILLS HOLDINGS LLC | 13008 Minnetonka Blvd | Minnetonka | 55305 | Tank Site | UST | F000 | A | 2816 | 4 | Moderate |
| 241 | 1511722410051 | TONKA MILLS HOLDINGS LLC | 13008 Minnetonka Blvd | Minnetonka | 55305 | Tank Site | UST | F000 | R | 2816 | 9 | Moderate |
| 242 | 1511722410051 | TONKA MILLS HOLDINGS LLC | 13008 Minnetonka Blvd | Minnetonka | 55305 | Tank Site | UST | F000 | C | 2816 | 1 | Moderate |
| 243 | 1511722410062 | Glenn Seutter | 12908 Minnetonka Blvd | Minnetonka | 55305 | Tank Site | UST | F000 | A | 1827 | 3 | Moderate |
| 244 | 1511722410062 | Glenn Seutter | 12908 Minnetonka Blvd | Minnetonka | 55305 | Tank Site | UST | F000 | A | 1827 | 4 | Moderate |
| 245 | 1611722310015 | City of Minnetonka | 11522 Minnetonka Blvd | Minnetonka | 55305 | Leak Site | LUST | F000 | C | 3736 | 1 | Moderate |
| 246 | 1611722310015 | City of Minnetonka | 11522 Minnetonka Blvd | Minnetonka | 55305 | Leak Site | LUST | F000 | C | 10814 | 1 | Moderate |
| 247 | 1611722310015 | City of Minnetonka | 11522 Minnetonka Blvd | Minnetonka | 55305 | Tank Site | UST | F000 | R | 2491 | 5 | Moderate |
| 248 | 1611722310015 | City of Minnetonka | 11522 Minnetonka Blvd | Minnetonka | 55305 | Tank Site | AST | F000 | A | 2491 | 3 | Moderate |
| 249 | 1611722410003 | City of Minnetonka | 14550 Minnetonka Blvd | Minnetonka | 55345 | Tank Site | UST | F000 | C | 17258 | 1 | Moderate |
| 250 | 1611722420003 | MINN CONF OF 7TH ADV | 3500 Williston Rd | Minnetonka | 55345 | Tank Site | UST | F000 | R | 124191 | 1 | Moderate |
| 251 | 1611722430010 | A M MINNESOTA FUNDING CO INC | See location description | Minnetonka | 55345 | Voluntary Investigation & Cleanup | PCS | VIC | A | VP15281 | 1 | Moderate |
| 252 | 1611722430011 | Honeywell International Inc | 15102 Minnetonka Industrial Rd | Minnetonka | 55345 | Tank Site | AST | F000 | R | 2365 | 2 | Moderate |
| 253 | 1811721340011 | BP | 8900 Highway 7 | St. Louis Park | 55426 | Tank Site | UST | F000 | R | 2936 | 1 | Moderate |
| 254 | 1811721430002 | LINDSAY-KNOLLWOOD 2 LLC | 8530 W Highway 7 | St. Louis Park | 55426 | Tank Site | UST | F000 | R | 19705 | 1 | Moderate |
| 255 | 1811721430028 | Kohl's Corp | 8440 Highway 7 | St. Louis Park | 55426 | Leak Site | LUST | F000 | C | 7091 | 1 | Moderate |
| 256 | 1811721430028 | Kohl's Corp | 8440 Highway 7 | St. Louis Park | 55426 | Tank Site | UST | F000 | R | 1667 | 1 | Moderate |
| 257 | 1811721430037 | Mister Car Wash | 8650 Highway 7 | St. Louis Park | 55426 | Tank Site | UST | F000 | R | 12716 | 2 | Moderate |
| 258 | 1911721120018 | Metropolitan Council | 1131 NE Lake St | Hopkins | 55343 | Tank Site | UST | F000 | R | 3077 | 1 | Moderate |
| 259 | 1911721120023 | HOLIDAY STATIONSTORES INC | 530 Blake Rd N | Hopkins | 55343 | Leak Site | LUST | F000 | C | 2346 | 1 | Moderate |
| 260 | 1911721120023 | HOLIDAY STATIONSTORES INC | 530 Blake Rd N | Hopkins | 55343 | Tank Site | UST | F000 | A | 13823 | 5 | Moderate |
| 261 | 1911721120023 | HOLIDAY STATIONSTORES INC | 530 Blake Rd N | Hopkins | 55343 | Tank Site | UST | F000 | A | 13823 | 3 | Moderate |
| 262 | 1911721240244 | Northern States Power a MN Corp dba Xcel | 600 2nd St NE | Hopkins | 55343 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP15661 | 1 | Moderate |
| 263 | 1911721240244 | Northern States Power a MN Corp dba Xcel | 600 2nd St NE | Hopkins | 55343 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP15662 | 1 | Moderate |
| 264 | 1911721240244 | Northern States Power a MN Corp dba Xcel | 600 2nd St NE | Hopkins | 55343 | Tank Site | AST | F000 | A | 124933 | 1 | Moderate |
| 265 | 1911721310017 | Precious Metal Platers Inc | 149 Jackson Ave N | Hopkins | 55343 | Tank Site | UST | F000 | R | 2413 | 2 | Moderate |
| 266 | 2111722430035 | Youngstedt Inc | 15114 Highway 7 | Minnetonka | 55345 | Tank Site | UST | F000 | R | 1917 | 7 | Moderate |
| 267 | 2111722430035 | Youngstedt Inc | 15114 Highway 7 | Minnetonka | 55345 | Tank Site | UST | F000 | A | 1997 | 4 | Moderate |
| 268 | 2111722430066 | Oasis Market | 14820 Highway 7 | Minnetonka | 55345 | Leak Site | LUST | F000 | C | 16089 | 1 | Moderate |
| 269 | 2111722430066 | Oasis Market | 14820 Highway 7 | Minnetonka | 55345 | Leak Site | LUST | F000 | C | 570 | 1 | Moderate |
| 270 | 2111722430068 | Oasis Market | 14820 Highway 7 | Minnetonka | 55345 | Leak Site | LUST | F000 | C | 9900 | 1 | Moderate |
| 271 | 2211722120009 | ISD 270 | 3830 Baker Rd | Minnetonka | 55305 | Tank Site | UST | F000 | R | 3088 | 2 | Moderate |
| 272 | 2211722120009 | ISD 270 | 3830 Baker Rd | Minnetonka | 55305 | Tank Site | UST | F000 | A | 3088 | 1 | Moderate |
| 273 | 2211722430023 | RB Broadway Development Group | 4400 Baker Rd | Minnetonka | 55343 | Tank Site | UST | F000 | R | 2539 | 4 | Moderate |
| 274 | 2311722110004 | CROIK OIL COMPANY | 3864 Hopkins Crossroads | Minnetonka | 55305 | Leak Site | LUST | F000 | I | 6565 | 1 | Moderate |
| 275 | 2311722110009 | Hopkins Motors LLC/Town & Country Dodge | 1710 Highway 7 | Hopkins | 55343 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP23770 | 1 | Moderate |
| 276 | 2311722110009 | Hopkins Motors LLC/Town & Country Dodge | 1710 Highway 7 | Hopkins | 55343 | Leak Site | LUST | F000 | I | 5740 | 1 | Moderate |
| 277 | 1611722430011 | CCH-B MINNETONKA LLC | 15000 Minnetonka Industrial Blvd | Minnetonka | 55345 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP1362 | 1 | Moderate |
| 278 | 1611722430011 | CCH-B MINNETONKA LLC | 15000 Minnetonka Industrial Blvd | Minnetonka | 55345 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP1361 | 1 | Moderate |
| 279 | 1611722430011 | CCH-B MINNETONKA LLC | 15000 Minnetonka Industrial Blvd | Minnetonka | 55345 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP0070 | 1 | Moderate |
| 280 | 1611722430011 | CCH-B MINNETONKA LLC | 15000 Minnetonka Industrial Blvd | Minnetonka | 55345 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP1360 | 1 | Moderate |
| 281 | 1911721240244 | Alliant Integrated Defense Co LLC | 600 2nd St NE | Hopkins | 55343 | Tank Site | UST | F000 | R | 3062 | 2 | Moderate |
| 282 | 1911721240244 | Alliant Integrated Defense Co LLC | 600 2nd St NE | Hopkins | 55343 | Tank Site | UST | F000 | C | 3062 | 2 | Moderate |
| 283 | 1911721330027 | SUPER VALU INC | 101 Jefferson Ave S | Hopkins | 55343 | Leak Site | LUST | F000 | I | 1124 | 1 | Moderate |
| 284 | 1911721330027 | SUPER VALU INC | 101 Jefferson Ave S | Hopkins | 55343 | Leak Site | LUST | F000 | I | 19656 | 1 | Moderate |
| 285 | 1911721330027 | SUPER VALU INC | 101 Jefferson Ave S | Hopkins | 55343 | Tank Site | UST | F000 | R | 2756 | 12 | Moderate |
| 286 | 1911721330027 | SUPER VALU INC | 101 Jefferson Ave S | Hopkins | 55343 | Tank Site | UST | F000 | C | 2756 | 3 | Moderate |
| 287 | 1911721330027 | SUPER VALU INC | 101 Jefferson Ave S | Hopkins | 55343 | Tank Site | UST | F000 | A | 2756 | 2 | Moderate |
| 288 | 1911721330027 | SUPER VALU INC | 101 Jefferson Ave S | Hopkins | 55343 | Tank Site | AST | F000 | A | 2756 | 3 | Moderate |
| 289 | 2311722410157 | Dale Feste Automotive Inc | 1801 Main St | Hopkins | 55343 | Tank Site | UST | F000 | R | 1555 | 4 | Moderate |
| 290 | 2311722430002 | ERICKSON OIL PRODUCTS INC | 4548 Shady Oak Rd | Minnetonka | 55343 | Leak Site | LUST | F000 | I | 290 | 1 | Moderate |
| 291 | 2311722430002 | ERICKSON OIL PRODUCTS INC | 4548 Shady Oak Rd | Minnetonka | 55343 | Tank Site | UST | F000 | A | 1754 | 4 | Moderate |
| 292 | 2311722430002 | ERICKSON OIL PRODUCTS INC | 4548 Shady Oak Rd | Minnetonka | 55343 | Tank Site | UST | F000 | R | 1754 | 8 | Moderate |
| 293 | 2311722430016 | Dorholt Inc | 20 Shady Oak Rd | Hopkins | 55343 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP30870 | 1 | Moderate |
| 294 | 1911721330027 | SUPER VALU INC | 101 Jefferson Ave S | Hopkins | 55343 | Petroleum Brownfield | PCS | BMS | C | 4776 | 1 | Moderate |
| 295 | 1911721240244 | Alliant Integrated Defense Co LLC | 600 2nd St NE | Hopkins | 55343 | Leak Site | LUST | F000 | I | 236 | 1 | Moderate |
| 296 | 2311722430017 | Syndicate Sales | 24 Shady Oak Rd | Hopkins | 55343 | Petroleum Brownfield | PCS | BMS | I | 4496 | 1 | Moderate |
| 297 | 2311722430022 | Mokabaka Development | 108, 112, and 120 Shady Oak Rd | Hopkins | 55343 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP30890 | 1 | Moderate |
| 298 | 2311722440011 | VIOLET D TWEED | 11500 Excelsior Blvd | Minnetonka | 55343 | Leak Site | LUST | F000 | I | 8961 | 1 | Moderate |
| 299 | 2311722440036 | Tbg Properties | 1702 Main St | Hopkins | 55343 | Tank Site | UST | F000 | R | 1868 | 2 | Moderate |
| 300 | 2411722120002 | SELA INVESTMENTS LTD LLP | 640 Oak Ridge Rd | Hopkins | 55305 | Tank Site | UST | F000 | R | 13376 | 1 | Moderate |
| 301 | 2411722120002 | SELA INVESTMENTS LTD LLP | 640 Oak Ridge Rd | Hopkins | 55305 | Tank Site | UST | F000 | A | 13376 | 1 | Moderate |
| 302 | 2411722120002 | SELA INVESTMENTS LTD LLP | 640 Oak Ridge Rd | Hopkins | 55305 | Leak Site | LUST | F000 | C | 2999 | 1 | Moderate |
| 303 | 2411722120010 | IND SCHOOL DIST NO 274 | 801 Minnetonka Mills Rd | Hopkins | 55343 | Tank Site | UST | F000 | A | 3087 | 1 | Moderate |
| 304 | 2411722120013 | KOREAN EVANGELICAL UN METH C | 717 Highway 7 | Hopkins | 55305 | Tank Site | UST | F000 | R | 14204 | 1 | Moderate |
| 305 | 2411722130004 | Augustana HealthCare Center | 615 Minnetonka Mills Rd | Hopkins | 55343 | Tank Site | UST | F000 | A | 2993 | 1 | Moderate |
| 306 | 2411722130089 | CHURCH OF THE CROSS | 201 9th Ave N | Hopkins | 55343 | Leak Site | LUST | F000 | C | 17521 | 1 | Moderate |
| 307 | 2411722210033 | ISD 270 | 1001 Highway 7 | Hopkins | 55305 | Leak Site | LUST | F000 | I | 2280 | 1 | Moderate |
| 308 | 2411722210033 | ISD 270 | 1001 Highway 7 | Hopkins | 55305 | Tank Site | UST | F000 | R | 3094 | 4 | Moderate |
| 309 | 2411722210033 | ISD 270 | 1001 Highway 7 | Hopkins | 55305 | Tank Site | UST | F000 | A | 3094 | 1 | Moderate |
| 310 | 2411722220007 | Troy Mathwig Development Co | 1501 Highway 7 | Hopkins | 55305 | Tank Site | UST | F000 | | | | |

Table 2 - Potential Contaminant Source Inventory

| Figure ID | Parcel ID | Owner Name | Address | City | Zip Code | Activity | PCS Code | Material Code | Status | MPCA ID | Total | Vulnerability |
|-----------|---------------|----------------------------------------|---------------------------------|------------|----------|-----------------------------------|----------|---------------|--------|---------|-------|---------------|
| 316 | 2411722310131 | Qwest Corp dba CenturyLink QC | 10 11th Ave N | Hopkins | 55343 | Leak Site | LUST | F000 | I | 13203 | 1 | Moderate |
| 317 | 2411722310131 | Qwest Corp dba CenturyLink QC | 10 11th Ave N | Hopkins | 55343 | Tank Site | UST | F000 | A | 2831 | 1 | Moderate |
| 318 | 2411722320131 | City of Hopkins | 33 14th Ave N | Hopkins | 55343 | Tank Site | UST | F000 | R | 15191 | 1 | Moderate |
| 319 | 2411722310142 | Metropolitan Corp | 1100 Mainstreet | Hopkins | 55343 | Tank Site | UST | F000 | R | 1894 | 5 | Moderate |
| 320 | 2411722330004 | Hennepin County Transportation Dept | Excelsior Blvd | Hopkins | 55343 | Leak Site | LUST | F000 | I | 11574 | 1 | Moderate |
| 321 | 2411722330012 | ISD 270 | 1600 Main St | Hopkins | 55343 | Leak Site | LUST | F000 | I | 1482 | 1 | Moderate |
| 322 | 2411722330012 | ISD 270 | 1600 Main St | Hopkins | 55343 | Tank Site | UST | F000 | R | 3092 | 2 | Moderate |
| 323 | 2411722340045 | Cemstone | 70 10th Ave S | Hopkins | 55343 | Leak Site | LUST | F000 | I | 2427 | 1 | Moderate |
| 324 | 2411722410003 | THE LUTHER COMPANY LLLP | 499 Mainstreet | Hopkins | 55343 | Tank Site | UST | F000 | R | 2610 | 4 | Moderate |
| 325 | 2411722420009 | Hopkins Doran LLC | 501 Mainstreet | Hopkins | 55343 | Leak Site | LUST | F000 | C | 14780 | 1 | Moderate |
| 326 | 2411722420009 | Hopkins Doran LLC | 501 Mainstreet | Hopkins | 55343 | Petroleum Brownfield | PCS | BMS | A | 4772 | 1 | Moderate |
| 327 | 2411722420009 | Hopkins Doran LLC | 501 Mainstreet | Hopkins | 55343 | Tank Site | UST | F000 | R | 1466 | 7 | Moderate |
| 328 | 2411722420166 | HSG & RDVLP ATHY HOPKINS | 525 W Main St | Hopkins | 55343 | Leak Site | LUST | F000 | A | 19626 | 1 | Moderate |
| 329 | 2411722420166 | HSG & RDVLP ATHY HOPKINS | 525 W Main St | Hopkins | 55343 | Leak Site | LUST | F000 | C | 5196 | 1 | Moderate |
| 330 | 2411722420166 | HSG & RDVLP ATHY HOPKINS | 525 W Main St | Hopkins | 55343 | Tank Site | UST | F000 | R | 16310 | 3 | Moderate |
| 331 | 2411722420173 | MARKETPLACE HOLDINGS INC | 701 Mainstreet | Hopkins | 55343 | Leak Site | LUST | F000 | C | 18667 | 1 | Moderate |
| 332 | 2411722420173 | MARKETPLACE HOLDINGS INC | 701 Mainstreet | Hopkins | 55343 | Tank Site | UST | F000 | R | 2611 | 3 | Moderate |
| 333 | 2411722430151 | SUPERVALUE INC | 215 E Excelsior Ave | Hopkins | 55343 | Tank Site | UST | F000 | R | 1669 | 9 | Moderate |
| 334 | 2411722430151 | SUPERVALUE INC | 215 E Excelsior Ave | Hopkins | 55343 | Tank Site | UST | F000 | C | 1669 | 2 | Moderate |
| 335 | 2411722430151 | Stonebridge Construction Inc. | 611 & 701 Mainstreet | Hopkins | 55343 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP21690 | 1 | Moderate |
| 336 | 2411722440050 | The Luther Co Ltd Partnership | 250 5th Ave S | Hopkins | 55343 | Tank Site | UST | F000 | R | 11386 | 1 | Moderate |
| 337 | 2411722440050 | The Luther Co Ltd Partnership | 250 5th Ave S | Hopkins | 55343 | Tank Site | AST | F000 | A | 124041 | 4 | Moderate |
| 338 | 2511722110003 | SUPERVALUE INC | See location description | Hopkins | 55343 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP9941 | 1 | Moderate |
| 339 | 2511722110003 | Hennepin County Property Services | 320 Washington Ave S | Hopkins | 55343 | Leak Site | LUST | F000 | C | 5521 | 1 | Moderate |
| 340 | 2511722110003 | Hennepin County Property Services | 320 Washington Ave S | Hopkins | 55343 | Leak Site | LUST | F000 | C | 6821 | 1 | Moderate |
| 341 | 2511722110003 | Hennepin County Property Services | 320 Washington Ave S | Hopkins | 55343 | Leak Site | LUST | F000 | C | 11591 | 1 | Moderate |
| 342 | 2511722110003 | Hennepin County Property Services | 320 Washington Ave S | Hopkins | 55343 | Tank Site | UST | F000 | R | 2041 | 10 | Moderate |
| 343 | 2511722110003 | Hennepin County Property Services | 320 Washington Ave S | Hopkins | 55343 | Tank Site | UST | F000 | R | 2041 | 8 | Moderate |
| 344 | 2511722120003 | Hopkins Car Care Center Ltd | 404 Main St | Hopkins | 55343 | Tank Site | UST | F000 | R | 2444 | 2 | Moderate |
| 345 | 2511722140125 | 2075 FORD PARKWAY LLC | 601 2nd Ave S | Hopkins | 55343 | Tank Site | UST | F000 | A | 2015 | 1 | Moderate |
| 346 | 2511722140127 | CREEK VALLEY PROPERTIES LLC | 509 2nd Ave S | Hopkins | 55343 | Voluntary Investigation & Cleanup | PCS | F000 | I | VP3581 | 1 | Moderate |
| 347 | 2511722140127 | CREEK VALLEY PROPERTIES LLC | 509 2nd Ave S | Hopkins | 55343 | Voluntary Investigation & Cleanup | PCS | F000 | I | VP3582 | 1 | Moderate |
| 348 | 2511722210023 | Citrus Systems Inc | 415 11th Ave S | Hopkins | 55343 | Tank Site | UST | C000 | R | 11929 | 8 | Moderate |
| 349 | 2511722210024 | Holiday Companies Inc | 300 11th Ave S | Hopkins | 55343 | Leak Site | LUST | F000 | C | 5093 | 1 | Moderate |
| 350 | 2511722210024 | Holiday Companies Inc | 300 11th Ave S | Hopkins | 55343 | Tank Site | UST | F000 | R | 5093 | 5 | Moderate |
| 351 | 2511722210025 | JUSTUS LUMBER CO | 330 11th Ave S | Hopkins | 55343 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP9721 | 1 | Moderate |
| 352 | 2511722210025 | JUSTUS LUMBER CO | 330 11th Ave S | Hopkins | 55343 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP9722 | 1 | Moderate |
| 353 | 2511722220008 | Thermotech Inc | 1302 5th St S | Hopkins | 55343 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP21770 | 1 | Moderate |
| 354 | 2511722230045 | ARI | 560 16th Ave S | Hopkins | 55343 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP13091 | 1 | Moderate |
| 355 | 2511722230045 | ARI | 560 16th Ave S | Hopkins | 55343 | Tank Site | UST | C000 | R | 54356 | 8 | Moderate |
| 356 | 2511722240028 | Elchit Inc | 643 13th Ave S | Hopkins | 55343 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP18390 | 1 | Moderate |
| 357 | 2511722240044 | Murphy Oil Usa Inc | 602 E Excelsior Blvd | Hopkins | 55343 | Tank Site | UST | F000 | R | 1763 | 7 | Moderate |
| 358 | 2611722110001 | HOPKINS TECH CENTER LLC | 1620 S 2nd St | Hopkins | 55343 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP2070A | 1 | Moderate |
| 359 | 2611722110001 | HOPKINS TECH CENTER LLC | 1620 S 2nd St | Hopkins | 55343 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP2070B | 1 | Moderate |
| 360 | 2611722110001 | HOPKINS TECH CENTER LLC | 1620 S 2nd St | Hopkins | 55343 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP2071 | 1 | Moderate |
| 361 | 2611722110035 | STONEBROOK INVESTMENTS LLC | 11421 W 47th St | Minnetonka | 55343 | Leak Site | LUST | F000 | I | 3833 | 1 | Moderate |
| 362 | 211722310004 | Carson Pine Scott - Ridgedale | 12441 Wayzata Blvd | Minnetonka | 55305 | Tank Site | UST | F000 | R | 1663 | 1 | Moderate |
| 363 | 211722320002 | Sindair Ridgedale Station | 12415 Wayzata Blvd | Minnetonka | 55305 | Leak Site | LUST | F000 | C | 8884 | 1 | Moderate |
| 364 | 211722320002 | Sindair Ridgedale Station | 12415 Wayzata Blvd | Minnetonka | 55305 | Petroleum Brownfield | PCS | BMS | C | 4289 | 1 | Moderate |
| 365 | 211722320002 | Sindair Ridgedale Station | 12415 Wayzata Blvd | Minnetonka | 55305 | Tank Site | UST | F000 | R | 1470 | 4 | Moderate |
| 366 | 211722320003 | General Growth Properties Inc | 12401 Wayzata Blvd | Minnetonka | 55305 | Leak Site | LUST | F000 | C | 7897 | 1 | Moderate |
| 367 | 211722320003 | General Growth Properties Inc | 12401 Wayzata Blvd | Minnetonka | 55305 | Leak Site | LUST | F000 | C | 7783 | 1 | Moderate |
| 368 | 211722320003 | General Growth Properties Inc | 12401 Wayzata Blvd | Minnetonka | 55305 | Leak Site | LUST | F000 | C | 7937 | 1 | Moderate |
| 369 | 211722320003 | General Growth Properties Inc | 12401 Wayzata Blvd | Minnetonka | 55305 | Tank Site | UST | F000 | R | 2784 | 5 | Moderate |
| 370 | 211722320003 | General Growth Properties Inc | 12401 Wayzata Blvd | Minnetonka | 55305 | Tank Site | UST | F000 | C | 2784 | 1 | Moderate |
| 371 | 211722330001 | Macy's North Division of Macy's Retail | 12411 Wayzata Blvd | Minnetonka | 55305 | Tank Site | UST | F000 | R | 2429 | 1 | Moderate |
| 372 | 211722330001 | Firestone | 12425 Wayzata Blvd | Minnetonka | 55305 | Tank Site | UST | F000 | R | 2880 | 1 | Moderate |
| 373 | 211722340006 | SEARS ROEBUCK AND CO | 12431 Wayzata Blvd | Minnetonka | 55305 | Tank Site | UST | F000 | R | 3204 | 1 | Moderate |
| 374 | 311722130052 | D SEARS & E SEARS CO-TRSTES | 13500 Wayzata Blvd | Minnetonka | 55305 | Leak Site | LUST | F000 | C | 18138 | 1 | Moderate |
| 375 | 311722130052 | D SEARS & E SEARS CO-TRSTES | 13500 Wayzata Blvd | Minnetonka | 55305 | Leak Site | LUST | F000 | C | 5154 | 1 | Moderate |
| 376 | 311722130052 | D SEARS & E SEARS CO-TRSTES | 13500 Wayzata Blvd | Minnetonka | 55305 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP21470 | 1 | Moderate |
| 377 | 311722130052 | D SEARS & E SEARS CO-TRSTES | 13500 Wayzata Blvd | Minnetonka | 55305 | Tank Site | UST | F000 | R | 2130 | 3 | Moderate |
| 378 | 311722130053 | Morris Minnetonka Ford | 13400 Wayzata Blvd | Minnetonka | 55305 | Leak Site | LUST | F000 | C | 4657 | 1 | Moderate |
| 379 | 311722130053 | Morris Minnetonka Ford | 13400 Wayzata Blvd | Minnetonka | 55305 | Tank Site | UST | F000 | R | 11142 | 6 | Moderate |
| 380 | 311722130053 | Morris Minnetonka Ford | 13400 Wayzata Blvd | Minnetonka | 55305 | Tank Site | UST | F000 | A | 11142 | 2 | Moderate |
| 381 | 311722440004 | D & M 55TH STREET LLC | 13820 Wayzata Blvd | Minnetonka | 55305 | Petroleum Brownfield | PCS | BMS | I | 3853 | 1 | Moderate |
| 382 | 411722240015 | CLS PROPERTIES IV LLC | 15320 Wayzata Blvd | Minnetonka | 55391 | Petroleum Brownfield | PCS | BMS | I | 4051 | 1 | Moderate |
| 383 | 411722240021 | TWELVE OAKS LTD PTNRSHIP | 6001-1001 Twelve Oaks Center Dr | Wayzata | 55391 | Petroleum Brownfield | PCS | BMS | I | 4278 | 1 | Moderate |
| 384 | 611722320023 | Wayzata Buy Management | 294 E Grove Ln | Wayzata | 55391 | Leak Site | LUST | F000 | C | 8222 | 1 | Moderate |
| 385 | 2411722420074 | Snyder Drug Inc - Corporate Office | 15 9th Ave N | Hopkins | 55343 | Petroleum Brownfield | PCS | BMS | I | 4624 | 1 | Moderate |
| 386 | 2411722420074 | Snyder Drug Inc - Corporate Office | 15 9th Ave N | Hopkins | 55343 | Leak Site | LUST | F000 | C | 19506 | 1 | Moderate |
| 387 | 2511722220012 | Unknown | 1600 2nd St S | Hopkins | 55343 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP1970 | 1 | Moderate |
| 388 | 2511722220012 | Unknown | 1600 2nd St S | Hopkins | 55343 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP1971 | 1 | Moderate |
| 389 | 2511722220012 | Unknown | 1600 2nd St S | Hopkins | 55343 | Leak Site | LUST | F000 | C | 1458 | 1 | Moderate |
| 390 | 2511722220012 | Unknown | 1600 2nd St S | Hopkins | 55343 | Tank Site | UST | F000 | R | 13355 | 2 | Moderate |
| 391 | 2511722220012 | Unknown | 1600 2nd St S | Hopkins | 55343 | Tank Site | UST | F000 | A | 13355 | 1 | Moderate |
| 392 | 2511722220012 | Unknown | 1600 2nd St S | Hopkins | 55343 | Tank Site | UST | F000 | R | 1618 | 1 | Moderate |
| 393 | 2511722230046 | UMI REAL ESTATE INC | See location description | Hopkins | 55305 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP22171 | 1 | Moderate |
| 394 | 2511722240077 | TRJ Dry Cleaning dba Ivy Cleaners | 612 11th Ave S | Hopkins | 55343 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP21951 | 1 | Moderate |
| 395 | 911722230005 | CARGILL INC | 2301 Crosby Rd | Minnetonka | 55391 | Leak Site | LUST | F000 | I | 3998 | 1 | Moderate |
| 396 | 911722230005 | CARGILL INC | 2301 Crosby Rd | Minnetonka | 55391 | Tank Site | AST | F000 | A | 54834 | 1 | Moderate |
| 397 | 911722230005 | CARGILL INC | 2301 Crosby Rd | Minnetonka | 55391 | Tank Site | AST | F000 | R | 54834 | 1 | Moderate |
| 398 | 911722230005 | CARGILL INC | 2301 Crosby Rd | Minnetonka | 55391 | Tank Site | UST | F000 | R | 2486 | 1 | Moderate |
| 399 | 911722310006 | GREENDALE ASSOCIATES LLC | 15615 McGinty Road West | Wayzata | 55391 | Leak Site | LUST | F000 | I | 4251 | 1 | Moderate |
| 400 | 911722310006 | GREENDALE ASSOCIATES LLC | 15615 McGinty Road West | Wayzata | 55391 | Leak Site | LUST | F000 | R | 2484 | 5 | Moderate |
| 401 | 911722340002 | GREENDALE ASSOCIATES LLC | 15407 McGinty Rd W | Wayzata | 55391 | Tank Site | UST | F000 | R | 2485 | 2 | Moderate |
| 402 | 911722340002 | GREENDALE ASSOCIATES LLC | 15407 McGinty Rd W | Wayzata | 55391 | Tank Site | AST | F000 | A | 2485 | 2 | Moderate |
| 403 | 1111722110049 | OMEGON INC | 2000 Hopkins Crossroads | Minnetonka | 55305 | Tank Site | UST | F000 | R | 1867 | 2 | Moderate |
| 404 | 1111722110061 | Charles Berry | 2001 Dwight Ln | Minnetonka | 55305 | Tank Site | UST | F000 | R | 122241 | 2 | Moderate |
| 405 | 1111722440014 | Hedberg & Sons Co | 11303 W Cedar Lake Rd | Minnetonka | 55305 | Tank Site | UST | F000 | R | 1744 | 3 | Moderate |
| 406 | 1211722240004 | ISD 270 | 2400 Lindbergh Dr | Minnetonka | 55305 | Tank Site | UST | F000 | R | 3090 | 3 | Moderate |
| 407 | 1211722240006 | ISD 270 | 10901 Hillside Ln | Minnetonka | 55305 | Tank Site | UST | F000 | A | 3085 | 1 | Moderate |
| 408 | 1211722240006 | ISD 270 | 10901 Hillside Ln | Minnetonka | 55305 | Tank Site | UST | F000 | R | 3085 | 1 | Moderate |
| 409 | 1211722240006 | SCHOOL DISTRICT NO 270 | 10700 Cedar Lake Rd | Minnetonka | 55305 | Tank Site | UST | F000 | R | 3089 | 2 | Moderate |
| 410 | 1211722330001 | A JAMES SPIELMANN | 2711 Hopkins Crossroad | Minnetonka | 55305 | Leak Site | LUST | F000 | I | 13051 | 1 | Moderate |
| 411 | 1211722330001 | A JAMES SPIELMANN | 2711 Hopkins Crossroad | Minnetonka | 55305 | Tank Site | UST | F000 | A | 2924 | 6 | Moderate |
| 412 | 1211722330001 | A JAMES SPIELMANN | 2711 Hopkins Crossroad | Minnetonka | 55305 | Tank Site | UST | F000 | R | 2924 | 4 | Moderate |
| 413 | 1211722330003 | HOLIDAY STATIONSTORES INC | 2801 Hopkins Crossroad | Minnetonka | 55305 | Tank Site | UST | F000 | A | 2144 | 3 | Moderate |
| 414 | 1211722330003 | HOLIDAY STATIONSTORES INC | 2801 Hopkins Crossroad | Minnetonka | 55305 | Tank Site | UST | F000 | R | 2144 | 5 | Moderate |
| 415 | 1211722420221 | CEDAR RIDGE CONDO ASSOC | 10311 Cedar Lake Rd | Minnetonka | 0 | Tank Site | UST | F000 | R | 17267 | 1 | Moderate |
| 416 | 1211722420221 | CEDAR RIDGE CONDO ASSOC | 10311 Cedar Lake Rd | Minnetonka | 0 | Tank Site | UST | F | | | | |

Table 2 - Potential Contaminant Source Inventory

| Figure ID | Parcel ID | Owner Name | Address | City | Zip Code | Activity | PCS Code | Material Code | Status | MPCA ID | Total | Vulnerability |
|-----------|---------------|-----------------------------------------|----------------------------|-------------|----------|-----------------------------------|----------|---------------|--------|---------|--------|---------------|
| 421 | 1311722140011 | Boulevard Sinclair | 9800 Minnetonka Blvd | Minnetonka | 55305 | Tank Site | UST | F000 | A | 1472 | 5 | Moderate |
| 422 | 1311722140011 | Boulevard Sinclair | 9800 Minnetonka Blvd | Minnetonka | 55305 | Tank Site | UST | F000 | R | 1472 | 2 | Moderate |
| 423 | 1311722310002 | OAK RIDGE COUNTRY CLUB | 700 Oak Ridge Rd | Hopkins | 55305 | Tank Site | UST | F000 | R | 15497 | 2 | Moderate |
| 424 | 1311722310002 | OAK RIDGE COUNTRY CLUB | 700 Oak Ridge Rd | Hopkins | 55305 | Tank Site | UST | F000 | A | 15497 | 1 | Moderate |
| 425 | 2711722110069 | Carworks Auto Care Inc | 13125 Excelsior Blvd | Minnetonka | 55343 | Leak Site | LUST | F000 | I | 11403 | 1 | Moderate |
| 426 | 2711722110069 | Carworks Auto Care Inc | 13125 Excelsior Blvd | Minnetonka | 55343 | Tank Site | UST | F000 | R | 12450 | 3 | Moderate |
| 427 | 2711722110076 | BAUER CAPITAL CORPORATION | 13118 Excelsior Blvd | Minnetonka | 55343 | Tank Site | UST | F000 | A | 2453 | 3 | Moderate |
| 428 | 2311722110004 | CROIX OIL COMPANY | 3864 Hopkins Crossroads | Minnetonka | 55305 | Tank Site | UST | F000 | R | 1766 | 8 | Moderate |
| 429 | 2311722110009 | Hopkins Motors LLC/Town & Country Dodge | 1710 Highway 7 | Hopkins | 55343 | Leak Site | LUST | F000 | I | 16693 | 1 | Moderate |
| 430 | 2311722110009 | Hopkins Motors LLC/Town & Country Dodge | 1710 Highway 7 | Hopkins | 55343 | Tank Site | UST | F000 | R | 3157 | 1 | Moderate |
| 431 | 1211722340101 | Greenbier Condo | 10531 Cedar Lake Rd | Minnetonka | 55305 | Tank Site | UST | F000 | R | 14321 | 1 | Moderate |
| 432 | 1611722430014 | CREEKWOOD INVESTMENTS LLC | 15115 Minnetonka Boulevard | Minnetonka | 55345 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP0074 | 1 | Moderate |
| 433 | 1611722430014 | CREEKWOOD INVESTMENTS LLC | 15115 Minnetonka Boulevard | Minnetonka | 55345 | Voluntary Investigation & Cleanup | PCS | VIC | I | VP0077 | 1 | Moderate |
| 434 | 1911721210008 | RAMSGATE APARTMENTS LLC | 725 NE Lake St | Hopkins | 55343 | Tank Site | UST | F000 | R | 2206 | 6 | Moderate |
| 435 | 2611722110002 | RADER FAMILY PARTNERSHIP LP | 11303 Excelsior Blvd | Hopkins | 55343 | Tank Site | UST | F000 | R | 11121 | 6 | Moderate |
| 436 | 2611722110026 | THE SIERRA CORPORATION | 11401 47th St W | Minnetonka | 55343 | Tank Site | AST | F000 | R | 54723 | 3 | Moderate |
| 437 | 811722340017 | STATE OF MINNESOTA | 2831 Highway 101 | Wayzata | 55391 | Tank Site | UST | F000 | R | 20787 | 2 | Moderate |
| 438 | 1411722120007 | CITY OF MINNETONKA | 2138 Shadywood Rd | Wayzata | 55305 | | SWMS | 4346 | I | SW162 | <Null> | Moderate |
| 439 | 1411722420029 | CITY OF MINNETONKA | Highway 5 & Highway 37 | Minneapolis | 55305 | | SWMS | 4346 | I | SW105 | 1 | Moderate |

Table 3 - Public and Private Wells

| Figure ID | Unique Number | Well Name | Status Code | Use Code | Parcel ID | Address | City | Zip Code | Vulnerability | PCS Code |
|-----------|---------------|--------------------------|-------------|----------|---------------|----------------------|------------|----------|---------------|----------|
| 440 | 00204559 | TARASCH, ROY | A | DO | 2311722340006 | SUNRISE LA | MINNETONKA | 55343 | Moderate | WEL |
| 441 | 00242112 | THERMOTECHE NO.1 | A | CO | 2511722240149 | 5TH ST S | HOPKINS | 55343 | Moderate | WEL |
| 442 | 00112228 | HOPKINS 6 | A | PC | 2411722120032 | ADDRESS UNASSIGNED | HOPKINS | 0 | Moderate | WEL |
| 443 | 00204103 | | A | DO | 1511722110021 | PLYMOUTH RD | MINNETONKA | 55305 | Moderate | WEL |
| 444 | 00204104 | TYLER, H. | A | DO | 1511722110029 | APRIL LA | MINNETONKA | 55305 | Moderate | WEL |
| 445 | 00223807 | PALMER, JOHN | A | DO | 1511722110031 | APRIL LA | MINNETONKA | 55305 | Moderate | WEL |
| 446 | 00204106 | RASMUSSEN, ERICK | A | DO | 1511722120005 | ATWOOD DR | MINNETONKA | 55305 | Moderate | WEL |
| 447 | 00204107 | BURTON | A | DO | 1511722130002 | MCGINTY RD E | MINNETONKA | 55305 | Moderate | WEL |
| 448 | 00204109 | SCHULTZ, BILL | A | DO | 1511722130039 | MCGINTY RD E | MINNETONKA | 55305 | Moderate | WEL |
| 449 | W0000107 | BURNELL COMM.CTR. | A | PS | 1511722140010 | PLYMOUTH RD | MINNETONKA | 55305 | Moderate | WEL |
| 450 | 00204110 | HANLEY, JAMES | A | DO | 1511722140014 | BURWELL DR | MINNETONKA | 55305 | Moderate | WEL |
| 451 | 00204111 | LEEKLY, RICHARD | A | DO | 1511722210015 | MCGINTY RD E | MINNETONKA | 55305 | Moderate | WEL |
| 452 | 00272293 | BEAN, JOHN B. | A | DO | 1511722220025 | HAZEL LA | MINNETONKA | 55305 | Moderate | WEL |
| 453 | 00204112 | SCHULTZ, WM. B. | A | DO | 1511722240008 | WENTWORTH TR | MINNETONKA | 55305 | Moderate | WEL |
| 454 | 00204130 | OSTROM + SONS | A | DO | 1511722240011 | ELDORADO TR E | MINNETONKA | 55305 | Moderate | WEL |
| 455 | 00204113 | LOSCHIEDER, P. | A | DO | 1511722240026 | WENTWORTH TR | MINNETONKA | 55305 | Moderate | WEL |
| 456 | 00204108 | OSTRUM, KENNETH | A | DO | 1511722240033 | ELDORADO TR E | MINNETONKA | 55305 | Moderate | WEL |
| 457 | 00204115 | | A | DO | 1511722310004 | INVERNESS RD | MINNETONKA | 55305 | Moderate | WEL |
| 458 | 00204116 | | A | DO | 1511722310020 | INVERNESS RD | MINNETONKA | 55305 | Moderate | WEL |
| 459 | 00204114 | CASPERS, PETER | A | DO | 1511722310039 | INVERNESS RD | MINNETONKA | 55305 | Moderate | WEL |
| 460 | 00204122 | JESSING | A | DO | 1511722330008 | SUNRISE DR E | MINNETONKA | 55345 | Moderate | WEL |
| 461 | 00223746 | GERSTNER, PHIL | A | DO | 1511722330019 | SUNRISE DR W | MINNETONKA | 55345 | Moderate | WEL |
| 462 | 00204117 | SPETZ + BERG | A | DO | 1511722330039 | CARDINAL RD | MINNETONKA | 55345 | Moderate | WEL |
| 463 | 00204119 | | A | DO | 1511722330040 | CARDINAL RD | MINNETONKA | 55345 | Moderate | WEL |
| 464 | 00204118 | STOCKDILL, R. G. | A | DO | 1511722330041 | CARDINAL RD | MINNETONKA | 55345 | Moderate | WEL |
| 465 | 00204120 | REITEN, R. D. | A | DO | 1511722330048 | CARDINAL RD | MINNETONKA | 55345 | Moderate | WEL |
| 466 | 00204121 | | A | DO | 1511722330050 | ORCHARD RD | MINNETONKA | 55345 | Moderate | WEL |
| 467 | 00204123 | OERTEL, FRITZ | A | DO | 1511722340007 | FAVORITE LA | MINNETONKA | 55305 | Moderate | WEL |
| 468 | 00204125 | OLSON, PAUL | A | DO | 1511722340019 | PARK VALLEY RD | MINNETONKA | 55305 | Moderate | WEL |
| 469 | 00204127 | ANDERSON, BRUCE | A | DO | 1511722340026 | PARK VALLEY RD | MINNETONKA | 55305 | Moderate | WEL |
| 470 | 00204126 | HODGES, JACK | A | DO | 1511722340028 | SUMMIT LA | MINNETONKA | 55305 | Moderate | WEL |
| 471 | 00204128 | QUAM, GEORGE | A | DO | 1511722410015 | MINNETONKA DR | MINNETONKA | 55305 | Moderate | WEL |
| 472 | 00204131 | WECKOFF, FRANK | A | DO | 1511722410045 | PLYMOUTH RD | MINNETONKA | 55305 | Moderate | WEL |
| 473 | 00204129 | OLSON, A. W. | A | DO | 1511722410059 | INVERNESS RD | MINNETONKA | 55305 | Moderate | WEL |
| 474 | 00204132 | JENSEN, HARRY | A | DO | 1511722420014 | INVERNESS RD | MINNETONKA | 55305 | Moderate | WEL |
| 475 | 00204133 | JENSEN, HARRY | A | DO | 1511722420015 | INVERNESS RD | MINNETONKA | 55305 | Moderate | WEL |
| 476 | 00204135 | GRUMMAR | A | DO | 1511722430034 | DAHLGREN RD | MINNETONKA | 55305 | Moderate | WEL |
| 477 | 00204136 | NOR-VIC CONSTRUCTION | A | DO | 1511722430035 | DAHLGREN RD | MINNETONKA | 55305 | Moderate | WEL |
| 478 | 00204134 | SMITH, PAUL HOWARD | A | DO | 1511722430064 | ORCHARD RD | MINNETONKA | 55305 | Moderate | WEL |
| 479 | 00204137 | BAER, LARRY | A | DO | 1511722440028 | FARMINGTON RD | MINNETONKA | 55305 | Moderate | WEL |
| 480 | 00204139 | CUNNINGHAM, GORDON | A | DO | 1611722130012 | TIMBERHILL RD | MINNETONKA | 55345 | Moderate | WEL |
| 481 | 00114405 | MOE, DR. JOHN | A | DO | 1611722230001 | MARTHA LA | MINNETONKA | 55345 | Moderate | WEL |
| 482 | 00204141 | WILTSE, RAY | A | DO | 1611722320010 | MARTHA LA | MINNETONKA | 55345 | Moderate | WEL |
| 483 | 00204143 | BETCHER | A | DO | 1611722330010 | ROBINWOOD DR | MINNETONKA | 55345 | Moderate | WEL |
| 484 | 00204144 | DAHLMEIR, JAMES | A | DO | 1611722330013 | ROBINWOOD DR | MINNETONKA | 55345 | Moderate | WEL |
| 485 | 00223747 | | A | DO | 1611722330020 | DAY PL | MINNETONKA | 55345 | Moderate | WEL |
| 486 | W0000110 | BENDELL, MIKE | A | DO | 1611722340023 | ROBINWOOD DR | MINNETONKA | 55345 | Moderate | WEL |
| 487 | 00661402 | MINNETONKA 16B | A | PC | 1611722410001 | MINNETONKA BLVD | MINNETONKA | 55345 | Moderate | WEL |
| 488 | 00434327 | MINNETONKA | A | DO | 1611722410004 | ADDRESS UNASSIGNED | MINNETONKA | 0 | Moderate | WEL |
| 489 | 00580217 | MW-11 | A | MW | 1611722410007 | ADDRESS UNASSIGNED | MINNETONKA | 0 | Moderate | WEL |
| 490 | 00204145 | JUNIOR ACADEMY | A | UN | 1611722420003 | WILLISTON RD | MINNETONKA | 55345 | Moderate | WEL |
| 491 | 00797092 | MW-FS | A | MW | 1611722430011 | MINNETONKA INDUST RD | MINNETONKA | 55345 | Moderate | WEL |
| 492 | 00797093 | MW-FB | A | MW | 1611722430011 | MINNETONKA INDUST RD | MINNETONKA | 55345 | Moderate | WEL |
| 493 | 00797091 | MW-GS | A | MW | 1611722430011 | MINNETONKA INDUST RD | MINNETONKA | 55345 | Moderate | WEL |
| 494 | 00717732 | MW-B-D | A | MW | 1611722430012 | MINNETONKA INDUST RD | MINNETONKA | 55345 | Moderate | WEL |
| 495 | 00734057 | GCW-8 | A | RM | 1611722430012 | MINNETONKA INDUST RD | MINNETONKA | 55345 | Moderate | WEL |
| 496 | 00734052 | GCV-3 | A | RM | 1611722430012 | MINNETONKA INDUST RD | MINNETONKA | 55345 | Moderate | WEL |
| 497 | 00717727 | MW-B-S | A | MW | 1611722430012 | MINNETONKA INDUST RD | MINNETONKA | 55345 | Moderate | WEL |
| 498 | 00717729 | MW-D-S | A | MW | 1611722430012 | MINNETONKA INDUST RD | MINNETONKA | 55345 | Moderate | WEL |
| 499 | 00717734 | MW-D-D | A | MW | 1611722430012 | MINNETONKA INDUST RD | MINNETONKA | 55345 | Moderate | WEL |
| 500 | 00204148 | THOMAS MACHINE CO. | A | IN | 1611722430015 | MINNETONKA INDUST RD | MINNETONKA | 55345 | Moderate | WEL |
| 501 | 00580219 | MW-14 | A | MW | 1611722430015 | MINNETONKA INDUST RD | MINNETONKA | 55345 | Moderate | WEL |
| 502 | 00204146 | HARVEY, BERT | A | DO | 1611722430023 | MINNETONKA BLVD | MINNETONKA | 55345 | Moderate | WEL |
| 503 | W0000012 | LYON, BILL | A | DO | 1711722110008 | FAIRCHILD AVE | MINNETONKA | 55391 | Moderate | WEL |
| 504 | 00204152 | SCHULTZ, WM. | A | DO | 1711722110014 | TONKAHA DR | MINNETONKA | 55391 | Moderate | WEL |
| 505 | 00272622 | THOMPSON, HT | A | DO | 1711722120003 | GRAYS BAY BLVD | MINNETONKA | 55391 | Moderate | WEL |
| 506 | 00272621 | THOMPSON, HERB | A | DO | 1711722120004 | GRAYS BAY BLVD | MINNETONKA | 55391 | Moderate | WEL |
| 507 | 00204155 | | A | DO | 1711722120006 | FAIRCHILD AVE | MINNETONKA | 55391 | Moderate | WEL |
| 508 | 00203785 | HERB THOMPSON CONST. CO. | A | DO | 1711722120007 | GRAYS BAY BLVD | MINNETONKA | 55391 | Moderate | WEL |
| 509 | 00204158 | BORAN, BUD | A | DO | 1711722120021 | FAIRCHILD AVE | MINNETONKA | 55391 | Moderate | WEL |
| 510 | 00204151 | WRIGHT, RICHARD | A | DO | 1711722120022 | TONKAHA DR | MINNETONKA | 55391 | Moderate | WEL |
| 511 | 00204150 | MORRISON, RON | A | DO | 1711722120023 | TONKAHA DR | MINNETONKA | 55391 | Moderate | WEL |
| 512 | 00204154 | HAHN, LOWELL | A | DO | 1711722120065 | FAIRCHILD AVE | MINNETONKA | 55391 | Moderate | WEL |
| 513 | 00204160 | | A | DO | 1711722130010 | LAKE SHORE BLVD | MINNETONKA | 55391 | Moderate | WEL |
| 514 | 00204159 | CHARLESTON, DON | A | DO | 1711722130012 | LAKE SHORE BLVD | MINNETONKA | 55391 | Moderate | WEL |
| 515 | 00204161 | ROBINSON, E. I. | A | DO | 1711722130046 | HIGHLAND AVE | MINNETONKA | 55391 | Moderate | WEL |
| 516 | 00224801 | RODGERS, GEORGE | A | DO | 1711722140006 | FAIRCHILD AVE | MINNETONKA | 55391 | Moderate | WEL |
| 517 | 00204163 | THOMPSON, HERB | A | DO | 1711722210005 | GRAYS BAY BLVD | MINNETONKA | 55391 | Moderate | WEL |
| 518 | 00272554 | HERB THOMPSON & SON | A | DO | 1711722210005 | GRAYS BAY BLVD | MINNETONKA | 55391 | Moderate | WEL |
| 519 | 00204166 | KVALE, BASIL | A | DO | 1711722210012 | COTTAGE GROVE AVE | MINNETONKA | 55391 | Moderate | WEL |
| 520 | 00211955 | SWANSON, OSCAR | A | DO | 1711722210083 | GRAYS BAY BLVD | MINNETONKA | 55391 | Moderate | WEL |
| 521 | 00204164 | NELSON, WILLARD | A | DO | 1711722210091 | GRAYS BAY BLVD | MINNETONKA | 55391 | Moderate | WEL |
| 522 | 00204167 | CAMANCHO, JANE | A | DO | 1711722210121 | COTTAGE GROVE AVE | MINNETONKA | 55391 | Moderate | WEL |
| 523 | 00204174 | CARMICHAEL, BRUCE | A | DO | 1711722240059 | PROSPECT PL | MINNETONKA | 55391 | Moderate | WEL |

Table 3 - Public and Private Wells

| Figure ID | Unique Number | Well Name | Status Code | Use Code | Parcel ID | Address | City | Zip Code | Vulnerability | PCS Code |
|-----------|---------------|------------------------|-------------|----------|---------------|-------------------|----------------|----------|---------------|----------|
| 524 | W0000120 | THORKEN, LINDA | A | DO | 1711722240064 | LARCHMORE AVE | MINNETONKA | 55391 | Moderate | WEL |
| 525 | W0000122 | ADAMS, DICK | A | DO | 1711722410022 | TONKAWOOD RD | MINNETONKA | 55345 | Moderate | WEL |
| 526 | 00204194 | KENNEDY, THOMAS P. | A | DO | 1711722410024 | TONKAWOOD RD | MINNETONKA | 55345 | Moderate | WEL |
| 527 | 00204193 | HAVERTY, PAT | A | DO | 1711722410034 | MINNETONKA BLVD | MINNETONKA | 55345 | Moderate | WEL |
| 528 | 00204406 | VAN BOCKLE | A | DO | 1711722440002 | THE STRAND | MINNETONKA | 55345 | Moderate | WEL |
| 529 | 00204408 | VAN BOCKLE | A | DO | 1711722440003 | THE STRAND | MINNETONKA | 55345 | Moderate | WEL |
| 530 | 00204407 | VAN BOCKLE | A | DO | 1711722440004 | THE STRAND | MINNETONKA | 55345 | Moderate | WEL |
| 531 | 00204409 | VAN BOCKLE | A | DO | 1711722440006 | THE STRAND | MINNETONKA | 55345 | Moderate | WEL |
| 532 | 00204410 | ROELOTS, KEN | A | DO | 1711722440007 | THE STRAND | MINNETONKA | 55345 | Moderate | WEL |
| 533 | 00204411 | VAN BOCKLE | A | DO | 1711722440008 | THE STRAND | MINNETONKA | 55345 | Moderate | WEL |
| 534 | 00204405 | ARCHIBALD, PETER | A | DO | 1711722440035 | TONKAWOOD RD | MINNETONKA | 55345 | Moderate | WEL |
| 535 | 00274162 | NASH, DAVID | A | UN | 1711722440036 | STEELE ST | MINNETONKA | 55345 | Moderate | WEL |
| 536 | 00272313 | BROOKSIDE BUILDERS | A | DO | 1811721220014 | GETTYSBURG AVE S | ST. LOUIS PARK | 55426 | Moderate | WEL |
| 537 | 00203193 | CALVARY BAPTIST CHURCH | A | PS | 1811721220055 | MINNETONKA BLVD | ST. LOUIS PARK | 55426 | Moderate | WEL |
| 538 | 00203194 | LONGABDUGH, GERALD | A | DO | 1811721220062 | MINNETONKA BLVD | ST. LOUIS PARK | 55426 | Moderate | WEL |
| 539 | 00203195 | HARADA, M. | A | DO | 1811721230033 | FLAG AVE S | ST. LOUIS PARK | 55426 | Moderate | WEL |
| 540 | 00227917 | P-31 | A | OT | 1811721340009 | 36TH ST W | ST. LOUIS PARK | 55426 | Moderate | WEL |
| 541 | 00224064 | CHRISTY, ALLEN | A | DO | 1911721120006 | HIAWATHA AVE | HOPKINS | 55343 | Moderate | WEL |
| 542 | 00203197 | GLASGOW | A | DO | 1911721120013 | HIAWATHA AVE | HOPKINS | 55343 | Moderate | WEL |
| 543 | 00272297 | BJORK, M. A. | A | DO | 1911721120015 | HIAWATHA AVE | HOPKINS | 55343 | Moderate | WEL |
| 544 | 00272527 | PETERSON, GORDON | A | DO | 1911721120016 | HIAWATHA AVE | HOPKINS | 55343 | Moderate | WEL |
| 545 | 00203199 | LINDMARK, R. C. | A | DO | 1911721210006 | CAMBRIDGE ST | HOPKINS | 55343 | Moderate | WEL |
| 546 | 00203200 | CAMPBELL, WALLY | A | DO | 1911721240029 | TYLER AVE N | HOPKINS | 55343 | Moderate | WEL |
| 547 | 00203601 | PITTS FIRM SERVICE | A | CO | 1911721310058 | 2ND ST N E | HOPKINS | 55343 | Moderate | WEL |
| 548 | 00204458 | WAHL, ED | A | DO | 2011722110007 | PINE ST | MINNETONKA | 55345 | Moderate | WEL |
| 549 | 00204460 | VAN BOCKLE | A | DO | 2011722110009 | PINE ST | MINNETONKA | 55345 | Moderate | WEL |
| 550 | 00204461 | CROWN CONST. CO. | A | DO | 2011722110020 | HIDDEN VALLEY RD | MINNETONKA | 55345 | Moderate | WEL |
| 551 | 00272359 | FENSKE, FRED | A | DO | 2011722110037 | TONKAWOOD RD | MINNETONKA | 55345 | Moderate | WEL |
| 552 | 00204457 | HANUS, GLADY | A | DO | 2011722110039 | TONKAWOOD RD | MINNETONKA | 55345 | Moderate | WEL |
| 553 | 00204463 | BRUCE CONSTRUCTION | A | DO | 2011722140037 | TONKAWOOD LA | MINNETONKA | 55345 | Moderate | WEL |
| 554 | 00204462 | VEITS, F. J. | A | DO | 2011722140041 | TONKAWOOD RD | MINNETONKA | 55345 | Moderate | WEL |
| 555 | 00204465 | HABERHAM, BOB | A | DO | 2011722140049 | LAKE ST EXTENSION | MINNETONKA | 55345 | Moderate | WEL |
| 556 | 00204476 | SAUTIER | A | DO | 2111722110040 | SPRING LAKE RD | MINNETONKA | 55345 | Moderate | WEL |
| 557 | 00204475 | NOYES, PAUL | A | DO | 2111722140004 | OAKWOOD RD | MINNETONKA | 55345 | Moderate | WEL |
| 558 | 00204481 | JOHNSON | A | DO | 2111722140024 | IDYLWOOD RD | MINNETONKA | 55345 | Moderate | WEL |
| 559 | 00204482 | JONES, MARK | A | DO | 2111722140028 | RED OAK RIDGE | MINNETONKA | 55345 | Moderate | WEL |
| 560 | 00204485 | JONES, MARK | A | DO | 2111722140033 | RED OAK RIDGE | MINNETONKA | 55345 | Moderate | WEL |
| 561 | 00204487 | JONES, MARK | A | DO | 2111722140034 | RED OAK RIDGE | MINNETONKA | 55345 | Moderate | WEL |
| 562 | 00204483 | JONES, MARK | A | DO | 2111722140035 | RED OAK RIDGE | MINNETONKA | 55345 | Moderate | WEL |
| 563 | 00204484 | GREINER, PETER | A | DO | 2111722140036 | RED OAK RIDGE | MINNETONKA | 55345 | Moderate | WEL |
| 564 | 00204488 | JOHNSON, HAROLD | A | DO | 2111722140053 | LENNELL DR | MINNETONKA | 55345 | Moderate | WEL |
| 565 | 00204486 | JOHNSON, HAROLD | A | DO | 2111722140073 | LENNELL DR | MINNETONKA | 55345 | Moderate | WEL |
| 566 | 00204490 | WOODROW | A | DO | 2111722210015 | MCKENZIE BLVD | MINNETONKA | 55345 | Moderate | WEL |
| 567 | 00204489 | GRAHDE, E. W. | A | DO | 2111722220057 | SUNSET RD | MINNETONKA | 55345 | Moderate | WEL |
| 568 | 00204492 | CARLSON, CURT | A | DO | 2111722220058 | SUNSET RD | MINNETONKA | 55345 | Moderate | WEL |
| 569 | 00204493 | CARLSON, ART | A | DO | 2111722220060 | SUNSET RD | MINNETONKA | 55345 | Moderate | WEL |
| 570 | 00204494 | FRA-TIM | A | DO | 2111722220062 | SUNSET RD | MINNETONKA | 55345 | Moderate | WEL |
| 571 | 00204497 | JENSON, HARRY | A | DO | 2111722230012 | LAKE ST EXTENSION | MINNETONKA | 55345 | Moderate | WEL |
| 572 | 00204495 | CLAPP, JACK | A | DO | 2111722230034 | LEXINGTON AVE | MINNETONKA | 55345 | Moderate | WEL |
| 573 | 00204491 | ERICKSON, PAUL | A | DO | 2111722230061 | TONKAWOOD RD | MINNETONKA | 55345 | Moderate | WEL |
| 574 | 00204496 | BERGMAN, RAY | A | DO | 2111722230070 | TONKAWOOD RD | MINNETONKA | 55345 | Moderate | WEL |
| 575 | 00204506 | POLLACK, WAYNE | A | DO | 2111722240026 | VICTORIA ST | MINNETONKA | 55345 | Moderate | WEL |
| 576 | 00204504 | BARRETT, JOHN P. | A | DO | 2111722240029 | VICTORIA ST | MINNETONKA | 55345 | Moderate | WEL |
| 577 | 00204502 | PAUL HOST | A | DO | 2111722240040 | SKYVIEW RD | MINNETONKA | 55345 | Moderate | WEL |
| 578 | 00204498 | HOST CONST. CO | A | DO | 2111722240040 | SKYVIEW RD | MINNETONKA | 55345 | Moderate | WEL |
| 579 | 00204500 | PAUL HOST | A | DO | 2111722240041 | SKYVIEW CIR | MINNETONKA | 55345 | Moderate | WEL |
| 580 | 00204501 | PAUL HOST | A | DO | 2111722240043 | SKYVIEW CIR | MINNETONKA | 55345 | Moderate | WEL |
| 581 | 00204503 | PAUL HOST | A | DO | 2111722240044 | SKYVIEW CIR | MINNETONKA | 55345 | Moderate | WEL |
| 582 | 00204507 | LAY, CHESTER | A | DO | 2111722310011 | VICTORIA ST | MINNETONKA | 55345 | Moderate | WEL |
| 583 | 00204508 | DELANEY, LEROY | A | DO | 2111722310019 | VICTORIA ST | MINNETONKA | 55345 | Moderate | WEL |
| 584 | 00204510 | JOHNSON, MILTON | A | DO | 2111722310026 | COURT RD | MINNETONKA | 55345 | Moderate | WEL |
| 585 | W0000123 | SJADIN, CARL | A | DO | 2111722310031 | MANOR COURT RD | MINNETONKA | 55345 | Moderate | WEL |
| 586 | 00204509 | POWERS REALTY CO. | A | DO | 2111722310032 | COURT RD | MINNETONKA | 55345 | Moderate | WEL |
| 587 | 00223772 | SEIGEL, BILL | A | DO | 2111722410005 | RICHARDS DR | MINNETONKA | 55345 | Moderate | WEL |
| 588 | 00204516 | HAMEL | A | DO | 2111722410025 | WILLISTON RD | MINNETONKA | 55345 | Moderate | WEL |
| 589 | 00204518 | OTTESON, DENNIS | A | DO | 2111722410038 | WILDCREST RD | MINNETONKA | 55345 | Moderate | WEL |
| 590 | 00204521 | BLAINES CONSTRUCTION | A | DO | 2111722420003 | EVELYN LA | MINNETONKA | 55345 | Moderate | WEL |
| 591 | 00204520 | DEARSTYNE | A | DO | 2111722420004 | EVELYN LA | MINNETONKA | 55345 | Moderate | WEL |
| 592 | 00204522 | JERGENS | A | DO | 2111722420027 | EVELYN LA | MINNETONKA | 55345 | Moderate | WEL |
| 593 | 00204523 | SMITH, HOWARD | A | DO | 2111722430053 | HIGHLAND RD | MINNETONKA | 55345 | Moderate | WEL |
| 594 | 00272598 | OSTERBERG | A | DO | 2111722440017 | KARYL DR | MINNETONKA | 55345 | Moderate | WEL |
| 595 | 00204517 | STILLMAN | A | DO | 2111722440018 | KARYL DR | MINNETONKA | 55345 | Moderate | WEL |
| 596 | 00204519 | KRUSTOON, OSCAR | A | DO | 2111722440024 | KARYL DR | MINNETONKA | 55345 | Moderate | WEL |
| 597 | 00204526 | PYHONEN, R. J. | A | DO | 2211722110005 | DO LITTLE DR | MINNETONKA | 55305 | Moderate | WEL |
| 598 | 00204527 | LARSONS | A | DO | 2211722110006 | DO LITTLE DR | MINNETONKA | 55305 | Moderate | WEL |
| 599 | 00204525 | JOHNSON, AXEL | A | DO | 2211722110075 | DO LITTLE DR | MINNETONKA | 55305 | Moderate | WEL |
| 600 | 00204528 | ANDERSON | A | DO | 2211722140011 | CASTLE VIEW CT | MINNETONKA | 55305 | Moderate | WEL |
| 601 | 00204529 | VANEK, MEL | A | DO | 2211722140047 | BAKER RD | MINNETONKA | 55305 | Moderate | WEL |
| 602 | 00204530 | JOHNSON, AXEL | A | DO | 2211722220018 | WOODHAVEN RD | MINNETONKA | 55345 | Moderate | WEL |
| 603 | 00204531 | REEVES, G. B. | A | DO | 2211722220033 | WOODHAVEN RD | MINNETONKA | 55345 | Moderate | WEL |
| 604 | 00204532 | JOHNSON, HAROLD | A | DO | 2211722220054 | HAVEN RD | MINNETONKA | 55345 | Moderate | WEL |
| 605 | 00204533 | BLOOM, JEROME | A | DO | 2211722230039 | LENNELL DR | MINNETONKA | 55345 | Moderate | WEL |
| 606 | 00204536 | KENNEN, BERNARD A. | A | DO | 2211722240013 | SPRING LAKE RD | MINNETONKA | 55345 | Moderate | WEL |
| 607 | 00204535 | | A | DO | 2211722240030 | SPRING LAKE RD | MINNETONKA | 55345 | Moderate | WEL |

Table 3 - Public and Private Wells

| Figure ID | Unique Number | Well Name | Status Code | Use Code | Parcel ID | Address | City | Zip Code | Vulnerability | PCS Code |
|-----------|---------------|---------------------------|-------------|----------|---------------|---------------------|----------------|----------|---------------|----------|
| 608 | 00791996 | | A | DO | 2211722240044 | SPRING LAKE RD | MINNETONKA | 55345 | Moderate | WEL |
| 609 | 00272428 | JOHNSON, DON B. | A | DO | 2211722330005 | QUIGLEY RD | MINNETONKA | 55345 | Moderate | WEL |
| 610 | 00208011 | MINNETONKA 1 | A | MU | 2211722340030 | ELLERDALE RD | MINNETONKA | 55345 | Moderate | WEL |
| 611 | 00204538 | CITY OF MINNETONKA | A | IN | 2211722430023 | BAKER RD | MINNETONKA | 55343 | Moderate | WEL |
| 612 | 00160021 | MINNETONKA 14A | A | PC | 2211722430023 | BAKER RD | MINNETONKA | 55343 | Moderate | WEL |
| 613 | 00204539 | BETZ, MAURICE | A | DO | 2211722440005 | SHADY DALE RD | MINNETONKA | 55343 | Moderate | WEL |
| 614 | 00204540 | OLSEN, DON | A | DO | 2211722440019 | GREENWOOD RD | MINNETONKA | 55343 | Moderate | WEL |
| 615 | 00204541 | | A | DO | 2311722110043 | MINNETONKA MILLS RD | MINNETONKA | 55305 | Moderate | WEL |
| 616 | 00204542 | KNOTT | A | DO | 2311722120003 | COTTAGE LA | MINNETONKA | 55305 | Moderate | WEL |
| 617 | 00223879 | WILLIE, GERALD C. | A | DO | 2311722130043 | 21ST AVE N | HOPKINS | 55343 | Moderate | WEL |
| 618 | 00204544 | LEVINE, CLARENCE | A | DO | 2311722210009 | WILLMATT HILL | MINNETONKA | 55305 | Moderate | WEL |
| 619 | 00204543 | PARKER | A | DO | 2311722210020 | WILLMATT HILL | MINNETONKA | 55305 | Moderate | WEL |
| 620 | 00204545 | JOHNSON, AXEL | A | DO | 2311722210038 | HUNTINGDON DR | MINNETONKA | 55305 | Moderate | WEL |
| 621 | 00204546 | ANDERSON, CLIFF | A | DO | 2311722220009 | HUNTINGDON DR | MINNETONKA | 55305 | Moderate | WEL |
| 622 | 00204547 | OLSON, ROGER | A | DO | 2311722230008 | MERRIAM RD | MINNETONKA | 55305 | Moderate | WEL |
| 623 | 00204548 | | A | DO | 2311722230020 | MERRIAM RD | MINNETONKA | 55305 | Moderate | WEL |
| 624 | 00204550 | JOHNSON, AXEL | A | DO | 2311722240040 | HUNTINGDON DR | MINNETONKA | 55305 | Moderate | WEL |
| 625 | 00204554 | CHAS, ALEXANDER | A | DO | 2311722320023 | BRIARWOOD CT | MINNETONKA | 55343 | Moderate | WEL |
| 626 | 00204552 | BYLAND, DICK | A | DO | 2311722320027 | BRIARWOOD DR | MINNETONKA | 55343 | Moderate | WEL |
| 627 | 00204553 | GAMBILL, ROBERT | A | DO | 2311722320028 | BRIARWOOD DR | MINNETONKA | 55343 | Moderate | WEL |
| 628 | 00204551 | OLSON, DON | A | DO | 2311722330006 | BRIARWOOD DR | MINNETONKA | 55343 | Moderate | WEL |
| 629 | 00204558 | OLSON, DON | A | DO | 2311722330007 | BRIARWOOD DR | MINNETONKA | 55343 | Moderate | WEL |
| 630 | 00204557 | | A | DO | 2311722330008 | BRIARWOOD DR | MINNETONKA | 55343 | Moderate | WEL |
| 631 | 00204567 | CARLSON, ARTHUR | A | DO | 2311722420005 | LAKE ST EXTENSION | MINNETONKA | 55343 | Moderate | WEL |
| 632 | 00204568 | CONOCO | A | CO | 2311722430002 | SHADY OAK RD | MINNETONKA | 55343 | Moderate | WEL |
| 633 | 00224075 | PORT, O. | A | DO | 2311722440018 | SHADY OAK RD | HOPKINS | 55343 | Moderate | WEL |
| 634 | 00204569 | PINES TRAILER COURT | A | PS | 2311722440118 | ADDRESS UNASSIGNED | HOPKINS | 0 | Moderate | WEL |
| 635 | 00204570 | HOPKINS 5 | A | PC | 2411722210033 | STATE HWY NO 7 | HOPKINS | 55305 | Moderate | WEL |
| 636 | 00507134 | MW-3 | A | MW | 2411722210033 | STATE HWY NO 7 | HOPKINS | 55305 | Moderate | WEL |
| 637 | 00224059 | J.H. KILEGORE LUMBER CO. | A | CO | 2411722220025 | 17TH AVE N | HOPKINS | 55343 | Moderate | WEL |
| 638 | 00204571 | HOPKINS THEATER | A | CO | 2411722410003 | MAINSTREET | HOPKINS | 55343 | Moderate | WEL |
| 639 | 00223878 | REINSTR, WALTER | A | DO | 2411722430235 | 7TH AVE S | HOPKINS | 55343 | Moderate | WEL |
| 640 | 00204573 | HOPKINS 11 | A | PC | 2511722210026 | EXCELSIOR BLVD | HOPKINS | 55343 | Moderate | WEL |
| 641 | 00599638 | MW-11 | A | MW | 2511722220005 | EXCELSIOR BLVD | HOPKINS | 55343 | Moderate | WEL |
| 642 | 00224060 | | A | DO | 2511722220008 | 5TH ST S | HOPKINS | 55343 | Moderate | WEL |
| 643 | 00227132 | THERMOTEC 2 | A | CO | 2511722230061 | 5TH ST S | HOPKINS | 55343 | Moderate | WEL |
| 644 | 00505002 | GETSCH, TOM | A | DO | 2611722120002 | PIONEER RD | MINNETONKA | 55343 | Moderate | WEL |
| 645 | 00204578 | BATTS, DAVE | A | DO | 2611722130022 | SHADY OAK LA | MINNETONKA | 55343 | Moderate | WEL |
| 646 | 00204577 | FERNICKS, BERNIE | A | DO | 2611722130028 | SHADY OAK LA | MINNETONKA | 55343 | Moderate | WEL |
| 647 | 00204579 | SORENSEN, C. L. | A | DO | 2611722130031 | SHADY OAK RD | MINNETONKA | 55343 | Moderate | WEL |
| 648 | 00204576 | MICHL | A | DO | 2611722130033 | SHADY OAK RD | MINNETONKA | 55343 | Moderate | WEL |
| 649 | 00224058 | | A | DO | 2611722130034 | SHADY OAK RD | MINNETONKA | 55343 | Moderate | WEL |
| 650 | 00204580 | PARENTEASE, ART | A | DO | 2611722140009 | ENCORE CIR | MINNETONKA | 55343 | Moderate | WEL |
| 651 | 00204581 | ALASBIR | A | DO | 2611722210018 | WINTERSET DR | MINNETONKA | 55343 | Moderate | WEL |
| 652 | 00204582 | SANDON, ROY F. | A | DO | 2611722220006 | PIONEER RD | MINNETONKA | 55343 | Moderate | WEL |
| 653 | 00204583 | MARK Z. JONES CO. | A | DO | 2611722220009 | VALLEY RD | MINNETONKA | 55343 | Moderate | WEL |
| 654 | 00204584 | MILLER | A | DO | 2611722220034 | MERILEE DR | MINNETONKA | 55343 | Moderate | WEL |
| 655 | 00203735 | CARROTHERS CONSTRUCTION | A | DO | 411722330032 | WHITE PINE DR | MINNETONKA | 55391 | Moderate | WEL |
| 656 | 00203738 | MEEHAN, MIKE | A | DO | 411722340009 | HOLDRIDGE DR | MINNETONKA | 55391 | Moderate | WEL |
| 657 | 00203737 | HARVEY, RALPH | A | DO | 411722340013 | HOLDRIDGE DR | MINNETONKA | 55391 | Moderate | WEL |
| 658 | 00203739 | GRADOUS, FRED | A | DO | 411722340015 | HOLDRIDGE DR | MINNETONKA | 55391 | Moderate | WEL |
| 659 | 00203743 | | A | DO | 411722340028 | HOLDRIDGE RD | MINNETONKA | 55391 | Moderate | WEL |
| 660 | 00203744 | | A | DO | 411722340030 | HOLDRIDGE RD | MINNETONKA | 55391 | Moderate | WEL |
| 661 | 00203741 | | A | DO | 411722340036 | HOLDRIDGE DR | MINNETONKA | 55391 | Moderate | WEL |
| 662 | 00203759 | FIELDS, JOHN | A | DO | 511722340027 | BUSHAWAY RD | WAYZATA | 55391 | Moderate | WEL |
| 663 | 00272603 | STARR, WILLIAM | A | DO | 711721330008 | 28TH ST W | ST. LOUIS PARK | 55426 | Moderate | WEL |
| 664 | 00660570 | MASSIE, JOHN | A | DO | 711722310005 | MARSHLAND RD | WOODLAND | 55391 | Moderate | WEL |
| 665 | 00718314 | | A | DO | 711722310012 | MAPLEWOOD CIR E | WOODLAND | 55391 | Moderate | WEL |
| 666 | 00239942 | YOUNG, SUMNER B. | A | DO | 711722310026 | MAPLEWOOD CIR E | WOODLAND | 55391 | Moderate | WEL |
| 667 | 00157836 | KIENKE, BRUCE | A | DO | 711722310031 | MARSHLAND RD | WOODLAND | 55391 | Moderate | WEL |
| 668 | 00478387 | THORPE, A. SKIDMORE | A | DO | 711722310034 | CEDAR POINT DR | WOODLAND | 55391 | Moderate | WEL |
| 669 | 00204436 | KINGMAN, HENRY | A | DO | 711722310035 | MAPLEWOOD CIR E | WOODLAND | 55391 | Moderate | WEL |
| 670 | 00420513 | DURR, KEN | A | DO | 711722310039 | CEDAR RIDGE RD | WOODLAND | 55391 | Moderate | WEL |
| 671 | 00692506 | | A | DO | 711722310040 | CEDAR POINT DR | WOODLAND | 55391 | Moderate | WEL |
| 672 | 00419449 | GAILLARD, CHARLES | A | DO | 711722320023 | CEDAR RIDGE RD | WOODLAND | 55391 | Moderate | WEL |
| 673 | 00711471 | MORRISON, JOHN | A | DO | 711722320025 | CEDAR RIDGE RD | WOODLAND | 55391 | Moderate | WEL |
| 674 | 00742374 | MACHALEC, GARY | A | DO | 711722330029 | GALE RD | WOODLAND | 55391 | Moderate | WEL |
| 675 | 00114368 | STINCHFIELD, JOHN | A | DO | 711722430013 | BREEZY HEIGHTS RD | WOODLAND | 55391 | Moderate | WEL |
| 676 | 00756059 | BASSETT, PATRICK & ANDREA | A | DO | 711722430021 | WOOLSEY LA | WOODLAND | 55391 | Moderate | WEL |
| 677 | 00591540 | FRENCH, GINA | A | DO | 711722430023 | WOOLSEY LA | WOODLAND | 55391 | Moderate | WEL |
| 678 | 00623564 | JOHNSON, MYLES | A | DO | 711722430025 | BREEZY HEIGHTS RD | WOODLAND | 55391 | Moderate | WEL |
| 679 | 00162019 | GLEESON, FRANK | A | DO | 711722430027 | BREEZY POINT RD | WOODLAND | 55391 | Moderate | WEL |
| 680 | 00760649 | | A | DO | 711722430027 | BREEZY POINT RD | WOODLAND | 55391 | Moderate | WEL |
| 681 | 00596672 | | A | DO | 711722440002 | BREEZY POINT RD | WOODLAND | 55391 | Moderate | WEL |
| 682 | 00233123 | METHODIST LAKESIDE ASSEM | A | PC | 711722440158 | ADDRESS UNASSIGNED | WOODLAND | 0 | Moderate | WEL |
| 683 | 00203771 | HAGEN | A | DO | 811722110004 | MCGINTY RD W | MINNETONKA | 55391 | Moderate | WEL |
| 684 | 00203772 | | A | DO | 811722110017 | MCGINTY RD W | MINNETONKA | 55391 | Moderate | WEL |
| 685 | 00203770 | CAMPION-PETERSON CONST. | A | DO | 811722110018 | ICE CIRCLE DR | MINNETONKA | 55391 | Moderate | WEL |
| 686 | 00100191 | LABELLE | A | DO | 811722110023 | ADELINE LA | MINNETONKA | 55391 | Moderate | WEL |
| 687 | 00100208 | JOHNSON, HERBERT T. JR. | A | DO | 811722110026 | CROSBY RD | MINNETONKA | 55391 | Moderate | WEL |
| 688 | 00203775 | KLINK, STAN | A | DO | 811722140008 | CROSBY RD | MINNETONKA | 55391 | Moderate | WEL |
| 689 | 00203774 | GARCO CONST. | A | DO | 811722140017 | CROSBY RD | MINNETONKA | 55391 | Moderate | WEL |
| 690 | 00203777 | BROWN, PHILLIP G. | A | DO | 811722330005 | CO RD NO 101 | MINNETONKA | 55391 | Moderate | WEL |
| 691 | 00203778 | KALKES, J.W. | A | DO | 811722330006 | CO RD NO 101 | MINNETONKA | 55391 | Moderate | WEL |

Table 3 - Public and Private Wells

| Figure ID | Unique Number | Well Name | Status Code | Use Code | Parcel ID | Address | City | Zip Code | Vulnerability | PCS Code |
|-----------|---------------|--------------------------|-------------|----------|---------------|----------------------|------------|----------|---------------|----------|
| 692 | 00223813 | THOMPSON, HERB | A | DO | 811722340001 | GRAYS BAY BLVD | MINNETONKA | 55391 | Moderate | WEL |
| 693 | 00223815 | | A | DO | 811722340002 | GRAYS BAY BLVD | MINNETONKA | 55391 | Moderate | WEL |
| 694 | 00272623 | H T THOMPSON | A | DO | 811722340002 | GRAYS BAY BLVD | MINNETONKA | 55391 | Moderate | WEL |
| 695 | 00203776 | GRAYS BAY RESORT | A | CO | 811722340017 | CO RD NO 101 | MINNETONKA | 55391 | Moderate | WEL |
| 696 | 00203780 | WANGBERG, FRED W. | A | DO | 811722410014 | CROSBY RD | MINNETONKA | 55391 | Moderate | WEL |
| 697 | 00203779 | BRINK, ROBERT | A | DO | 811722410014 | CROSBY RD | MINNETONKA | 55391 | Moderate | WEL |
| 698 | 00203787 | HERBERT THOMPSON + SON | A | DO | 811722430009 | MEADOWBROOK LA | MINNETONKA | 55391 | Moderate | WEL |
| 699 | 00203788 | HERB THOMPSON + SON | A | DO | 811722430010 | MEADOWBROOK LA | MINNETONKA | 55391 | Moderate | WEL |
| 700 | 00203791 | LOKENS GARD | A | DO | 811722430017 | MEADOWBROOK LA | MINNETONKA | 55391 | Moderate | WEL |
| 701 | 00203786 | HERB THOMPSON + SON | A | DO | 811722430018 | FAIRCHILD AVE | MINNETONKA | 55391 | Moderate | WEL |
| 702 | 00203790 | CLASEN, H. G. | A | DO | 811722430020 | GRAYS BAY BLVD | MINNETONKA | 55391 | Moderate | WEL |
| 703 | 00203784 | LANDSTROM, DON | A | DO | 811722430021 | GRAYS BAY BLVD | MINNETONKA | 55391 | Moderate | WEL |
| 704 | 00223814 | HARRIS, WALLACE L. | A | DO | 811722430023 | GRAYS BAY BLVD | MINNETONKA | 55391 | Moderate | WEL |
| 705 | W0000111 | RAY ANDERSON CONSTR | A | CO | 811722430024 | GRAYS BAY BLVD | MINNETONKA | 55391 | Moderate | WEL |
| 706 | 00272620 | THOMPSON, HERB | A | DO | 811722430034 | GRAYS BAY BLVD | MINNETONKA | 55391 | Moderate | WEL |
| 707 | 00203783 | | A | DO | 811722430035 | GRAYS BAY BLVD | MINNETONKA | 55391 | Moderate | WEL |
| 708 | 00223812 | VAN BOCKLE | A | DO | 811722440004 | MEADOWBROOK LA | MINNETONKA | 55391 | Moderate | WEL |
| 709 | 00223811 | | A | DO | 811722440004 | MEADOWBROOK LA | MINNETONKA | 55391 | Moderate | WEL |
| 710 | 00203794 | ECKSTROM, ED | A | DO | 911722210008 | POST RD | MINNETONKA | 55391 | Moderate | WEL |
| 711 | 00223785 | | A | DO | 911722210020 | SHERIDAN HILLS RD | MINNETONKA | 55391 | Moderate | WEL |
| 712 | 00223787 | | A | DO | 911722210021 | SHERIDAN HILLS RD | MINNETONKA | 55391 | Moderate | WEL |
| 713 | 00223786 | | A | DO | 911722210022 | SHERIDAN HILLS RD | MINNETONKA | 55391 | Moderate | WEL |
| 714 | 00203795 | ADAMS CONST. CO. | A | DO | 911722210024 | SHERIDAN HILLS RD | MINNETONKA | 55391 | Moderate | WEL |
| 715 | 00256806 | | I | | 911722220068 | ADDRESS UNASSIGNED | MINNETONKA | 0 | Moderate | WEL |
| 716 | 00255880 | CARGILL, INC. | A | IR | 911722230005 | CROSBY RD | MINNETONKA | 55391 | Moderate | WEL |
| 717 | 203796 | SMESTAD + ENGQUIST | A | DO | 911722240009 | SHERIDAN HILLS RD | MINNETONKA | 55391 | Moderate | WEL |
| 718 | 00203797 | EXSTROM, ED | A | DO | 911722240011 | SHERIDAN HILLS CUR | MINNETONKA | 55391 | Moderate | WEL |
| 719 | 00203798 | DAHL | A | DO | 911722240012 | SHERIDAN HILLS CUR | MINNETONKA | 55391 | Moderate | WEL |
| 720 | 00203800 | FRA-TIM | A | DO | 911722240014 | SHERIDAN HILLS CUR | MINNETONKA | 55391 | Moderate | WEL |
| 721 | 00204002 | REIRERSON, DON | A | DO | 911722240015 | SHERIDAN HILLS CUR | MINNETONKA | 55391 | Moderate | WEL |
| 722 | 00204001 | FRA-TIM | A | DO | 911722240024 | SHERIDAN HILLS CUR | MINNETONKA | 55391 | Moderate | WEL |
| 723 | 00203789 | LINDGREN, JOHN | A | DO | 911722240029 | SHERIDAN HILLS CUR | MINNETONKA | 55391 | Moderate | WEL |
| 724 | 00255722 | CARGILL LAKE OFFICE WELL | I | DO | 911722330004 | MCGINTY RD W | MINNETONKA | 55391 | Moderate | WEL |
| 725 | 00223810 | | A | DO | 911722430011 | MCGINTY RD W | MINNETONKA | 55391 | Moderate | WEL |
| 726 | 00204003 | KAYONEN, HUGO | A | DO | 911722430046 | MCGINTY RD W | MINNETONKA | 55391 | Moderate | WEL |
| 727 | 00204011 | UNDERSTAD | A | DO | 1011722340014 | GREEN BRIAR DR | MINNETONKA | 55305 | Moderate | WEL |
| 728 | 00204009 | SIEGEL, WILLIAM | A | DO | 1011722340035 | COYTE CT | MINNETONKA | 55305 | Moderate | WEL |
| 729 | 00204053 | MARTIN, J.V. | A | DO | 1211722320087 | CEDAR BEND | MINNETONKA | 55305 | Moderate | WEL |
| 730 | 00208012 | MINNETONKA 6A | A | PC | 1211722340002 | GREENBRIER RD | MINNETONKA | 55305 | Moderate | WEL |
| 731 | 00204054 | MINNETONKA 6 | A | PC | 1211722340002 | GREENBRIER RD | MINNETONKA | 55305 | Moderate | WEL |
| 732 | 00204061 | CRONEST, DAVID | A | DO | 1311722130008 | MINNETONKA BLVD | MINNETONKA | 55305 | Moderate | WEL |
| 733 | 00224062 | JOHNSON & PETERSON | A | DO | 1311722130026 | BIRCH PL | MINNETONKA | 55305 | Moderate | WEL |
| 734 | 00204060 | | A | DO | 1311722130030 | BIRCH PL | MINNETONKA | 55305 | Moderate | WEL |
| 735 | 00204059 | NORBERG, CARL | A | DO | 1311722130040 | MINNETONKA BLVD | MINNETONKA | 55305 | Moderate | WEL |
| 736 | 00204062 | ZIMMERMAN, C. M. | A | DO | 1311722130045 | MINNETONKA BLVD | MINNETONKA | 55305 | Moderate | WEL |
| 737 | 00204063 | GOODYEAR STORE | A | DO | 1311722140071 | ADDRESS UNASSIGNED | MINNETONKA | 0 | Moderate | WEL |
| 738 | 00204064 | CASH, J.P. | I | DO | 1311722220007 | ST ALBANS RD W | HOPKINS | 55305 | Moderate | WEL |
| 739 | 00204065 | CORDALIS, JAMES | A | DO | 1311722220008 | ST ALBANS RD E | HOPKINS | 55305 | Moderate | WEL |
| 740 | 00224061 | BOCK, ALLAN C. | A | DO | 1311722230019 | LORING RD | HOPKINS | 55305 | Moderate | WEL |
| 741 | 00247225 | MURSCH, JERGAN | I | DO | 1311722230026 | HOPKINS CROSSROAD | HOPKINS | 55305 | Moderate | WEL |
| 742 | 00204066 | MOE, DR. JOHN | A | DO | 1311722230040 | WEBSTER PL | HOPKINS | 55305 | Moderate | WEL |
| 743 | 00204067 | LESLIE, JOHN | A | DO | 1311722240006 | MANITOBA RD | HOPKINS | 55305 | Moderate | WEL |
| 744 | W0020155 | | U | | 1311722240022 | MILL RD | HOPKINS | 55305 | Moderate | WEL |
| 745 | 00595761 | OAK RIDGE COUNTRY CLUB 2 | A | IR | 1311722310002 | OAKRIDGE RD | HOPKINS | 55305 | Moderate | WEL |
| 746 | 00272744 | OAK RIDGE COUNTRY CLUB | A | IR | 1311722310002 | OAKRIDGE RD | HOPKINS | 55305 | Moderate | WEL |
| 747 | 00224100 | OAK RIDGE GOLF | A | DO | 1311722320065 | FAIRWAY LA | MINNETONKA | 55305 | Moderate | WEL |
| 748 | 00204068 | HOPKINS 4 | A | PC | 1311722330003 | ELMO PARK SERVICE RD | HOPKINS | 55305 | Moderate | WEL |
| 749 | 00204070 | MCNULTY CONST. CO. | A | DO | 1311722410010 | ANN LA | MINNETONKA | 55305 | Moderate | WEL |
| 750 | 00224063 | ZORAZIL, AL | A | DO | 1311722410012 | ANN LA | MINNETONKA | 55305 | Moderate | WEL |
| 751 | 00204071 | NAN | A | DO | 1311722420053 | 34TH CIR W | MINNETONKA | 55305 | Moderate | WEL |
| 752 | 00204073 | BRONSTIEN, S. | A | DO | 1311722440005 | VALLEY WAY | HOPKINS | 55305 | Moderate | WEL |
| 753 | 00204057 | ALDERSONS, PETER | A | DO | 1411722120002 | CEDAR LAKE RD | MINNETONKA | 55305 | Moderate | WEL |
| 754 | 00204074 | SKOGSMO, ART | A | DO | 1411722120042 | CEDAR CROSSING | MINNETONKA | 55305 | Moderate | WEL |
| 755 | 00204075 | KAMINSKI | A | DO | 1411722130041 | HONEYWOOD LA | MINNETONKA | 55305 | Moderate | WEL |
| 756 | 00204076 | EIDE, CLINTON | A | DO | 1411722140001 | MINNETONKA BLVD | MINNETONKA | 55305 | Moderate | WEL |
| 757 | 00204080 | LAUERMAN, BOB | A | DO | 1411722140010 | HOPKINS CROSSROAD | MINNETONKA | 55305 | Moderate | WEL |
| 758 | 00204078 | HALTER | A | DO | 1411722140013 | MINNETONKA BLVD | MINNETONKA | 55305 | Moderate | WEL |
| 759 | 00223808 | SEWANDOWSKI, RONALD | A | DO | 1411722220036 | CREEK RD W | MINNETONKA | 55305 | Moderate | WEL |
| 760 | 00204081 | J. + G. CONST. CO. | A | DO | 1411722230003 | BURWELL DR | MINNETONKA | 55305 | Moderate | WEL |
| 761 | 00204082 | POLLOCK, RICHARD | A | DO | 1411722230012 | MINNETONKA BLVD | MINNETONKA | 55305 | Moderate | WEL |
| 762 | 00223809 | | A | DO | 1411722310047 | ARBOR LA | MINNETONKA | 55305 | Moderate | WEL |
| 763 | 00272854 | KAUFMANN | A | DO | 1411722320017 | ORCHARD LA | MINNETONKA | 55305 | Moderate | WEL |
| 764 | 00204083 | HARRY JENSEN CONST. | A | DO | 1411722320026 | SHADY OAK RD | MINNETONKA | 55305 | Moderate | WEL |
| 765 | 00204084 | JENSEN, HARRY | A | DO | 1411722320027 | SHADY OAK RD | MINNETONKA | 55305 | Moderate | WEL |
| 766 | 00204085 | KOCK, STAN | A | DO | 1411722320033 | SHADY OAK RD | MINNETONKA | 55305 | Moderate | WEL |
| 767 | 00204086 | AMKRIEN, LUTHER | A | DO | 1411722330008 | SHADY OAK RD | MINNETONKA | 55305 | Moderate | WEL |
| 768 | 00204088 | LAM, HAUSER | A | DO | 1411722330027 | PLYMOUTH RD | MINNETONKA | 55305 | Moderate | WEL |
| 769 | 00204090 | DELANEY, LEROY | A | DO | 1411722340011 | MINNETONKA MILLS RD | MINNETONKA | 55305 | Moderate | WEL |
| 770 | 00204089 | ANDERSON, PAUL F. | A | DO | 1411722340013 | ARBOR LA | MINNETONKA | 55305 | Moderate | WEL |
| 771 | 00204091 | BATTS, DAVE | A | DO | 1411722410061 | FARM LA | MINNETONKA | 55305 | Moderate | WEL |
| 772 | 00204092 | HALL, WILLIAM B. | A | DO | 1411722410062 | FARM LA | MINNETONKA | 55305 | Moderate | WEL |
| 773 | 00204093 | BATTS, DAVE | A | DO | 1411722410063 | FARM LA | MINNETONKA | 55305 | Moderate | WEL |
| 774 | 00204095 | HAMILTON, DALE | A | DO | 1411722430018 | PHEASANT LA | MINNETONKA | 55305 | Moderate | WEL |
| 775 | 00195524 | ANDERSON, BRAD | A | DO | 1411722430063 | PRESTIGE LA | MINNETONKA | 55305 | Moderate | WEL |

Table 3 - Public and Private Wells

| Figure ID | Unique Number | Well Name | Status Code | Use Code | Parcel ID | Address | City | Zip Code | Vulnerability | PCS Code |
|-----------|---------------|-----------------------------|-------------|----------|---------------|----------------------|------------|----------|---------------|----------|
| 776 | 00204098 | BATTS, DAVE | A | DO | 1411722440001 | OAKVALE RD N | MINNETONKA | 55305 | Moderate | WEL |
| 777 | 00204100 | BATTS, DAVE | A | DO | 1411722440002 | OAKVALE RD N | MINNETONKA | 55305 | Moderate | WEL |
| 778 | 00204099 | BATTS, DAVID | A | DO | 1411722440003 | OAKVALE RD N | MINNETONKA | 55305 | Moderate | WEL |
| 779 | 00204102 | BATTS, DAVE | A | DO | 1411722440036 | OAKVALE RD S | MINNETONKA | 55305 | Moderate | WEL |
| 780 | 00204094 | | A | DO | 1411722440041 | ROYZELLE LA | MINNETONKA | 55305 | Moderate | WEL |
| 781 | 00204097 | | A | DO | 1411722440058 | ROYZELLE LA | MINNETONKA | 55305 | Moderate | WEL |
| 782 | 00204096 | JOHNSON, AXEL | A | DO | 1411722440086 | ROBINWOOD CIR | MINNETONKA | 55305 | Moderate | WEL |
| 783 | 00272557 | RITCHIE, ROBERT S. | A | DO | 1511722120034 | SURRY LA | MINNETONKA | 55305 | Moderate | WEL |
| 784 | 00204124 | PEHAN, LEROY | A | DO | 1511722340001 | SUMMIT LA | MINNETONKA | 55305 | Moderate | WEL |
| 785 | 00204157 | BORAN, BUD | A | DO | 1711722120020 | MEADOWBROOK LA | MINNETONKA | 55391 | Moderate | WEL |
| 786 | 00276380 | FOTY, JOHN | A | DO | 1711722210028 | EDGEWOOD AVE | MINNETONKA | 55391 | Moderate | WEL |
| 787 | 00272548 | CARRELL, JOHN | A | DO | 1911721120004 | HIAWATHA AVE | HOPKINS | 55343 | Moderate | WEL |
| 788 | 00272382 | C. HAFT (CARL WHITE) | A | DO | 1911721120020 | HIAWATHA AVE | HOPKINS | 55343 | Moderate | WEL |
| 789 | 00272581 | SHIMA, ISABELLE | A | DO | 1911721240104 | TYLER AVE N | HOPKINS | 55343 | Moderate | WEL |
| 790 | 00204459 | VAN BOCKEL | A | DO | 2011722110013 | AVONDALE ST | MINNETONKA | 55345 | Moderate | WEL |
| 791 | 00204480 | PASQUARETTE | A | DO | 2111722130059 | WILLISTON RD | MINNETONKA | 55345 | Moderate | WEL |
| 792 | 00204534 | JOHNSON, AXEL | A | DO | 2211722230014 | OAKWOOD RD EXTENSION | MINNETONKA | 55345 | Moderate | WEL |
| 793 | 00458079 | NAEGLE OUTDOOR ADVERTISI | A | DO | 2311722130057 | WYNDHAM HILL DR | MINNETONKA | 55343 | Moderate | WEL |
| 794 | 00204549 | FUFFORD, GEORGE | A | DO | 2311722210017 | AUBURN DR | MINNETONKA | 55305 | Moderate | WEL |
| 795 | 00203742 | | A | DO | 411722340026 | HOLDRIDGE DR | MINNETONKA | 55391 | Moderate | WEL |
| 796 | 00162099 | KYTONEN, MILFRED | A | DO | 711722430011 | BREEZY HEIGHTS RD | WOODLAND | 55391 | Moderate | WEL |
| 797 | 00272678 | THOMPSON, HERB | A | DO | 811722340003 | GRAYS BAY BLVD | MINNETONKA | 55391 | Moderate | WEL |
| 798 | 00203799 | FRA-TIM | A | DO | 911722240027 | SHERIDAN HILLS CUR | MINNETONKA | 55391 | Moderate | WEL |
| 799 | 00276378 | AAKER, LAWRENCE | A | DO | 1311722240025 | FLETCHER PL | HOPKINS | 55305 | Moderate | WEL |
| 800 | 00272825 | GREENBERG, LOUIS | A | DO | 1311722440015 | COTTAGE DOWNS | HOPKINS | 55305 | Moderate | WEL |
| 801 | 00276377 | WYNN, BILL | A | DO | 1411722140015 | HOPKINS CROSSROAD | MINNETONKA | 55305 | Moderate | WEL |
| 802 | 00204087 | REINKING, B. F. | A | DO | 1411722330047 | SHADY OAK RD | MINNETONKA | 55305 | Moderate | WEL |
| 803 | 00204149 | MINNETONKA ATHLETIC CLUB | A | CO | 1611722440076 | MINNETONKA DR | MINNETONKA | 55345 | Low | WEL |
| 804 | 00204478 | JOHNSON & PETERSON | A | DO | 2111722120031 | WALKER PL | MINNETONKA | 55345 | Low | WEL |
| 805 | 00204479 | CURTISS, PAUL | A | DO | 2111722120037 | WILLISTON RD | MINNETONKA | 55345 | Low | WEL |
| 806 | 00204477 | DEVEAU BUS CO. | A | CO | 2111722120043 | DEVEAU PL | MINNETONKA | 55345 | Low | WEL |
| 807 | 00204035 | JANESE, ERIC | A | DO | 1711722310007 | MEADOW LA | MINNETONKA | 55345 | Low | WEL |
| 808 | 00204198 | VAN BOCKLE | A | DO | 1711722420032 | ELMWOOD PL | MINNETONKA | 55345 | Low | WEL |
| 809 | 00249991 | KELLING, GORDON | I | DO | 1711722420034 | ELMWOOD PL | MINNETONKA | 55345 | Low | WEL |
| 810 | 00204199 | VAN BOCKLE | A | DO | 1711722420035 | FAIRLAWN DR | MINNETONKA | 55345 | Low | WEL |
| 811 | 00204196 | VAN BOCKLE | A | DO | 1711722420061 | FAIRLAWN DR | MINNETONKA | 55345 | Low | WEL |
| 812 | 00204195 | HILL, DAVE | A | DO | 1711722420091 | MEADOW LA | MINNETONKA | 55345 | Low | WEL |
| 813 | 00204200 | | A | DO | 1711722420100 | ELMWOOD PL | MINNETONKA | 55345 | Low | WEL |
| 814 | 00204401 | SMITH, DONALD | A | DO | 1711722430045 | ADDRESS UNASSIGNED | MINNETONKA | 0 | Low | WEL |
| 815 | 00204402 | YBUSO, GARY | A | DO | 1711722430054 | ELMWOOD PL | MINNETONKA | 55345 | Low | WEL |
| 816 | 00203672 | GREVICH, MEL | A | DO | 211722230030 | WAYZATA BLVD | MINNETONKA | 55305 | Moderate | WEL |
| 817 | 00203673 | | A | DO | 211722230051 | WAYZATA BLVD | MINNETONKA | 55305 | Moderate | WEL |
| 818 | 00203671 | HAGGESETH | A | DO | 211722240031 | MARION LA W | MINNETONKA | 55305 | Moderate | WEL |
| 819 | 00272663 | ZAHAND, RENE | A | DO | 211722440011 | TIMBERLINE SPUR | MINNETONKA | 55305 | Moderate | WEL |
| 820 | 00203676 | LOSCHIEDER, P. | A | DO | 211722440017 | TIMBERLINE RD | MINNETONKA | 55305 | Moderate | WEL |
| 821 | 00272371 | FOX FARM WELL - GIBSON FARM | A | DO | 211722440034 | TIMBERLINE RD | MINNETONKA | 55305 | Moderate | WEL |
| 822 | 00223793 | | A | DO | 311722110012 | SUNSET DR S | MINNETONKA | 55305 | Moderate | WEL |
| 823 | 00203681 | BUSHWELL, GARY | A | DO | 311722110041 | MILBERT RD | MINNETONKA | 55305 | Moderate | WEL |
| 824 | 00203683 | KOSKA, JAMES | A | DO | 311722120006 | PLYMOUTH RD | MINNETONKA | 55305 | Moderate | WEL |
| 825 | 00203686 | HADFIELD, HARRIET | A | DO | 311722120023 | PLYMOUTH RD | MINNETONKA | 55305 | Moderate | WEL |
| 826 | 00203684 | LICHT, RAYMOND | A | DO | 311722120046 | WINDYHILL RD | MINNETONKA | 55305 | Moderate | WEL |
| 827 | 00203688 | NESLUND, RICHARD | A | DO | 311722130052 | WAYZATA BLVD | MINNETONKA | 55305 | Moderate | WEL |
| 828 | 00203692 | HEDTKE, OTTO | A | DO | 311722140005 | MARION LA W | MINNETONKA | 55305 | Moderate | WEL |
| 829 | 00223792 | | A | DO | 311722140008 | FAIRFIELD RD | MINNETONKA | 55305 | Moderate | WEL |
| 830 | 00203690 | TOWNROE, E. B. | A | DO | 311722140038 | SUNNYVIEW LA | MINNETONKA | 55305 | Moderate | WEL |
| 831 | 00203689 | JOHNSON, CHARLES | A | DO | 311722140042 | FAIRFIELD RD | MINNETONKA | 55305 | Moderate | WEL |
| 832 | 00203685 | GRADY | A | DO | 311722210022 | KENMAR CIR | MINNETONKA | 55305 | Moderate | WEL |
| 833 | 00203694 | STANDARD OIL CO. | A | CO | 311722240003 | WAYZATA BLVD | MINNETONKA | 55305 | Moderate | WEL |
| 834 | 00223968 | BELL HOTEL | A | CO | 311722240003 | WAYZATA BLVD | MINNETONKA | 55305 | Moderate | WEL |
| 835 | 00203693 | | A | DO | 311722240018 | KNOLLWAY DR N | MINNETONKA | 55305 | Moderate | WEL |
| 836 | 00223969 | GREEN GABLE MOTEL | A | CO | 311722310023 | RIDGEDALE DR | MINNETONKA | 55305 | Moderate | WEL |
| 837 | 00203695 | | A | DO | 311722310026 | FAIRFIELD RD S | MINNETONKA | 55305 | Moderate | WEL |
| 838 | 00223791 | | A | DO | 311722320005 | LAUREL RD | MINNETONKA | 55305 | Moderate | WEL |
| 839 | 00203700 | | A | DO | 311722320009 | WHITE BIRCH RD | MINNETONKA | 55305 | Moderate | WEL |
| 840 | 00203706 | | A | DO | 311722320010 | WHITE BIRCH RD | MINNETONKA | 55305 | Moderate | WEL |
| 841 | 00203705 | | A | DO | 311722320013 | WHITE BIRCH RD | MINNETONKA | 55305 | Moderate | WEL |
| 842 | 00203697 | | A | DO | 311722320015 | WHITE BIRCH RD | MINNETONKA | 55305 | Moderate | WEL |
| 843 | 00203701 | | A | DO | 311722320019 | LAUREL RD | MINNETONKA | 55305 | Moderate | WEL |
| 844 | 00203699 | | A | DO | 311722320020 | LAUREL RD | MINNETONKA | 55305 | Moderate | WEL |
| 845 | 00203702 | | A | DO | 311722320022 | WHITE BIRCH RD | MINNETONKA | 55305 | Moderate | WEL |
| 846 | 00203707 | | A | DO | 311722320022 | WHITE BIRCH RD | MINNETONKA | 55305 | Moderate | WEL |
| 847 | 00203703 | | A | DO | 311722320023 | WHITE BIRCH RD | MINNETONKA | 55305 | Moderate | WEL |
| 848 | 00203704 | | A | DO | 311722320024 | WHITE BIRCH RD | MINNETONKA | 55305 | Moderate | WEL |
| 849 | 00203708 | LUNDGREN BROS. | A | DO | 311722330003 | OAKLAND RD | MINNETONKA | 55305 | Moderate | WEL |
| 850 | 00203710 | HUGHES BROS. | A | DO | 311722330004 | OAKLAND RD | MINNETONKA | 55305 | Moderate | WEL |
| 851 | 00203712 | LENHART, A. A. | A | DO | 311722330010 | OAKLAND RD | MINNETONKA | 55305 | Moderate | WEL |
| 852 | 00203713 | ANDERSON, LOWELL A. | A | DO | 311722340013 | FAIRFIELD RD S | MINNETONKA | 55305 | Moderate | WEL |
| 853 | 00203715 | CHURCH | A | DO | 311722420005 | ESSEX RD | MINNETONKA | 55305 | Moderate | WEL |
| 854 | 00203714 | WHITLEY | A | DO | 311722420007 | JEFFRY WAY | MINNETONKA | 55305 | Moderate | WEL |
| 855 | 00203717 | MINNETONKA 12 | A | PC | 311722420009 | JEFFRY WAY | MINNETONKA | 55305 | Moderate | WEL |
| 856 | 00191939 | MINNETONKA 12A | A | PC | 311722420023 | RIDGEDALE DR | MINNETONKA | 55305 | Moderate | WEL |
| 857 | 00203721 | Laurie, Jim | A | DO | 311722430011 | LARKIN DR | MINNETONKA | 55305 | Moderate | WEL |
| 858 | 00203719 | LUNDSTROM CONST. CO. | A | DO | 311722430030 | ESSEX RD | MINNETONKA | 55305 | Moderate | WEL |
| 859 | 00203720 | EDWALL, ROBERT | A | DO | 311722430034 | LARKIN DR | MINNETONKA | 55305 | Moderate | WEL |

Table 3 - Public and Private Wells

| Figure ID | Unique Number | Well Name | Status Code | Use Code | Parcel ID | Address | City | Zip Code | Vulnerability | PCS Code |
|-----------|---------------|--------------------------|-------------|----------|---------------|--------------------|------------|----------|---------------|----------|
| 860 | W0000118 | IMPERIAL DEVELOPERS | A | CO | 311722440036 | PLYMOUTH RD | MINNETONKA | 55305 | Moderate | WEL |
| 861 | 00203749 | WESTMAN, CARL | A | DO | 411722420012 | LINNER RD | MINNETONKA | 55391 | Moderate | WEL |
| 862 | 00223806 | MICHALIK, MICHAEL | A | DO | 1011722140002 | PLYMOUTH RD | MINNETONKA | 55305 | Moderate | WEL |
| 863 | 00223788 | | A | DO | 1011722210052 | OAKLAND RD | MINNETONKA | 55305 | Moderate | WEL |
| 864 | 00204010 | | A | DO | 1011722440010 | MURIEL RD | MINNETONKA | 55305 | Moderate | WEL |
| 865 | 00204013 | OLSON | A | DO | 1011722440022 | MARCH CIR | MINNETONKA | 55305 | Moderate | WEL |
| 866 | 00204012 | OERTEL CONSTRUCTION | A | DO | 1011722440032 | JUNE TER | MINNETONKA | 55305 | Moderate | WEL |
| 867 | 00204014 | WAGNER, LOUIS | A | DO | 1111722110008 | OAK RIDGE LA W | MINNETONKA | 55305 | Moderate | WEL |
| 868 | 00439711 | MARTINSON, RALPH | A | DO | 1111722110017 | PARK RIDGE DR W | MINNETONKA | 55305 | Moderate | WEL |
| 869 | 00204017 | HUTTNER, LESLIE | A | DO | 1111722110029 | LAKEVIEW LA W | MINNETONKA | 55305 | Moderate | WEL |
| 870 | 00204016 | DRAKE, G. A. | A | DO | 1111722110032 | LAKEVIEW LA W | MINNETONKA | 55305 | Moderate | WEL |
| 871 | 00204015 | KOLSRUID, WALLY | A | DO | 1111722110037 | LIVE OAK DR | MINNETONKA | 55305 | Moderate | WEL |
| 872 | 00223801 | | A | DO | 1111722110039 | PARK RIDGE DR W | MINNETONKA | 55305 | Moderate | WEL |
| 873 | 00204018 | HIETANAN, W. | A | DO | 1111722110044 | PARK RIDGE DR W | MINNETONKA | 55305 | Moderate | WEL |
| 874 | 00204019 | HONEY | A | DO | 1111722120008 | LIVE OAK DR | MINNETONKA | 55305 | Moderate | WEL |
| 875 | 00223802 | WILSON, V. E. | A | DO | 1111722120011 | PARK RIDGE DR W | MINNETONKA | 55305 | Moderate | WEL |
| 876 | 00204020 | SODERLUND | A | DO | 1111722120026 | LIVE OAK DR | MINNETONKA | 55305 | Moderate | WEL |
| 877 | 00204021 | DOOLEY, ED | A | DO | 1111722130007 | FETTERLY LA | MINNETONKA | 55305 | Moderate | WEL |
| 878 | 00204022 | KUALEY, PAUL | A | DO | 1111722130009 | FETTERLY LA | MINNETONKA | 55305 | Moderate | WEL |
| 879 | 00204025 | LA MANTIA, CHARLES | A | DO | 1111722130019 | SHERWOOD HILLS RD | MINNETONKA | 55305 | Moderate | WEL |
| 880 | 00204023 | LEEDS, JACK | A | DO | 1111722130023 | SHERWOOD HILLS CIR | MINNETONKA | 55305 | Moderate | WEL |
| 881 | 00223804 | BEATTY, HERBERT O. | A | DO | 1111722130024 | SHERWOOD HILLS CIR | MINNETONKA | 55305 | Moderate | WEL |
| 882 | 00223803 | JOHNSON, ORELAND | A | DO | 1111722130028 | SHERWOOD HILLS RD | MINNETONKA | 55305 | Moderate | WEL |
| 883 | 00158081 | | A | DO | 1111722130031 | SHERWOOD HILLS RD | MINNETONKA | 55305 | Moderate | WEL |
| 884 | 00204024 | BOWEN, ROBERT | A | DO | 1111722130037 | SHERWOOD HILLS RD | MINNETONKA | 55305 | Moderate | WEL |
| 885 | 00149847 | NITZ, DAVID | A | DO | 1111722130043 | SHERWOOD HILLS RD | MINNETONKA | 55305 | Moderate | WEL |
| 886 | 00147855 | MOORE, CLEM | A | DO | 1111722130047 | SHERWOOD HILLS RD | MINNETONKA | 55305 | Moderate | WEL |
| 887 | 00204026 | SCHMITT | A | DO | 1111722130048 | SHERWOOD HILLS RD | MINNETONKA | 55305 | Moderate | WEL |
| 888 | 00204028 | DORN REALTY | A | DO | 1111722140020 | NOTTINGHAM CT | MINNETONKA | 55305 | Moderate | WEL |
| 889 | 00204029 | DORN REALTY | A | DO | 1111722140021 | NOTTINGHAM CT | MINNETONKA | 55305 | Moderate | WEL |
| 890 | 00223805 | HYDE, ARTHUR | A | DO | 1111722210060 | DWIGHT LA | MINNETONKA | 55305 | Moderate | WEL |
| 891 | 00204030 | JOHNSON, FRIDOLPH | A | DO | 1111722220309 | ADDRESS UNASSIGNED | MINNETONKA | 0 | Moderate | WEL |
| 892 | 00204031 | ALEXANDER | A | DO | 1111722230030 | HILLOWAY RD W | MINNETONKA | 55305 | Moderate | WEL |
| 893 | 00161427 | CARTIER, TOM | A | DO | 1111722240023 | BYRNES RD | MINNETONKA | 55305 | Moderate | WEL |
| 894 | 00133350 | NITZ, DAVID | A | DO | 1111722240032 | BYRNES RD | MINNETONKA | 55305 | Moderate | WEL |
| 895 | 00272452 | LEEDS, JACK | A | DO | 1111722240048 | HILLOWAY RD W | MINNETONKA | 55305 | Moderate | WEL |
| 896 | 00204033 | JOHNSON, DOUG | A | DO | 1111722310010 | ORCHARD AVE W | MINNETONKA | 55305 | Moderate | WEL |
| 897 | 00204034 | DORN, MIKE | A | DO | 1111722320001 | SYLVAN RD S | MINNETONKA | 55305 | Moderate | WEL |
| 898 | 00204048 | MCCANN, LLOYD | A | DO | 1211722130043 | CEDARWOOD RIDGE | MINNETONKA | 55305 | Moderate | WEL |
| 899 | 00204050 | LESCHIEDER, PETE | A | DO | 1211722220003 | CAPE COD PL | MINNETONKA | 55305 | Moderate | WEL |
| 900 | 00750624 | EARTH SPIRIT ENVIRONMENT | A | IR | 1211722220007 | CAPE COD PL | MINNETONKA | 55305 | Moderate | WEL |
| 901 | 00204052 | HOLT, S. S. | A | DO | 1211722230033 | MILL RUN | MINNETONKA | 55305 | Moderate | WEL |
| 902 | 00203682 | DEDRICK, GRANVILLE A. | A | DO | 311722110031 | FAIRFIELD RD | MINNETONKA | 55305 | Moderate | WEL |
| 903 | 00203691 | TRIPLETT, JEROME | A | DO | 311722140027 | SUNSET DR S | MINNETONKA | 55305 | Moderate | WEL |
| 904 | 00203696 | | A | DO | 311722310007 | ESSEX RD | MINNETONKA | 55305 | Moderate | WEL |
| 905 | 00203716 | SKOGEN, LYLE | A | DO | 311722420017 | ESSEX RD | MINNETONKA | 55305 | Moderate | WEL |
| 906 | 00137381 | RUTTEN, JOHN N | A | DO | 1111722320008 | PLYMOUTH RD | MINNETONKA | 55305 | Moderate | WEL |
| 907 | 00203793 | GOETZE, BRITTON | A | DO | 911722140021 | MEETING ST | MINNETONKA | 55391 | Low | WEL |
| 908 | 00204138 | BOYER, JOE | A | DO | 1611722110014 | MINNEHAHA CT | MINNETONKA | 55391 | Low | WEL |
| 909 | 00150356 | MINNETONKA 10A | A | PC | 1611722140002 | WILLISTON RD | MINNETONKA | 55345 | Low | WEL |
| 910 | 00204140 | MINNETONKA 10 | A | PC | 1611722140002 | WILLISTON RD | MINNETONKA | 55345 | Low | WEL |
| 911 | 00661401 | MINNETONKA 16A | A | PC | 1611722140002 | WILLISTON RD | MINNETONKA | 55345 | Low | WEL |
| 912 | 00203726 | BAKER, L. J. | A | DO | 411722310008 | CLARENDON DR | MINNETONKA | 55391 | Low | WEL |
| 913 | 00203728 | LAUER, DICK | A | DO | 411722310012 | CLARE LA | MINNETONKA | 55391 | Low | WEL |
| 914 | 00203727 | AULD, JOE | A | DO | 411722320002 | HOLDRIDGE TER | WAYZATA | 55391 | Low | WEL |
| 915 | 00203729 | ASTRUM, CARL | A | DO | 411722320004 | HOLDRIDGE TER | WAYZATA | 55391 | Low | WEL |
| 916 | 00561362 | ESTHER CHRISTENSON TRUST | A | DO | 411722320004 | HOLDRIDGE TER | WAYZATA | 55391 | Low | WEL |
| 917 | 00424071 | KLEVEN, DAVID | A | DO | 411722320007 | HILL RD | WAYZATA | 55391 | Low | WEL |
| 918 | 00620055 | KROECK, GEORGE | A | DO | 411722320012 | HILL RD | WAYZATA | 55391 | Low | WEL |
| 919 | 00462143 | FRANK, SUSAN | A | DO | 411722320014 | HOLDRIDGE TER | WAYZATA | 55391 | Low | WEL |
| 920 | 00615234 | BREMER, BILL | A | DO | 411722320015 | CROSBY RD | WAYZATA | 55391 | Low | WEL |
| 921 | 00650716 | ALLEN-WOLSTEAD, LISA & E | A | DO | 411722320016 | HOLDRIDGE TER | WAYZATA | 55391 | Low | WEL |
| 922 | 00426532 | ROSEN, CASEY | A | DO | 411722320017 | CROSBY RD | WAYZATA | 55391 | Low | WEL |
| 923 | 00538036 | COOK, TIM | A | DO | 411722320019 | CROSBY RD | WAYZATA | 55391 | Low | WEL |
| 924 | 00735741 | SMITH, RUSSELL | A | DO | 411722320020 | HOLDRIDGE TER | WAYZATA | 55391 | Low | WEL |
| 925 | 00419428 | LIPACO, JOHN | A | DO | 411722320022 | HOLDRIDGE TER | WAYZATA | 55391 | Low | WEL |
| 926 | 00184761 | BRIGGS, GARY | A | DO | 411722320024 | HOLDRIDGE TER | WAYZATA | 55391 | Low | WEL |
| 927 | 00112218 | COLLINS, THOMAS | A | DO | 411722320025 | HOLDRIDGE TER | WAYZATA | 55391 | Low | WEL |
| 928 | 00203731 | LINDAHL, JACK | A | DO | 411722320030 | HOLDRIDGE RD E | WAYZATA | 55391 | Low | WEL |
| 929 | 00705933 | HOLDRIDGE LLC | A | DO | 411722320032 | HOLDRIDGE RD E | WAYZATA | 55391 | Low | WEL |
| 930 | 00112226 | LUDWIG, L. J. | A | DO | 411722330001 | HOLDRIDGE RD E | WAYZATA | 55391 | Low | WEL |
| 931 | 00655014 | MALMBERG, JOEL & JEAN | A | DO | 411722330007 | CROSBY RD | WAYZATA | 55391 | Low | WEL |
| 932 | 00621593 | KELLESTAD, LEIGH | A | DO | 411722330008 | CROSBY RD | WAYZATA | 55391 | Low | WEL |
| 933 | 00203733 | | A | DO | 411722330014 | HOLDRIDGE RD E | WAYZATA | 55391 | Low | WEL |
| 934 | 00203732 | JOHNSON, RAY | A | DO | 411722330015 | HOLDRIDGE RD E | WAYZATA | 55391 | Low | WEL |
| 935 | 00203734 | HAIL, DOUGLAS | A | DO | 411722330045 | HOLDRIDGE RD E | WAYZATA | 55391 | Low | WEL |
| 936 | 00203746 | VON BUSCH, ART | A | DO | 411722410011 | BRIGHTWOOD DR | MINNETONKA | 55391 | Low | WEL |
| 937 | 00203747 | BANAZAK | A | DO | 411722410012 | BRIGHTWOOD DR | MINNETONKA | 55391 | Low | WEL |
| 938 | 00136737 | CARLSON, KEN | A | DO | 411722430001 | LINNER RD | MINNETONKA | 55391 | Low | WEL |
| 939 | 00223743 | CARLSON, KENNETH | A | DO | 411722430008 | DEER HILL CT | MINNETONKA | 55391 | Low | WEL |
| 940 | W0000115 | CROSBY, JUDIE | A | DO | 411722430052 | LINNER RD | MINNETONKA | 55391 | Low | WEL |
| 941 | 00203751 | JOHNSON, IVAN | A | DO | 411722440007 | DEER HILL DR | MINNETONKA | 55391 | Low | WEL |
| 942 | 00203752 | LONG, G. R. | A | DO | 411722440008 | DEER HILL DR | MINNETONKA | 55391 | Low | WEL |
| 943 | 00203753 | SMESTAD + ENGQUIST | A | DO | 411722440009 | DEER HILL DR | MINNETONKA | 55391 | Low | WEL |

Table 3 - Public and Private Wells

| Figure ID | Unique Number | Well Name | Status Code | Use Code | Parcel ID | Address | City | Zip Code | Vulnerability | PCS Code |
|-----------|---------------|-----------------------|-------------|----------|---------------|--------------------|----------------|----------|---------------|----------|
| 944 | 00203754 | RYERSE, D. D. | A | DO | 411722440011 | DEER HILL DR | MINNETONKA | 55391 | Low | WEL |
| 945 | 00203750 | MEYERS, CLIFFORD | A | DO | 411722440019 | OAKWAYS | MINNETONKA | 55391 | Low | WEL |
| 946 | 00203766 | EXTURM, ED | A | DO | 511722440006 | RINGER RD | MINNETONKA | 55391 | Low | WEL |
| 947 | 00203763 | BUDINGER | A | DO | 511722440013 | RINGER RD | MINNETONKA | 55391 | Low | WEL |
| 948 | 00203767 | PIERCE, C.C. | A | DO | 511722440015 | LYMAN LA | MINNETONKA | 55391 | Low | WEL |
| 949 | 00203765 | PIERCE | A | DO | 511722440016 | RINGER RD | MINNETONKA | 55391 | Low | WEL |
| 950 | 00203769 | HEIL, RICHARD | A | DO | 511722440025 | LYMAN LA | MINNETONKA | 55391 | Low | WEL |
| 951 | 00203764 | BOYER, JOE | A | DO | 511722440038 | RINGER RD | MINNETONKA | 55391 | Low | WEL |
| 952 | 00688960 | | A | DO | 511722440039 | CROSBY RD | WAYZATA | 55391 | Low | WEL |
| 953 | 00223744 | MICHAEL, WAYNE | A | DO | 911722110002 | MEETING ST | MINNETONKA | 55391 | Low | WEL |
| 954 | 00223745 | STEDMAN | A | DO | 911722110006 | MEETING ST | MINNETONKA | 55391 | Low | WEL |
| 955 | 00203792 | GOETZE, B. A. | A | DO | 911722130057 | STONE RD | MINNETONKA | 55391 | Low | WEL |
| 956 | 00204007 | WATERHOUSE, RAY | A | DO | 911722440008 | MAYFIELD RD | MINNETONKA | 55391 | Low | WEL |
| 957 | 00204006 | WATERHOUSE, RAY | A | DO | 911722440010 | MAYFIELD RD | MINNETONKA | 55391 | Low | WEL |
| 958 | 00204004 | WATERHOUSE, RAY | A | DO | 911722440013 | MAYFIELD RD | MINNETONKA | 55391 | Low | WEL |
| 959 | 00204005 | WATERHOUSE, RAY | A | DO | 911722440014 | MAYFIELD RD | MINNETONKA | 55391 | Low | WEL |
| 960 | 00426893 | COLWELL, FELTON | A | DO | 911722440025 | COPPERFIELD PL | MINNETONKA | 55391 | Low | WEL |
| 961 | 204008 | MINNETONKA 9 | A | MU | 1011722220022 | ADDRESS UNASSIGNED | MINNETONKA | 0 | Low | WEL |
| 962 | 00791777 | WEBER, LOUIS | A | DO | 1011722240013 | OAKLAND RD | MINNETONKA | 55305 | Low | WEL |
| 963 | 00276376 | OLSON, H.S. | A | DO | 411722310003 | CLARENDON DR | MINNETONKA | 55391 | Low | WEL |
| 964 | 00750674 | FITZGERALD, SUZANNE | A | DO | 411722320008 | HILL RD | WAYZATA | 55391 | Low | WEL |
| 965 | 00127500 | BRITIAN, BOB | A | DO | 411722320010 | HOLDRIDGE TER | WAYZATA | 55391 | Low | WEL |
| 966 | 00204556 | OLSON, DON | A | DO | 2311722330013 | BRIARWOOD TER | MINNETONKA | 55343 | High | WEL |
| 967 | 00204555 | OLSON, DON | A | DO | 2311722330018 | BRIARWOOD TER | MINNETONKA | 55343 | High | WEL |
| 968 | 00204561 | UNDESTAD | A | DO | 2311722340034 | JAMES RD | MINNETONKA | 55343 | High | WEL |
| 969 | 00204562 | UNDESTAD | A | DO | 2311722340035 | JAMES RD | MINNETONKA | 55343 | High | WEL |
| 970 | 00204563 | UNDESTAD | A | DO | 2311722340038 | JAMES RD | MINNETONKA | 55343 | High | WEL |
| 971 | 00204565 | UNDESTAD, N. | A | DO | 2311722340039 | JAMES RD | MINNETONKA | 55343 | High | WEL |
| 972 | 00204566 | DONEFF, JACK | A | DO | 2311722340040 | JAMES RD | MINNETONKA | 55343 | High | WEL |
| 973 | 00204560 | UNDESTAD | A | DO | 2311722340043 | JAMES RD | MINNETONKA | 55343 | High | WEL |
| 974 | 00249976 | WALDENBERGER, LYNETTE | A | DO | 1811721210035 | 31ST ST W | ST. LOUIS PARK | 55426 | High | WEL |
| 975 | 00224065 | SAMUELSON, C.S. | A | UN | 1811721210077 | COBBLECREST CT | ST. LOUIS PARK | 55426 | High | WEL |
| 976 | 00203192 | TINKER, DR. H. A. | A | UN | 711721340030 | CAVELL AVE S | ST. LOUIS PARK | 55426 | High | WEL |

APPENDIX B
Figures

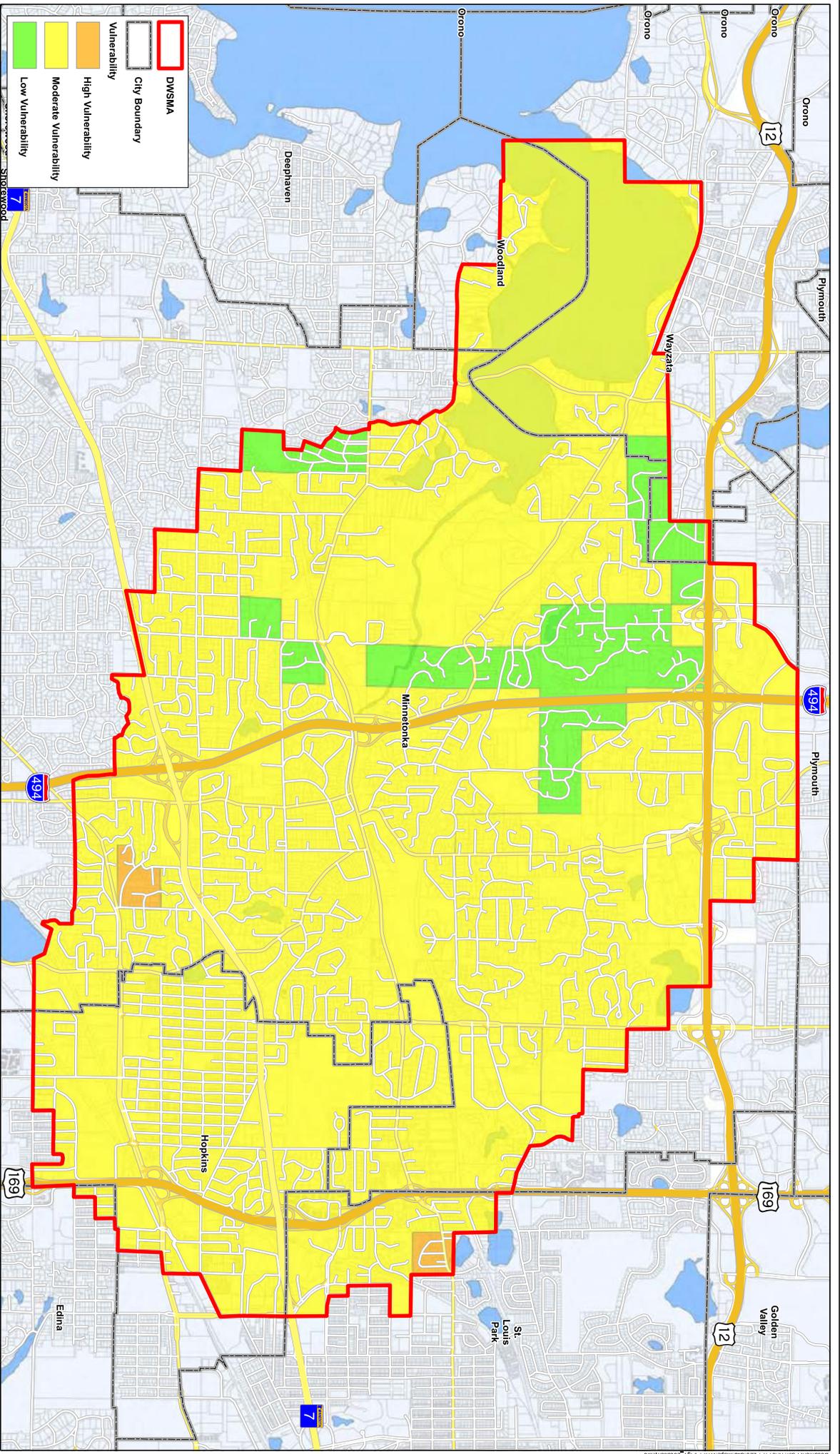
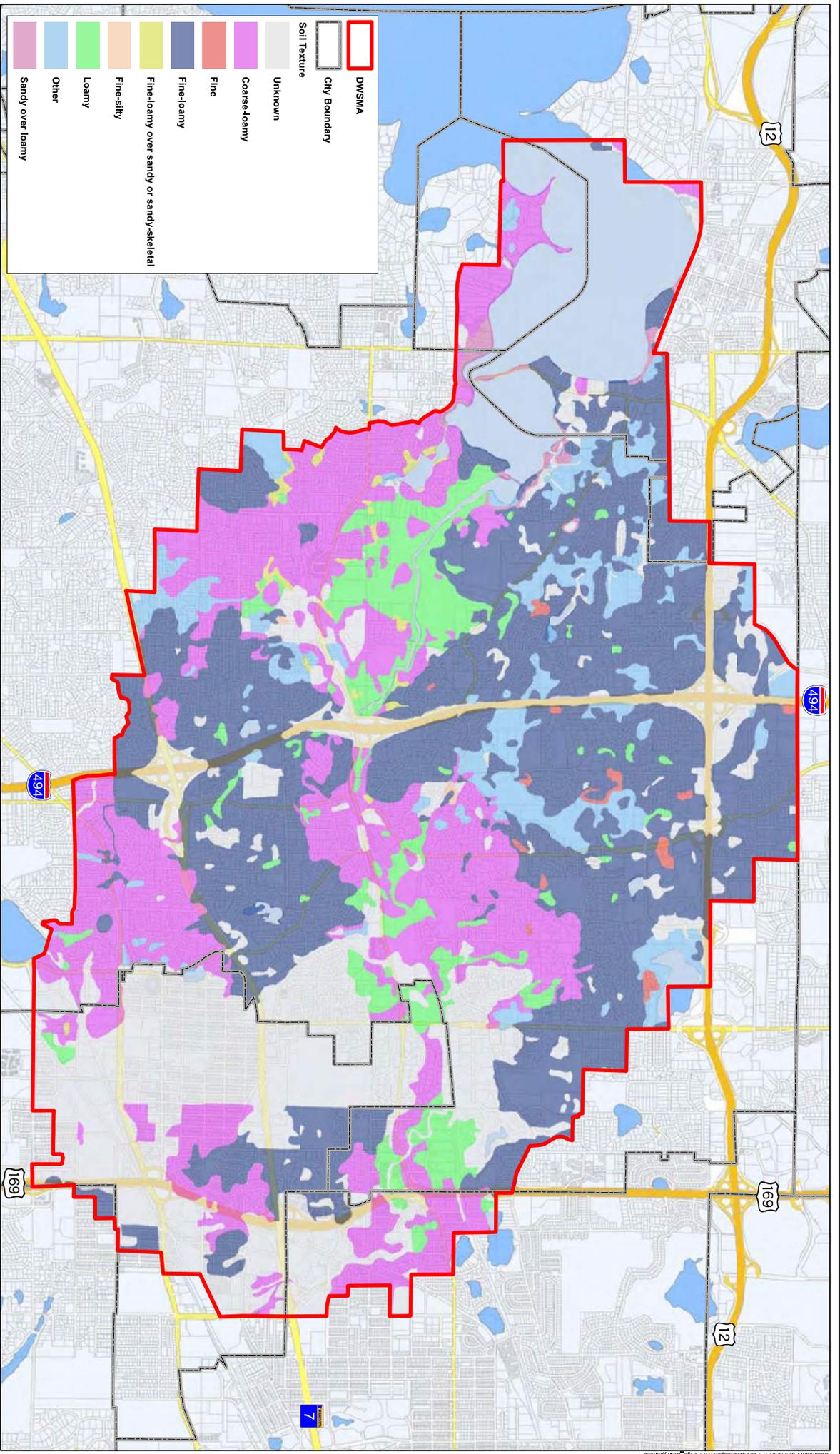


Figure 1: DWSMA Vulnerability
Wellhead Protection Plan
City of Hopkins



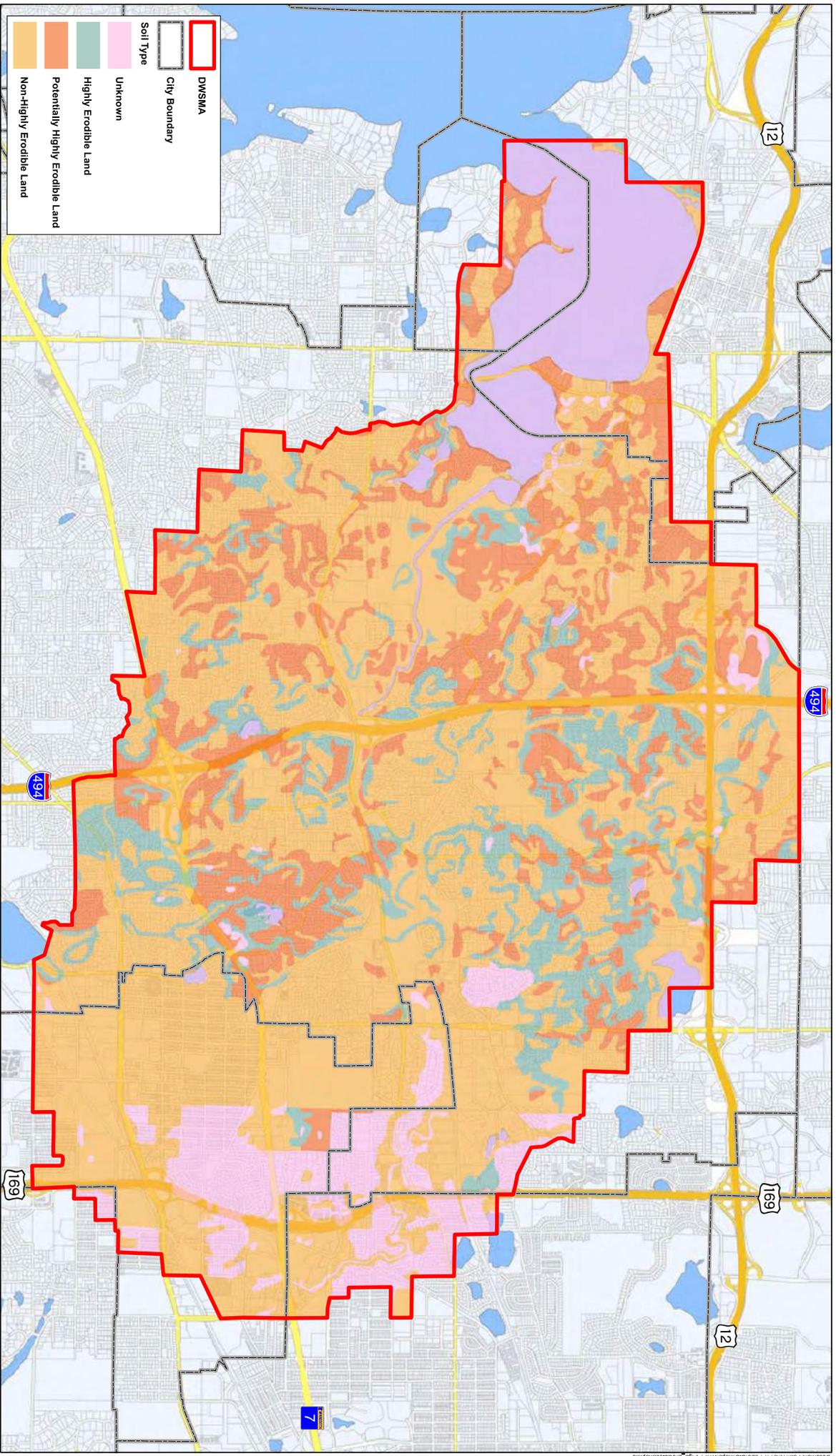


| | |
|--------------|-----------------------------------------|
| | DWSMA |
| | City Boundary |
| Soil Texture | |
| | Sandy over loamy |
| | Other |
| | Loamy |
| | Fine-silty |
| | Fine-loamy over sandy or sandy-skeletal |
| | Fine-loamy |
| | Fine |
| | Coarse-loamy |
| | Unknown |



Figure 2: Soil Type
Wellhead Protection Plan
City of Hopkins



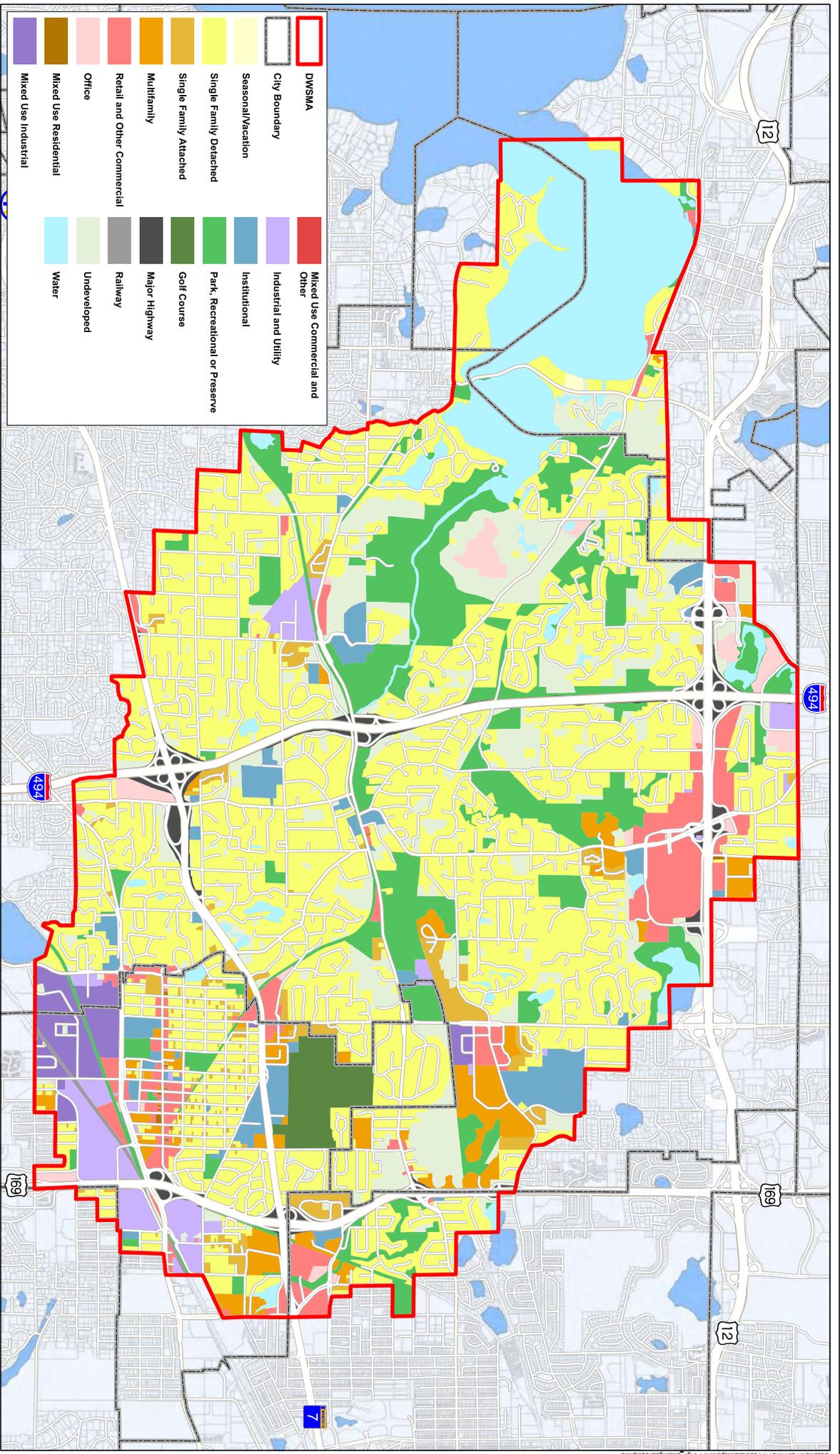


| | |
|-----------|----------------------------------|
| | DWSMA |
| | City Boundary |
| Soil Type | |
| | Unknown |
| | Highly Erodible Land |
| | Potentially Highly Erodible Land |
| | Non-Highly Erodible Land |



Figure 3: Erodible Land
Wellhead Protection Plan
City of Hopkins



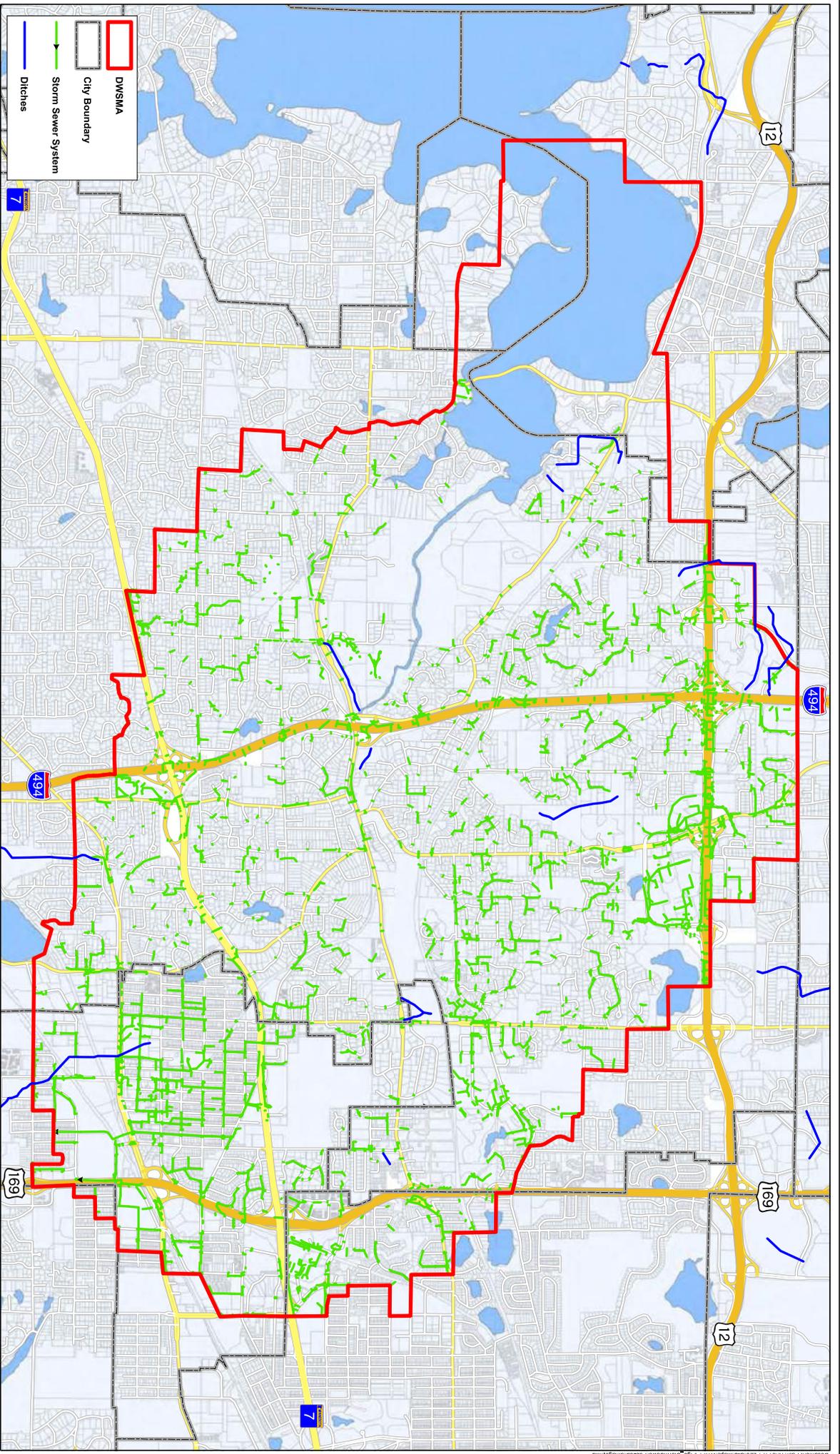


| | | | |
|--------------------------------------------------------------------------------------------------------|-----------------------------|-------------------------------------------------------------------------------------------------------|--------------------------------|
| | DWSMA | | Mixed Use Commercial and Other |
| | City Boundary | | Industrial and Utility |
| | Seasonal/Vacation | | Institutional |
| | Single Family Detached | | Park, Recreational or Preserve |
| | Single Family Attached | | Golf Course |
| | Multifamily | | Major Highway |
| | Retail and Other Commercial | | Railway |
| | Office | | Undeveloped |
| | Mixed Use Residential | | Water |
| | Mixed Use Industrial | | |



Figure 4: Existing Land Use
Wellhead Protection Plan
City of Hopkins





**Figure 5: Storm Sewer and Public Drainage
Wellhead Protection Plan
City of Hopkins**

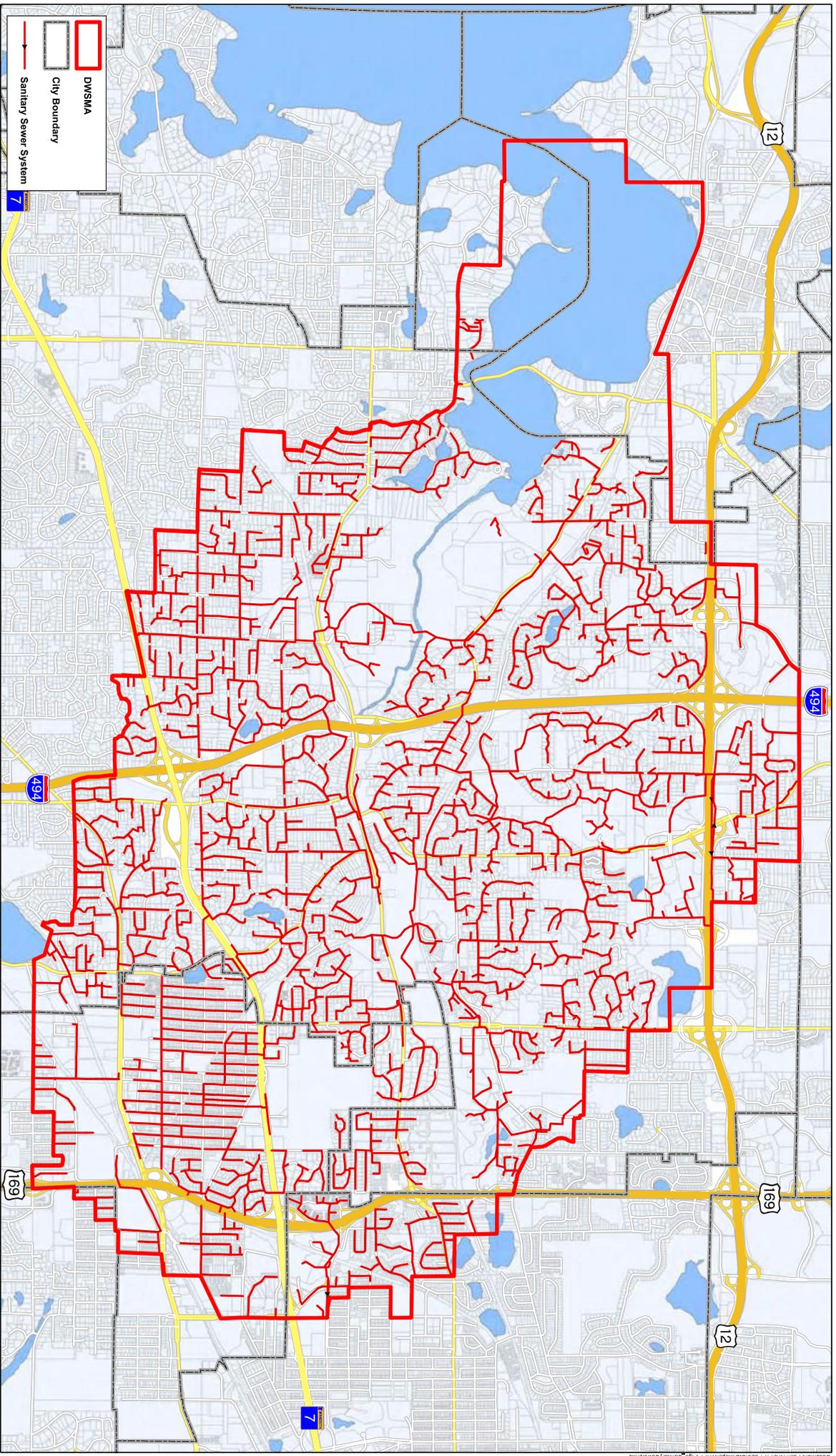
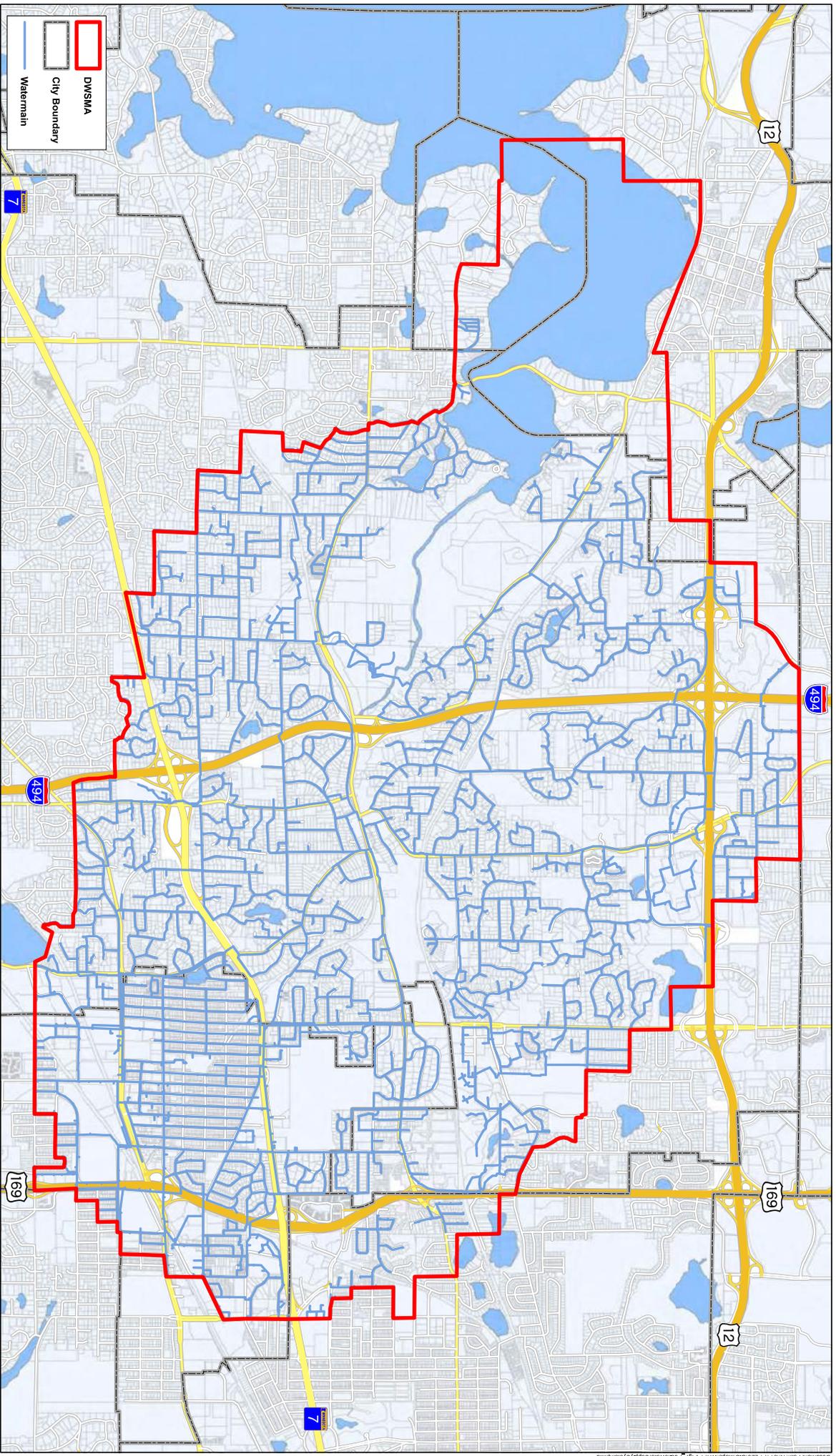


Figure 6: Sanitary Sewer Wellhead Protection Plan
City of Hopkins





**Figure 7 : Public Water Supply System
Wellhead Protection Plan
City of Hopkins**

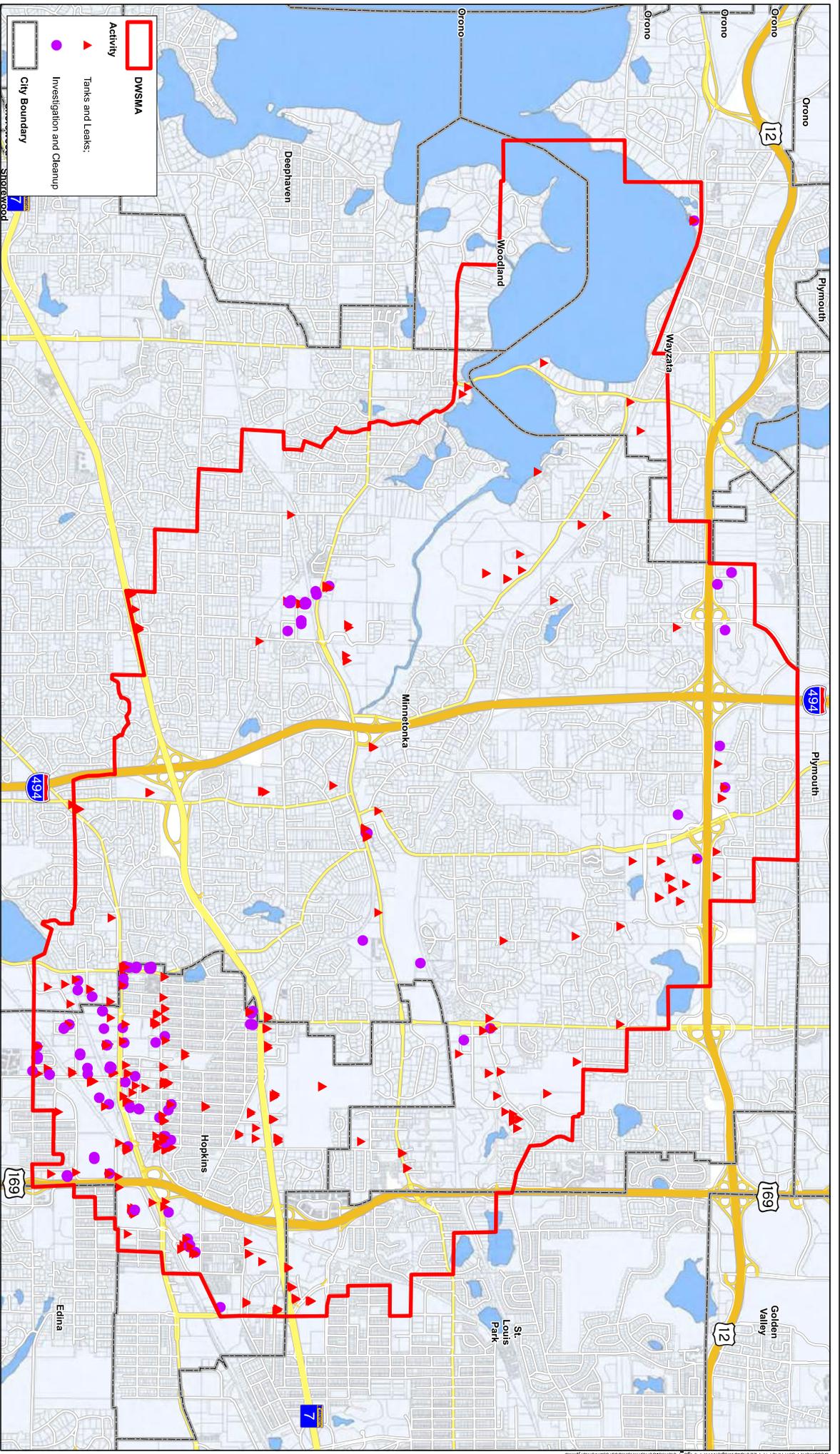


Figure 8: Potential Contaminant Source Inventory
Wellhead Protection Plan
City of Hopkins



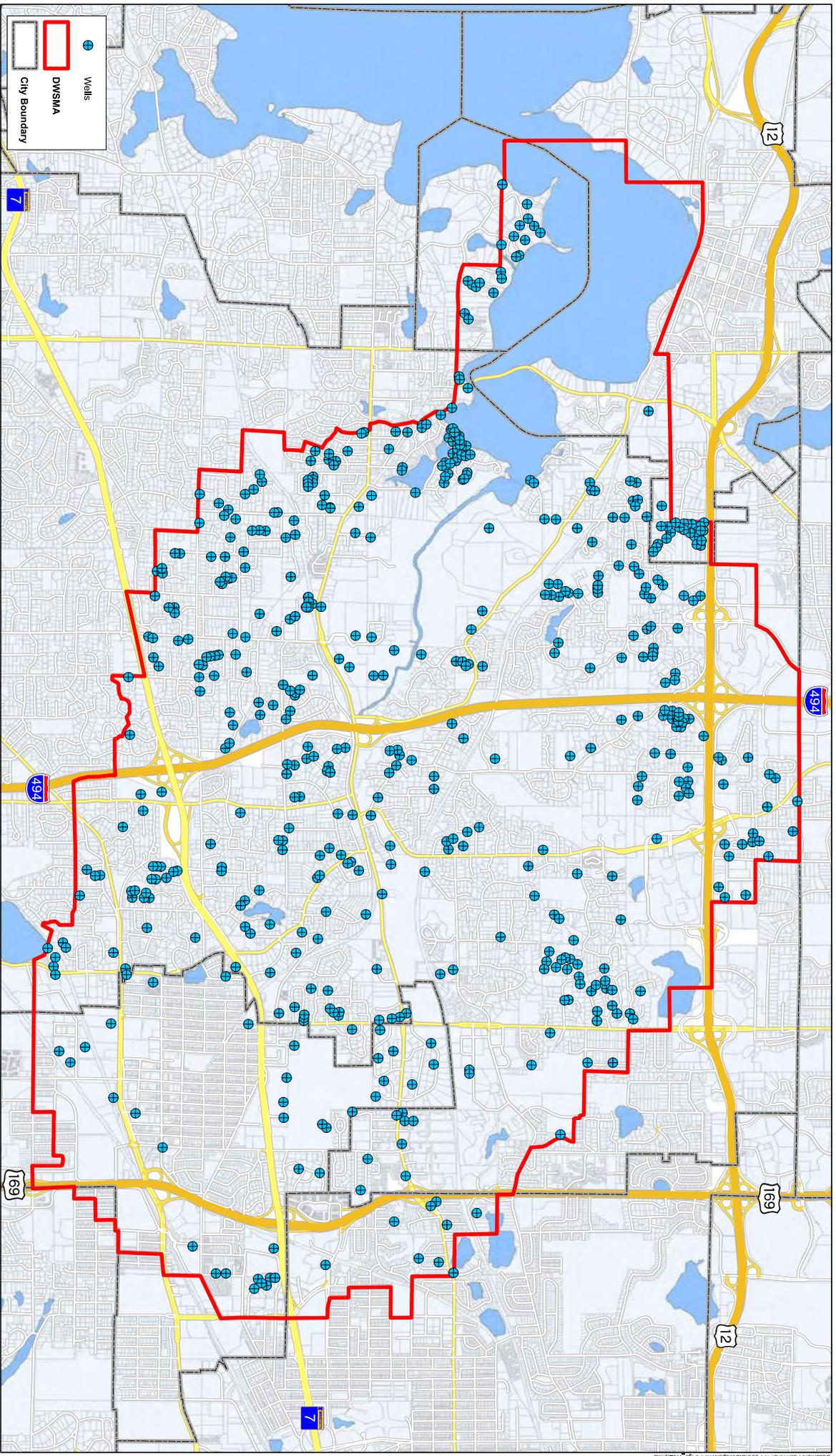


Figure 9: Wells
Wellhead Protection Plan
City of Hopkins

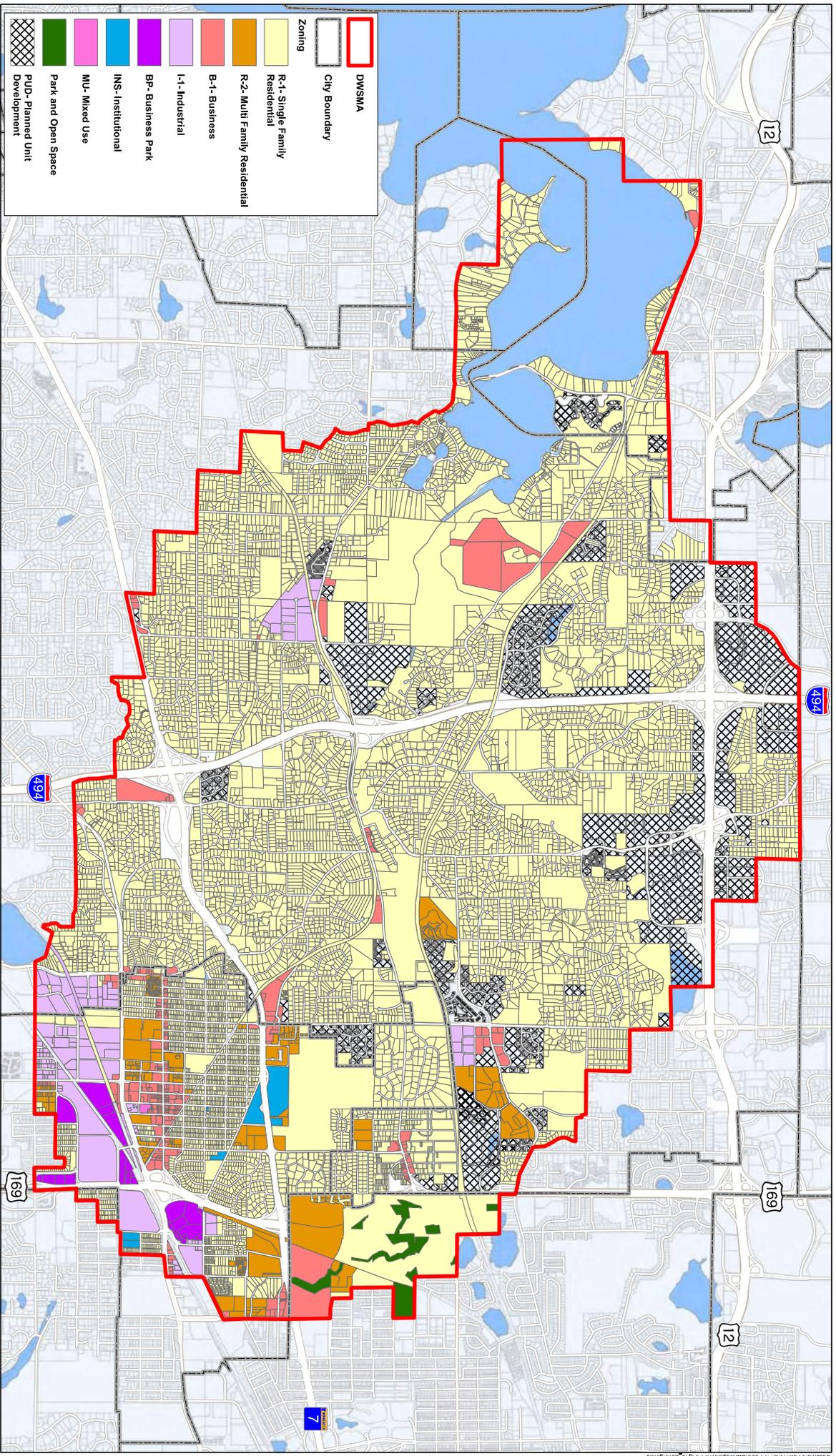


Figure 10: Zoning
Wellhead Protection Plan
City of Hopkins



APPENDIX C
Wellhead Protection Plan Part 1

**Amendment to the
Wellhead Protection Plan**

Part 1

**Delineation of Wellhead Protection Area, Drinking Water Supply Management
Area, and Drinking Water Supply
Management Area Vulnerability Assessment**

March 2015

Prepared for

The City of Hopkins

by

Leggette, Brashears & Graham, Inc.

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Glossary of Terms

Data Element. A specific type of information required by the Minnesota Department of Health to prepare a Wellhead Protection Plan.

Drinking Water Supply Management Area (DWSMA). The area delineated using identifiable land marks that reflects the scientifically calculated wellhead protection area boundaries as closely as possible (Minnesota Rules, part 4720.5100, subpart 13).

Drinking Water Supply Management Area Vulnerability. An assessment of the likelihood that the aquifer within the DWSMA is subject to impact from land and water uses within the wellhead protection area. It is based upon criteria that are specified under Minnesota Rules, part 4720.5210, subpart 3.

Emergency Response Area (ERA). The part of the wellhead protection area that is defined by a one-year time of travel within the aquifer that is used by the public water supply well (Minnesota Rules, part 4720.5250, subpart 3). It is used to set priorities for managing potential contamination sources within the DWSMA.

Inner Wellhead Management Zone (IWMZ). The land that is within 200 feet of a public water supply well (Minnesota Rules, part 4720.5100, subpart 19). The public water supplier must manage the IWMZ to help protect it from sources of pathogen or chemical contamination that may cause an acute health effect.

Wellhead Protection (WHP). A method of preventing well contamination by effectively managing potential contamination sources in all or a portion of the well's recharge area.

Wellhead Protection Area (WHPA). The surface and subsurface area surrounding a well or well field that supplies a public water system, through which contaminants are likely to move toward and reach the well or well field (Minnesota Statutes, part 103I.005, subdivision 24).

Well Vulnerability. An assessment of the likelihood that a well is at risk to human-caused contamination, either due to its construction or indicated by criteria that are specified under Minnesota Rules, part 4720.5550, subpart 2.

Acronyms

ATP - Aquifer Test Plan

CFR - Calculated Fixed Radius

CWI - County Well Index

DNR - Minnesota Department of Natural Resources

EPA - United States Environmental Protection Agency

FSA - Farm Security Administration

MDA - Minnesota Department of Agriculture

MDH - Minnesota Department of Health

MGS - Minnesota Geological Survey

MnDOT - Minnesota Department of Transportation

MnGEO - Minnesota Geospatial Information Office

MPCA - Minnesota Pollution Control Agency

NRCS - Natural Resource Conservation Service

SWCD - Soil and Water Conservation District

SWUDS – State Water Use Database System

UGE - Upgradient Extensions

UMN - University of Minnesota

USDA - United States Department of Agriculture

USGS - United States Geological Survey

1. Introduction

Leggette, Brashears and Graham, Inc. (LBG) has developed Part 1 of the Wellhead Protection (WHP) Plan for the City of Hopkins, Minnesota (City) (public water supply identification number 1270016). The work was performed in accordance with the Minnesota Wellhead Protection Rule (MR), parts 4720.5100 to 4720.5590. The City's existing WHP Plan, approved in 2007, is being amended now to have this amendment completed and approved by the expiration of the previous plan on September 15, 2017.

The results of the development of this amended WHP Plan are presented in the text below, on Tables 1 through 7, Figures 1 through 11, and in Appendix A, which are listed in the Table of Contents.

This report presents delineations of the wellhead protection area (WHPA) and drinking water supply management area (DWSMA), and the vulnerability assessments for the public water supply wells and DWSMA. Figure 8 shows the boundaries of the WHPA and the DWSMA. These are based on WHPAs for the City's three wells that are defined by a 10-year time of travel and fracture flow considerations. Figure 8 also shows the emergency response area (ERA), which are defined by a 1-year time of travel. An inner wellhead management zone (IWMZ), which is the area within a 200-foot radius around the well, serves as the wellhead protection area for emergency wells, and is not displayed in this report. Definitions of rule-specific terms that are used are provided in the "Glossary of Terms".

This report also lists the technical information that was used to prepare this portion of the WHP Plan in accordance with the MR. Information pertaining to the Determination of Aquifer Properties and Aquifer Test Plan (DAP-ATP) and the well vulnerability sheets can be obtained from the Minnesota Department of Health (MDH).

The City Wells included in the WHP Plan are listed in Table 1.

**Table 1 - Water Supply Well Information
City of Hopkins**

| Local Well Name | Unique Number | Type | Casing Diameter (inches) | Casing Depth (feet) | Well Depth (feet) | Date Constructed/Reconstructed | Well Vulnerability | Aquifer |
|-----------------|---------------|-----------|--------------------------|---------------------|-------------------|--------------------------------|--------------------|---------|
| Well No. 1 | 204573 | Emergency | 16 x 12 | 286 | 482 | 1905 | Vulnerable | OPCJ |
| Well No. 4 | 204068 | Primary | 24 x 20 | 410 | 548 | 1954 | Vulnerable | OPCJ |
| Well No. 5 | 204570 | Primary | 36x24x16 | 382 | 495 | 1967 | Vulnerable | OPCJ |
| Well No. 6 | 112228 | Primary | 30 x 24 | 354 | 545 | 1977 | Vulnerable | OPCJ |

OPCJ- Prairie du Chien - Jordan

2. Assessment of the Data Elements

Table 2 presents the assessment of the data elements as outlined in the MDH’s scoping letter relative to the present and future implications of planning items that are specified in MR, part 4720.5210.

Table 2 - Assessment of Data Elements

| Data Element | Present and Future Implications | | | | Data Source (See Selected References for Numbered Citations) |
|----------------------------------------------------|---------------------------------|----------------------|------------------------------------|-----------------------------------|--------------------------------------------------------------------|
| | Use of the Well (s) | Delineation Criteria | Quality and Quantity of Well Water | Land and Groundwater Use in DWSMA | |
| Precipitation | | | | | |
| Geology | | | | | |
| Maps and geologic descriptions | H | H | H | H | MGS, 2000 and 2013, CWI |
| Subsurface data | H | H | H | H | MGS, 2000 and 2013, CWI |
| Borehole geophysics | H | H | H | H | MGS |
| Surface geophysics | | | | | None Available |
| Maps and soil descriptions | | | | | |
| Water Resources | | | | | |
| Watershed units | | | | | |
| List of public waters | | | | | |
| Land Use | | | | | |
| Parcel boundaries map | L | L | L | L | Hennepin County GIS Data |
| Political boundaries map | L | H | L | L | ESRI Data |
| PLS map | L | H | L | L | ESRI Data |
| Public Utility Services | | | | | |
| Transportation routes and corridors | L | M | M | M | ESRI |
| Storm/sanitary sewers and PWS system map | | | | | |
| Public drainage systems map or list | | | | | |
| Records of well construction, maintenance, and use | H | H | H | H | City, CWI, MDH Files |
| Surface Water Quantity | | | | | |
| Stream flow data | | | | | |
| Ordinary high water mark data | | | | | |
| Permitted withdrawals | | | | | |
| Protected levels/flows | | | | | |
| Water use conflicts | | | | | |
| Groundwater Quantity | | | | | |
| Permitted withdrawals | H | H | H | H | DNR |
| Groundwater use conflicts | H | H | H | H | DNR |
| Water levels | H | H | H | H | DNR, MPCA, MDH, City |

| Data Element | Present and Future Implications | | | | Data Source (See Selected References for Numbered Citations) |
|-------------------------------------|---------------------------------|----------------------|------------------------------------|-----------------------------------|-----------------------------------------------------------------|
| | Use of the Well (s) | Delineation Criteria | Quality and Quantity of Well Water | Land and Groundwater Use in DWSMA | |
| Surface Water Quality | | | | | |
| Monitoring data summary | L | M | | | MDH, MPCA, MDA, DNR, City |
| Groundwater Quality | | | | | |
| Monitoring data | | | | | |
| Isotopic data | H | H | H | H | MPCA, MDH, USGS, UMN |
| Tracer studies | | | | | None Available |
| Contamination site data | | | | | |
| MPCA and MDA spills/release reports | H | H | H | | MPCA and MDA |

Definitions Used for Assessing Data Elements:

High (H) – The element has a direct impact.

Moderate (M) – The element has an indirect or marginal impact.

Low (L) – The element has little if any impact.

Shaded – The element was not required by MDH for preparing the WHP Part 1 Plan.

3. General Descriptions

3.1 Description of the Water Supply System

The City, shown on Figure 1, obtains its drinking water supply from 3 primary wells, City Wells No. 4, 5, and 6. The wells are shown on Figure 1 and Table 1 summarizes information regarding them.

3.2 Description of the Hydrogeologic Setting

The geology in the vicinity of the City consists of Quaternary-age glacial and post-glacial deposits that are underlain by Ordovician and Cambrian-aged bedrock. Clay and sand deposits are predominant throughout the study area. The uppermost bedrock over much of the area in and around the City consists of the Platteville and Glenwood Formations. These overlie, in order of depth, the St. Peter Sandstone, the Prairie du Chien Group, the Jordan Sandstone, the St. Lawrence Formation, the Tunnel City Group, the Wonewoc Sandstone, the Eau Claire Formation and the Mt. Simon Sandstone. A summary of the hydrologic conditions at the City Wells is presented in Tables 3a and 3b.

The layers of interest in this study are the Prairie du Chien Group and Jordan Sandstone as the City's production wells are completed solely within these aquifers. These two aquifers are referred to herein as the Prairie du Chien and Jordan Aquifers. The Jordan Aquifer is underlain by the St. Lawrence formation, a dolomitic siltstone that acts as a regional aquitard and confining layer, effectively isolating the layers from deeper bedrock aquifers.

Table 3a - Description of the Prairie du Chien Aquifer at Hopkins Wells

| Aquifer | Attribute | Descriptor | Data Source |
|-------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Prairie du Chien (OPDC) | Aquifer Material | Shale, Dolomite | City Well Logs |
| | Primary Porosity | 0.056 | Typical of aquifer material and recommended by MDH. |
| | Aquifer Thickness | 115 - 119 | City Well Logs (OPDC) |
| | Stratigraphic Top Elevation | 637 – 656 ft-amsl | City Well Logs |
| | Stratigraphic Bottom Elevation | 519 – 536 ft-amsl | City Well Logs |
| | Hydraulic Confinement | Confined | City Well Logs |
| | Transmissivity (T) | Reference Value: 20,532 ft ² /day | The reference value for the OPDC was calculated using a pumping test on both the OPDC and CJDN aquifers at City Well No. 5 in 2005 and a test on the CJDN aquifer at Minnetonka City Well No. 6a in 1994. |
| | Hydraulic Conductivity (K) | Reference Value/Range: 177 ft/day (88.5 – 304 ft/day) | The reference value for the conductivity of the OPDC was determined by dividing the reference transmissivity by the thickness of the OPDC at City Well No. 5. The high end of the range was defined by an MDH re-analysis of the pumping test at City Well No. 5 from 2014 (see DAP-ATP). The low end of the range is equal to half of the reference value. |
| Groundwater Flow Field | Flow to the east and south (variable) Hydraulic Gradient: 2.0×10^{-3} | Measured from model results. Flow generally toward the Mississippi River. | |

- ft-amsl = feet above mean sea level (NAVD 88)

Table 3b - Description of the Jordan Aquifer at Hopkins Wells

| Aquifer | Attribute | Descriptor | Data Source |
|-------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Jordan Sandstone (CJDN) | Aquifer Material | Sandstone | City Well Logs |
| | Primary Porosity | 0.2 | Typical of aquifer material and recommended by MDH. |
| | Aquifer Thickness | 60 - 105 ft | City Well Logs |
| | Stratigraphic Top Elevation | 519 - 536 ft-amsl | City Well Logs |
| | Stratigraphic Bottom Elevation | 423 - 474 ft-amsl | City Well Logs |
| | Hydraulic Confinement | Confined | City Well Logs |
| | Transmissivity (T) | Reference Value: 1,548 ft ² /day | The reference value for the transmissivity of the CJDN aquifer calculated from the conductivity determined from a pumping test at City of Minnetonka Well No. 6a in 1994 and the thickness of the CJDN at City Well No. 5. |
| | Hydraulic Conductivity (K) | Reference Value/Range: 25.9 ft/day (22 – 71.8 ft/day) | The reference value was determined from a CJDN-only pumping test at City of Minnetonka Well No. 6a in 1995 and the range was determined from a test at City of Medina Well No. 6 in 2007 and specific capacity data from CJDN-only wells in the area. |
| Groundwater Flow Field | Flow to the east and south (variable) Hydraulic Gradient: 2.0×10^{-3} | Measured from model results. Flow generally toward the Mississippi River. | |

4. Delineation of the Wellhead Protection Area

4.1 Delineation Criteria

The boundaries of the WHPA for the City are shown in Figure 8. Table 4 provides descriptions of how the delineation criteria that are specified under MR, part 4720.5510 were included in the model.

Table 4 - Description of WHPA Delineation Criteria

| Criterion | Descriptor | How the Criterion was Addressed |
|------------------------------|--------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Flow Boundary | Mississippi and Minnesota Rivers, Bassett and Minnehaha Creeks, Lake Minnetonka and other local lakes. | The rivers provide boundary conditions within the regional model near the City. They are included in the local model and help set the local groundwater flow. |
| Daily Volume of Water Pumped | See Table 5 | Pumping information was obtained from the Minnesota Department of Natural Resources (DNR) Appropriations Permit 1975-6245. The annual pumped volumes were converted to a daily volume pumped by a well. |
| Flow Boundary | Other High-Capacity Wells (Table 6) | The pumping amounts were determined based on the averaged 2010-2014 pumped volumes. The pumping amounts of these high-capacity wells were included in the methods used for the delineation. |
| Groundwater Flow Field | See Figures 3 through 5 | The model calibration process addressed the relationship between the calculated versus observed groundwater flow field. |
| Aquifer Transmissivity | Reference Value 22,080 ft ² /day | The reference value for the transmissivity of the combined OPDC and CJDN Aquifers was determined from a pumping test conducted at City Well No. 5 in 2005. |
| Time of Travel | 10 years | The public water supplier selected a 10-year time of travel. |

Information provided by the City and from the DNR MPARS database were used to identify the maximum volume of water pumped annually by each well over the previous five-year period (2010 – 2014). The volumes pumped from the wells over previous five years and the rates used in the delineation are summarized in Table 5. The total volume illustrated in Table 5 (1,094.3 MGY) is approximately 33% greater than the highest single-year demand over the period of record (820 MGY in 2011), indicating a conservative delineation volume. The daily volume of discharge used as an input parameter in the model was calculated by dividing the annual withdrawal volume by 365 days.

Table 5 - Annual Volume of Water Discharged from Water Supply Wells

| Well Name | Unique Number | Total Annual Withdrawal (million gallons/year)(MGY) | | | | | Maximum Withdrawal 2010 - 2014 (MGY) | Daily Withdrawal used in WHP Plan (m3/d) |
|---------------|---------------|-----------------------------------------------------|--------------|-------|-------|------------|--------------------------------------|------------------------------------------|
| | | 2010 | 2011 | 2012 | 2013 | 2014 | | |
| Well No. 1 | 204573 | 0 | 0 | 0 | 0 | 0 | 0.0 | |
| Well No. 4 | 204068 | 476.9 | <u>561.2</u> | 460 | 489.6 | 440.2 | 5,814.0 | |
| Well No. 5 | 204570 | 0 | 78.1 | 191.8 | 198.2 | <u>216</u> | 2,237.8 | |
| Well No. 6 | 112228 | <u>317.1</u> | 180.7 | 119.8 | 129.8 | 317.1 | 3,285.2 | |
| Totals | | 794 | 820 | 771.6 | 817.6 | 812.6 | 1,094.3 | |
| | | | | | | | 11,336.9 | |

- Source: The DNR State Water Use Database System (MPARS) Permit Number 1965-6425.

- Underlined values used in model for WHPA delineation.

Table 6 - Other Permitted High-Capacity Wells within 2 Miles of City Wells

| Unique Number | Well Name | DNR Permit Number | Aquifer | Use | Annual Volume of Water Pumped* (million gallons) | Daily Volume (cubic meters) |
|---------------|--------------------------|-------------------|----------|-------------------------------|--------------------------------------------------|-----------------------------|
| 203613 | Edina, City of | 1973-1119 | CJDN | Municipal/Public Water Supply | 374.86 | 3,883.5 |
| 203614 | Edina, City of | 1973-1119 | CMTS | Municipal/Public Water Supply | 111.9 | 1,159.3 |
| 132263 | Minnetonka, City Of | 1979-6207 | OPDCCJDN | Municipal/Public Water Supply | 182.6 | 1,891.7 |
| 205165 | Minnetonka, City Of | 1979-6207 | OPDCCJDN | Municipal/Public Water Supply | 182.2 | 1,888.0 |
| 204054 | Minnetonka, City Of | 1979-6207 | CJDN | Municipal/Public Water Supply | 127.9 | 1,324.6 |
| 208012 | Minnetonka, City Of | 1979-6207 | CJDN | Municipal/Public Water Supply | 111.6 | 1,155.8 |
| 204537 | Minnetonka, City Of | 1979-6207 | OPDCCJDN | Municipal/Public Water Supply | 85.0 | 880.4 |
| 160021 | Minnetonka, City Of | 1979-6207 | OPDCCJDN | Municipal/Public Water Supply | 92.1 | 953.9 |
| 204072 | Oak Ridge Country Club | 1966-1167 | OPDCCJDN | Golf Course Irrigation | 28.7 | 296.8 |
| 216050 | St Louis Park, City Of | 1988-6213 | OPCJ | Pollution Containment | 27.6 | 285.7 |
| 453805 | Interlachen Country Club | 1969-0490 | OPCJ | Golf Course Irrigation | 15.9 | 164.7 |

- Source: The DNR State Water Use Database System (MPARS) average pumping data from 2010-2014

4.2 Method Used to Delineate the Wellhead Protection Area

The WHPA for each City Well was determined using a combination of two delineations. The first was a porous media groundwater flow model. The second was a fracture flow delineation, which considers flow through fractured bedrock that could potentially significantly expand the capture zone of a well.

4.2.1. Porous Media Delineation

The porous media delineations of the WHPA for the City Wells were completed using an existing regional MODFLOW model, Metromodel 2.0, which was provided by the Metropolitan Council (Met Council, 2009). MODFLOW is a 3D, cell-centered, finite difference, saturated flow model developed by the USGS (Harbaugh et al., 2005).

The regional Metromodel consists of nine layers that represent the major aquifers and aquitards within the seven-county metropolitan area. These layers represent, from top to bottom, the following units: (1) surficial aquifer of glacial deposits; (2) St. Peter Sandstone or Quaternary Buried Artesian Aquifer; (3) Prairie du Chien Group; (4) Jordan Sandstone; (5) St. Lawrence Formation (aquitard); (6) Tunnel City Group; (7) Wonewoc Sandstone; (8) Eau Claire Formation (aquitard); and, (9) Mt. Simon Sandstone. The regional groundwater model was calibrated to steady-state water levels and river base flows.

A local-scale model, limited to parts of Hennepin and Ramsey Counties, was extracted from the regional seven-county model and is shown on Figures 1 through 4. The local model and all of the modeling for this amendment was completed using GMS (Aquaveo, 2015), a pre- and post-processor for MODFLOW. The local model was created using the technique of local grid refinement where a smaller, more refined grid is used within the regional model. The heads computed from the regional model then provide some of the boundary conditions for the local model as specified heads. The size of the domain and the general flow-field characteristics of the model were based on the Metromodel and the results of the original delineation.

The local model domain was divided into a three-dimensional, non-uniform grid. The model has 329 rows, 395 columns, and nine layers. The details of the Metromodel were translated to the local-scale model using GMS. Finer grid spacing was applied in the local model with telescopic mesh refinement used in the area of the site where the City Wells are located. This grid spacing (3 m in the area of the City's wells) provides better definition in the area of the flow field where simulating the influence of pumping from the wells is critical. The base of the model is variable at an elevation of approximately 30 meters below mean sea level in the area of the City Wells. There are the same nine layers in the local model to represent the bedrock units and unconsolidated materials as in the Metromodel. These layers correspond to the approximate vertical extent of the various stratigraphic units observed in the vicinity of the City. Layer 1 represents the unconsolidated materials, primarily clay till and sand units. Layer 2 represents unconsolidated materials in some areas and St. Peter Sandstone, where present. Layers 3 and 4 are comprised primarily of the Prairie du Chien Group and Jordan Sandstone, respectively. Layer 5 is the St. Lawrence Formation, which is an aquitard that effectively eliminates any influence from the four deeper layers of the model in the area of interest.

Changes were made to the original Metromodel defined characteristics in the area of interest around the City Wells. Site specific information allowed for more accurate definition of aquifer

characteristics. These changes were confined primarily to the Prairie du Chien and Jordan Aquifers in the area of the City. The conductivities of the Prairie du Chien and Jordan Aquifers were modified to be in line with the values reported in the DAP-ATP. Zones were created in Layers 3 and 4 of the model, shown in Figure 2, for modifying the horizontal and vertical conductivity of the aquifers in the vicinity of the City Wells and their capture zones. These conductivities replaced those used in the Metromodel for that area.

In addition to the previously mentioned changes, the following modifications were incorporated in the refined model:

- The pumping rates from Table 5 were assigned to the City Wells.
- The pumping rates from Table 6 were assigned to the permitted high-capacity wells located within approximately 2 miles of the City Wells.

As part of the delineation, groundwater pathline analyses were performed to determine the 1-, 5- and 10-year capture zones and ultimately the WHPA. The pathline analysis consisted of using MODPATH, a flowpath calculation program, to determine the capture zone for each of the City Wells. This was completed by tracing 375 flow paths from each cell for a 10-year travel time. Porosities of 5.6 percent and 20 percent were used for the Prairie du Chien Aquifer and the Jordan Aquifer, respectively, per MDH recommendations.

All three of the primary City Wells are open to both the Prairie du Chien and Jordan Aquifers. The Jordan Aquifer is also hydraulically connected to the Prairie du Chien Aquifer with a high likelihood of leakage between the two as documented in numerous tests and other WHP Plans completed in the area. The high likelihood of fracture flow within the Prairie du Chien Aquifer required the completion of a delineation of the potential area of fractured rock contributing to the flow from the City Wells.

4.2.2. Fractured Rock Delineation

The second WHPA delineation for the City Wells was determined using the “Guidance for Delineating Wellhead Protection Areas in Fractured and Solution-Weathered Bedrock in Minnesota” (MDH, 2012). This guidance was developed by MDH to address the increased variability in flow velocities and directions in geologic settings with secondary porosity. The guidance is a modified volumetric analysis and does not use a model based on flow equations.

In accordance with the guidance, Delineation Technique 3 was used to delineate the WHPA. This technique was chosen, in part, because it is recommended for aquifers characterized by locally confined conditions where the ratio of the well discharge to the discharge vector is less than 3000, and Wells No. 4 through 6 are open to both the Prairie du Chien and Jordan. Parameters used in the fracture flow analysis are summarized in Appendix A.

The fracture-flow analysis is a method that establishes a calculated fixed-radius (CFR) capture zone based on the 5-year volume of water pumped for a given well. The initial CFRs were calculated using the MDH Calculated Fixed Radius Tool (Tool) for City Wells No. 4 and 6. Special considerations had to be made due to significant overlap of the initial CFRs. As a result, through discussions with MDH, it was decided that it would be useful to apportion the flow volume of City Well No. 5 to Wells No. 4 and 6 based on their proportion of total flow. This approach allowed a “two-well” scenario to be run using the Tool to determine the original, revised, and upgradient extensions for City Wells No. 4 and 6.

The flow direction was determined by reviewing the upgradient capture direction determined from the 10-year capture zones in the groundwater flow model.

Appendix A presents the input and output from the Tool used to determine the fracture flow delineation. Figure 7 illustrates the initial and revised CFRs, and the resulting fracture flow WHPA delineation.

After the uncertainty analysis and the fracture flow analysis were completed, the capture zones delineated for each of the analyses were plotted together. The outline of this concatenation delineates a final composite WHPA capture zone, shown on Figure 8, for use in defining the DWSMA.

The resulting WHPA boundaries (Figure 8) are a composite of the 10-year capture zones calculated using this model for the base case parameters, the parameter values used in the sensitivity analysis, and the fracture flow delineation. Details are discussed in the following section. The model input files are available upon request from the MDH.

4.3 Results of Model Calibration and Sensitivity Analysis

The goal of numerical model calibration is to obtain a reasonable correlation between the simulated model results and observed field data. The calibration process is generally completed by running a series of steady-state simulations (simulations where the flow magnitude and direction are constant with time), comparing calculated heads to the measured heads at wells within the model domain while changing the model parameters until the best match between the two is achieved. After a model is reasonably calibrated a sensitivity analysis is used to determine the impact that changes to an input parameter have on the output of the model. In areas where there is a great deal of uncertainty in the physical parameters, either as a consequence of lack of data or based on the uncertainty associated with the interpretation of available data (i.e. pumping test analyses), a number of models are generally run to observe the effect on the model results over the range of potential values for each of the significant parameters. While none of the individual capture zones delineated as part of this analysis should be considered the “correct” one, it is assumed that the actual capture zone is encompassed by the resulting concatenation of analysis zones.

4.3.1. Calibration

The calibration plot, showing measured versus simulated hydraulic head values, for Layers 3 and 4 of the local model (representing the Prairie du Chien and Jordan Aquifers, respectively) is illustrated on Figure 5. The plots show that the simulated values and measured head values generally compare quite favorably and have a normalized root mean squared (NRMS) error of approximately 9 percent. Much of the error stems from areas in the model where the observation data was collected more than 20 years ago. In many parts of the metropolitan area, pumping has increased dramatically over this time period resulting in the model over-predicting drawdown relative to this older information. These portions of the model still calibrate reasonably well, however, and these older measurements are considered more valuable than no data. Therefore, no further effort was put into improving the calibration once the simulated heads in the area of interest closely matched the measured heads.

More extensive observation data collected within the same general time period and more accurate, site-specific transmissivity values throughout the model domain would improve calibration and model confidence.

The groundwater flow field and hydraulic heads in the area of the City for the calibrated model are shown on Figures 3, 4, and 7. The 1-, 5-, and 10-year capture zones, predicted using the calibrated model, are shown on Figure 6. However, due to the potential variability associated with the physical characteristics of the aquifer, a sensitivity/uncertainty analysis was completed as part of the modeling effort.

4.3.2. Sensitivity Analysis

Sensitivity is the amount of change in model results caused by the variation of a particular input parameter. For example, changing the hydraulic conductivity of an area can change the calculated head values in and around the area of the modified model as compared to the heads in an unmodified model. Because of the relative complexity of the area of interest in this model, the size and orientation of the modeled capture zone may be sensitive to any of the input parameters described below:

The **pumping rate** determines the volume of the aquifer that contributes water to the well. Increasing the pumping rate will expand the capture zone, for a given thickness, and decreasing it will make the capture zone smaller.

- **Results** – The pumping rate for each well was defined by MR and therefore is not a variable for consideration in this analysis.

The **direction of groundwater flow** and gradient can often be variable and change significantly with changing conditions such as fluctuations in local surface water elevations or the pumping rates in local wells

- **Results** – The regional flow direction and gradient were determined through the modeling process and closely resemble the flow direction and gradient determined through mathematical analysis of the measured heads in the area. The model was calibrated to hydraulic heads, and the local refined model calibration mirrored the regional calibration. Based on the regional observation data, the characteristics of the flow field and the use of the aquifers of interest there is not likely to be a significant change to the flow field.

The **horizontal hydraulic conductivity** influences the size and shape of the capture zone. In the presence of a gradient, higher conductivities will result in long, narrow capture zones extending upgradient. Lower conductivities will result in shorter, wider capture zones. As there is nearly always a large amount of uncertainty associated with this parameter, most analyses will consider a range of conductivities. All of the transmissivity and conductivity data and analysis can be found in the DAP-ATP documentation from the MDH.

- **Results** - A change in the hydraulic conductivity of the aquifer will alter the location of the capture zones. As a result, a range of potential values of hydraulic conductivity were calculated using each of the City Wells. The hydraulic conductivity in the area of the City Wells was determined from the results of pumping tests completed at City Well No. 5 in 2005 and Minnetonka City Well No. 6A (208012) in 1994. Minnetonka City Well No. 6a is a solely Jordan Aquifer well that provided the hydraulic conductivity value for the Jordan Aquifer in the area. Using this information to determine the Jordan Aquifer contribution to the total flow at City Well No. 5 allowed for the calculation of the Prairie du Chien Aquifer conductivity in the Hopkins area. The values determined from specific capacity data from other wells completed only in the Jordan Aquifer in the Hopkins area yielded a conductivity range of 22 to 72 ft/day

(6.7 to 21.9 m/day) that was used during the uncertainty analysis, described in Section 4.4. The range of values for the Prairie du Chien Aquifer was determined by using half of the reference value for the low end of the range and the high end of the range was obtained from an MDH reassessment of the original City Well No. 5 test data. This yielded a range of approximately 89 to 304 ft/day (27 to 93 m/day) that was used during the uncertainty analysis.

The aquifer **thickness** and **porosity** influence the size and shape of the capture zone by limiting the water-bearing volume within a given area of aquifer. Decreasing or increasing either thickness or porosity forces a proportional decrease or increase in the areal extent of the capture zone.

- **Results** - The thickness of the aquifers around the wells in the model was compared to the actual thicknesses observed on the well logs for each of the City Wells. The modeled Prairie du Chien aquifer is approximately 7 percent thinner than the logged thickness at City Well No 6, the same thickness at City Well No. 5 and approximately 7 percent thicker at City Well No. 4. The modeled Jordan Aquifer is 38 percent thicker at City Well No. 5, 17 percent thinner at City Well No. 6 and approximately the same at City Well No. 4. To account for these differences, the values for the hydraulic conductivity used in the model were modified slightly from the values shown in Tables 3a and 3b in order to maintain the proper transmissivity. The porosity value in the model for the Jordan Aquifer is 20 percent and 5.6 percent for the Prairie du Chien Aquifer are typical or conservative for these aquifers and are not considered variables.

4.4 Addressing Model Uncertainty

Using computer models to simulate groundwater flow always requires that simplifying assumptions be made. Local geology can be highly variable and information from well logs and pumping tests indicates that this is likely the case near the City Wells. Unfortunately, existing information is not detailed enough to define this degree of variability and interpretation of log and test data is often inconsistent. For models of the scale used in this study, the information and computational ability does not exist to precisely delineate the WHPA. To account for this, a number of models are run to examine the various potential WHPAs for the wells, given the range of the input data mentioned previously.

MODFLOW models were used to delineate the capture zones for the Prairie du Chien and Jordan Aquifers that supply water to the City Wells. As described previously, the hydraulic conductivity was the single variable identified that could cause the greatest change in the WHPAs for the City Wells. The range of hydraulic conductivity determined from the pumping test data at the City Wells and specific capacity analyses at other local wells is summarized in Table 3. The values used for each of the model runs in the uncertainty analysis are presented in Table 7.

Table 7– Hydraulic Conductivity Values Used in Uncertainty Analysis

| Simulation | Prairie du Chien Conductivity (ft/day) | Prairie du Chien Conductivity (m/day) | Jordan Conductivity (ft/day) | Jordan Conductivity (m/day) |
|-------------------|-------------------------------------------------------|------------------------------------------------------|---------------------------------------------|--------------------------------------------|
| Base Model | 177 | 53.9 | 25.9 | 7.9 |
| Uncert-1 | 177 | 53.9 | 71.9 | 21.9 |
| Uncert-2 | 177 | 53.9 | 22 | 6.7 |
| Uncert-3 | 89 | 27 | 25.9 | 7.9 |
| Uncert-4 | 89 | 27 | 22 | 6.7 |
| Uncert-5 | 89 | 27 | 71.9 | 21.9 |
| Uncert-6 | 304 | 93 | 25.9 | 7.9 |
| Uncert-7 | 304 | 93 | 22 | 6.7 |
| Uncert-8 | 304 | 93 | 71.9 | 21.9 |

- Conductivities were determined through testing and analysis as summarized in the DAP-ATP.

Capture areas delineated for the assessed range of aquifer conductivities for a 10-year time-of-travel period are shown on Figure 6. The WHPAs for the City Wells consist of a composite of the porous media aquifer delineations for the different input parameters used in the uncertainty analysis, shown on Figure 8, and the previously described fracture flow delineation, shown on Figure 7.

5. Delineation of the Drinking Water Supply Management Area

The boundaries of the DWSMA were defined by LBG using roads, railroads and Public Land Survey System (PLSS) coordinates (Figure 8). The boundary was digitized using an aerial photo, and therefore, may not match the topographic map background layer exactly. Where the PLSS quarter quarter section coordinates were used, the DWSMA is snapped to the intersections.

6. Vulnerability Assessments

The Part 1 WHP Plan includes the vulnerability assessments for the public water supply well and DWSMA. These vulnerability assessments are used to help define potential contamination sources within the DWSMA and to select appropriate measures for reducing the risk that they present to the public water supply.

6.1 Assessment of City Well Vulnerability

The City Well vulnerability assessment was conducted in accordance with the MDH guidance document, “Assessing Well and Aquifer Vulnerability for Wellhead Protection” (MDH, 1997). Vulnerability assessment rating sheets and vulnerability scores for Wells No. 4 through 6 were obtained from the MDH and reviewed by LBG. The vulnerability of a well is scored based on the following six categories: DNR geologic sensitivity rating, casing integrity, casing depth, pumping rate, isolation distance from contaminant sources, and chemical and isotopic information. Based on these categories, City Wells No. 4 and 5 are considered Vulnerable, and City Well No. 6 is considered Not Vulnerable. The presence of tritium above 1 Tritium Unit (T.U.) in City Wells No. 4 and 5 triggered

the Vulnerable rating for these wells and the absence of a tritium result above 1 T.U. resulted in City Well No. 6 being Not Vulnerable.

6.2 Assessment of Drinking Water Supply Management Area Sensitivity

The assessment of geologic sensitivity is a useful metric when estimating the relative vertical downward travel time of contaminants from grade level to the water table or source aquifer. A Level-3 DNR geologic sensitivity assessment was used for the City Wells. The Level-3 DNR geologic sensitivity rating is an empirical value determined by dividing the cumulative thickness of low permeability units above the aquifer by 10 (DNR, 1991). The resulting score is termed the “L-score”. A higher L-score indicates more low-permeability material above the aquifer, and therefore a lower vulnerability. A low L-score represents higher vulnerability. For example, a rating of L-1 has a higher vulnerability than L-9, because there is less low-permeability material present above the aquifer. A Level-3 assessment was conducted since the aquifers are overlain by varying thicknesses of clay.

A Level-3 assessment was also conducted for all Minnesota County Well Index (CWI) wells located in the vicinity of the DWSMA delineation. The geologic sensitivity “L-scores” were calculated by MDH using a Geographic Information System tool that utilizes lithology information from the CWI. Figure 9 illustrates the geologic sensitivity for the DWSMA as determined by mapping L-scores from well logs for wells near the DWSMA.

Review of site-specific data from the CWI indicates that much of the DWSMA has significant thicknesses of low permeability material that overlie the Prairie du Chien and Jordan aquifers. This results in geologic sensitivity ratings of Very Low and Low across much of the DWSMA. However, there are two areas across the DWSMA where there is less low permeability material, and therefore these are categorized as High geologic sensitivity. One area is located near the southwest boundary of the DWSMA, and the other is located near the northeast boundary of the DWSMA. City Wells No. 4 and 6 are considered to have Low geologic sensitivity, and City Well No 5 is considered in to have Very Low geologic sensitivity. These categorizations are the result of the MDH City Well Vulnerability Assessment sheets and the DWSMA geologic sensitivity analysis.

6.3 Assessment of the Drinking Water Supply Management Area Vulnerability

Once the geologic sensitivity was determined for wells near the DWSMA and for the area within the DWSMA, the vulnerability ratings could be determined. Since tritium has been detected above 1 T.U., the vulnerability rating in the vicinity of the City Wells and across the DWSMA was increased one level compared to the sensitivity rating (Figure 10), when the geologic sensitivity alone could not explain the presence of Tritium.

6.4 Conjunctive Delineation

A review was conducted to determine if a conjunctive delineation was necessary due to the presence of tritium above 1 T.U. present in City Wells No. 4 and 5, and that there were two areas considered geologically sensitive. Given that much of the DWSMA near the main surface water feature, Lake Minnetonka, has significant low permeability material overlying the Prairie du Chien and Jordan Aquifers, there does not appear to be a direct connection between these aquifers and surface water. Further, the two areas that are considered to have High geologic sensitivity are not coincident with significant surface water bodies. The high geologic sensitivity area in the southwest part of the DWSMA has a pond within the area, but in the event of surface drainage from the pond, the runoff

would run further southwest, and out of the DWSMA. Therefore, no conjunctive delineation was completed at this time.

7. Comparing Original Part 1 to This Amendment

The vast majority of the WHP Area is the same between the original and this amended Part I. The primary difference between the original and current WHP Area is that there is an extension of the northwest boundary from the original Part I. This is due to the inclusion of the higher hydraulic conductivity value used for the Prairie du Chien Aquifer as part of the uncertainty analysis. The similarity between the remainder of the two WHP Areas is a result of using similar CFR Methodology for the determination of the fracture flow delineation.

The original Part 1 model was an analytic element model that considered the Prairie du Chien Group and Jordan Sandstone as a single aquifer. The current model is a finite difference model that treats each aquifer separately and incorporates the variable thicknesses of each aquifer and potential interactions with overlying and underlying layers. The current model should be flexible enough to be modified and updated to include any new data when the next Amendment to this Part 1 is due.

8. Recommendations

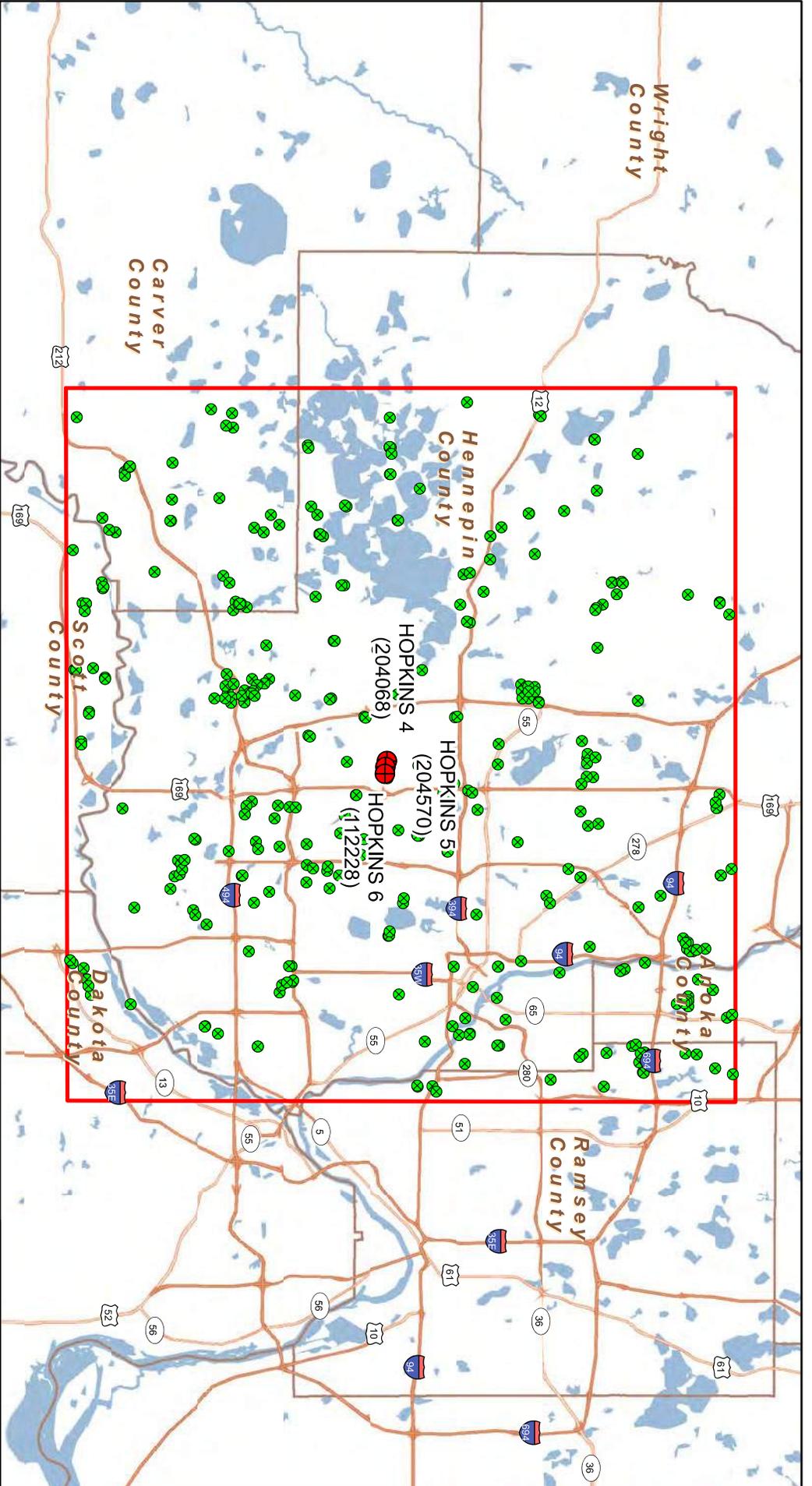
As the majority of the WHP Area was included as a result of the uncertainty associated with the fracture flow nature of the Prairie du Chien Aquifer, there are not many options for reducing the uncertainty. Therefore, upon completion of this Part 1 WHP Plan amendment, only the following recommendations are provided for the City to consider for better understanding the hydrogeologic conditions of the source aquifers and refinement of future WHPA delineations.

- Collect a synoptic round of groundwater samples from City Wells No. 4 and 5, surface water samples from Lake Minnetonka and Minnehaha Creek, and precipitation samples. It is recommended that one round of sampling be completed to conduct stable isotope analyses to evaluate the mixture of surface water and groundwater.
- Continue collecting groundwater samples from the City wells for analysis of regulated contaminants and provide the data to the MDH.

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Figures

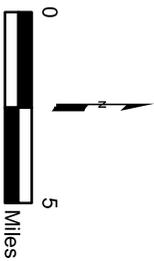


- City Well Location
- High Capacity Well Location
- Local Model Boundary

Source: ESRI, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community
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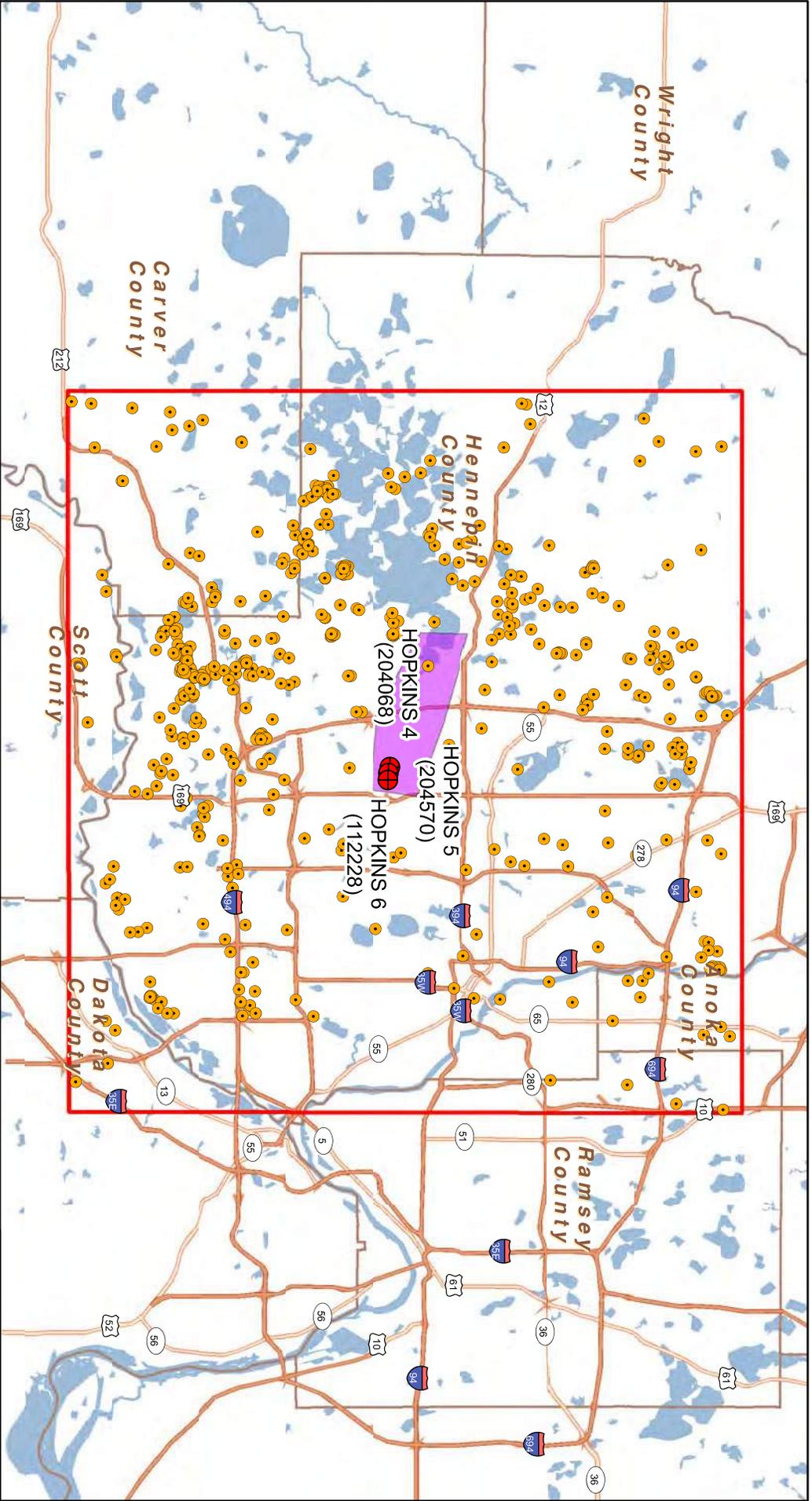
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SITE LOCATION, HIGH CAPACITY WELLS, AND
 LOCAL MODEL BOUNDARY

FILE: g3hopkinswHP01d - Fig 1.MXD DATE: 12/7/2015 FIGURE: 1

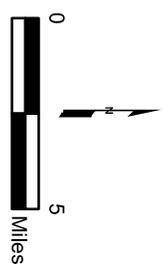


- City Well Location
- Calibration Point Location
- Local Model Boundary
- Modification Area

Source: ESRI, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community
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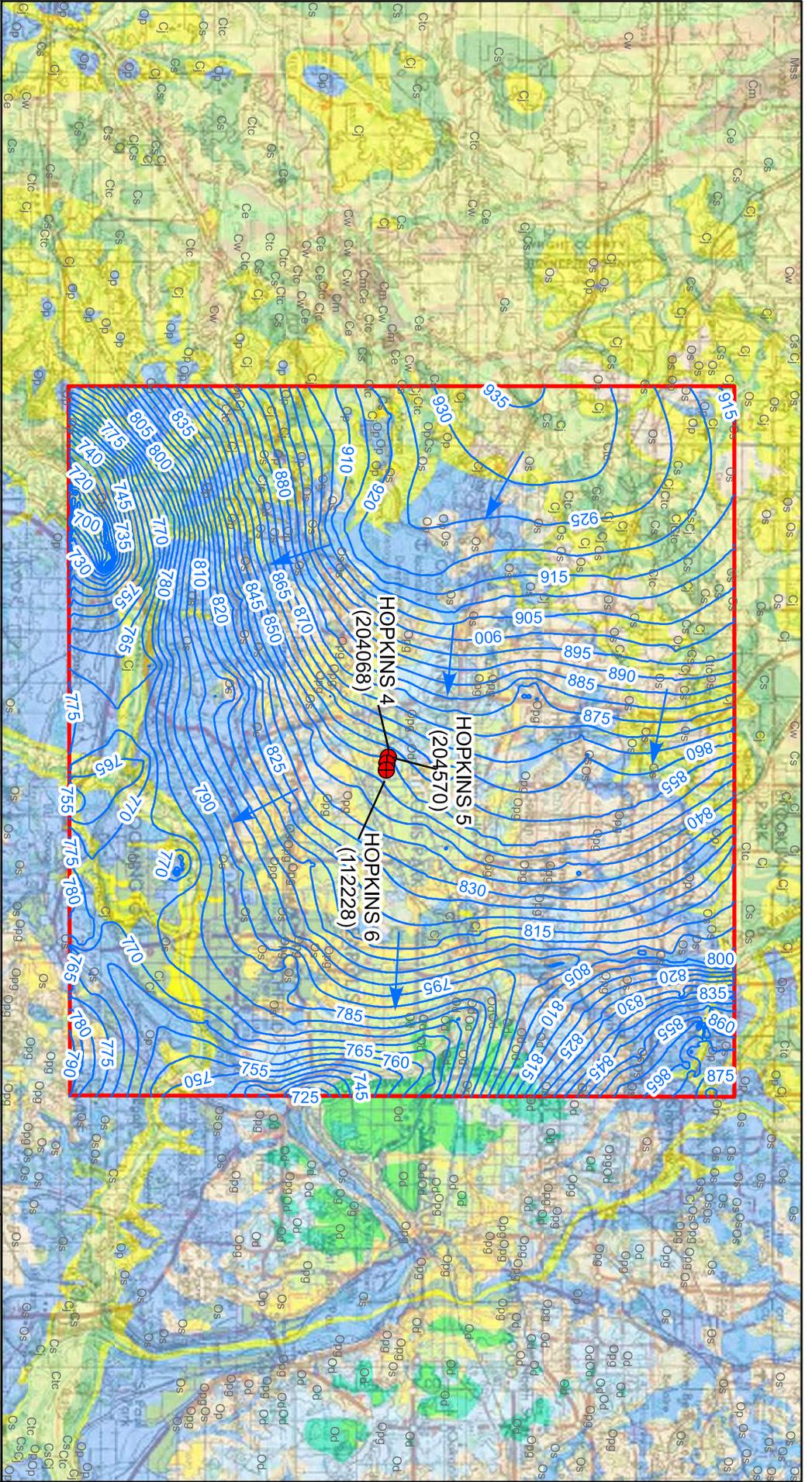
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**LOCAL MODEL BOUNDARY, CALIBRATION POINTS, AND
 MODIFICATION AREA**

FILE: g3hopkinswhp01e - Fig 2.MXD DATE: 12/7/2015 FIGURE: 2

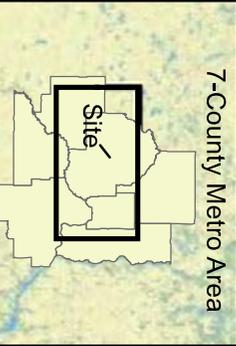
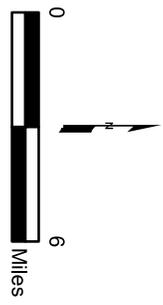


- City Well Location
- Potentiometric Surface Contour Prairie du Chien Aquifer (feet)
- Groundwater Flow Direction
- Local Model Boundary
- Bedrock in Model Boundary
- Platteville and Glenwood Formations
- St. Peter Sandstone
- Prairie du Chien Group
- Jordan Sandstone
- St. Lawrence Formation
- Tunnel City Group
- Woneoc Sandstone
- Mt. Simon Sandstone

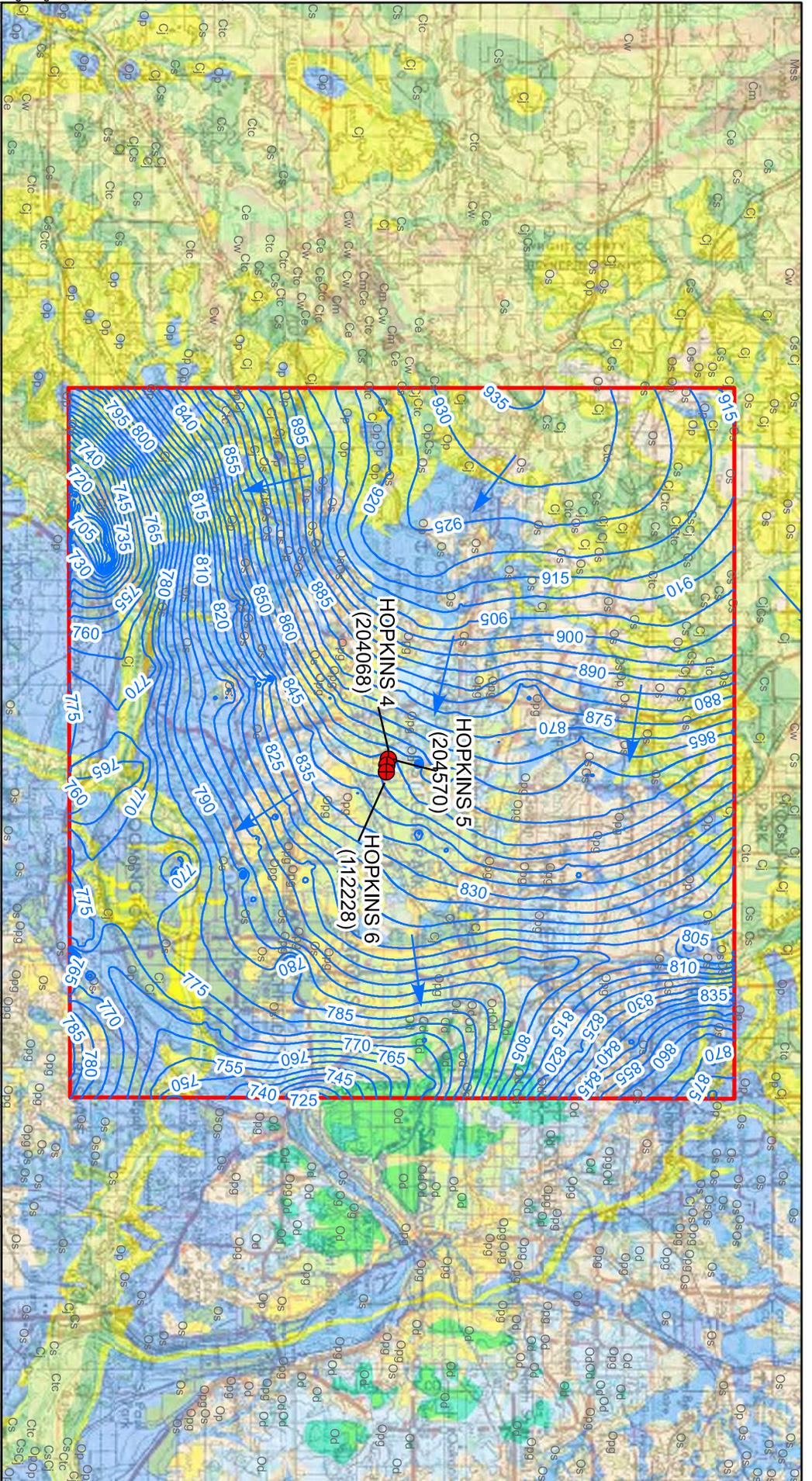


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| CITY OF HOPKINS HOPKINS, MINNESOTA | |
| SIMULATED GROUNDWATER EQUIPOTENTIAL CONTOURS OF PRAIRIE DU CHIEN AQUIFER AND BEDROCK GEOLOGY | |
| FILE: g3hopkinswhp01f - Fig3.MXD | DATE: 1/11/2016 |
| FIGURE: 3 | |

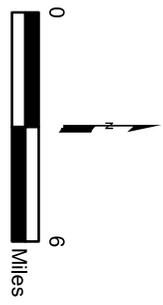


- City Well Location
- Potentiometric Surface Contour Jordan Aquifer (feet)
- Groundwater Flow Direction
- Local Model Boundary
- Bedrock in Model Boundary
- Platteville and Glenwood Formations
- St. Peter Sandstone
- Prairie du Chien Group
- Jordan Sandstone
- St. Lawrence Formation
- Tunnel City Group
- Wonevoc Sandstone
- Mt. Simon Sandstone

Source: ESRI, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community
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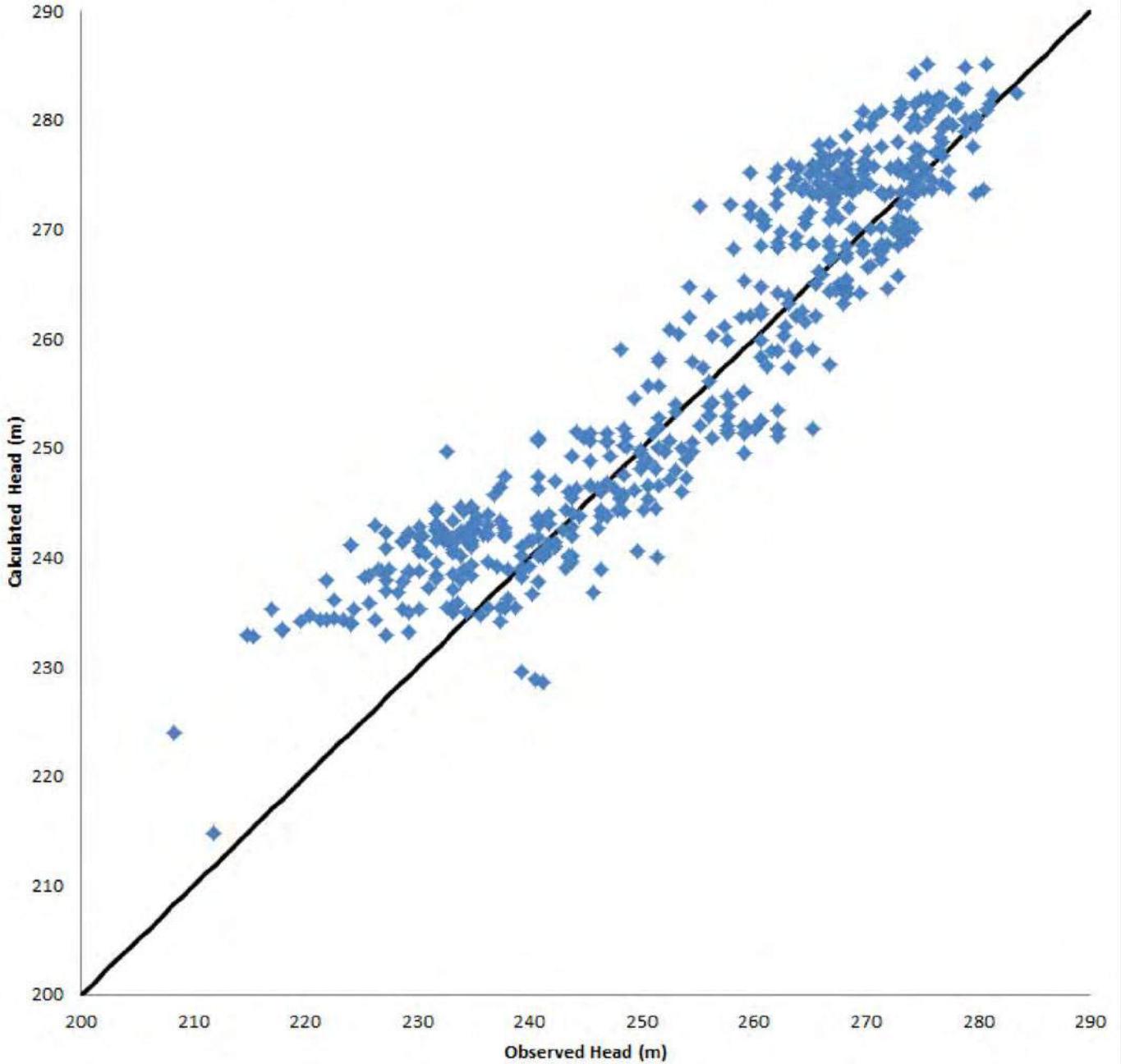


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**SIMULATED GROUNDWATER EQUIPOTENTIAL CONTOURS OF
 JORDAN AQUIFER AND BEDROCK GEOLOGY**

FILE: g3hopkinswhp01g - Fig4.MXD DATE: 1/11/2016 FIGURE: 4

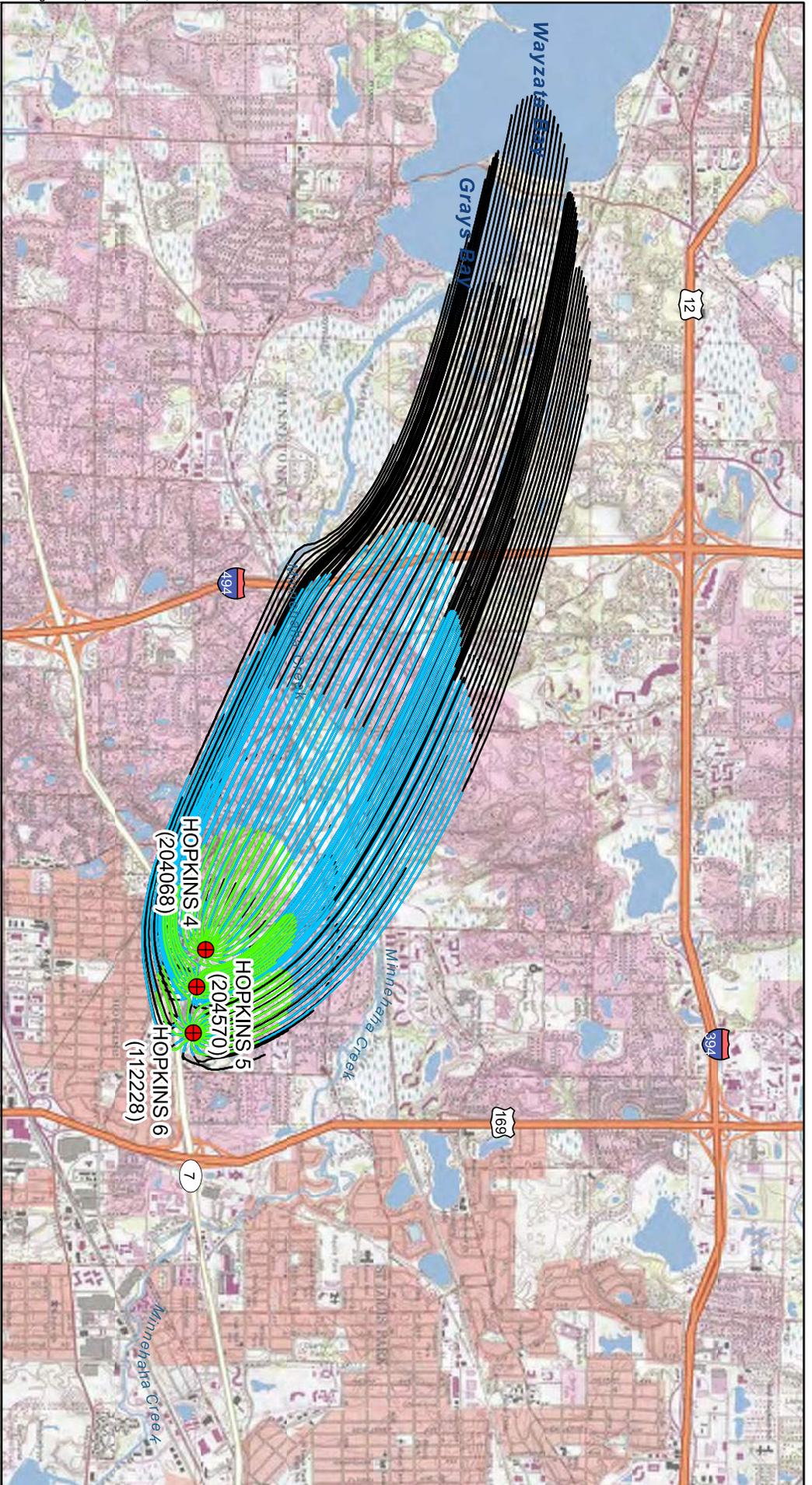
Computed vs. Observed Values Hydraulic Head in Model Layers 3 and 4



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HOPKINS, MINNESOTA

MODEL CALIBRATION

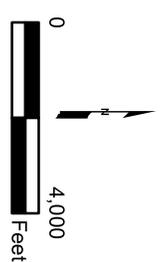


- City Well Location
- 1-Year Flowpaths Jordan and Prairie du Chien Aquifers
- 5-Year Flowpaths Jordan and Prairie du Chien Aquifers
- 10-Year Flowpaths Jordan and Prairie du Chien Aquifers

Source: ESRI, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community
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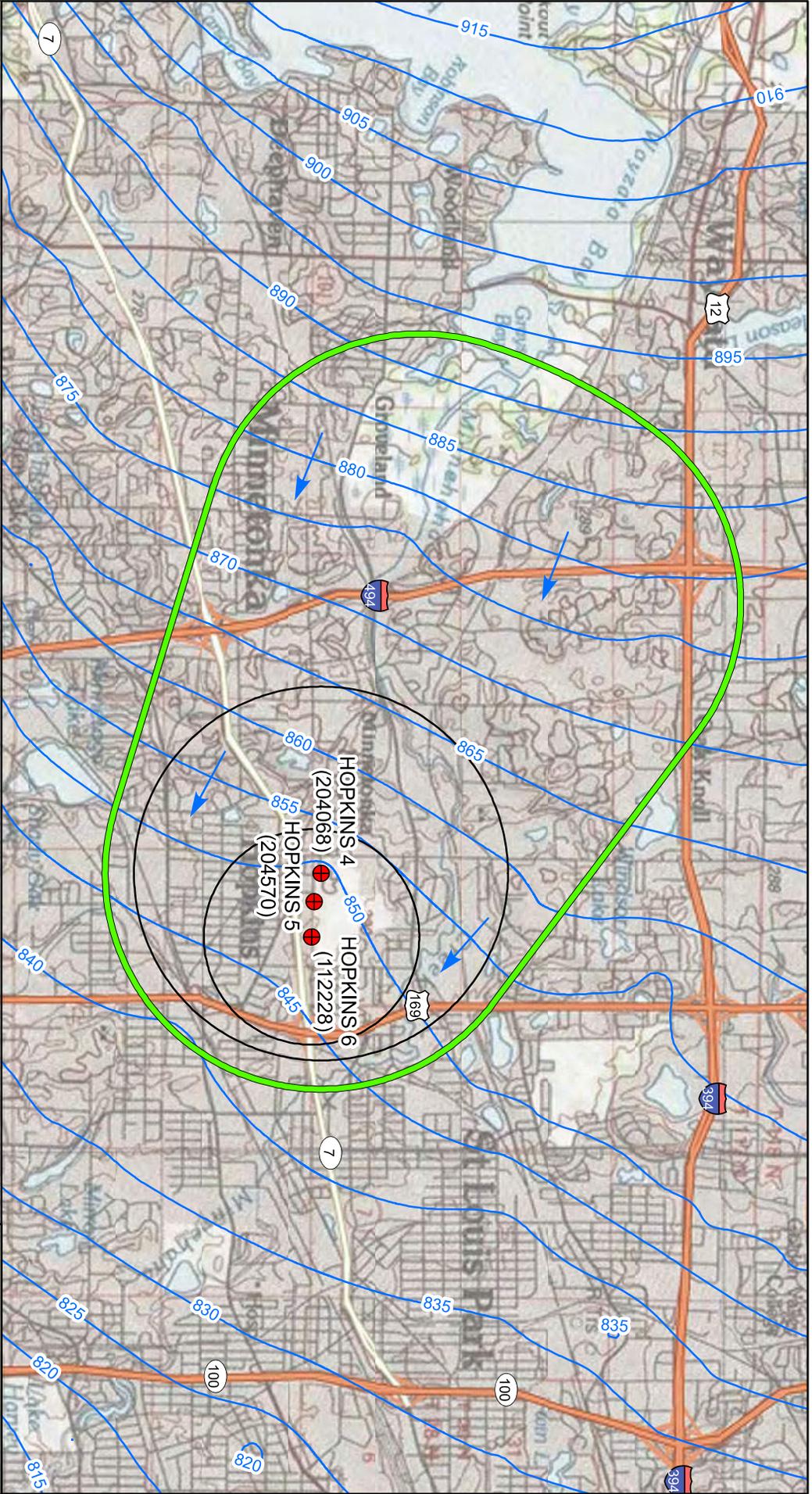
Prepared By:
LEGGETTE, BRASHEARS & GRAHAM, INC.
 Professional Groundwater and
 Environmental Engineering Services
 8 Pine Tree Drive, Suite 250
 St. Paul, Minnesota 55112
 (651) 490-1405



CITY OF HOPKINS
 HOPKINS, MINNESOTA

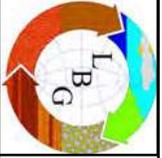
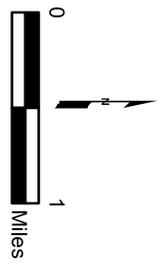
1, 5, AND 10 YEAR FLOWPATHS FOR CALIBRATED MODEL

FILE: g3hopkinswHP01i - Fig 6.MXD DATE: 2/24/2016 FIGURE: 6



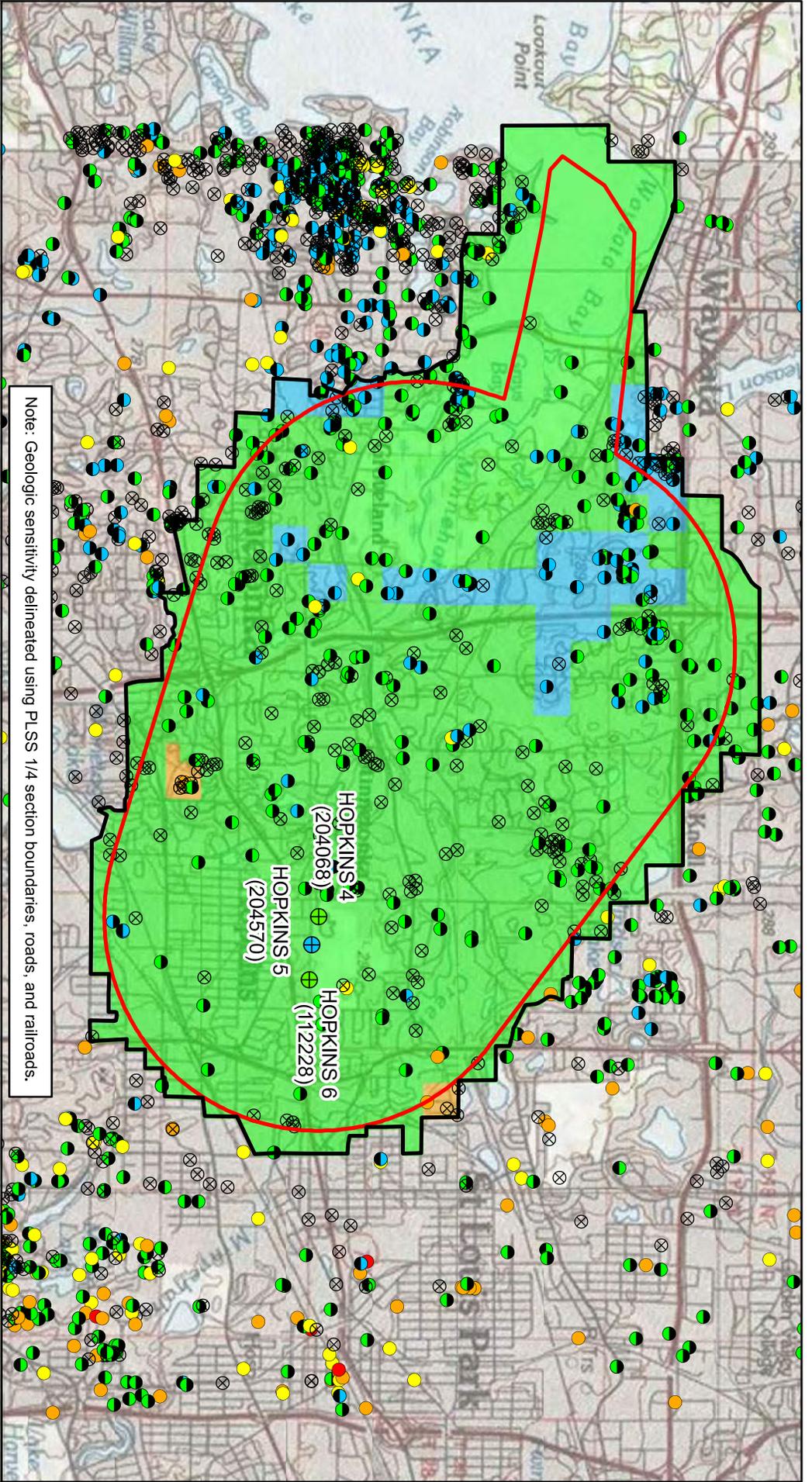
- City Well Location
- Fracture Flow - Initial Fixed Radii
- Fracture Flow - Capture Zone (Wells No. 4 through 6 with extensions)
- Potentiometric Surface Contour (Prairie du Chien Aquifer)
- Groundwater Flow Direction

Source: ESRI, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community
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| | |
|---------------------------------------------|-----------------|
| CITY OF HOPKINS | |
| HOPKINS, MINNESOTA | |
| FRACTURE FLOW DELINEATION BOUNDARIES | |
| FILE: g3hopkinswHP01j - Fig 7.MXD | DATE: 2/24/2016 |
| FIGURE: 7 | |

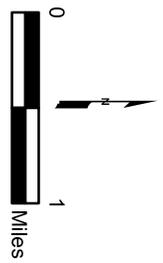


- ⊕ City Well Location
- ⊗ Insufficient Data
- Domestic Well
- ⊕ Combined Wellhead Protection Area
- Drinking Water Supply Management Area
- Drinking Water Supply Protection Area

- Geologic Sensitivity**
- Very High Sensitivity
 - High Sensitivity
 - Moderate Sensitivity
 - Low Sensitivity (L-Score: 1-3)
 - Low Sensitivity (L-Score: 4-7)
 - Very Low Sensitivity (L-Score: 8-11)
 - Very Low Sensitivity (L-Score: >11)

Note: Geologic sensitivity delineated using PLSS 1/4 section boundaries, roads, and railroads.

Source: ESRI, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community
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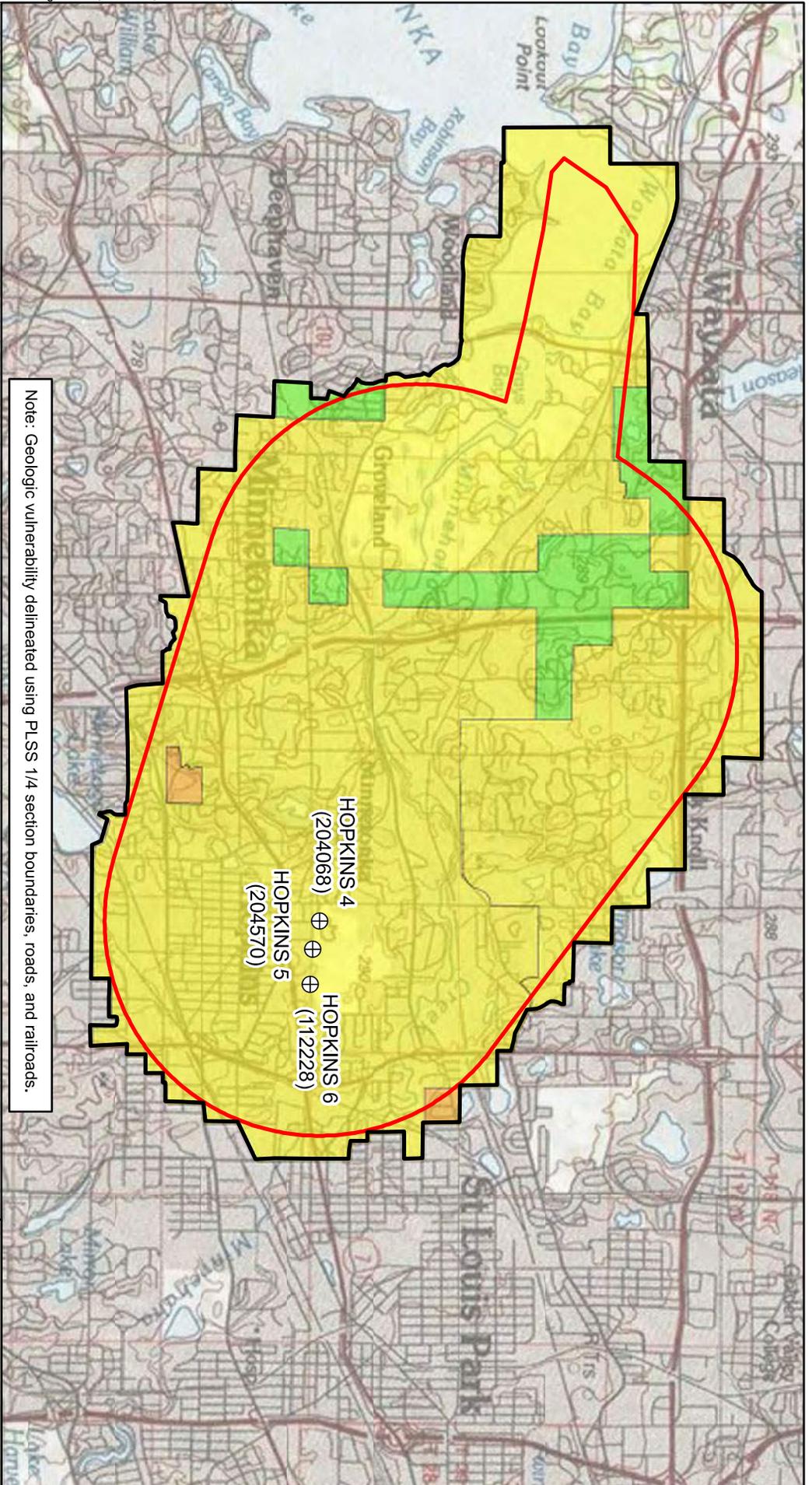


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CITY OF HOPKINS
 HOPKINS, MINNESOTA

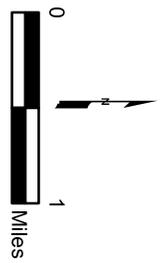
DRINKING WATER SUPPLY MANAGEMENT AREA
GEOLOGIC SENSITIVITY ASSESSMENT

FILE: g3hopkinswHP011 - Fig 9.MXD DATE: 3/7/2016 FIGURE: 9



Note: Geologic vulnerability delineated using PLSS 1/4 section boundaries, roads, and railroads.

- ⊕ City Well Location
 - Combined Wellhead Protection Area
 - Drinking Water Supply Management Area
- DWSMA Vulnerability**
- Very High
 - High
 - Moderate
 - Low



Source: ESRI, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community
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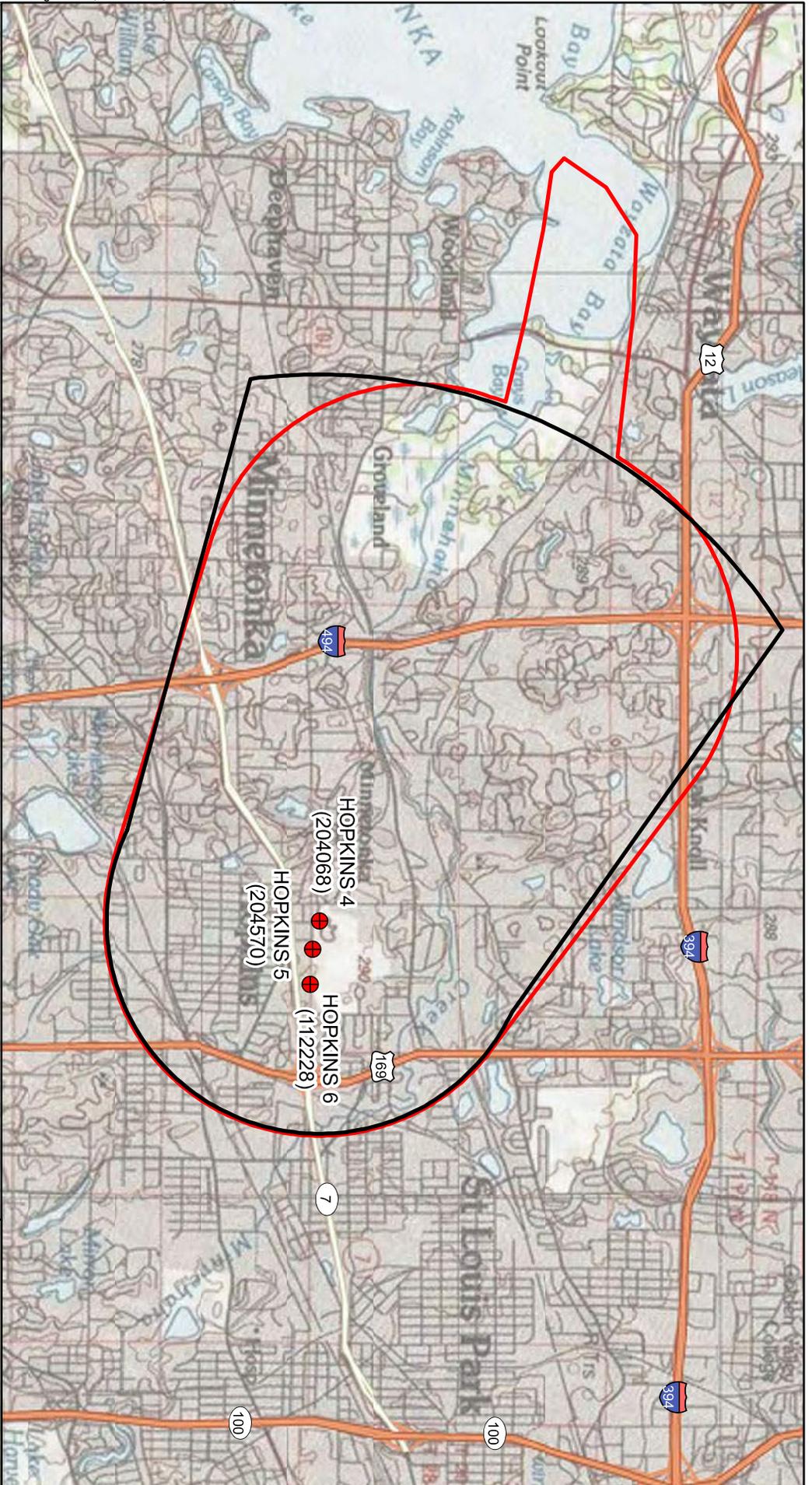


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CITY OF HOPKINS
 HOPKINS, MINNESOTA

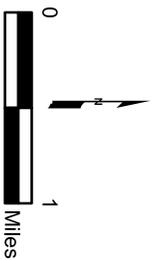
**DRINKING WATER SUPPLY MANAGEMENT AREA
 VULNERABILITY ASSESSMENT**

FILE: g3hopkinswHP01m - Fig 10.MXD DATE: 3/7/2016 FIGURE: 10



- City Well Location
- Amended 2015 Wellhead Protection Area
- Original 2005 Wellhead Protection Area

Source: ESRI, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community
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CITY OF HOPKINS
 HOPKINS, MINNESOTA

ORIGINAL AND AMENDED WELLHEAD PROTECTION AREAS

FILE: g3hopkinswhp01n - Fig 11.MXD DATE: 12/14/2015 FIGURE: 11

Appendix A

Fracture Flow Delineation Calculation Data

Appendix A
Fracture Flow Delineation Calculation Data

Part 1 Wellhead Protection Plan
Hopkins, Minnesota

Unique Well# = 204068
HOPKINS 4
X = 466,990.000, Y = 4,975,893.000

| | | | | |
|-------------------------------------|-----------------|-----------------------|--------------------|-----------------------|
| 5 Year Pumping Volume (1825 days) | | | | |
| Pumping Volume (Q): | 7,252.00 m3/day | 256,102.00 cu.ft./day | 1,330.40 gal./min. | 1,915,776.00 gal./day |
| Water Producing Zone Thickness (L): | 13.411 m | 44 ft. | | |
| Effective Porosity (n): | 0.056 | | | |
| Original (CFR) Radius: | 2,368.41 m | 7,770.39 ft. | | |
| New Radius: | 2,688.88 m | 8,821.79 ft. | | |
| New Pumping Volume (Q): * | 9,347.29 m3/day | 330,096.31 cu.ft./day | 1,714.79 gal./min. | 2,469,291.91 gal./day |

Unique Well# = 112228
HOPKINS 6
X = 467,675.000, Y = 4,975,792.000

| | | | | |
|-------------------------------------|-----------------|-----------------------|-----------------|-----------------------|
| 5 Year Pumping Volume (1825 days) | | | | |
| Pumping Volume (Q): | 4,095.33 m3/day | 144,625.25 cu.ft./day | 751.3 gal./min. | 1,081,872.00 gal./day |
| Water Producing Zone Thickness (L): | 26.21 m | 86.00 ft. | | |
| Effective Porosity (n): | 0.056 | | | |
| Original (CFR) Radius: | 1,273.06 m | 4,176.72 ft. | | |
| New Radius: | 1,273.06 m | 4,176.72 ft. | | |
| New Pumping Volume (Q): * | 4,095.33 m3/day | 144,625.25 cu.ft./day | 751.3 gal./min. | 1,081,872.00 gal./day |

OVERLAP SUMMARY INFORMATION

| | | |
|---------------------------------------|------------------|-----------------------|
| Original (CFR) Area for Well# 204068: | 17,622,400.90 m2 | 189,685,761.08 sq.ft. |
| New (CFR) Area for Well# 204068: | 22,713,956.09 m2 | 244,490,751.90 sq.ft. |
| Original (CFR) Area for Well# 112228: | 5,091,555.18 m2 | 54,804,990.82 sq.ft. |
| New (CFR) Area for Well# 112228: | 5,091,555.18 m2 | 54,804,990.82 sq.ft. |
| Overlap Area to Well# 204068: | 5,091,555.18 m2 | 54,804,990.82 sq.ft. |
| Overlap Area to Well# 112228: | 0 m2 | 0 sq.ft. |
| Total Overlap Area: | 5,091,555.18 m2 | 54,804,990.82 sq.ft. |

* = New Pumping Volumes (Q) if needed for additional overlap computations with another well.

UP-GRADIENT EXTENSION (UGE)

(area beyond the New Areas of both Wells)

(area beyond the New Areas of both Wells)

Bearing from Well# 204068 = 297° from North +/- 10°.

Bearing from Well# 112228 = 297° from North +/- 10°.

| | | |
|-----------------------------|------------------|-----------------------|
| Up-Gradient Extension Area: | 24,682,304.62 m2 | 265,677,858.72 sq.ft. |
|-----------------------------|------------------|-----------------------|

APPENDIX D
Inner Well Management Zone

**INNER WELLHEAD MANAGEMENT ZONE (IWMZ) -
 POTENTIAL CONTAMINANT SOURCE INVENTORY (PCSI) REPORT**

PUBLIC WATER SYSTEM INFORMATION

| | | |
|----------------|----------------------------------------------------------------------------|------------------|
| PWS ID | 1270016 | COMMUNITY |
| NAME | Hopkins | |
| ADDRESS | Hopkins Water Superintendent, 11100 Excelsior Boulevard, Hopkins, MN 55343 | |

FACILITY (WELL) INFORMATION

| | | |
|------------------------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NAME | Well #1 | IS THERE A WELL LOG OR ADDITIONAL CONSTRUCTION INFORMATION AVAILABLE? <input type="checkbox"/> YES (Please attach a copy) <input type="checkbox"/> NO <input type="checkbox"/> UNDETERMINED |
| FACILITY ID | S01 | |
| UNIQUE WELL NO. | 204573 | |
| COUNTY | Hennepin | |

| | | | |
|-----------------------------|----------------|------------------------|--------|
| PWS ID / FACILITY ID | 1270016 S01 | UNIQUE WELL NO. | 204573 |
|-----------------------------|----------------|------------------------|--------|

| PCSI CODE | ACTUAL OR POTENTIAL CONTAMINATION SOURCE | ISOLATION DISTANCES (FEET) | | | | LOCATION | |
|-----------|------------------------------------------|----------------------------|---------------|-----------------------------|--------------------------|-----------------|----------|
| | | Minimum Distances | | Sensitive Well ¹ | Within 200 Ft. Y / N / U | Dist. from Well | Est. (?) |
| | | Community | Non-community | | | | |

Agricultural Related

| | | | | | | | |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------------|--------|---|--|--|
| *AC1 | Agricultural chemical buried piping | 50 | 50 | | N | | |
| *AC2 | Agricultural chemical multiple tanks or containers for residential retail sale or use, no single tank or container exceeding, but aggregate volume exceeding 56 gal. or 100 lbs. dry weight | 50 | 50 | | N | | |
| ACP | Agricultural chemical tank or container with 25 gal. or more or 100 lbs. or more dry weight, or equipment filling or cleaning area without safeguards | 150 | 150 | | N | | |
| ACS | Agricultural chemical storage or equipment filling or cleaning area with safeguards | 100 | 100 | | N | | |
| ACR | Agricultural chemical storage or equipment filling or cleaning area with safeguards and roofed | 50 | 50 | | N | | |
| ADW | Agricultural drainage well ² (Class V well - illegal ³) | 50 | 50 | | N | | |
| AAT | Anhydrous ammonia tank (stationary tank) | 50 | 50 | | N | | |
| AB1 | Animal building, feedlot, confinement area, or kennel, 0.1 to 1.0 animal unit (stockyard) | 50 | 20 | 100/40 | N | | |
| AB2 | Animal building or poultry building, including a horse riding area, more than 1.0 animal unit | 50 | 50 | 100 | N | | |
| ABS | Animal burial area, more than 1.0 animal unit | 50 | 50 | | N | | |
| FWP | Animal feeding or watering area within a pasture, more than 1.0 animal unit | 50 | 50 | 100 | N | | |
| AF1 | Animal feedlot, unroofed, 300 or more animal units (stockyard) | 100 | 100 | 200 | N | | |
| AF2 | Animal feedlot, more than 1.0, but less than 300 animal units (stockyard) | 50 | 50 | 100 | N | | |
| AMA | Animal manure application | use discretion | use discretion | | N | | |
| REN | Animal rendering plant | 50 | 50 | | N | | |
| MS1 | Manure (liquid) storage basin or lagoon, unpermitted or noncertified | 300 | 300 | 600 | N | | |
| MS2 | Manure (liquid) storage basin or lagoon, approved earthen liner | 150 | 150 | 300 | N | | |
| MS3 | Manure (liquid) storage basin or lagoon, approved concrete or composite liner | 100 | 100 | 200 | N | | |
| MS4 | Manure (solid) storage area, not covered with a roof | 100 | 100 | 200 | N | | |
| OSC | Open storage for crops | use discretion | use discretion | | N | | |

SSTS Related

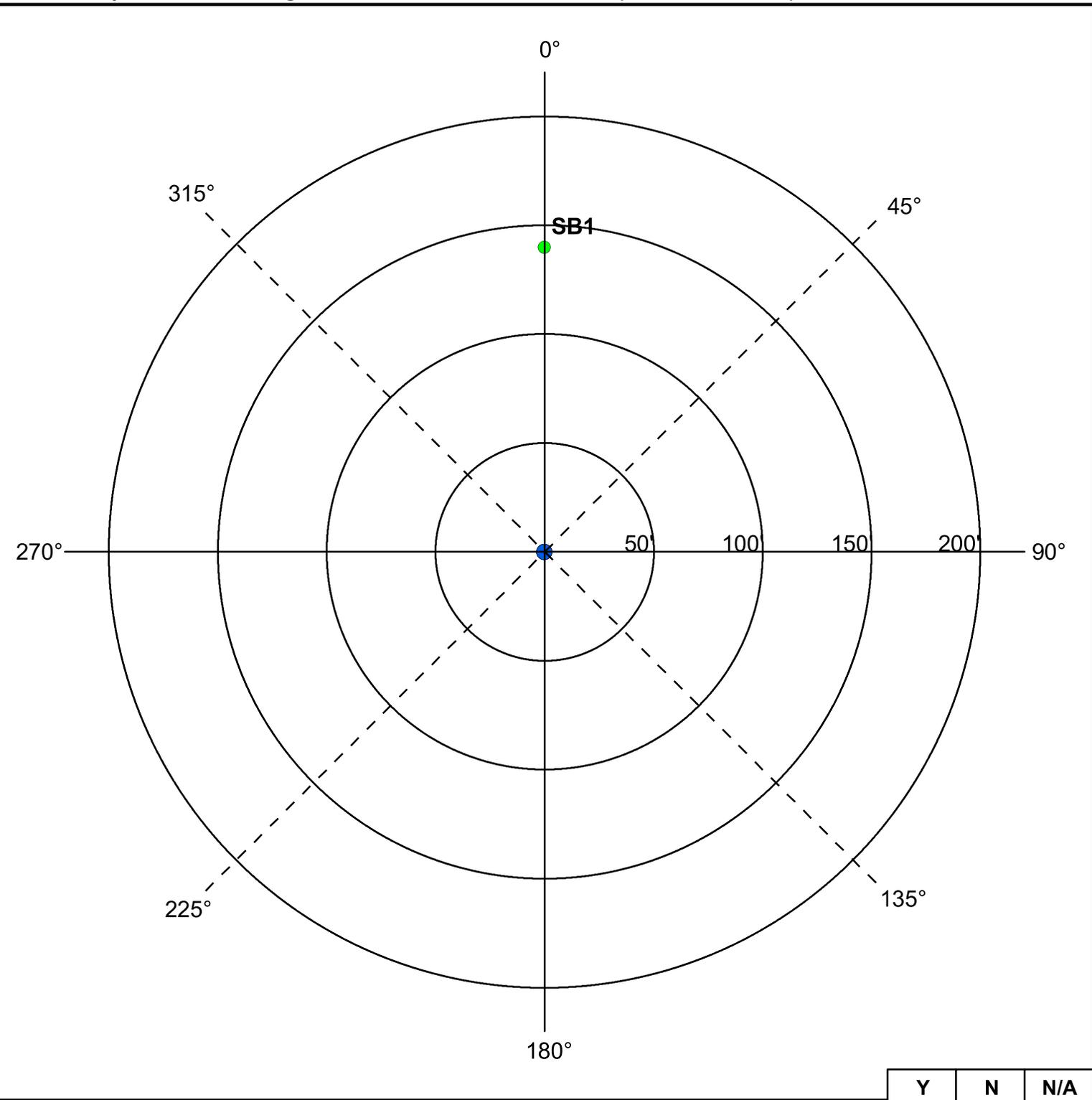
| | | | | | | | |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-------------------------|--------------------------|---|--|--|
| AA1 | Absorption area of a soil dispersal system, average flow greater than 10,000 gal./day | 300 | 300 | 600 | N | | |
| AA2 | Absorption area of a soil dispersal system serving a facility handling infectious or pathological wastes, average flow 10,000 gal./day or less | 150 | 150 | 300 | N | | |
| AA3 | Absorption area of a soil dispersal system, average flow 10,000 gal./day or less | 50 | 50 | 100 | N | | |
| AA4 | Absorption area of a soil dispersal system serving multiple family residences or a non-residential facility and has the capacity to serve 20 or more persons per day (Class V well) ² | 50/300/150 ⁴ | 50/300/150 ⁴ | 100/600/300 ⁴ | N | | |
| CSP | Cesspool | 75 | 75 | 150 | N | | |
| AGG | Dry well, leaching pit, seepage pit | 75 | 75 | 150 | N | | |
| *FD1 | Floor drain, grate, or trough connected to a buried sewer | 50 | 50 | | N | | |
| *FD2 | Floor drain, grate, or trough if buried sewer is air-tested, approved materials, serving one building, or two or less single-family residences | 50 | 20 | | N | | |
| *GW1 | Gray-water dispersal area | 50 | 50 | 100 | N | | |
| LC1 | Large capacity cesspools (Class V well - illegal) ² | 75 | 75 | 150 | N | | |
| MVW | Motor vehicle waste disposal (Class V well - illegal) ² | illegal | illegal | | N | | |

| | | | |
|-----------------------------|-------------|------------------------|--------|
| PWS ID / FACILITY ID | 1270016 S01 | UNIQUE WELL NO. | 204573 |
|-----------------------------|-------------|------------------------|--------|

| PCSI CODE | ACTUAL OR POTENTIAL CONTAMINATION SOURCE | ISOLATION DISTANCES (FEET) | | | | LOCATION | |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|----------------------|-----------------------------|--------------------------|-----------------|----------|
| | | Minimum Distances | | Sensitive Well ¹ | Within 200 Ft. Y / N / U | Dist. from Well | Est. (?) |
| | | Community | Non-community | | | | |
| PR1 | Privy, nonportable | 50 | 50 | 100 | N | | |
| PR2 | Portable (privy) or toilet | 50 | 20 | | N | | |
| *SF1 | Watertight sand filter; peat filter; or constructed wetland | 50 | 50 | | N | | |
| SET | Septic tank | 50 | 50 | | N | | |
| HTK | Sewage holding tank, watertight | 50 | 50 | | N | | |
| SS1 | Sewage sump capacity 100 gal. or more | 50 | 50 | | N | | |
| SS2 | Sewage sump capacity less than 100 gal., tested, conforming to rule | 50 | 20 | | N | | |
| *ST1 | Sewage treatment device, watertight | 50 | 50 | | N | | |
| SB1 | Sewer, buried, approved materials, tested, serving one building, or two or less single-family residences | 50 | 20 | | Y | 140 | N |
| SB2 | Sewer, buried, collector, municipal, serving a facility handling infectious or pathological wastes, open-jointed or unapproved materials | 50 | 50 | | N | | |
| *WB1 | Water treatment backwash holding basin, reclaim basin, or surge tank with a direct sewer connection | 50 | 50 | | N | | |
| *WB2 | Water treatment backwash holding basin, reclaim basin, or surge tank with a backflow protected sewer connection | 20 | 20 | | N | | |
| Land Application | | | | | | | |
| SPT | Land spreading area for sewage, septage, or sludge | 50 | 50 | 100 | N | | |
| Solid Waste Related | | | | | | | |
| COS | Commercial compost site | 50 | 50 | | N | | |
| CD1 | Construction or demolition debris disposal area | 50 | 50 | 100 | N | | |
| *HW1 | Household solid waste disposal area, single residence | 50 | 50 | 100 | N | | |
| LF1 | Landfill, permitted demolition debris, dump, or mixed municipal solid waste from multiple persons | 300 | 300 | 600 | N | | |
| SVY | Scrap yard | 50 | 50 | | N | | |
| SWT | Solid waste transfer station | 50 | 50 | | N | | |
| Storm Water Related | | | | | | | |
| SD1 | Storm water drain pipe, 8 inches or greater in diameter | 50 | 20 | | N | | |
| SWI | Storm water drainage well ² (Class V well - illegal ³) | 50 | 50 | | N | | |
| SM1 | Storm water pond greater than 5000 gal. | 50 | 35 | | N | | |
| Wells and Borings | | | | | | | |
| *EB1 | Elevator boring, not conforming to rule | 50 | 50 | | N | | |
| *EB2 | Elevator boring, conforming to rule | 20 | 20 | | N | | |
| MON | Monitoring well | record dist. | record dist. | | N | | |
| WEL | Operating well | record dist. | record dist. | | N | | |
| UUW | Unused, unsealed well or boring | 50 | 50 | | N | | |
| General | | | | | | | |
| *CR1 | Cistern or reservoir, buried, nonpressurized water supply | 20 | 20 | | N | | |
| PLM | Contaminant plume | 50 | 50 | | N | | |
| *CW1 | Cooling water pond, industrial | 50 | 50 | 100 | N | | |
| DC1 | Deicing chemicals, bulk road | 50 | 50 | 100 | N | | |
| *ET1 | Electrical transformer storage area, oil-filled | 50 | 50 | | N | | |
| GRV | Grave or mausoleum | 50 | 50 | | N | | |
| GP1 | Gravel pocket or French drain for clear water drainage only | 20 | 20 | | N | | |
| *HS1 | Hazardous substance buried piping | 50 | 50 | | N | | |
| HS2 | Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight, without safeguards | 150 | 150 | | N | | |
| HS3 | Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight with safeguards | 100 | 100 | | N | | |
| HS4 | Hazardous substance multiple storage tanks or containers for residential retail sale or use, no single tank or container exceeding 56 gal. or 100 lbs., but aggregate volume exceeding | 50 | 50 | | N | | |
| HWF | Highest water or flood level | 50 | N/A | | N | | |
| *HG1 | Horizontal ground source closed loop heat exchanger buried piping | 50 | 50 | | N | | |
| *HG2 | Horizontal ground source closed loop heat exchanger buried piping and horizontal piping, approved materials and heat transfer fluid | 50 | 10 | | N | | |
| IWD | Industrial waste disposal well (Class V well) ² | illegal ³ | illegal ³ | | N | | |
| IWS | Interceptor, including a flammable waste or sediment | 50 | 50 | | N | | |
| OH1 | Ordinary high water level of a stream, river, pond, lake, reservoir, or drainage ditch (holds water six months or more) | 50 | 35 | | N | | |
| *PP1 | Petroleum buried piping | 50 | 50 | | N | | |
| *PP2 | Petroleum or crude oil pipeline to a refinery or distribution center | 100 | 100 | | N | | |

| | |
|--------------------------|-------------------------------------------------------------------|
| SETBACK DISTANCES | All potential contaminant sources must be noted on sketch. |
|--------------------------|-------------------------------------------------------------------|

Record the distance and approximate compass bearing of each potential contaminant source from the well, and identify the source using the "Source Code". Unlabeled points on the map are unsealed wells.



| | Y | N | N/A |
|--------------------------------------------------------------------------------------|---|---|-----|
| Were the isolation distances maintained for the new sources of contamination? | | | X |
| Is the system monitoring existing nonconforming sources of contamination? | | | X |

Reminder Question: Were the wellhead protection measure(s) implemented?

| | | | |
|------------------|---------------|-------------|---------------|
| INSPECTOR | Freitag, John | DATE | 5 - 31 - 2017 |
|------------------|---------------|-------------|---------------|

| RECOMMENDED WELLHEAD PROTECTION (WHP) MEASURES | WHP MEASURE IMPLEMENTED? Y or N | DATE VERIFIED |
|------------------------------------------------|------------------------------------|---------------|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

| COMMENTS |
|--------------------------------------------------------------------|
| <p>There is a gravel pocket at an unkown distance and bearing.</p> |

For further information, please contact:

**Minnesota Department of Health
 Drinking Water Protection Section
 Source Water Protection Unit
 P.O. Box 64975
 St. Paul, Minnesota 55164-0975**

**Section Receptionist: 651-201-4700
 Division TDD: 651-201-5797 or MN Relay Service @ 1-800-627-3529 and ask for 651-201-5000**

**INNER WELLHEAD MANAGEMENT ZONE (IWMZ) -
 POTENTIAL CONTAMINANT SOURCE INVENTORY (PCSI) REPORT**

PUBLIC WATER SYSTEM INFORMATION

| | | |
|----------------|----------------------------------------------------------------------------|------------------|
| PWS ID | 1270016 | COMMUNITY |
| NAME | Hopkins | |
| ADDRESS | Hopkins Water Superintendent, 11100 Excelsior Boulevard, Hopkins, MN 55343 | |

FACILITY (WELL) INFORMATION

| | | |
|------------------------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NAME | Well #4 | IS THERE A WELL LOG OR ADDITIONAL CONSTRUCTION INFORMATION AVAILABLE? <input type="checkbox"/> YES (Please attach a copy) <input type="checkbox"/> NO <input type="checkbox"/> UNDETERMINED |
| FACILITY ID | S03 | |
| UNIQUE WELL NO. | 204068 | |
| COUNTY | Hennepin | |

| | | | |
|-----------------------------|----------------|------------------------|--------|
| PWS ID / FACILITY ID | 1270016 S03 | UNIQUE WELL NO. | 204068 |
|-----------------------------|----------------|------------------------|--------|

| PCSI CODE | ACTUAL OR POTENTIAL CONTAMINATION SOURCE | ISOLATION DISTANCES (FEET) | | | LOCATION | | |
|-----------|------------------------------------------|----------------------------|---------------|-----------------------------|--------------------------|-----------------|----------|
| | | Minimum Distances | | Sensitive Well ¹ | Within 200 Ft. Y / N / U | Dist. from Well | Est. (?) |
| | | Community | Non-community | | | | |

Agricultural Related

| | | | | | | | |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------------|--------|---|--|--|
| *AC1 | Agricultural chemical buried piping | 50 | 50 | | N | | |
| *AC2 | Agricultural chemical multiple tanks or containers for residential retail sale or use, no single tank or container exceeding, but aggregate volume exceeding 56 gal. or 100 lbs. dry weight | 50 | 50 | | N | | |
| ACP | Agricultural chemical tank or container with 25 gal. or more or 100 lbs. or more dry weight, or equipment filling or cleaning area without safeguards | 150 | 150 | | N | | |
| ACS | Agricultural chemical storage or equipment filling or cleaning area with safeguards | 100 | 100 | | N | | |
| ACR | Agricultural chemical storage or equipment filling or cleaning area with safeguards and roofed | 50 | 50 | | N | | |
| ADW | Agricultural drainage well ² (Class V well - illegal ³) | 50 | 50 | | N | | |
| AAT | Anhydrous ammonia tank (stationary tank) | 50 | 50 | | N | | |
| AB1 | Animal building, feedlot, confinement area, or kennel, 0.1 to 1.0 animal unit (stockyard) | 50 | 20 | 100/40 | N | | |
| AB2 | Animal building or poultry building, including a horse riding area, more than 1.0 animal unit | 50 | 50 | 100 | N | | |
| ABS | Animal burial area, more than 1.0 animal unit | 50 | 50 | | N | | |
| FWP | Animal feeding or watering area within a pasture, more than 1.0 animal unit | 50 | 50 | 100 | N | | |
| AF1 | Animal feedlot, unroofed, 300 or more animal units (stockyard) | 100 | 100 | 200 | N | | |
| AF2 | Animal feedlot, more than 1.0, but less than 300 animal units (stockyard) | 50 | 50 | 100 | N | | |
| AMA | Animal manure application | use discretion | use discretion | | N | | |
| REN | Animal rendering plant | 50 | 50 | | N | | |
| MS1 | Manure (liquid) storage basin or lagoon, unpermitted or noncertified | 300 | 300 | 600 | N | | |
| MS2 | Manure (liquid) storage basin or lagoon, approved earthen liner | 150 | 150 | 300 | N | | |
| MS3 | Manure (liquid) storage basin or lagoon, approved concrete or composite liner | 100 | 100 | 200 | N | | |
| MS4 | Manure (solid) storage area, not covered with a roof | 100 | 100 | 200 | N | | |
| OSC | Open storage for crops | use discretion | use discretion | | N | | |

SSTS Related

| | | | | | | | |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-------------------------|--------------------------|---|--|--|
| AA1 | Absorption area of a soil dispersal system, average flow greater than 10,000 gal./day | 300 | 300 | 600 | N | | |
| AA2 | Absorption area of a soil dispersal system serving a facility handling infectious or pathological wastes, average flow 10,000 gal./day or less | 150 | 150 | 300 | N | | |
| AA3 | Absorption area of a soil dispersal system, average flow 10,000 gal./day or less | 50 | 50 | 100 | N | | |
| AA4 | Absorption area of a soil dispersal system serving multiple family residences or a non-residential facility and has the capacity to serve 20 or more persons per day (Class V well) ² | 50/300/150 ⁴ | 50/300/150 ⁴ | 100/600/300 ⁴ | N | | |
| CSP | Cesspool | 75 | 75 | 150 | N | | |
| AGG | Dry well, leaching pit, seepage pit | 75 | 75 | 150 | N | | |
| *FD1 | Floor drain, grate, or trough connected to a buried sewer | 50 | 50 | | N | | |
| *FD2 | Floor drain, grate, or trough if buried sewer is air-tested, approved materials, serving one building, or two or less single-family residences | 50 | 20 | | N | | |
| *GW1 | Gray-water dispersal area | 50 | 50 | 100 | N | | |
| LC1 | Large capacity cesspools (Class V well - illegal) ² | 75 | 75 | 150 | N | | |
| MVW | Motor vehicle waste disposal (Class V well - illegal) ² | illegal | illegal | | N | | |

| | | | |
|-----------------------------|-------------|------------------------|--------|
| PWS ID / FACILITY ID | 1270016 S03 | UNIQUE WELL NO. | 204068 |
|-----------------------------|-------------|------------------------|--------|

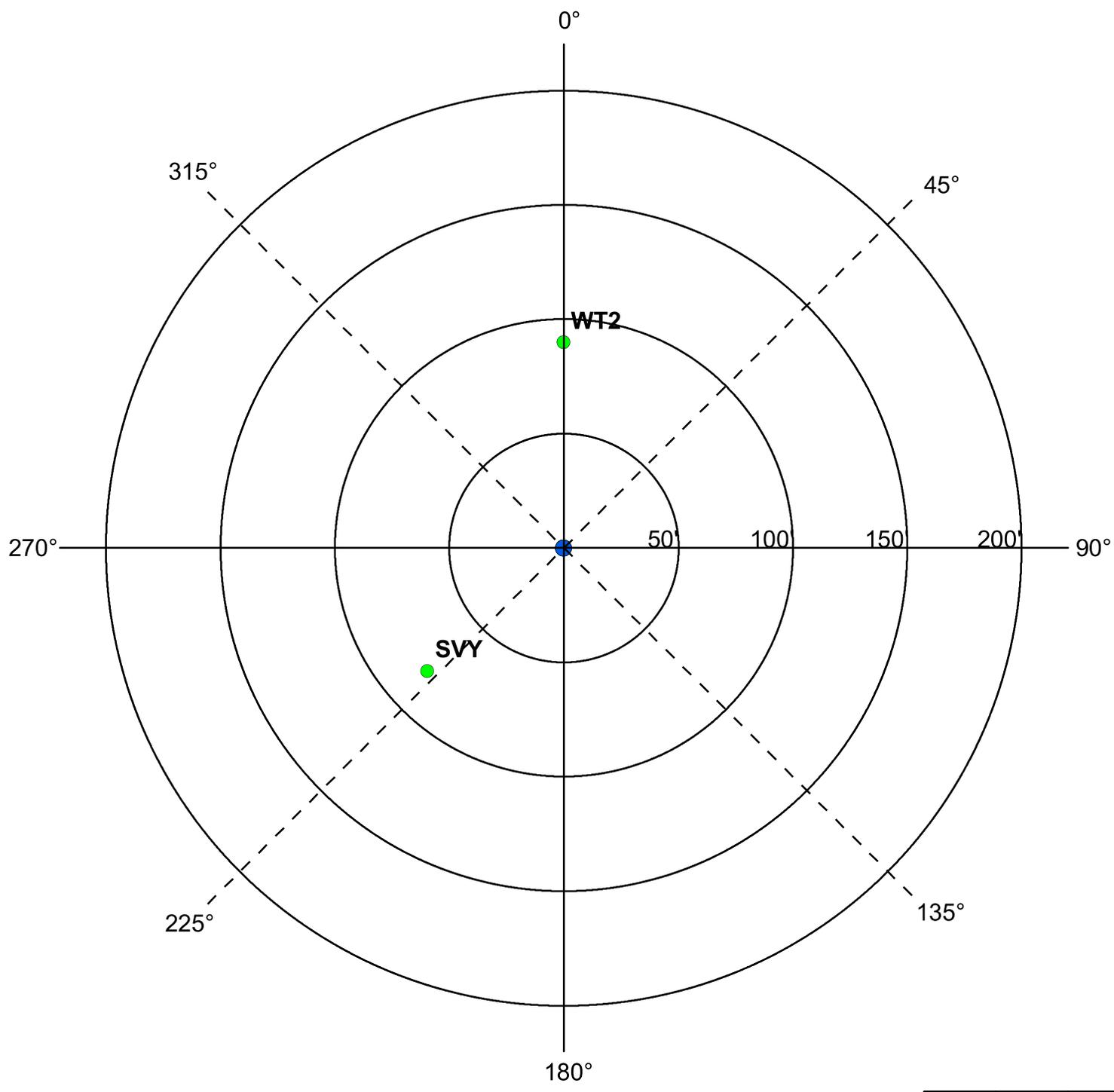
| PCSI CODE | ACTUAL OR POTENTIAL CONTAMINATION SOURCE | ISOLATION DISTANCES (FEET) | | | | LOCATION | |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|----------------------|-----------------------------|--------------------------|-----------------|----------|
| | | Minimum Distances | | Sensitive Well ¹ | Within 200 Ft. Y / N / U | Dist. from Well | Est. (?) |
| | | Community | Non-community | | | | |
| PR1 | Privy, nonportable | 50 | 50 | 100 | N | | |
| PR2 | Portable (privy) or toilet | 50 | 20 | | N | | |
| *SF1 | Watertight sand filter; peat filter; or constructed wetland | 50 | 50 | | N | | |
| SET | Septic tank | 50 | 50 | | N | | |
| HTK | Sewage holding tank, watertight | 50 | 50 | | N | | |
| SS1 | Sewage sump capacity 100 gal. or more | 50 | 50 | | N | | |
| SS2 | Sewage sump capacity less than 100 gal., tested, conforming to rule | 50 | 20 | | N | | |
| *ST1 | Sewage treatment device, watertight | 50 | 50 | | N | | |
| SB1 | Sewer, buried, approved materials, tested, serving one building, or two or less single-family residences | 50 | 20 | | N | | |
| SB2 | Sewer, buried, collector, municipal, serving a facility handling infectious or pathological wastes, open-jointed or unapproved materials | 50 | 50 | | N | | |
| *WB1 | Water treatment backwash holding basin, reclaim basin, or surge tank with a direct sewer connection | 50 | 50 | | N | | |
| *WB2 | Water treatment backwash holding basin, reclaim basin, or surge tank with a backflow protected sewer connection | 20 | 20 | | N | | |
| Land Application | | | | | | | |
| SPT | Land spreading area for sewage, septage, or sludge | 50 | 50 | 100 | N | | |
| Solid Waste Related | | | | | | | |
| COS | Commercial compost site | 50 | 50 | | N | | |
| CD1 | Construction or demolition debris disposal area | 50 | 50 | 100 | N | | |
| *HW1 | Household solid waste disposal area, single residence | 50 | 50 | 100 | N | | |
| LF1 | Landfill, permitted demolition debris, dump, or mixed municipal solid waste from multiple persons | 300 | 300 | 600 | N | | |
| SVY | Scrap yard | 50 | 50 | | Y | 80 | N |
| SWT | Solid waste transfer station | 50 | 50 | | N | | |
| Storm Water Related | | | | | | | |
| SD1 | Storm water drain pipe, 8 inches or greater in diameter | 50 | 20 | | N | | |
| SWI | Storm water drainage well ² (Class V well - illegal ³) | 50 | 50 | | N | | |
| SM1 | Storm water pond greater than 5000 gal. | 50 | 35 | | N | | |
| Wells and Borings | | | | | | | |
| *EB1 | Elevator boring, not conforming to rule | 50 | 50 | | N | | |
| *EB2 | Elevator boring, conforming to rule | 20 | 20 | | N | | |
| MON | Monitoring well | record dist. | record dist. | | N | | |
| WEL | Operating well | record dist. | record dist. | | N | | |
| UUW | Unused, unsealed well or boring | 50 | 50 | | N | | |
| General | | | | | | | |
| *CR1 | Cistern or reservoir, buried, nonpressurized water supply | 20 | 20 | | N | | |
| PLM | Contaminant plume | 50 | 50 | | N | | |
| *CW1 | Cooling water pond, industrial | 50 | 50 | 100 | N | | |
| DC1 | Deicing chemicals, bulk road | 50 | 50 | 100 | N | | |
| *ET1 | Electrical transformer storage area, oil-filled | 50 | 50 | | N | | |
| GRV | Grave or mausoleum | 50 | 50 | | N | | |
| GP1 | Gravel pocket or French drain for clear water drainage only | 20 | 20 | | N | | |
| *HS1 | Hazardous substance buried piping | 50 | 50 | | N | | |
| HS2 | Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight, without safeguards | 150 | 150 | | N | | |
| HS3 | Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight with safeguards | 100 | 100 | | N | | |
| HS4 | Hazardous substance multiple storage tanks or containers for residential retail sale or use, no single tank or container exceeding 56 gal. or 100 lbs., but aggregate volume exceeding | 50 | 50 | | N | | |
| HWF | Highest water or flood level | 50 | N/A | | N | | |
| *HG1 | Horizontal ground source closed loop heat exchanger buried piping | 50 | 50 | | N | | |
| *HG2 | Horizontal ground source closed loop heat exchanger buried piping and horizontal piping, approved materials and heat transfer fluid | 50 | 10 | | N | | |
| IWD | Industrial waste disposal well (Class V well) ² | illegal ³ | illegal ³ | | N | | |
| IWS | Interceptor, including a flammable waste or sediment | 50 | 50 | | N | | |
| OH1 | Ordinary high water level of a stream, river, pond, lake, reservoir, or drainage ditch (holds water six months or more) | 50 | 35 | | N | | |
| *PP1 | Petroleum buried piping | 50 | 50 | | N | | |
| *PP2 | Petroleum or crude oil pipeline to a refinery or distribution center | 100 | 100 | | N | | |

PWS ID / FACILITY ID 1270016 S03

UNIQUE WELL NO. 204068

SETBACK DISTANCES All potential contaminant sources must be noted on sketch.

Record the distance and approximate compass bearing of each potential contaminant source from the well, and identify the source using the "Source Code". Unlabeled points on the map are unsealed wells.



| | Y | N | N/A |
|-------------------------------------------------------------------------------|---|---|-----|
| Were the isolation distances maintained for the new sources of contamination? | | | X |
| Is the system monitoring existing nonconforming sources of contamination? | | | X |

Reminder Question: Were the wellhead protection measure(s) implemented?

INSPECTOR Freitag, John

DATE 5 - 31 - 2017

**INNER WELLHEAD MANAGEMENT ZONE (IWMZ) -
 POTENTIAL CONTAMINANT SOURCE INVENTORY (PCSI) REPORT**

PUBLIC WATER SYSTEM INFORMATION

| | | |
|----------------|----------------------------------------------------------------------------|------------------|
| PWS ID | 1270016 | COMMUNITY |
| NAME | Hopkins | |
| ADDRESS | Hopkins Water Superintendent, 11100 Excelsior Boulevard, Hopkins, MN 55343 | |

FACILITY (WELL) INFORMATION

| | | |
|------------------------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NAME | Well #5 | IS THERE A WELL LOG OR ADDITIONAL CONSTRUCTION INFORMATION AVAILABLE? <input type="checkbox"/> YES (Please attach a copy) <input type="checkbox"/> NO <input type="checkbox"/> UNDETERMINED |
| FACILITY ID | S04 | |
| UNIQUE WELL NO. | 204570 | |
| COUNTY | Hennepin | |

| | | | |
|-----------------------------|----------------|------------------------|--------|
| PWS ID / FACILITY ID | 1270016 S04 | UNIQUE WELL NO. | 204570 |
|-----------------------------|----------------|------------------------|--------|

| PCSI CODE | ACTUAL OR POTENTIAL CONTAMINATION SOURCE | ISOLATION DISTANCES (FEET) | | | LOCATION | | |
|-----------|------------------------------------------|----------------------------|---------------|-----------------------------|--------------------------|-----------------|----------|
| | | Minimum Distances | | Sensitive Well ¹ | Within 200 Ft. Y / N / U | Dist. from Well | Est. (?) |
| | | Community | Non-community | | | | |

Agricultural Related

| | | | | | | | |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------------|--------|---|--|--|
| *AC1 | Agricultural chemical buried piping | 50 | 50 | | N | | |
| *AC2 | Agricultural chemical multiple tanks or containers for residential retail sale or use, no single tank or container exceeding, but aggregate volume exceeding 56 gal. or 100 lbs. dry weight | 50 | 50 | | N | | |
| ACP | Agricultural chemical tank or container with 25 gal. or more or 100 lbs. or more dry weight, or equipment filling or cleaning area without safeguards | 150 | 150 | | N | | |
| ACS | Agricultural chemical storage or equipment filling or cleaning area with safeguards | 100 | 100 | | N | | |
| ACR | Agricultural chemical storage or equipment filling or cleaning area with safeguards and roofed | 50 | 50 | | N | | |
| ADW | Agricultural drainage well ² (Class V well - illegal ³) | 50 | 50 | | N | | |
| AAT | Anhydrous ammonia tank (stationary tank) | 50 | 50 | | N | | |
| AB1 | Animal building, feedlot, confinement area, or kennel, 0.1 to 1.0 animal unit (stockyard) | 50 | 20 | 100/40 | N | | |
| AB2 | Animal building or poultry building, including a horse riding area, more than 1.0 animal unit | 50 | 50 | 100 | N | | |
| ABS | Animal burial area, more than 1.0 animal unit | 50 | 50 | | N | | |
| FWP | Animal feeding or watering area within a pasture, more than 1.0 animal unit | 50 | 50 | 100 | N | | |
| AF1 | Animal feedlot, unroofed, 300 or more animal units (stockyard) | 100 | 100 | 200 | N | | |
| AF2 | Animal feedlot, more than 1.0, but less than 300 animal units (stockyard) | 50 | 50 | 100 | N | | |
| AMA | Animal manure application | use discretion | use discretion | | N | | |
| REN | Animal rendering plant | 50 | 50 | | N | | |
| MS1 | Manure (liquid) storage basin or lagoon, unpermitted or noncertified | 300 | 300 | 600 | N | | |
| MS2 | Manure (liquid) storage basin or lagoon, approved earthen liner | 150 | 150 | 300 | N | | |
| MS3 | Manure (liquid) storage basin or lagoon, approved concrete or composite liner | 100 | 100 | 200 | N | | |
| MS4 | Manure (solid) storage area, not covered with a roof | 100 | 100 | 200 | N | | |
| OSC | Open storage for crops | use discretion | use discretion | | N | | |

SSTS Related

| | | | | | | | |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-------------------------|--------------------------|---|--|--|
| AA1 | Absorption area of a soil dispersal system, average flow greater than 10,000 gal./day | 300 | 300 | 600 | N | | |
| AA2 | Absorption area of a soil dispersal system serving a facility handling infectious or pathological wastes, average flow 10,000 gal./day or less | 150 | 150 | 300 | N | | |
| AA3 | Absorption area of a soil dispersal system, average flow 10,000 gal./day or less | 50 | 50 | 100 | N | | |
| AA4 | Absorption area of a soil dispersal system serving multiple family residences or a non-residential facility and has the capacity to serve 20 or more persons per day (Class V well) ² | 50/300/150 ⁴ | 50/300/150 ⁴ | 100/600/300 ⁴ | N | | |
| CSP | Cesspool | 75 | 75 | 150 | N | | |
| AGG | Dry well, leaching pit, seepage pit | 75 | 75 | 150 | N | | |
| *FD1 | Floor drain, grate, or trough connected to a buried sewer | 50 | 50 | | N | | |
| *FD2 | Floor drain, grate, or trough if buried sewer is air-tested, approved materials, serving one building, or two or less single-family residences | 50 | 20 | | N | | |
| *GW1 | Gray-water dispersal area | 50 | 50 | 100 | N | | |
| LC1 | Large capacity cesspools (Class V well - illegal) ² | 75 | 75 | 150 | N | | |
| MVW | Motor vehicle waste disposal (Class V well - illegal) ² | illegal | illegal | | N | | |

| | | | |
|-----------------------------|-------------|------------------------|--------|
| PWS ID / FACILITY ID | 1270016 S04 | UNIQUE WELL NO. | 204570 |
|-----------------------------|-------------|------------------------|--------|

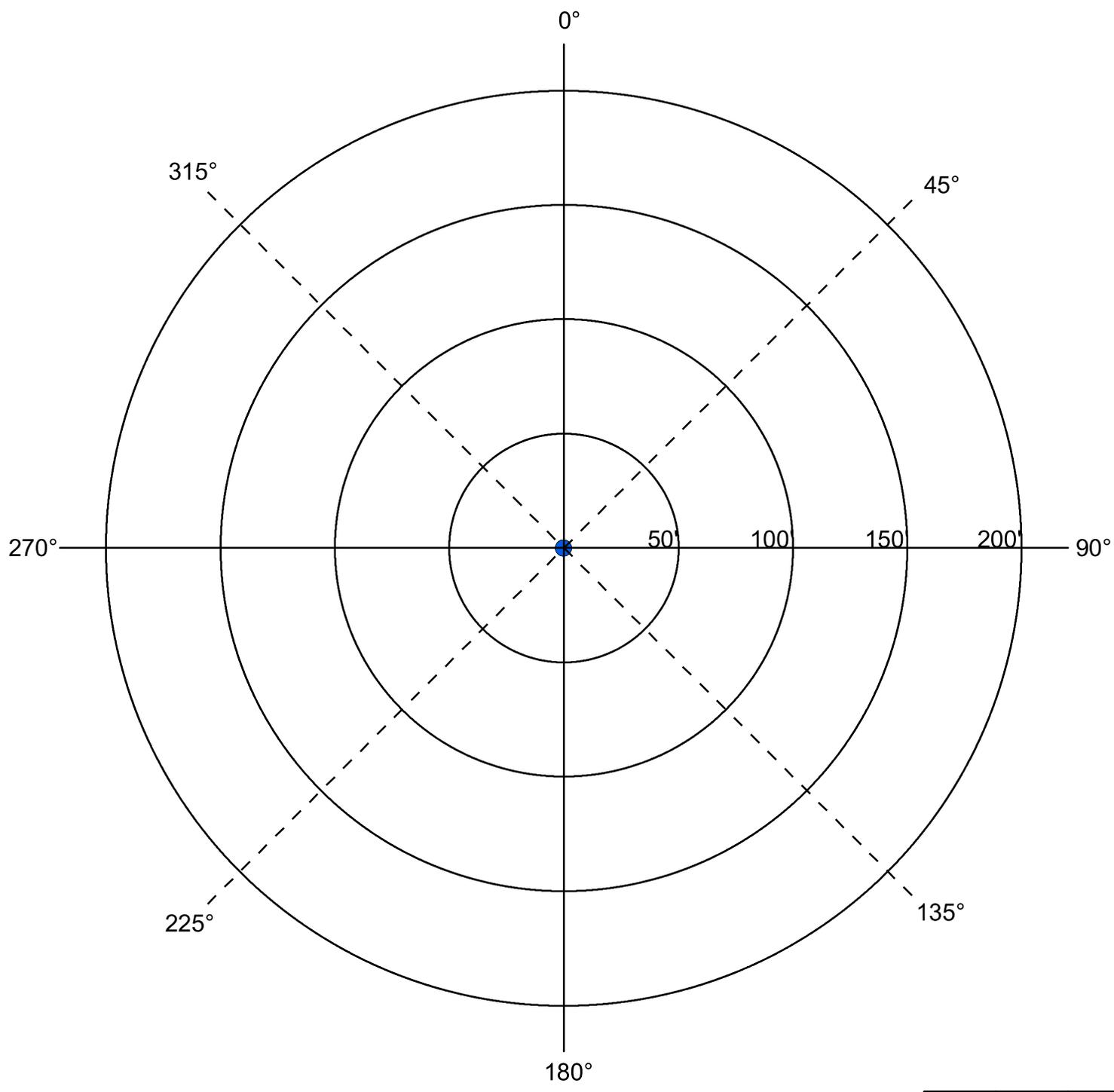
| PCSI CODE | ACTUAL OR POTENTIAL CONTAMINATION SOURCE | ISOLATION DISTANCES (FEET) | | | | LOCATION | |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|----------------------|-----------------------------|--------------------------|-----------------|----------|
| | | Minimum Distances | | Sensitive Well ¹ | Within 200 Ft. Y / N / U | Dist. from Well | Est. (?) |
| | | Community | Non-community | | | | |
| PR1 | Privy, nonportable | 50 | 50 | 100 | N | | |
| PR2 | Portable (privy) or toilet | 50 | 20 | | N | | |
| *SF1 | Watertight sand filter; peat filter; or constructed wetland | 50 | 50 | | N | | |
| SET | Septic tank | 50 | 50 | | N | | |
| HTK | Sewage holding tank, watertight | 50 | 50 | | N | | |
| SS1 | Sewage sump capacity 100 gal. or more | 50 | 50 | | N | | |
| SS2 | Sewage sump capacity less than 100 gal., tested, conforming to rule | 50 | 20 | | N | | |
| *ST1 | Sewage treatment device, watertight | 50 | 50 | | N | | |
| SB1 | Sewer, buried, approved materials, tested, serving one building, or two or less single-family residences | 50 | 20 | | N | | |
| SB2 | Sewer, buried, collector, municipal, serving a facility handling infectious or pathological wastes, open-jointed or unapproved materials | 50 | 50 | | N | | |
| *WB1 | Water treatment backwash holding basin, reclaim basin, or surge tank with a direct sewer connection | 50 | 50 | | N | | |
| *WB2 | Water treatment backwash holding basin, reclaim basin, or surge tank with a backflow protected sewer connection | 20 | 20 | | N | | |
| Land Application | | | | | | | |
| SPT | Land spreading area for sewage, septage, or sludge | 50 | 50 | 100 | N | | |
| Solid Waste Related | | | | | | | |
| COS | Commercial compost site | 50 | 50 | | N | | |
| CD1 | Construction or demolition debris disposal area | 50 | 50 | 100 | N | | |
| *HW1 | Household solid waste disposal area, single residence | 50 | 50 | 100 | N | | |
| LF1 | Landfill, permitted demolition debris, dump, or mixed municipal solid waste from multiple persons | 300 | 300 | 600 | N | | |
| SVY | Scrap yard | 50 | 50 | | N | | |
| SWT | Solid waste transfer station | 50 | 50 | | N | | |
| Storm Water Related | | | | | | | |
| SD1 | Storm water drain pipe, 8 inches or greater in diameter | 50 | 20 | | N | | |
| SWI | Storm water drainage well ² (Class V well - illegal ³) | 50 | 50 | | N | | |
| SM1 | Storm water pond greater than 5000 gal. | 50 | 35 | | N | | |
| Wells and Borings | | | | | | | |
| *EB1 | Elevator boring, not conforming to rule | 50 | 50 | | N | | |
| *EB2 | Elevator boring, conforming to rule | 20 | 20 | | N | | |
| MON | Monitoring well | record dist. | record dist. | | N | | |
| WEL | Operating well | record dist. | record dist. | | N | | |
| UUW | Unused, unsealed well or boring | 50 | 50 | | N | | |
| General | | | | | | | |
| *CR1 | Cistern or reservoir, buried, nonpressurized water supply | 20 | 20 | | N | | |
| PLM | Contaminant plume | 50 | 50 | | N | | |
| *CW1 | Cooling water pond, industrial | 50 | 50 | 100 | N | | |
| DC1 | Deicing chemicals, bulk road | 50 | 50 | 100 | N | | |
| *ET1 | Electrical transformer storage area, oil-filled | 50 | 50 | | N | | |
| GRV | Grave or mausoleum | 50 | 50 | | N | | |
| GP1 | Gravel pocket or French drain for clear water drainage only | 20 | 20 | | N | | |
| *HS1 | Hazardous substance buried piping | 50 | 50 | | N | | |
| HS2 | Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight, without safeguards | 150 | 150 | | N | | |
| HS3 | Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight with safeguards | 100 | 100 | | N | | |
| HS4 | Hazardous substance multiple storage tanks or containers for residential retail sale or use, no single tank or container exceeding 56 gal. or 100 lbs., but aggregate volume exceeding | 50 | 50 | | N | | |
| HWF | Highest water or flood level | 50 | N/A | | N | | |
| *HG1 | Horizontal ground source closed loop heat exchanger buried piping | 50 | 50 | | N | | |
| *HG2 | Horizontal ground source closed loop heat exchanger buried piping and horizontal piping, approved materials and heat transfer fluid | 50 | 10 | | N | | |
| IWD | Industrial waste disposal well (Class V well) ² | illegal ³ | illegal ³ | | N | | |
| IWS | Interceptor, including a flammable waste or sediment | 50 | 50 | | N | | |
| OH1 | Ordinary high water level of a stream, river, pond, lake, reservoir, or drainage ditch (holds water six months or more) | 50 | 35 | | N | | |
| *PP1 | Petroleum buried piping | 50 | 50 | | N | | |
| *PP2 | Petroleum or crude oil pipeline to a refinery or distribution center | 100 | 100 | | N | | |

PWS ID / FACILITY ID 1270016 S04

UNIQUE WELL NO. 204570

SETBACK DISTANCES All potential contaminant sources must be noted on sketch.

Record the distance and approximate compass bearing of each potential contaminant source from the well, and identify the source using the "Source Code". Unlabeled points on the map are unsealed wells.



| | Y | N | N/A |
|-------------------------------------------------------------------------------|---|---|-----|
| Were the isolation distances maintained for the new sources of contamination? | | | X |
| Is the system monitoring existing nonconforming sources of contamination? | | | X |

Reminder Question: Were the wellhead protection measure(s) implemented?

INSPECTOR Freitag, John

DATE 5 - 31 - 2017

| RECOMMENDED WELLHEAD PROTECTION (WHP) MEASURES | WHP MEASURE IMPLEMENTED? Y or N | DATE VERIFIED |
|-------------------------------------------------------|--------------------------------------------|----------------------|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

COMMENTS

There is a gravel pocket at an unknown distance and bearing.

For further information, please contact:

**Minnesota Department of Health
 Drinking Water Protection Section
 Source Water Protection Unit
 P.O. Box 64975
 St. Paul, Minnesota 55164-0975**

**Section Receptionist: 651-201-4700
 Division TDD: 651-201-5797 or MN Relay Service @ 1-800-627-3529 and ask for 651-201-5000**

**INNER WELLHEAD MANAGEMENT ZONE (IWMZ) -
 POTENTIAL CONTAMINANT SOURCE INVENTORY (PCSI) REPORT**

PUBLIC WATER SYSTEM INFORMATION

| | | |
|----------------|----------------------------------------------------------------------------|------------------|
| PWS ID | 1270016 | COMMUNITY |
| NAME | Hopkins | |
| ADDRESS | Hopkins Water Superintendent, 11100 Excelsior Boulevard, Hopkins, MN 55343 | |

FACILITY (WELL) INFORMATION

| | | |
|------------------------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NAME | Well #6 | IS THERE A WELL LOG OR ADDITIONAL CONSTRUCTION INFORMATION AVAILABLE? <input type="checkbox"/> YES (Please attach a copy) <input type="checkbox"/> NO <input type="checkbox"/> UNDETERMINED |
| FACILITY ID | S05 | |
| UNIQUE WELL NO. | 112228 | |
| COUNTY | Hennepin | |

| | | | |
|-----------------------------|----------------|------------------------|--------|
| PWS ID / FACILITY ID | 1270016 S05 | UNIQUE WELL NO. | 112228 |
|-----------------------------|----------------|------------------------|--------|

| PCSI CODE | ACTUAL OR POTENTIAL CONTAMINATION SOURCE | ISOLATION DISTANCES (FEET) | | | | LOCATION | |
|-----------|------------------------------------------|----------------------------|---------------|-----------------------------|--------------------------|-----------------|----------|
| | | Minimum Distances | | Sensitive Well ¹ | Within 200 Ft. Y / N / U | Dist. from Well | Est. (?) |
| | | Community | Non-community | | | | |

Agricultural Related

| | | | | | | | |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------------|--------|---|--|--|
| *AC1 | Agricultural chemical buried piping | 50 | 50 | | N | | |
| *AC2 | Agricultural chemical multiple tanks or containers for residential retail sale or use, no single tank or container exceeding, but aggregate volume exceeding 56 gal. or 100 lbs. dry weight | 50 | 50 | | N | | |
| ACP | Agricultural chemical tank or container with 25 gal. or more or 100 lbs. or more dry weight, or equipment filling or cleaning area without safeguards | 150 | 150 | | N | | |
| ACS | Agricultural chemical storage or equipment filling or cleaning area with safeguards | 100 | 100 | | N | | |
| ACR | Agricultural chemical storage or equipment filling or cleaning area with safeguards and roofed | 50 | 50 | | N | | |
| ADW | Agricultural drainage well ² (Class V well - illegal ³) | 50 | 50 | | N | | |
| AAT | Anhydrous ammonia tank (stationary tank) | 50 | 50 | | N | | |
| AB1 | Animal building, feedlot, confinement area, or kennel, 0.1 to 1.0 animal unit (stockyard) | 50 | 20 | 100/40 | N | | |
| AB2 | Animal building or poultry building, including a horse riding area, more than 1.0 animal unit | 50 | 50 | 100 | N | | |
| ABS | Animal burial area, more than 1.0 animal unit | 50 | 50 | | N | | |
| FWP | Animal feeding or watering area within a pasture, more than 1.0 animal unit | 50 | 50 | 100 | N | | |
| AF1 | Animal feedlot, unroofed, 300 or more animal units (stockyard) | 100 | 100 | 200 | N | | |
| AF2 | Animal feedlot, more than 1.0, but less than 300 animal units (stockyard) | 50 | 50 | 100 | N | | |
| AMA | Animal manure application | use discretion | use discretion | | N | | |
| REN | Animal rendering plant | 50 | 50 | | N | | |
| MS1 | Manure (liquid) storage basin or lagoon, unpermitted or noncertified | 300 | 300 | 600 | N | | |
| MS2 | Manure (liquid) storage basin or lagoon, approved earthen liner | 150 | 150 | 300 | N | | |
| MS3 | Manure (liquid) storage basin or lagoon, approved concrete or composite liner | 100 | 100 | 200 | N | | |
| MS4 | Manure (solid) storage area, not covered with a roof | 100 | 100 | 200 | N | | |
| OSC | Open storage for crops | use discretion | use discretion | | N | | |

SSTS Related

| | | | | | | | |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-------------------------|--------------------------|---|--|--|
| AA1 | Absorption area of a soil dispersal system, average flow greater than 10,000 gal./day | 300 | 300 | 600 | N | | |
| AA2 | Absorption area of a soil dispersal system serving a facility handling infectious or pathological wastes, average flow 10,000 gal./day or less | 150 | 150 | 300 | N | | |
| AA3 | Absorption area of a soil dispersal system, average flow 10,000 gal./day or less | 50 | 50 | 100 | N | | |
| AA4 | Absorption area of a soil dispersal system serving multiple family residences or a non-residential facility and has the capacity to serve 20 or more persons per day (Class V well) ² | 50/300/150 ⁴ | 50/300/150 ⁴ | 100/600/300 ⁴ | N | | |
| CSP | Cesspool | 75 | 75 | 150 | N | | |
| AGG | Dry well, leaching pit, seepage pit | 75 | 75 | 150 | N | | |
| *FD1 | Floor drain, grate, or trough connected to a buried sewer | 50 | 50 | | N | | |
| *FD2 | Floor drain, grate, or trough if buried sewer is air-tested, approved materials, serving one building, or two or less single-family residences | 50 | 20 | | N | | |
| *GW1 | Gray-water dispersal area | 50 | 50 | 100 | N | | |
| LC1 | Large capacity cesspools (Class V well - illegal) ² | 75 | 75 | 150 | N | | |
| MVW | Motor vehicle waste disposal (Class V well - illegal) ² | illegal | illegal | | N | | |

| | | | |
|-----------------------------|-------------|------------------------|--------|
| PWS ID / FACILITY ID | 1270016 S05 | UNIQUE WELL NO. | 112228 |
|-----------------------------|-------------|------------------------|--------|

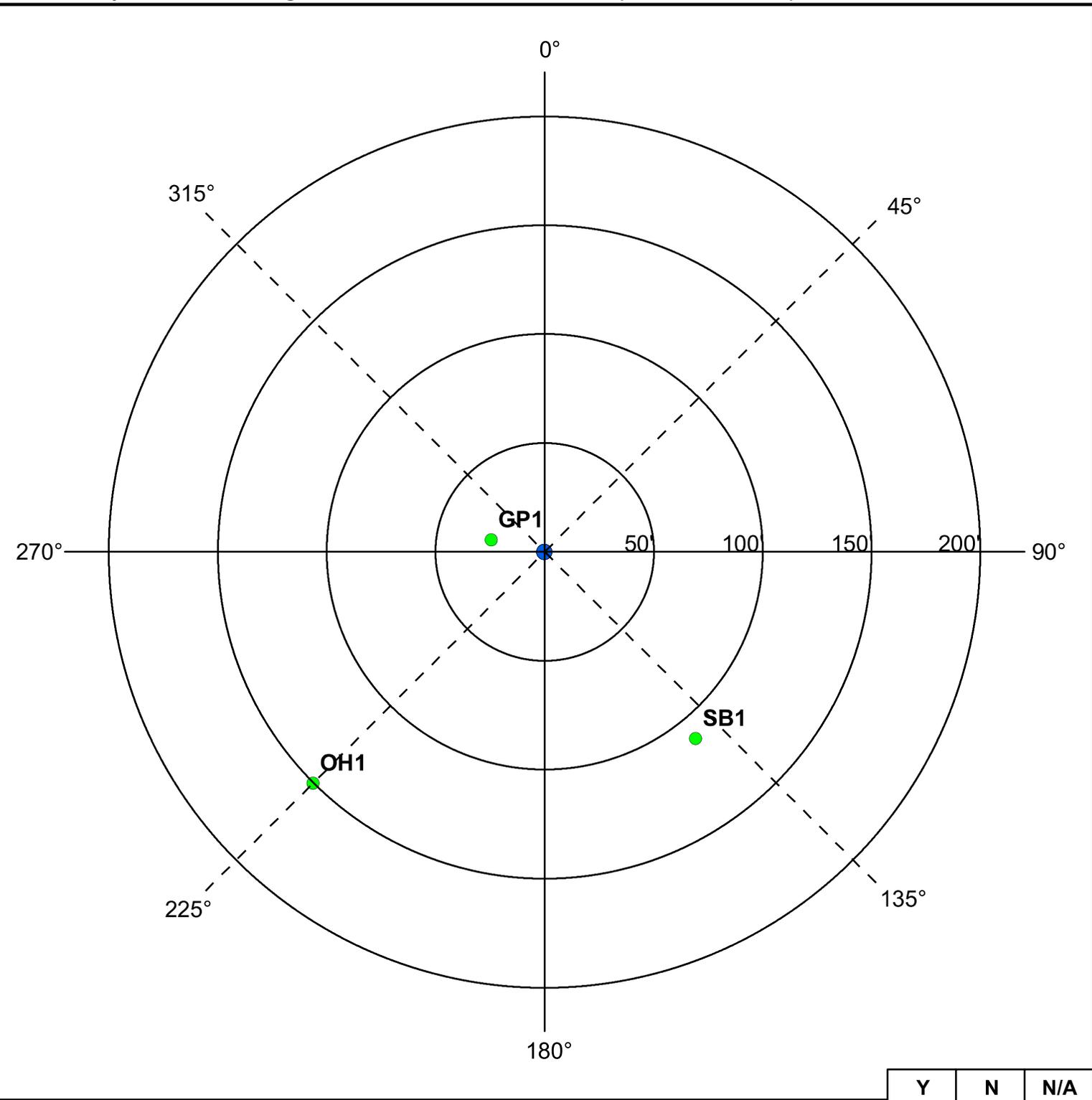
| PCSI CODE | ACTUAL OR POTENTIAL CONTAMINATION SOURCE | ISOLATION DISTANCES (FEET) | | | | LOCATION | |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|----------------------|-----------------------------|--------------------------|-----------------|----------|
| | | Minimum Distances | | Sensitive Well ¹ | Within 200 Ft. Y / N / U | Dist. from Well | Est. (?) |
| | | Community | Non-community | | | | |
| PR1 | Privy, nonportable | 50 | 50 | 100 | N | | |
| PR2 | Portable (privy) or toilet | 50 | 20 | | N | | |
| *SF1 | Watertight sand filter; peat filter; or constructed wetland | 50 | 50 | | N | | |
| SET | Septic tank | 50 | 50 | | N | | |
| HTK | Sewage holding tank, watertight | 50 | 50 | | N | | |
| SS1 | Sewage sump capacity 100 gal. or more | 50 | 50 | | N | | |
| SS2 | Sewage sump capacity less than 100 gal., tested, conforming to rule | 50 | 20 | | N | | |
| *ST1 | Sewage treatment device, watertight | 50 | 50 | | N | | |
| SB1 | Sewer, buried, approved materials, tested, serving one building, or two or less single-family residences | 50 | 20 | | Y | 110 | N |
| SB2 | Sewer, buried, collector, municipal, serving a facility handling infectious or pathological wastes, open-jointed or unapproved materials | 50 | 50 | | N | | |
| *WB1 | Water treatment backwash holding basin, reclaim basin, or surge tank with a direct sewer connection | 50 | 50 | | N | | |
| *WB2 | Water treatment backwash holding basin, reclaim basin, or surge tank with a backflow protected sewer connection | 20 | 20 | | N | | |
| Land Application | | | | | | | |
| SPT | Land spreading area for sewage, septage, or sludge | 50 | 50 | 100 | N | | |
| Solid Waste Related | | | | | | | |
| COS | Commercial compost site | 50 | 50 | | N | | |
| CD1 | Construction or demolition debris disposal area | 50 | 50 | 100 | N | | |
| *HW1 | Household solid waste disposal area, single residence | 50 | 50 | 100 | N | | |
| LF1 | Landfill, permitted demolition debris, dump, or mixed municipal solid waste from multiple persons | 300 | 300 | 600 | N | | |
| SVY | Scrap yard | 50 | 50 | | N | | |
| SWT | Solid waste transfer station | 50 | 50 | | N | | |
| Storm Water Related | | | | | | | |
| SD1 | Storm water drain pipe, 8 inches or greater in diameter | 50 | 20 | | N | | |
| SWI | Storm water drainage well ² (Class V well - illegal ³) | 50 | 50 | | N | | |
| SM1 | Storm water pond greater than 5000 gal. | 50 | 35 | | N | | |
| Wells and Borings | | | | | | | |
| *EB1 | Elevator boring, not conforming to rule | 50 | 50 | | N | | |
| *EB2 | Elevator boring, conforming to rule | 20 | 20 | | N | | |
| MON | Monitoring well | record dist. | record dist. | | N | | |
| WEL | Operating well | record dist. | record dist. | | N | | |
| UUW | Unused, unsealed well or boring | 50 | 50 | | N | | |
| General | | | | | | | |
| *CR1 | Cistern or reservoir, buried, nonpressurized water supply | 20 | 20 | | N | | |
| PLM | Contaminant plume | 50 | 50 | | N | | |
| *CW1 | Cooling water pond, industrial | 50 | 50 | 100 | N | | |
| DC1 | Deicing chemicals, bulk road | 50 | 50 | 100 | N | | |
| *ET1 | Electrical transformer storage area, oil-filled | 50 | 50 | | N | | |
| GRV | Grave or mausoleum | 50 | 50 | | N | | |
| GP1 | Gravel pocket or French drain for clear water drainage only | 20 | 20 | | Y | 25 | N |
| *HS1 | Hazardous substance buried piping | 50 | 50 | | N | | |
| HS2 | Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight, without safeguards | 150 | 150 | | N | | |
| HS3 | Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight with safeguards | 100 | 100 | | N | | |
| HS4 | Hazardous substance multiple storage tanks or containers for residential retail sale or use, no single tank or container exceeding 56 gal. or 100 lbs., but aggregate volume exceeding | 50 | 50 | | N | | |
| HWF | Highest water or flood level | 50 | N/A | | N | | |
| *HG1 | Horizontal ground source closed loop heat exchanger buried piping | 50 | 50 | | N | | |
| *HG2 | Horizontal ground source closed loop heat exchanger buried piping and horizontal piping, approved materials and heat transfer fluid | 50 | 10 | | N | | |
| IWD | Industrial waste disposal well (Class V well) ² | illegal ³ | illegal ³ | | N | | |
| IWS | Interceptor, including a flammable waste or sediment | 50 | 50 | | N | | |
| OH1 | Ordinary high water level of a stream, river, pond, lake, reservoir, or drainage ditch (holds water six months or more) | 50 | 35 | | Y | 150 | N |
| *PP1 | Petroleum buried piping | 50 | 50 | | N | | |
| *PP2 | Petroleum or crude oil pipeline to a refinery or distribution center | 100 | 100 | | N | | |

PWS ID / FACILITY ID 1270016 S05

UNIQUE WELL NO. 112228

SETBACK DISTANCES All potential contaminant sources must be noted on sketch.

Record the distance and approximate compass bearing of each potential contaminant source from the well, and identify the source using the "Source Code". Unlabeled points on the map are unsealed wells.



| | Y | N | N/A |
|-------------------------------------------------------------------------------|---|---|-----|
| Were the isolation distances maintained for the new sources of contamination? | | | X |
| Is the system monitoring existing nonconforming sources of contamination? | | | X |

Reminder Question: Were the wellhead protection measure(s) implemented?

INSPECTOR Freitag, John

DATE 5 - 31 - 2017

| RECOMMENDED WELLHEAD PROTECTION (WHP) MEASURES | WHP MEASURE IMPLEMENTED? Y or N | DATE VERIFIED |
|-------------------------------------------------------|--------------------------------------------|----------------------|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

COMMENTS

For further information, please contact:

**Minnesota Department of Health
 Drinking Water Protection Section
 Source Water Protection Unit
 P.O. Box 64975
 St. Paul, Minnesota 55164-0975**

**Section Receptionist: 651-201-4700
 Division TDD: 651-201-5797 or MN Relay Service @ 1-800-627-3529 and ask for 651-201-5000**

APPENDIX E
Consumer Confidence Report



Hopkins Highlights **Extra**

June
2014

Partnering with the Community, Enhancing the Quality of Life

Inspire - Educate - Involve - Communicate

The City of Hopkins is issuing the results of monitoring done on its drinking water for the period from January 1 to December 31, 2013. The purpose of this report is to advance consumers' understanding of drinking water and heighten awareness of the need to protect precious water resources.

Source of Water

The City of Hopkins provides drinking water to its residents from a groundwater source: three wells ranging from 495 to 548 feet deep that draw water from the Prairie Du Chien-Jordan aquifer.

The water provided to customers may meet drinking water standards, but the Minnesota Department of Health has also made a determination as to how vulnerable the source of water may be to future contamination incidents. If you wish to obtain the entire source water assessment regarding your drinking water, please call 651-201-4700 or 1-800-818-9318 (and press 5) during normal business hours, or view it online at www.health.state.mn.us/divs/eh/water/swp/swa/.

Call 952-548-6373 if you have questions about the City of Hopkins drinking water or would like information about opportunities for public participation in decisions that may affect the quality of the water.

Results of Monitoring

No contaminants were detected at levels that violated federal drinking water standards. However, some contaminants were detected in trace amounts that were below legal limits. The table that follows shows the contaminants that were detected in trace amounts last year. (Some contaminants are sampled less frequently than once a year; as a result, not all contaminants were sampled for in 2013. If any of these contaminants were detected the last time they were sampled for, they are included in the table along with the date that the detection occurred.)

Key to Table Abbreviations

MCLG (Maximum Contaminant Level Goal)—The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

MCL (Maximum Contaminant Level)—The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

MRDL (Maximum Residual Disinfectant Level)

MRDLG (Maximum Residual Disinfectant Level Goal)

AL (Action Level)—The concentration of a contaminant which, if exceeded, triggers treatment or other requirement which a water system must follow.

90th Percentile Level—This is the value obtained after disregarding 10 percent of the samples taken that had the highest levels. For example, in a situation in which 10 samples were taken, the 90th percentile level is determined by disregarding the highest result, which represents 10 percent of the samples. Note: In situations in which only 5 samples are taken, the average of the two with the highest levels is taken to determine the 90th percentile level.

pCi/l (PicoCuries per liter)—A measure of radioactivity.

ppb (parts per billion)—Can also be expressed as micrograms per liter (ug/l).

ppm (parts per million)—Can also be expressed as milligrams per liter (mg/l).

nd—No detection.

N/A (Not applicable)—Does not apply.

| Contaminants (units) | Level Found | | | Average/ Result* | Typical Source of Contaminant |
|-------------------------------------------|-------------|------|------------|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | MCLG | MCL | Range 2012 | | |
| Alpha Emitters (pCi/l) | 0 | 15.4 | N/A | 5.8 | Erosion of natural deposits. |
| Barium (ppm) | 2 | 2 | N/A | 0.14 | Discharge of drilling wastes, discharge from metal refineries, and erosion of natural deposits. |
| Combined Radium (pCi/l) | 0 | 5.4 | N/A | 1.2 | Erosion of natural deposits. |
| Fluoride (ppm) | 4 | 4 | 0.68-1.2 | 1.07 | Erosion of natural deposits, discharge from fertilizer and aluminum factories, and the State of Minnesota requires all municipal water systems to add fluoride to the drinking water to promote strong teeth. |
| Haloacetic Acids (HAA5) (ppb) | 0 | 60 | nd-1.3 | 0.85 | By-product of drinking water disinfection. |
| TTHM (Total Trihalomethanes) (ppb) | 0 | 80 | 0.3-1.1 | 0.78 | By-product of drinking water disinfection. |
| cis-1, 2-Dichloroethylene (ppb) | 70 | 70 | N/A | 0.45 | Discharge from industrial chemical factories. |

*This is the value used to determine compliance with federal standards. It sometimes is the highest value detected and sometimes is an average of all the detected values. If it is an average, it may contain sampling results from the previous year.



Hopkins Highlights **Extra**

June
2014

Partnering with the Community, Enhancing the Quality of Life

Inspire - Educate - Involve - Communicate

| Contaminants (units) | MRDLG | MRDL | Highest and Lowest Monthly Average | Highest Quarterly Average | Typical Source of Contaminant |
|-----------------------|-------|------|------------------------------------|---------------------------|------------------------------------------|
| Chlorine (ppm) | 4.0 | 4.0 | 0.6-1 | 0.85 | Water additive used to control microbes. |

| Contaminants (units) | MCLG | AL | 90% Level | # Sites Over AL | Typical Source of Contaminant |
|--------------------------------|------|-----|-----------|-----------------|--------------------------------------------------------------------------|
| Copper (ppm) | 1.3 | 1.3 | 0.93 | 0 out of 30 | Corrosion of household plumbing systems and erosion of natural deposits. |
| Lead (ppb) 6/18/2010 | 0 | 15 | 2.8 | 1 out of 30 | Corrosion of household plumbing systems and erosion of natural deposits. |

If present, elevated levels of **lead** can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of Hopkins is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at www.epa.gov/safewater/lead.

Some contaminants do not have Maximum Contaminant Levels established for them. These unregulated contaminants are assessed using state standards known as health risk limits to determine if they pose a threat to human health. If unacceptable levels of an unregulated contaminant are found, the response is the same as if an MCL has been exceeded; the water system must inform its customers and take other corrective actions. No unregulated contaminants were detected.

Compliance with National Primary Drinking Water Regulations

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

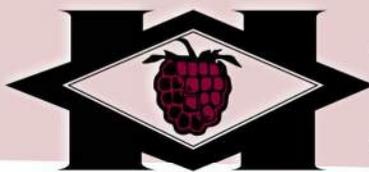
Contaminants that may be present in source water include:

- **Microbial contaminants**, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- **Inorganic contaminants**, such as salts and metals, which can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- **Pesticides and herbicides**, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- **Organic chemical contaminants**, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.
- **Radioactive contaminants**, which can be naturally occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the Environmental Protection Agency (EPA) prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium are available from the Safe Drinking Water Hotline at 1-800-426-4791.



Hopkins Highlights

EXTRA

2014 Drinking Water Report

The City of Hopkins is issuing the results of monitoring done on its drinking water for the period from January 1 to December 31, 2014. The purpose of this report is to advance consumers' understanding of drinking water and heighten awareness of the need to protect precious water resources.

Source of Water

The City of Hopkins provides drinking water to its residents from a groundwater source: three wells ranging from 495 to 548 feet deep that draw water from the Prairie Du Chien-Jordan aquifer.

The water provided to customers may meet drinking water standards, but the Minnesota Department of Health has also made a determination as to how vulnerable the source of water may be to future contamination incidents. If you wish to obtain the entire source water assessment regarding your drinking water, please call 651-201-4700 or 1-800-818-9318 (and press 5) during normal business hours, or view it online at www.health.state.mn.us/divs/eh/water/swp/swa/.

Call 952-548-6373 if you have questions about the City of Hopkins drinking water or would like information about opportunities for public participation in decisions that may affect the quality of the water.

Results of Monitoring

No contaminants were detected at levels that violated federal drinking water standards. However, some contaminants were detected in trace amounts that were below legal limits. The table that follows shows the contaminants that were detected in trace amounts last year. (Some contaminants are sampled less frequently than once a year; as a result, not all contaminants were sampled for in 2014. If any of these contaminants were detected the last time they were sampled for, they are included in the table along with the date that the detection occurred.)

Key to Table Abbreviations

MCLG (Maximum Contaminant Level Goal)—The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

MCL (Maximum Contaminant Level)—The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

MRDL (Maximum Residual Disinfectant Level)

MRDLG (Maximum Residual Disinfectant Level Goal)

AL (Action Level)—The concentration of a contaminant which, if exceeded, triggers treatment or other requirement which a water system must follow.

90th Percentile Level—This is the value obtained after disregarding 10 percent of the samples taken that had the highest levels. For example, in a situation in which 10 samples were taken, the 90th percentile level is determined by disregarding the highest result, which represents 10 percent of the samples. Note: In situations in which only 5 samples are taken, the average of the two with the highest levels is taken to determine the 90th percentile level.

pCi/l (PicoCuries per liter)—A measure of radioactivity.

ppb (parts per billion)—Can also be expressed as micrograms per liter (ug/l).

ppm (parts per million)—Can also be expressed as milligrams per liter (mg/l).

nd—No detection.

N/A—Does not apply.

| Contaminants (units) | MCLG | MCL | Level Found | | Typical Source of Contaminant |
|-------------------------------------------|------|------|-------------|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | | Range 2014 | Average/Result* | |
| Alpha Emitters (pCi/l) | 0 | 15.4 | N/A | 3.8 | Erosion of natural deposits. |
| Barium (ppm) | 2 | 2 | N/A | 0.14 | Discharge of drilling wastes, discharge from metal refineries, and erosion of natural deposits. |
| Combined Radium (pCi/l) | 0 | 5.4 | N/A | 1.1 | Erosion of natural deposits. |
| Fluoride (ppm) | 4 | 4 | 0.98–1.2 | 1.1 | Erosion of natural deposits, discharge from fertilizer and aluminum factories, and the State of Minnesota requires all municipal water systems to add fluoride to the drinking water to promote strong teeth. |
| Haloacetic Acids (HAA5) (ppb) | 0 | 60 | 1.5–1.9 | 1.9 | By-product of drinking water disinfection. |
| Nitrate (as Nitrogen) (ppm) | 10.4 | 10.4 | nd–.07 | 0.07 | Runoff from fertilizer use, leaching from septic tanks and sewage, and erosion of natural deposits. |
| TTHM (Total Trihalomethanes) (ppb) | 0 | 80 | 0.7–1.1 | 1.1 | By-product of drinking water disinfection. |

*This is the value used to determine compliance with federal standards. It sometimes is the highest value detected and sometimes is an average of all the detected values. If it is an average, it may contain sampling results from the previous year.



| Contaminants (units) | MRDLG | MRDL | Highest and Lowest Monthly Average | Highest Quarterly Average | Typical Source of Contaminant |
|----------------------|-------|------|------------------------------------|---------------------------|------------------------------------------|
| Chlorine (ppm) | 4 | 4 | 0.7-1.1 | 0.92 | Water additive used to control microbes. |

| Contaminants (units) | MCLG | AL | 90% Level | # Sites Over AL | Typical Source of Contaminant |
|-------------------------|------|-----|-----------|-----------------|--------------------------------------------------------------------------|
| Copper (ppm) | 1.3 | 1.3 | 0.93 | 0 out of 30 | Corrosion of household plumbing systems and erosion of natural deposits. |
| Lead (ppb) 6/18/2010 | 0 | 15 | 2.8 | 1 out of 30 | Corrosion of household plumbing systems and erosion of natural deposits. |

Lead

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children.

Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of Hopkins is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking.

If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at www.epa.gov/safewater/lead.

Compliance with National Primary Drinking Water Regulations

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

- **Microbial contaminants**, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- **Inorganic contaminants**, such as salts and metals, which can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- **Pesticides and herbicides**, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- **Organic chemical contaminants**, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.
- **Radioactive contaminants**, which can be naturally occurring or be the result of oil and gas production and mining activities.

Additional Contaminants

Monitoring may have been done for additional contaminants that do not have MCLs established for them and are not required to be monitored under the Safe Drinking Water Act. Results may be available by calling 651-201-4700 or 1-800-818-9318 during normal business hours.

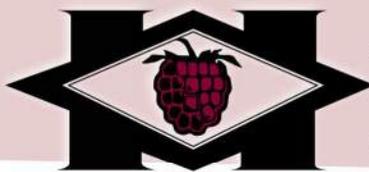
Monitoring for unregulated contaminants as required by U.S. Environmental Protection Agency rules (40 CFR 141.40) was conducted in 2014. Results of the unregulated contaminant monitoring are available upon request from Cindy Swanson, Minnesota Department of Health, at 651-201-4656.



In order to ensure that tap water is safe to drink, the Environmental Protection Agency (EPA) prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791. 🍷

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Hopkins Highlights EXTRA

2015 Drinking Water Report

The City of Hopkins is issuing the results of monitoring done on its drinking water for the period from January 1 to December 31, 2015. The purpose of this report is to advance consumers' understanding of drinking water and heighten awareness of the need to protect precious water resources.

Source of Water

The City of Hopkins provides drinking water to its residents from a groundwater source: three wells ranging from 495 to 548 feet deep that draw water from the Prairie Du Chien-Jordan aquifer.

The Minnesota Department of Health has made a determination as to how vulnerable our systems' source(s) of water may be to future contamination incidents. If you wish to obtain the entire source water assessment regarding your drinking water, please call 651-201-4700 or 1-800-818-9318 (and press 5) during normal business hours. Also, you can view it on line at www.health.state.mn.us/divs/eh/water/swp/swa/.

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No contaminants were detected at levels that violated federal drinking water standards. However, some contaminants were detected in trace amounts that were below legal limits. The table that follows shows the contaminants that were detected in trace amounts last year. (Some contaminants are sampled less frequently than once a year; as a result, not all contaminants were sampled for in 2015. If any of these contaminants were detected the last time they were sampled for, they are included in the table along with the date that the detection occurred.)

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nd—No detection.

N/A—Does not apply.

| Contaminants (units) | MCLG | MCL | Level Found | | Typical Source of Contaminant |
|-------------------------------------------|------|------|-------------|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | | Range 2015 | Average/Result* | |
| Alpha Emitters (pCi/l) | 0 | 15.4 | N/A | 3.8 | Erosion of natural deposits. |
| Barium (ppm) | 2 | 2 | N/A | 0.14 | Discharge of drilling wastes, discharge from metal refineries, and erosion of natural deposits. |
| Combined Radium (pCi/l) | 0 | 5.4 | N/A | 1.1 | Erosion of natural deposits. |
| Fluoride (ppm) | 4 | 4 | 0.77-1.0 | 1.04 | Erosion of natural deposits, discharge from fertilizer and aluminum factories, and the State of Minnesota requires all municipal water systems to add fluoride to the drinking water to promote strong teeth. |
| Haloacetic Acids (HAA5) (ppb) | 0 | 60 | 1-1.2 | 1.2 | By-product of drinking water disinfection. |
| Nitrate (as Nitrogen) (ppm) | 10.4 | 10.4 | nd-.05 | 0.05 | Runoff from fertilizer use, leaching from septic tanks and sewage, and erosion of natural deposits. |
| TTHM (Total Trihalomethanes) (ppb) | 0 | 80 | 0.5-0.6 | .6 | By-product of drinking water disinfection. |

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| Contaminants (units) | MRDLG | MRDL | Highest and Lowest Monthly Average | Highest Quarterly Average | Typical Source of Contaminant |
|-----------------------|-------|------|------------------------------------|---------------------------|------------------------------------------|
| Chlorine (ppm) | 4 | 4 | 0.6-0.9 | 0.9 | Water additive used to control microbes. |

| Contaminants (units) | MCLG | AL | 90% Level | # Sites Over AL | Typical Source of Contaminant |
|----------------------------------|------|-----|-----------|-----------------|--------------------------------------------------------------------------|
| Copper (ppm) 6/28/2013 | 1.3 | 1.3 | 0.93 | 0 out of 30 | Corrosion of household plumbing systems and erosion of natural deposits. |
| Lead (ppb) 6/28/2013 | 0 | 15 | 2.8 | 1 out of 30 | Corrosion of household plumbing systems and erosion of natural deposits. |

Lead

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children.

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Additional Contaminants

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Compliance with National Primary Drinking Water Regulations

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Appendix C:
City of Hopkins Coordination Plan

City of Hopkins Coordination Plan

The *MCWD Watershed Management Plan (2018)* and *NMCWD Water Management Plan (2017)* both highlight the desire to more closely integrate land use planning and water resource management to capitalize on opportunities to improve water resources as development and redevelopment occurs. Given that land use planning lies primarily with the cities, achievement of this goal will require close coordination and partnership between the watershed districts (WDs) and cities.

To achieve the level of coordination and communication required to successfully capitalize on opportunities to improve water resources as part of land use planning, the city will strive to conduct the following activities:

- Participate in an annual meeting to review water resource plan implementation, to be coordinated by the WDs. Parties will discuss how the WDs can receive notice of and consult on land use, infrastructure, park and recreation, and capital improvement planning efforts.
- Transmit the annual NPDES MS4 report to WDs (mutual transmittal, if applicable).
- Notify the WDs of the following:
 - Updates to road and infrastructure implementation programs. The City annually produces a map of anticipated road reconstruction and road maintenance projects for the next five years.
 - Updates to park and recreation plans.
 - Institution and completion of small area plans, sketch plans (if submitted) for large projects, and other focused development or redevelopment actions.
 - Significant alterations within the City MS4 system (to maintain currency of the WD watershed-wide hydrology and hydraulics model).
 - Updates to the Capital Improvement Plan.
- Partnership or coordination as to public communications and education.

The WDs are asked to complete the following activities:

- District notice to the City regarding watershed management plan amendments and annual capital improvement program updates.

Annual Meeting

To capture CIP and budget planning, the annual meeting is planned to occur early in the second quarter. The annual meeting will involve a Planning Team that consists of the City Engineer, Assistant City Engineer and City Planner. The City welcomes and will accommodate requests from the WDs for additional meetings and communications that spur from the annual meeting. For elements the City and WDs identify for coordination, specific communication plans and schedules will be made. The Assistant City Engineer will facilitate communication among appropriate parties based on the scope of the item.

Conversations around water resources planning occur continuously throughout the year and are guided by this plan. It is common for various stakeholders across the community (public agencies, non-profit organizations, citizen groups, city departments, and private entities) to be involved in work that has prominent or nuanced water resources implications. Some of the challenges of coordinating water

resources planning includes the number of stakeholders involved, balancing funding priorities, community attitudes, and the fact that plans and projects are often owned by others (and may have different schedules, values, and service targets). Due to the dynamic nature of various concurrent activities and planning efforts, maps of anticipated road reconstruction, potential park improvements, capital infrastructure investment/reinvestment, priority water resources issues, and private development are not provided here, but will be prepared ahead of each annual meeting. Spatial analysis tools allow for these pieces of information to be integrated annually, efficiently incorporating the best available information.

Watershed District Coordination

The City will work closely with the NMCWD and MCWD to identify and implement water resource protection or improvement partnership projects. The City and WDs have a history of partnership. The past successes have largely been the result of strong working relationships that promote regular conversations. The City is eager to continue and expand cooperative work in the following areas;

- CIP and budget planning: The City's process for this is described in more detail in the Capital Improvement Plan, which is located on the City's website: <http://www.hopkinsmn.com/468/Capital-Improvement-Plan>
- Private development and redevelopment: It's common for large projects to go through a sketch plan review with City Council. The City will share known upcoming projects at the annual meeting and refer to the watersheds as part of the sketch plan review process on larger projects. As WD staff develop relationships with the community and economic development staff at the City, they can regularly and informally check in with the City to stay abreast of private development and redevelopment activity. The City will facilitate a coordination meeting with private developers and the WDs at the request of the WDs. For projects that do not go through a sketch plan process, the City will inform permit applicants of the potential need for a WD permit and, when one is required, will not issue a City permit until the WD permit application has been made.
- Public development and redevelopment: Because of the City's strong working relationship with the WDs, the City is continually seeking opportunities for coordination. This occurs through informal conversations as opportunities arise. Any future efforts including small area plans or other planning activity will be shared at the annual meeting.
- Operation and maintenance: The City will inform the WDs of illicit discharges in a timely manner and share a summary of the illicit discharge detection and elimination program at each annual meeting. Additionally, the City will share its MS4 inspection results at each annual meeting.
- Applicants will be informed that permits may be required from the WDs and provide them with the necessary information to contact WD staff.
- Education and engagement: The City will share its education and engagement calendar at each annual meeting. The City asks the WDs to continue to cross- promote and partner on events.

Project Partnerships

While some opportunities may be associated with development and redevelopment, other opportunities will be focused on land owned by the City. Figure SW-09 shows the city-owned parcels throughout the city. Upcoming opportunities for water resource management or improvement partnerships associated with City-owned park and property redevelopment include:

- Cottageville Park: Phase III Improvements
- Central Park: Park Improvements
- Development for 325 Blake Road

In 2010, the City and Minnehaha Creek Watershed District initiated a Cooperative Agreement (Agreement), known as the Cottageville Park Stormwater Management and Park Improvement Project. The purpose the Agreement was to address the Minnehaha Creek corridor, which had sustained damage to its water quality, channel stability, habitat and public use opportunities as the result of decades of urban development, urban stormwater discharges and adjacent urban uses. The goal was to advance social, economic and environmental goals within the Minnehaha Creek corridor. The Cottageville Park Stormwater Management and Park Improvement Project cooperative agreement and amendments are attached at the end of this plan.

In September 2020, the City and MCWD agreed to explore further collaborative work in the Minnehaha Creek corridor through the adoption of the Cooperative Agreement for the Coordinated Planning, Improvements and Development for 325 Blake Road. This agreement allows for the joint planning of a mixed use development on a portion of the MCWD-owned 325 Blake Road parcel and integration of the development with MCWD's concurrent capital project on the same site. MCWD's capital project includes regionalizing the treatment of approximately 270 acres of stormwater flowing into Minnehaha Creek, adding trails along the creek and connections to the regional trail system, an ecological restoration of the site, and open space amenities for use by the community. The MCWD's Cottageville Park Phase II Riparian Restoration project will also be completed as part of the overall project.

Development Review Process and Land Use Planning

The City utilizes its Development Review process to address stormwater management and ensure water resource protection within the City. Engineering staff review development and redevelopment proposals to ensure that the stormwater management policies and standards of the WRMP are met. Engineering staff also consult the City's Wellhead Protection Plan to ensure that development and redevelopment proposals are in line with the protective measures established for the City's sensitive groundwater resources.

Staff from the City's planning department review development and redevelopment proposals with the guidance of the City's long-range Comprehensive Plan and Zoning Ordinance. In addition to incorporating the policies and design standards of this WRMP, the *City of Hopkins Comprehensive Plan* includes policies, principles, and guidelines that integrate water resources protection and management with land use planning. Among these include the City's land use policy to "grow and develop in a sustainable manner that will protect its high quality natural environment, promote energy efficiency and conservation of natural resources" and to "maintain the current open space and wetlands acreage and seek to expand it whenever possible". The Comprehensive Plan encourages reductions in impervious surfaces and associated stormwater runoff from redevelopment sites and parking lot design that

promotes stormwater infiltration, and encourages protection and improvement of urban forests, which provides stormwater management benefits, among others.

Additionally, the Hopkins Comprehensive Plan includes procedures for planning, programming, and implementing transportation infrastructure, sewer and water infrastructure, and park, recreation, and natural area management. These plans coincide with the timing of the local comprehensive planning timeline and support the Transportation, Water Resources, and Parks & Trails elements of the comprehensive plan.

The City's zoning ordinance is used by staff in the planning department to guide development and redevelopment within the city. The zoning ordinance establishes required setbacks from naturally occurring lakes, ponds, and streams. In some cases, the buffer requirements of the watershed districts may be more stringent, upon which the watershed district requirements supersede. The City's zoning ordinance also addresses development within the floodplain districts of the city.

Station Area Plans outline the long-range vision for land use and development along the proposed Green Line LRT Extension. Station area planning is occurring on an ongoing basis around and within a ½ mile radius of the station locations at Blake Road, in Downtown Hopkins and at Shady Oak Road. The plans can be viewed at: <http://www.hopkinsmn.com/162/Station-Area-Planning>.

The City of Hopkins is basically fully developed; thus, land alteration activities are primarily of a redevelopment nature. As the city redevelops, the City utilizes the policies of the Hopkins Comprehensive Plan, the zoning ordinance, and this WRMP to encourage low-impact site design. The City also relies on implementation of the rules and regulations of the NMCWD and MCWD.

**COOPERATIVE AGREEMENT
&
AMENDMENTS**

Cottageville Park Stormwater Management and Park
Improvement Project

COOPERATIVE AGREEMENT

Minnehaha Creek Watershed District and City of Hopkins Cottageville Park Stormwater Management and Park Improvement Project

This Cooperative Agreement (“Agreement”) is made between the Minnehaha Creek Watershed District (MCWD), a watershed district and political subdivision with powers at Minnesota Statutes Chapters 103B and 103D, and the City of Hopkins (“Hopkins”), a home rule charter city of the State of Minnesota (together, the “parties”).

Recitals and Statement of Purpose

WHEREAS the Minnehaha Creek corridor has sustained damage to its water quality, channel stability, habitat and public use opportunities as the result of decades of urban development, urban stormwater discharges and adjacent urban uses;

WHEREAS market forces, public investments and other external sources prompt and are expected to continue to prompt evolution of current land use, development and redevelopment along the corridor;

WHEREAS Hopkins has a strong interest in supporting and facilitating current use, development and redevelopment that promote the social, economic and environmental well-being of its residents and the broader community;

WHEREAS coordination between the parties, and among the parties and other public and private stakeholders, can enhance the social, economic and environmental vitality of the corridor cost-effectively and further the goals and purposes of the parties;

WHEREAS in furtherance of the parties’ objectives, the parties have entered into the Option Agreement identified and defined in Paragraph 7 of this Agreement;

WHEREAS the parties acknowledge that their ability to achieve these objectives depends on each party satisfactorily and promptly performing individual obligations and working cooperatively with the other party in accordance with the terms and conditions stated in this Agreement;

THEREFORE the parties enter into this Agreement to document the scope of work to be undertaken and the responsibilities assumed by each party; establish procedures for carrying out these responsibilities; and facilitate communication and cooperation between the parties for the successful completion of the work encompassed by the Agreement; and

THEREFORE the parties further agree that this Agreement is made for mutual valuable consideration and is legally binding on them pursuant to the terms herein.

Agreement

Relation of the Parties

1. This Agreement provides for the coordination of independent activities by the parties related to the proposed acquisition of the Property pursuant to the Option Agreement (as those terms are defined in Paragraph 7), the development or improvement of that Property according to the provisions of this Agreement, and related cooperation for municipal and watershed goals as described herein, and does not provide for a joining of powers. The governing body of each party will retain its authority to direct the activities for which that party is responsible. Neither party is responsible for the acts or omissions of the other within the meaning of Minnesota Statutes §471.59, subdivision 1a.

2. All notices or other communications under this Agreement shall be in writing and shall be deemed to have been delivered on receipt in hand, by fax or electronically at the addresses stated below, namely:

MCWD

Mark Ten Eyck
Land Conservation Program Manager
MCWD
18202 Minnetonka Boulevard
Deephaven MN 55391
952-471-0590 ext. 202
mtencyck@minnehahacreek.org

Hopkins

Kersten Elverum
Director of Planning
1010 First Street South
Hopkins, MN 55343

kilverum@hopkinsmn.com

Either party may change its addresses for notice purposes by written notice to the other party given as provided above.

3. The parties will cooperate to develop and carry out a plan for proper and effective communications with affected landowners and the broader public related to the subject matter of this Agreement.

4. Each party will bear the cost of carrying out its tasks and responsibilities under this Agreement, except as otherwise expressly provided in this Agreement.

5. MCWD approval of a stormwater facility or park improvement design under this Agreement is not an engineering certification of the design. The MCWD specifically disclaims any warranties or representations relative to the design or functionality of such improvements. The MCWD has no authority to select, or role in selecting, the means, method or manner of performing any of the work or the person or firm who will perform the work and is not liable for any amounts owed to such persons or firms. Any MCWD right to review or approve a design, work in progress or constructed improvement under this Agreement is solely for the MCWD's own purpose of ensuring that its public water resource goals are met and accounting for funds expended.

6. Hopkins will indemnify, defend and hold harmless the MCWD, its officers, board members, employees and agents from any and all actions, costs, damages and liabilities of any nature to the degree they are the result of any action or inaction by Hopkins or its contractor that is the basis for Hopkins' or its contractor's liability in law or equity, including but not limited to ordinary negligence. The MCWD will indemnify, defend and hold harmless Hopkins, its officers, council members, employees and agents, from any and all actions, costs, damages and liabilities of any nature to the degree they are the result of any action or inaction by the MCWD that is the basis for the MCWD's liability in law or equity, including but not limited to any claims arising out of the Option Agreement. Notwithstanding the foregoing or any other term of this Agreement, neither the MCWD nor Hopkins waives immunity in tort. This Agreement creates no right in and waives no immunity, defense or liability limit with respect to any third party.

Real Estate Acquisition

7. In accordance with the provision of that certain Memorandum Agreement by and between Hopkins and the MCWD dated June 14, 2010 (the "Memorandum Agreement"), Hopkins hereby assigns to MCWD all rights it possesses as Optionee under that certain Option Agreement dated June 16, 2010, and all amendments thereto, by and among Nemar Properties, LLC; Hopkins, and the MCWD for the purchase of 427-429 Blake Road (the "Option Agreement"). The real property located at 427-429 Blake Road that is the subject of the Option Agreement is herein referred to as the "Property". If and to the extent necessary, Hopkins will cooperate with the MCWD in connection with the exercise of all rights, responsibilities and remedies of Optionee under the Option Agreement; provided, however, Hopkins' liability for costs and expenses in connection with the Option Agreement incurred or arising prior to the date hereof shall be limited by and allocated in accordance with the provisions of the Memorandum Agreement. Paragraphs 1, 2 and 3 of the Memorandum Agreement are incorporated in this Agreement by reference and shall remain in effect in all of their terms, covenants and conditions.

8. This Agreement does not obligate the MCWD to exercise the option for acquisition of the Property. From and after the date hereof, the MCWD may exercise its rights and responsibilities as Optionee under the Option Agreement in its sole discretion and as it determines appropriate. The MCWD will promptly advise Hopkins of its decisions and actions as Optionee and will notify Hopkins of a) its

election to exercise the option to purchase the Property, or b) the termination of the Option Agreement and election by MCWD not to exercise its option to purchase the Property.

9. The parties' obligations and undertakings under the succeeding paragraphs of this Agreement are subject to and contingent upon the MCWD acquiring the Property pursuant to the Option Agreement. If the MCWD does not acquire the Property pursuant to the Option Agreement, Paragraphs 10-29 of this Agreement shall become null and void and shall have no further force or effect.

Stormwater Management Improvements

10. If the MCWD acquires the Property and conveys or unconditionally agrees to convey the Easement (defined in Paragraph 12) to Hopkins, Hopkins will design, construct and maintain stormwater management facilities conforming to the siting, performance, vegetation and maintenance criteria contained in Exhibit A to this Agreement, attached and incorporated herein. The stormwater management facilities to be designed, constructed and maintained by Hopkins in accordance with the terms and conditions of this Agreement are herein referred to as the "Stormwater Management Facilities."

11. Within 180 days following MCWD's closing on the Property, Hopkins will transmit to the MCWD preliminary plans for the Stormwater Management Facilities. The Stormwater Management Facilities may be sited on one or more parcels owned by Hopkins including the Cottageville Park property and any other property on which Hopkins has acquired, or is committed to acquiring, the property interest to support the improvements; or on the Property. The parties will consult and cooperate in Hopkins' development of the preliminary plan.

12. The MCWD will convey to Hopkins, at no cost, temporary and perpetual easements on the Property sufficient for construction and maintenance of stormwater management facilities conforming to Exhibit A and approved by the MCWD pursuant to this Agreement (the "Easement"). Notwithstanding, (a) Hopkins will conduct construction staging and stockpiling to the extent feasible on property other than the Property and (b) construction limits on the Property will be defined to minimize tree, vegetation and soil damage. Hopkins will perform the work in accordance with all applicable permits and approvals, including those of the MCWD. The MCWD in the easement may place terms on the performance of the work in order to protect its proprietary and water resource interests, provided they do not render the work unfeasible or significantly increase its cost.

13. Hopkins will exercise reasonable diligence to timely produce final design plans and specifications, as well as facility and vegetation management plans, for the Stormwater Management Facilities, for MCWD review and approval. MCWD approval will be based on the criteria in Exhibit A and will not be unreasonably withheld. Specifically, if the final design plans and specifications for the Stormwater Management Facilities are in conformity with the preliminary plans submitted under

Paragraph 11 and the criteria in Exhibit A, the MCWD shall reasonably grant approval of such plans and specifications.

14. On MCWD approval under the preceding paragraph 13 and the conveyance of or unconditional agreement to convey the Easement to Hopkins, Hopkins will retain a contractor to promptly and diligently construct the Stormwater Management Facilities substantially in accordance with the approved design and all applicable permits, approvals, rules, environmental review and other legal requirements, including those of the MCWD. To the extent work will occur on MCWD property, the MCWD may require that Hopkins include in the construction contract or otherwise provide reasonable protections for the MCWD as to potential liabilities resulting from construction and maintenance of the facilities that may include, but are not limited to, insurance coverage and indemnification requirements, as well as vegetation warranties. To the extent of its authority under applicable bidding law, Hopkins will work with the MCWD to incorporate and apply criteria to ensure the selected contractor is qualified to successfully implement any specialized designs or methods.

15. Hopkins will notify the MCWD of construction meetings, which the MCWD may attend. Hopkins may issue change orders and work change directives for the work, subject to MCWD concurrence in any change that materially modifies either the Stormwater Management Facilities approved by MCWD or any element of the contract providing protection for the MCWD as described in the preceding paragraph 14. Hopkins will notify the MCWD of proposed change orders and work change directives and provide the MCWD at least two full business days to review and respond. If a proposed change order or work change directive requires city council approval, Hopkins will provide such notice at least two business days before city council consideration. Where MCWD concurrence is required, the MCWD will respond within two business days of a written request for concurrence accompanied by adequate documentation of the proposed change. A response may state the need for additional time, if MCWD concurrence requires Board approval or specific engineering review is needed. In such a case, the MCWD will exercise good faith and diligence to respond as quickly as possible consistent with the contract(s) entered into by Hopkins for the construction of the Stormwater Management Facilities. Change order and work change directive concurrence may be exercised by MCWD staff provided the design as revised conforms with Exhibit A.

16. Hopkins will notify the MCWD within a reasonable time of the substantial completion of the Stormwater Management Facilities. At the earliest mutual opportunity, the MCWD will accompany Hopkins on the walk-through and identification of remaining work items. Within 20 days of walk-through, the MCWD will provide concurrence in conformance to design plans and specifications or specify deviations. If the MCWD specifies deviations in the Stormwater Management Facilities that are not in substantial compliance with the approved plans and specifications therefor, the parties will work together to determine remaining work required and how it will be accomplished. Hopkins will provide the MCWD with a full set of record drawings for the stormwater management improvements.

17. Hopkins will maintain the Stormwater Management Facilities in perpetuity in accordance with the facility and vegetation management plans approved by the MCWD. If the MCWD finds that facility or vegetation management is not meeting requirements of such management plans, it will provide Hopkins written notification describing the deficiency and, at the request of either party, the parties will meet promptly. Hopkins may cure such a facility maintenance deficiency within 30 days of the notification or meeting, or within such other time as the parties may agree; and may cure a vegetation maintenance deficiency by October 15 following the next full growing season after the notification or meeting, or within such other time as the parties may agree. If at that time the MCWD finds that the deficiency has not been cured, it may assume responsibility for maintenance of the facilities and/or native vegetation, with reimbursement by Hopkins for MCWD contract costs incurred. If the MCWD does not exercise this right, Hopkins' maintenance responsibility and its responsibility for maintenance costs will remain undiminished.

18. The parties will collaborate with respect to signage and other public information relating to the facilities. Each party retains the right to install and maintain signage or otherwise engage in any public informational effort with respect to its property, but will consult with the other party. Any public materials will acknowledge the shared participation of the parties in the project.

19. With the input of the MCWD and Hopkins engineers, the MCWD Board of Managers will determine the pollutant load reduction resulting from the project. On the basis of relative contributions to the costs of stormwater management improvements as reviewed by the parties, the MCWD will receive credit for 68 percent, and Hopkins will receive credit for 32 percent, of the pollutant load reduction for the purpose of meeting load allocations in the MCWD's watershed plan as well as any other water quality-related purpose.

Park Improvements

20. Hopkins intends to undertake recreational, park or other improvements to and the reconfiguration or expansion of Cottageville Park at its discretion and sole cost in conjunction with the acquisition of the Easement and design and construction of the Stormwater Management Facilities. MCWD may approve the siting of park improvements on the Property and shall convey easement rights to Hopkins consistent with its approval. MCWD approval will be on the basis of the water resource impacts of the park improvements, the potential for other uses of the Property consistent with MCWD's statutory purposes, possible MCWD liabilities and other relevant considerations.

21. Park improvements on the Cottageville Park property and any adjacent properties Hopkins may acquire have a primary purpose of serving recreational needs for the community. The MCWD will cooperate with Hopkins on the design and construction of any park improvements. For park improvements on Hopkins property, MCWD staff will have authority to approve the preliminary or concept plans for the park improvements with respect to water resource aspects of the design, including but not limited to stormwater impacts, tree preservation and design for

public education on water resource features of the site. Aside from orderly review and permitting under its rules, the MCWD will not have authority to approve the final plans and specifications for the park improvements on Hopkins property, provided such final plans and specifications are in conformity with the preliminary plans or concept plans for the park improvements approved by MCWD. The MCWD recognizes that the park improvements are intended, among other things, to serve specific recreational needs of the community. Hopkins recognizes the importance of meeting identified recreation needs in a way that supports and does not interfere with the District's surface and groundwater protection goals. The parties agree to work together and collaboratively to allow Hopkins to produce a park design that will integrate and knit together areas of active recreation, stormwater facilities, and protected vegetation and riparian areas to meet recreational needs in a way that provides for both active and passive recreation; meets MCWD goals for water resource restoration, enhancement and protection; and brings the public into productive and learning contact with water resource and conservation features.

Metropolitan Council Lift Station

22. The parties will cooperate to engage the Metropolitan Council in its project to relocate and reconstruct its Blake Road sanitary lift station. The parties' goal will be to establish a lift station location, design and construction schedule consistent with their water resource and park interests.

23. Hopkins will use its powers including its land use authorities to avoid a lift station siting deemed unacceptable to Hopkins or the MCWD, to distance the site from the creek, and to provide for spill protection and other risk reducing features to be incorporated into the design.

Further Collaboration

24. The parties will collaborate closely during design of the stormwater management facility and park improvements described in this Agreement. Hopkins will initiate or continue design efforts on these improvements on execution of this Agreement, in order to produce, without compromising the November 30, 2012 date for substantial completion of the Stormwater Management Facilities, a design that best integrates the public goals of the parties for the contiguous area comprising the Cottageville Park parcel, Property, and any other parcels in which Hopkins has acquired or is to acquire sufficient property rights. In a writing signed by both parties, and an amendment to this Agreement if necessary, the parties may adjust the design of the stormwater management facility improvements to incorporate trails or other park features and otherwise to advance the parties' mutual goals.

25. Hopkins and the MCWD agree that collaboration can result in expanded public benefits in realms of economic and housing redevelopment, public facilities and water resource protection and conservation. The parties will jointly review and build on the adopted Hopkins small-area plan encompassing the project area in order to develop a long-range redevelopment plan for an appropriately delineated area identified cooperatively. For the purpose of developing this plan, the parties commit

to work collaboratively and diligently to achieve, by September 9, 2010, governing body approval of a document that contains the following:

- a. A mutual statement of redevelopment goals;
- b. Identification and assessment of potentially applicable redevelopment tools including but not limited to land use powers, regulatory powers, redevelopment powers, property acquisition funds and powers, and revenue mechanisms;
- c. A review of opportunities for third-party participation, including but not limited to housing and redevelopment authorities, private landowners and stakeholders, and other municipalities along the Minnehaha Creek corridor; and
- d. Identification of further steps needed to complete a redevelopment implementation plan and a plan and schedule to complete those steps.

The parties will cooperate to complete the redevelopment implementation plan. The parties will retain consultants, commission studies and otherwise apply resources that they mutually determine are needed to ensure a sound and feasible plan that has community support. Costs, data ownership and other considerations related to this work will be negotiated between the parties in accordance with the relation the work in question bears to the purposes and roles of each party.

26. Neither party is committing to any specific role or responsibility under a redevelopment implementation plan by signing this Agreement. The outcome of the parties' effort under paragraph 25 will be a separate agreement allocating roles and responsibilities under the implementation plan, and that will be subject to approval by each party's governing body.

Remedies and Termination

27. Subject to the contingencies and conditions stated above, Hopkins will substantially complete the Stormwater Management Facilities by November 30, 2012.

28. Only contractual remedies are available for the failure of a party to fulfill the terms of this Agreement. The parties agree that the MCWD's acquisition of the Property, its assumption of relocation, demolition and other costs related to 427-429 Blake Road, and the acquisition of the Easement by Hopkins constitutes valuable consideration for the Stormwater Management Facilities. If the Stormwater Management Facilities are not completed by Hopkins in accordance with this Agreement, the MCWD may have, at its election, the contractual remedy of specific performance requiring that Hopkins fully perform its obligations under this Agreement.

29. This Agreement is effective when fully executed by the parties and expires five years thereafter. All obligations that have come into being before expiration, specifically including but not limited to obligations under paragraphs 6 and 17, shall survive expiration.

INTENDING TO BE BOUND,

MINNEHAHA CREEK WATERSHED DISTRICT

James B. Calkins 9-9-10
James Calkins, President

Approved for Form and Execution:

[Signature]
MCWD Counsel

CITY OF HOPKINS

Eugene J. Maxwell
By: Eugene J. Maxwell
Its: Mayor

[Signature]
By: Richard Getschow
Its: City Manager

Dated: September 10, 2010

Hopkins – MCWD Cooperative Agreement

EXHIBIT A

STORMWATER FACILITY STANDARDS:

Stormwater facilities located on the 427-429 Blake Road Property (the “MCWD Property”) and contiguous parcels owned by the City of Hopkins or in which it has acquired easement rights, designed and constructed by the City of Hopkins shall generally conform to the performance standards of the September 8, 2009 SEH Concept Plan. These facilities shall provide water quality (phosphorus load reduction), water quantity (runoff volume reduction) and runoff rate control for 32.48 acres of residential and commercial land in the City of Hopkins, identified by the City of Hopkins and SEH as subwatersheds EE-1 (1.19 acres), EE-2 (9.65 acres), EH-1 (3.13 acres), EH-2 (2.7 acres), EH-3 (4.04 acres), EK-1 (0.48 acres), EK-2 (11.29 acres).

Stormwater facilities are to be designed and constructed to treat the 32.48 acre tributary drainage area and shall: (a) provide at least 17 lbs/year of phosphorus load reduction, (b) reduce runoff rates to the extent feasible and in no case increase runoff rates above existing rates for the 1, 10 and 100 year design storm events and (c) provide maximum amount of runoff volume reduction feasible based on site specific conditions such as groundwater elevation, hydrologic soil groups etc. Pre-treatment shall be included for stormwater facilities in accordance with the Minnesota Stormwater Manual. Design performance of facilities shall be documented through the use of appropriate hydraulic, hydrologic and pollutant load modeling. Modeling will be based on the 2030 buildout for the drainage area, presuming that water quality, peak flow and volume for new development and redevelopment will be managed consistent with present Hopkins and MCWD permitting standards.

Modeling and design of stormwater facilities on site should incorporate the following recommendations outlined in the February 10, 2010 memorandum from Wenck Associates to the Minnehaha Creek Watershed District: “Evaluation of Conceptual Stormwater Routing Plans for Cottageville Park on Blake Road in Hopkins” (attached).

Adjustments to modeling:

- Use more recent precipitation and temperature files, and increase the number of runs from 1 to 3.
- Change the filtration efficiency for soluble fraction (P0) from 90% to 0% to reflect that soluble phosphorus will be passing through the system untreated.
- Reduce pond volumes to reflect the likely limit in pond depth and maintain existing footprint for conceptual plan. Original depths were about 2.2 to 2.3, revised pond depths should be set to 1.8 feet to accommodate an underdrain system.

Conceptual Alternative Design:

- Characterize local groundwater elevation & soils prior to design.
- Add pretreatment with a forebay or proprietary device, this will also reduce maintenance activities.
- Use engineered filtration media to promote filtration, enhance plant rooting depth, increase evapotranspiration.
- Consider assisted filtration by adding iron filings or an alternative to target removal of soluble phosphorus. Consider making this a demonstration project, by adding iron filings to one of the two ponds and measuring load reductions in both ponds. Some alternative routing scenarios would be necessary if this option is selected.
- Design the biofiltration systems with underdrains.

Consider addition of a shallow profile stormwater collection/ passive irrigation system to the garden area (or two garden areas). This could be in-lieu of one of the ponds, or to treat additional drainage area. Consider making the garden a native plant showcase and adding educational or community outreach elements. The additional cost for passive irrigation in an area about the size of the planned garden-oval is about \$160,000. The volume mitigation is equivalent to the 0.7 inch

storm which corresponds to 50% P removal capacity, and 80- 90 % of storms. This can also serve as a demonstration for future multipurpose public land use projects.

- Add monitoring to gauge effectiveness of demonstration projects. Bypass winter and early spring wet weather and large storm events to avoid impacts of road salt and large storms.
- Disconnect Pond A and B, as the treatment train will do nothing but hydraulically overload Pond B.
- Review updated MCWD XP-SWMM Model of the Creek to make additional recommendations.
- Add educational kiosks.
- The bio-filtration area EK-1 should be expanded to treat the 1.25 inch event Bring existing Interceptor Crossing into compliance with the MCWD Waterbody Crossing Rule.

Stormwater facilities may not include design features or management practices that unduly restrict groundwater flow through the site.

VEGETATION STANDARDS:

Native vegetation shall be planted and maintained in all bioretention basins such that a minimum of 95% native species cover and a maximum of 5% invasive species cover is retained.

Vegetative Performance Standards:

- Year 1 (first full growing season after construction): Seedlings of at least 4 native species shall be widely dispersed through the bioretention basins. No areas of bare soil larger than 16 square feet shall exist. There shall be no more than 5% total coverage of exotic, non-native, or invasive vegetation (such as cattail).
- Year 2 (second full growing season after construction): The bioretention basins shall contain at least 30% of all species contained in the specified seed mixture. No areas of bare soil larger than 9 square feet shall exist. There shall be no more than 5% total coverage of exotic, non-native or invasive vegetation.
- Subsequent years after Year 2: The bioretention basins shall have a minimum of 95% cover of native, non-invasive vegetation and shall contain at least 40% of all species in the specified seed mix. No areas of bare soil larger than 4 square feet shall exist. There shall be less than 5% total coverage of exotic, non-native, or invasive vegetation.

ECOLOGICAL RESTORATION & SECONDARY OBJECTIVES:

In addition to achieving the above water quality, water quantity and rate control standards, design of the stormwater facilities on site should, as feasible, accommodate concurrent or future integration of broader ecological concerns, passive recreation and trails, active recreation and public education opportunities. The 75 foot average buffer may include the native planting areas within the rain water gardens and may include a pedestrian trail and at least one access point to the creek as shown in the concept plans prepared by the City. Any temporary excavations within the buffer area will have adequate erosion protection and shall be restored in a timely fashion.

Stormwater facilities and the 75 foot creek buffer shall be planted and maintained with native vegetation suited to the site and anticipated soil moisture conditions.

Design of stormwater facilities on site will conform to a tree preservation plan prepared by the MCWD after site inspection and consultation between the MCWD and Hopkins.

MAINTENANCE:

Maintenance terms described in this exhibit will be incorporated in recorded perpetual instruments (easement for the MCWD Property, declaration for Hopkins parcels).

STORMWATER FACILITIES MAINTENANCE

When construction is complete, Hopkins will perform an as-built topographic survey of the stormwater facilities. Bottom sediment elevations are to be observed annually and measured every 3 years to monitor sedimentation. When half of the as-built volume has been displaced with sediment, the basin shall be excavated and rebuilt to its design depth.

Hopkins shall perform annual inspections of stormwater facilities, stormsewer pipes and side slopes. Maintenance is required to remove trash and debris, and to repair eroded side slopes.

Bioretention basins are to be inspected annually and after significant storms. The length of time required for a basin full of water to completely drain should be no more than 48 hours. If a basin does not drain at this rate, maintenance is required.

Any proprietary devices shall be inspected and maintained in accordance with manufacturer instructions.

Hopkins shall keep records of inspections and maintenance performed.

VEGETATION MAINTENANCE

Native vegetation shall be planted and maintained such that a minimum of 95% native species cover and a maximum of 5% invasive species cover is retained.

Maintenance activities shall be performed by a qualified professional:

- A certified wetland scientist or biologist shall conduct all vegetation surveys.
- A licensed contractor shall perform all maintenance within the bioretention basins.

**FIRST AMENDMENT to
COOPERATIVE AGREEMENT**

**Minnehaha Creek Watershed District and City of Hopkins
Cottageville Park Stormwater Management and Park Improvement Project**

This First Amendment (“Amendment”) to the Cooperative Agreement (“Agreement”) is made between the Minnehaha Creek Watershed District (MCWD), a watershed district and political subdivision with powers at Minnesota Statutes Chapters 103B and 103D, and the City of Hopkins (“Hopkins”), a home rule charter city of the State of Minnesota (together, the “parties”).

Recitals and Statement of Purpose

WHEREAS on September 10, 2010, the parties entered into the Agreement to advance social, economic and environmental goals within the Minnehaha Creek corridor;

WHEREAS pursuant to paragraphs 7 through 9 of the Agreement, the MCWD acquired the real property located at 427-429 Blake Road (the “Property”);

WHEREAS pursuant to the Agreement, Hopkins assumed the responsibility to design, build and maintain water quality facilities located on the Property, at its expense, in coordination with such park improvements it should choose to construct in adjacent, city-owned Cottageville Park, and pursuant to terms in the Agreement for the parties’ collaboration in the overall site improvements;

WHEREAS in January 2014 the Board of Water and Soil Resources (BWSR), on behalf of the State of Minnesota, awarded the MCWD a Clean Water Fund grant from the State of Minnesota in the amount of \$483,000, requiring a local match of \$150,000, to fund water quality and riparian improvements within the area described in this Agreement in order to meet water quality goals for Minnehaha Creek;

WHEREAS the MCWD concludes that it is cost-effective and advances the MCWD’s public goals to extend the design for the water resource improvements to encompass the parcel shown as Phase II on Exhibit C of this Amendment and riparian to Minnehaha Creek (together, “MCWD Properties”);

WHEREAS as conceptual design has proceeded, the parties have come to conclude that the MCWD should assume responsibility to design and construct the water resource improvements on the MCWD Properties;

WHEREAS the parties concur that in the interest of an integrated design and construction efficiencies, the MCWD’s design and construction activity also should extend onto the Cottageville Park property for the purpose of certain land grading, trail construction and landscaping;

WHEREAS these circumstances require that the Agreement be amended to revise the roles and responsibilities of the parties with respect to the design, construction and maintenance of the improvements contemplated in the Agreement and the funding of those improvements;

THEREFORE the parties agree that this Amendment is made for mutual valuable consideration and is legally binding on each party pursuant to the terms herein.

Terms of Amendment

A. Paragraph 2 of the Agreement is deleted and replaced by the following:

2. All notices or other communications under this Agreement shall be in writing and shall be deemed to have been delivered on receipt in hand, by fax or electronically at the addresses stated below, namely:

MCWD

Hopkins

Rena Clark
Projects Manager
MCWD
15320 Minnetonka Boulevard
Minnetonka MN 55345

Steve Stadler
Director of Public Works
City of Hopkins
1010 First Street South 55343
Hopkins MN

rclark@minnehahacreek.org

sstadler@hopkinsmn.com

B. Paragraph 5 of the Agreement is deleted and replaced by the following:

5. A party's approval of a design prepared by or for the other party is not an engineering certification of the design and the approving party specifically disclaims any warranties or representations relative to the design or functionality of the design. A party has no authority to select, or role in selecting, the means, method or manner of performing any of the work or the person or firm who will perform the work of or on behalf of the other party, and is not liable for any amounts owed to such person or firm. Any right of a party to review or approve a design, work in progress or constructed improvement under this Agreement is solely for that party's own purposes of ensuring that its public goals are met and accounting for funds expended. Notwithstanding, the release and hold harmless of paragraph 14, and the release, hold harmless and indemnification of paragraph 20b, are undiminished by this paragraph.

C. Paragraphs 10 through 18 of the Agreement hereby are deleted and replaced by the following paragraphs 10 through 18.

10. The MCWD, at its election, may design and construct water resource improvements on the MCWD Properties, including but not limited to stormwater management facilities and associated stormwater conveyances

(“Facilities”), creek bank improvements including vegetated buffer areas and native vegetation, structures and signage for public education and riparian recreation, and related appurtenances (all together, the “Water Resource Improvements”). The design will conform to the siting, performance, vegetation and maintenance criteria contained in Exhibit A and the Conceptual Master Plan that is Exhibit B to this Amendment, both attached and incorporated herein. MCWD contracts for design and construction will state that warranties run to both the MCWD and Hopkins. The MCWD may phase the work at its discretion.

11. Hopkins will timely advise the MCWD of technical requirements for the Facilities to be connected to and incorporated into the municipal stormsewer system. The MCWD must secure Hopkins’ approval of the 90 percent plans and specifications for the Facilities, which Hopkins will not delay or unreasonably withhold. Hopkins will timely process any MCWD permit needed for the Water Resource Improvements, without permit review costs, fee or financial assurance, and will timely communicate any local requirements regarding traffic, disturbance or occupation of public ways, and any other matters. The work will include an open cut in Lake Street to install stormwater piping. Hopkins will communicate reasonable terms and specifications for traffic control and restoration.

12. The MCWD will notify Hopkins of construction meetings concerning the Facilities, which Hopkins may attend. The MCWD may issue change orders and work change directives, subject to Hopkins concurrence in any change to the Facilities that may materially affect operation of the municipal stormsewer system or the cost or schedule to maintain the Facilities. For such a change, the MCWD will notify Hopkins and provide Hopkins at least two full business days to review and respond. If a proposed change order or work change directive requires board of managers approval, the MCWD will provide such notice at least two business days before board consideration. Hopkins may have additional time, if its concurrence requires specific engineering review. In such a case, Hopkins will exercise good faith and diligence to respond as quickly as possible in recognition of the need to avoid delay under the MCWD’s contract(s) for the Water Resource Improvements. Change order and work change directive concurrence may be exercised by the city manager on behalf of Hopkins. Any contract delay cost resulting from Hopkins contract change review will be shared equally by the parties.

13. The MCWD will notify Hopkins when the Facilities are installed and before subsurface elements are covered. Hopkins will have three business days to inspect the Facilities and to advise the MCWD in writing of any concern that the Facilities materially diverge from the 90 percent plans and specifications. When the Facilities are constructed, the MCWD will supply Hopkins with record drawings and ownership of the Facilities will vest in Hopkins. At that time Hopkins will hold harmless and release the MCWD from all claims with respect to the design and construction of the Facilities.

14. In exchange for being released from its obligation under the Agreement to fund the design and construction of stormwater management facilities on the Property, and for the additional benefits to Hopkins from the improvements, Hopkins agrees to reimburse the MCWD for all design contract costs incurred by the MCWD after April 10, 2014 and all construction contract costs incurred by the MCWD for design and construction of the Water Resource Improvements, beyond those costs that are reimbursed from grant funds. For each payment the MCWD has made on a design or construction contract for the Water Resource Improvements, it will have a right of reimbursement from Hopkins. The MCWD will use best efforts first to obtain reimbursement from grant funds up to the amount of the grant, and will invoice Hopkins no more frequently than monthly. Hopkins will process invoices within 30 days. At its request, Hopkins may have an accounting.

15. The parties will collaborate with respect to signage and other public information. Each party retains the right to install and maintain signage or otherwise engage in any public informational effort with respect to its property, but will consult with the other party. Any public materials will acknowledge the shared participation of the parties in the project.

16. The MCWD will maintain native vegetation, buffer zone improvements and signage on the MCWD Properties, all in accordance with terms of the grant agreement. Hopkins will maintain the Facilities in perpetuity in accordance with Exhibit A and applicable requirements of its municipal stormwater system (MS4) permit. Except as provided in the first sentence of this paragraph, above, Hopkins will be responsible for day-to-day inspection and maintenance of the combined MCWD-Hopkins public space comprising Cottageville Park and the MCWD Properties, including but not limited to sanitation, inspection for and addressing hazards resulting from events such as severe weather, and public safety. Hopkins will prioritize inspection and maintenance consistent with the parties' shared recognition that the site is locally and regionally visible. The MCWD will be responsible for capital replacement on the MCWD Properties.

17. If the MCWD believes that Hopkins is not meeting an obligation under paragraph 16 with respect to the MCWD Properties, it will advise Hopkins in writing and the parties will meet promptly and in good faith to review the concern. Thereafter, if Hopkins fails to meet its obligations, with 30 days' written notice the MCWD may perform the deficient work itself and will be reimbursed by Hopkins for the reasonable cost thereof.

18. When construction of the Water Resource Improvements is complete, the MCWD will deliver to Hopkins an easement for filing in county land records affording Hopkins all rights necessary for it to meet its inspection and maintenance obligations under paragraph 16 ("Easement"). The easement may contain reasonable conditions to protect the Water Resource

Improvements and otherwise to protect Minnehaha Creek and related water resources from damage.

D. New paragraphs 20a through 20c are inserted into the Agreement as follows:

20. The MCWD's design and construction of the Water Resource Improvements will encompass that part of Cottageville Park identified as "Phase I - Hopkins Land" on the Design and Construction Phasing Plan attached hereto as Exhibit C and incorporated herein ("Cottageville Elements"). The MCWD's design will include a part of the Facilities, as well as grading, surface treatment and landscaping, and will conform to Exhibit B. The MCWD must secure Hopkins' approval of the 90 percent plans and specifications for the Cottageville Elements, consisting of grading plans, site trail layout and details/cross-sections, which Hopkins will not delay or unreasonably withhold. Hopkins will timely process any MCWD permit needed for the Cottageville Elements, without permit review costs, fee or financial assurance, and will timely communicate any local requirements regarding traffic, disturbance or occupation of public ways, and any other matters. Hopkins will allow for ingress/egress and occupation of Cottageville Park as necessary or convenient for construction. MCWD contracts for design and construction of the Cottageville Elements will state that warranties run to both the MCWD and Hopkins.

20a. The MCWD will notify Hopkins of construction meetings concerning the Cottageville Elements, which Hopkins may attend. The MCWD may issue change orders and work change directives, subject to Hopkins concurrence in any change that would materially affect contract price or time, or the cost or schedule to maintain the improvements. For such a change, the MCWD will notify Hopkins and provide Hopkins at least two full business days to review and respond. If a proposed change order or work change directive requires board of managers approval, the MCWD will provide such notice at least two business days before board consideration. Hopkins may have additional time, if its concurrence requires specific engineering review. In such a case, Hopkins will exercise good faith and diligence to respond as quickly as possible in recognition of the need to avoid delay under the MCWD's contract(s). Change order and work change directive concurrence may be exercised by the city manager on behalf of Hopkins. Any contract delay cost resulting from Hopkins contract change review will be shared equally by the parties.

20b. The MCWD will notify Hopkins when the Cottageville Elements are substantially completed. Hopkins will inspect the improvements without undue delay and advise the MCWD in writing of any concern that the improvements materially diverge from the 90 percent plans and specifications. When the improvements are constructed, the MCWD will supply Hopkins with final grades and ownership of the improvements will vest in Hopkins. At that time Hopkins will hold harmless and release the MCWD from all claims with respect to the design and construction of the Cottageville Elements, and

will indemnify the MCWD with respect to all liabilities, damages and costs arising out of any third-party claim arising from the design, construction or use of the Cottageville Elements.

20c. Hopkins will reimburse the MCWD for design and construction costs that it incurs for the Cottageville Elements in the same manner as specified at paragraph 14. Hopkins recognizes that a substantial part of these costs may not be eligible for grant reimbursement.

E. Paragraph 20 is renumbered as paragraph 20d and revised to read as follows:

20. Hopkins intends to undertake recreational, park or other improvements to Cottageville Park, including refinements to the area encompassed by the Cottageville Elements, improvements to that part of Cottageville Park not labeled as "Phase I - Hopkins Land" on Exhibit C (including the area indicated on Exhibit C as "Out Parcel," which presently is under private ownership), and a redesign of the right-of-way north of Cottageville Park at its discretion and sole cost. Any such improvements will be consistent with Exhibit B.

F. Paragraph 24 is deleted and replaced by the following:

24. The parties will collaborate closely during design of the Water Resource Improvements and park improvements described in this Agreement. The parties' efforts will be directed to produce a design that best integrates their public goals for the contiguous area comprising the Cottageville Park parcel, the District Properties, and any adjoining parcels owned by either party that are incorporated into the design for the improvements. Specifically, but not exclusively, the District owns a parcel southeast of Lake Street, northeast of Minnehaha Creek and riparian to the creek, as shown in Exhibit B, that may be suited for a public canoe launch and otherwise to augment the Water Resource Improvements.

G. Paragraph 27 is deleted, and paragraphs 28 and 29 are deleted and replaced by the following:

28. Only contractual remedies are available for the failure of a party to fulfill the terms of this Agreement. The parties agree that the MCWD's acquisition of the Property; its assumption of relocation, demolition and other costs related to 427-429 Blake Road; and its siting and construction of the Facilities on its property constitute valuable consideration for the financial contributions and maintenance obligations assumed by Hopkins under this Agreement. The contractual remedy of specific performance is available for either party under this Agreement regardless of the existence of an adequate remedy at law.

29. This Agreement is effective when fully executed by the parties and expires on March 31, 2019. All obligations that have come into being before

expiration, specifically including but not limited to obligations under paragraphs 6, ¹⁶17 and ¹⁷18, will survive expiration.

H. Wherever in the agreement the term "Stormwater Management Facilities" appears, it is replaced by the term "Water Resource Improvements."

I. Exhibits A to this Amendment, labeled "Revised Standards," replaces Exhibit A of the Agreement. Exhibits B and C to this Amendment, labeled, respectively, "Conceptual Master Plan" and "Design and Construction Phasing Plan," are Exhibits B and C to the Agreement.

J. Except as specifically amended hereby, the Agreement and all terms therein remain in full force and effect.

INTENDING TO BE BOUND,

MINNEHAHA CREEK WATERSHED DISTRICT


Sherry Davis White, President

Date: 4/10/14

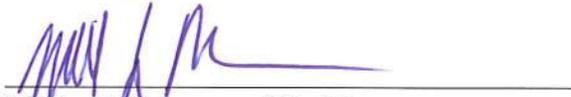
Approved for Form and Execution:


MCWD Counsel

CITY OF HOPKINS


Eugene Maxwell, Mayor

Date: 4-1-14


Michael Mornson, City Manager

Date: 4-1-14

EXHIBIT B

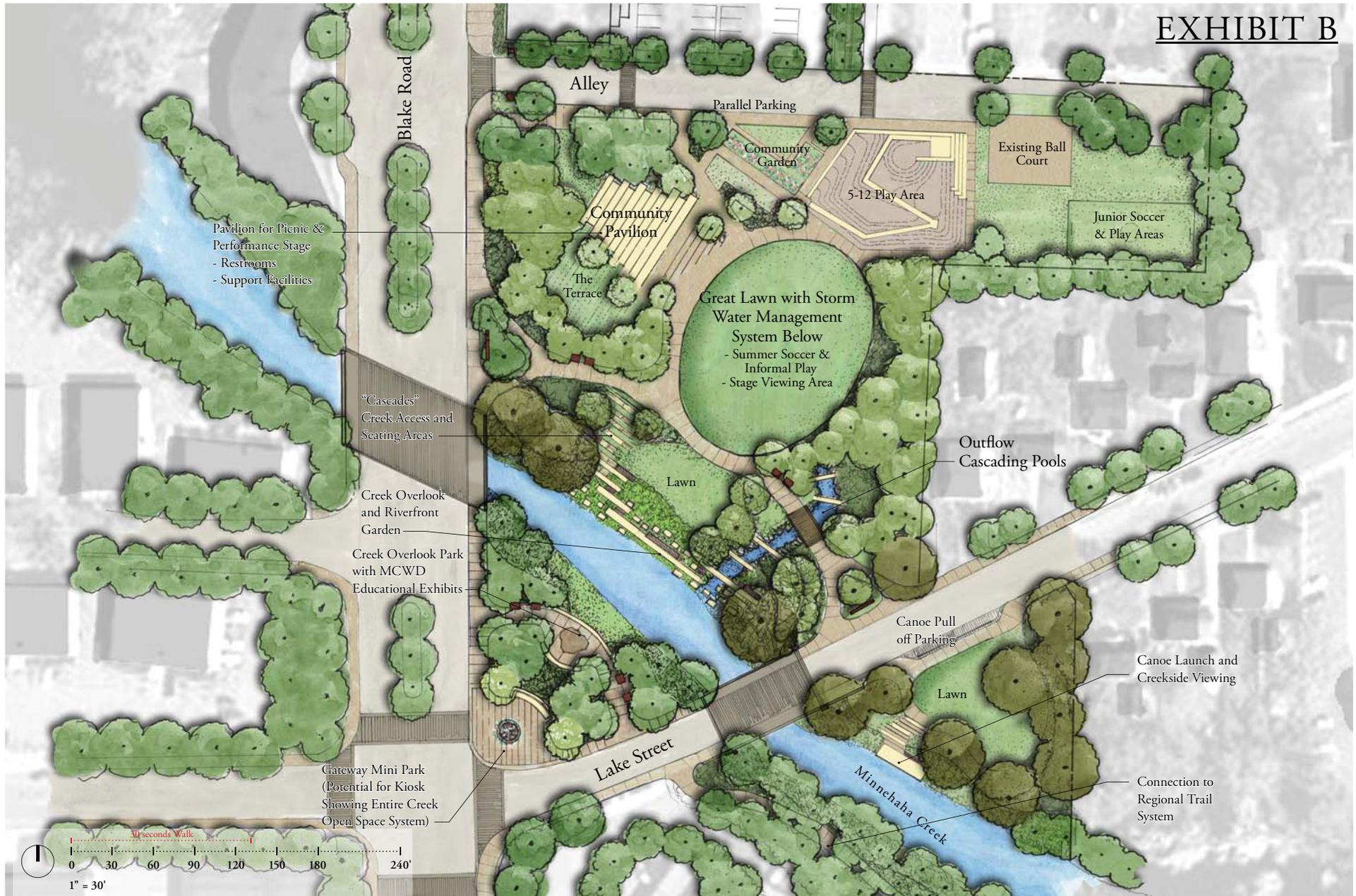
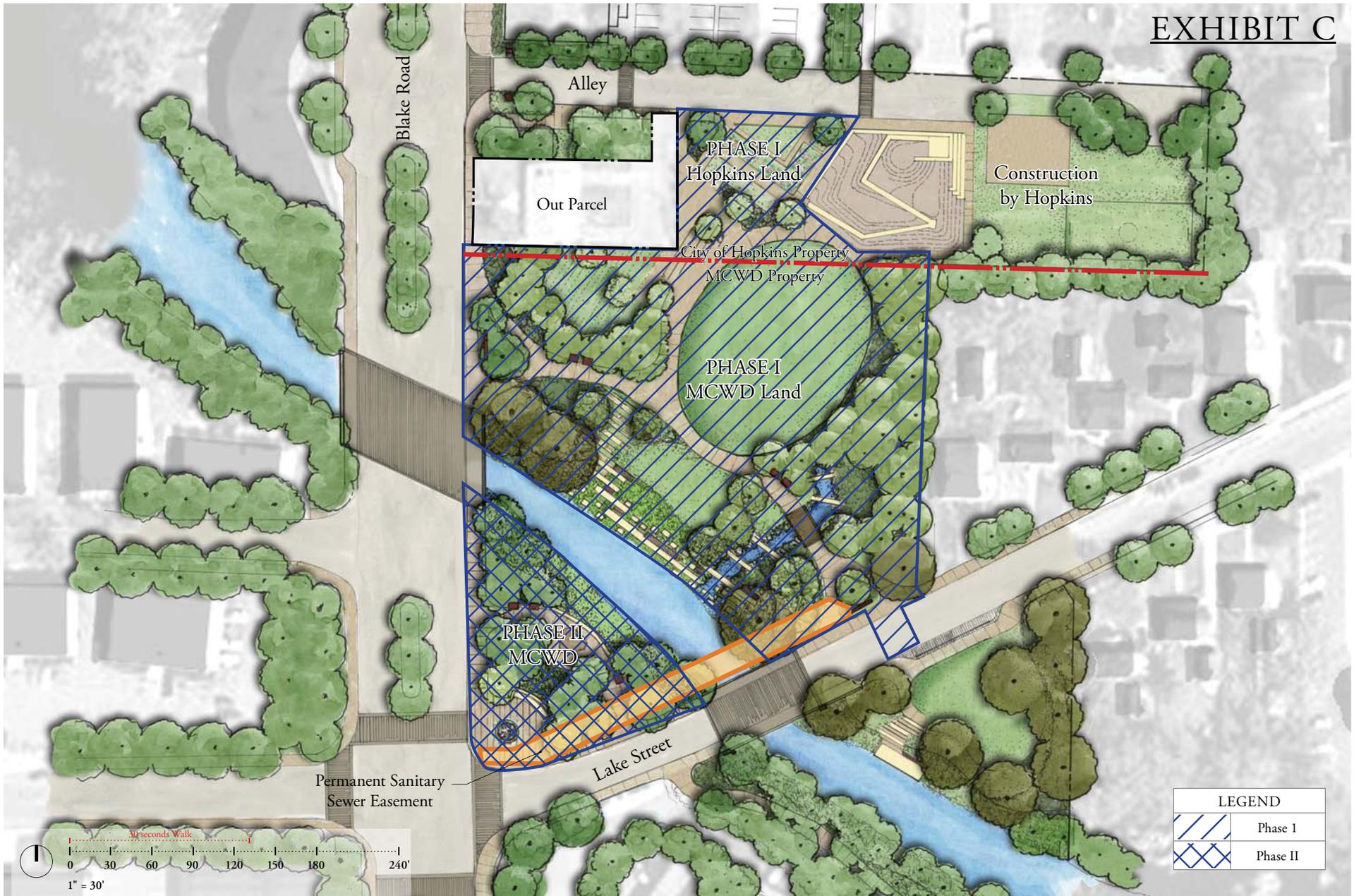


EXHIBIT C



| LEGEND | |
|--------|----------|
| | Phase I |
| | Phase II |



**SECOND AMENDMENT to
COOPERATIVE AGREEMENT**

**Minnehaha Creek Watershed District and City of Hopkins
Cottageville Park Stormwater Management and Park Improvement Project**

This Second Amendment (“Amendment”) to the Cooperative Agreement (“Agreement”) is made between the Minnehaha Creek Watershed District (MCWD), a watershed district and political subdivision with powers at Minnesota Statutes Chapters 103B and 103D, and the City of Hopkins (“Hopkins”), a home rule charter city of the State of Minnesota (together, the “parties”).

Recitals and Statement of Purpose

WHEREAS on September 10, 2010, the parties entered into a cooperative agreement to advance social, economic and environmental goals within the Minnehaha Creek corridor, and on April 10, 2014 the parties amended that agreement (together, the “Agreement”);

WHEREAS the Agreement stated roles and responsibilities for water quality, riparian and community recreational improvements within the area described;

WHEREAS pursuant to the Agreement, the MCWD designed the improvements and solicited bids for their construction, but on the basis of bids received the parties determined to postpone a bid award in order to review project design, consider value engineering modifications, and extend the improvements to two areas adjacent to Cottageville Park that at the time of the Agreement were not yet under Hopkins control or otherwise were not ready to site the improvements;

WHEREAS one of these areas, a private residential duplex, now has been acquired by Hopkins, which will perform demolition of the structure and prepare the site, and the other, a public alley right-of-way owned by Hopkins, now is suitable in Hopkins’ determination for incorporation into the improvements;

THEREFORE the parties agree that this Amendment is made for mutual valuable consideration and is legally binding on each party pursuant to the terms herein.

Terms of Amendment

A. Paragraph 20 of the Agreement is revised to read as follows:

20. The MCWD’s design and construction of the Water Resource Improvements will encompass that part of Cottageville Park identified as “Phase I - Hopkins Land,” as well as those areas labeled as “Out Parcel” and “Alley,” on the Design and Construction Phasing Plan attached hereto as Exhibit C and incorporated herein (together, the “Cottageville Elements”). The MCWD’s design will include a part of the Facilities, as well as grading,

surface treatment and landscaping, and will conform to Exhibit B. The MCWD must secure Hopkins' approval of the 90 percent plans and specifications for the Cottageville Elements, consisting of grading plans, site trail layout and details/cross-sections, which Hopkins will not delay or unreasonably withhold. Hopkins will timely process any MCWD permit needed for the Cottageville Elements, without permit review costs, fee or financial assurance, and will timely communicate any local requirements regarding traffic, disturbance or occupation of public ways, and any other matters. Hopkins will allow for ingress/egress and occupation of Cottageville Park as necessary or convenient for construction. MCWD contracts for design and construction of the Cottageville Elements will state that warranties run to both the MCWD and Hopkins.

B. Paragraph 20d of the Agreement is revised to read as follows:

20d. Hopkins intends to undertake recreational, park or other improvements to Cottageville Park, including refinements to the area encompassed by the Cottageville Elements, at its discretion and sole cost. Any such improvements will be consistent with Exhibit B.

C. Except as specifically amended hereby, the Agreement and all terms therein remain in full force and effect.

Intending to be bound,

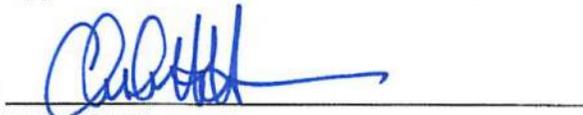
MINNEHAHA CREEK WATERSHED DISTRICT



Sherry Davis White, President

Date: 10-9-14

Approved for Form and Execution:



MCWD Counsel

CITY of HOPKINS



Eugene Maxwell, Mayor

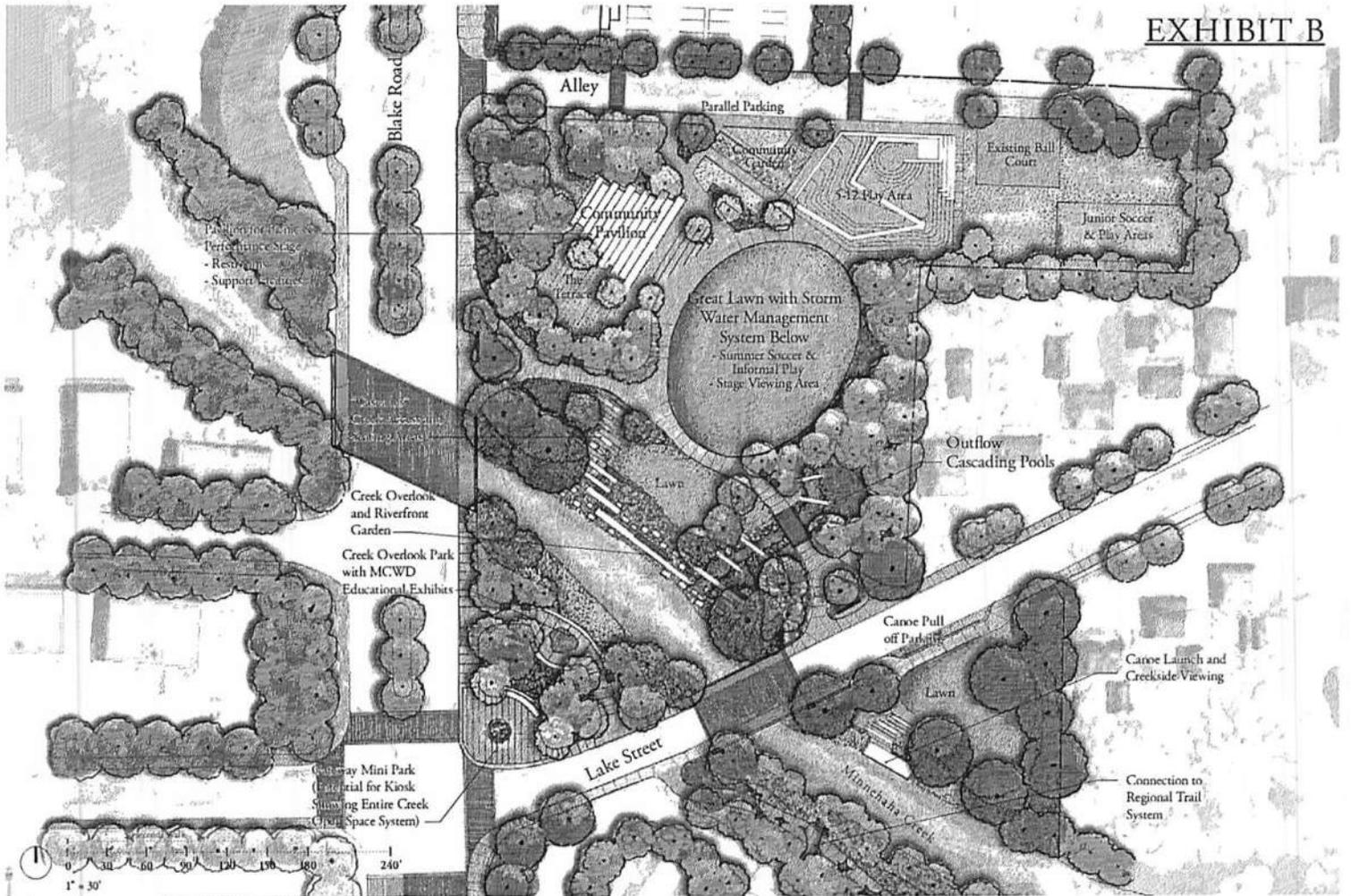
Date: 10/7/14



Michael Morrison, City Manager

Date: 10/7/14

EXHIBIT B



HART HOWERTON

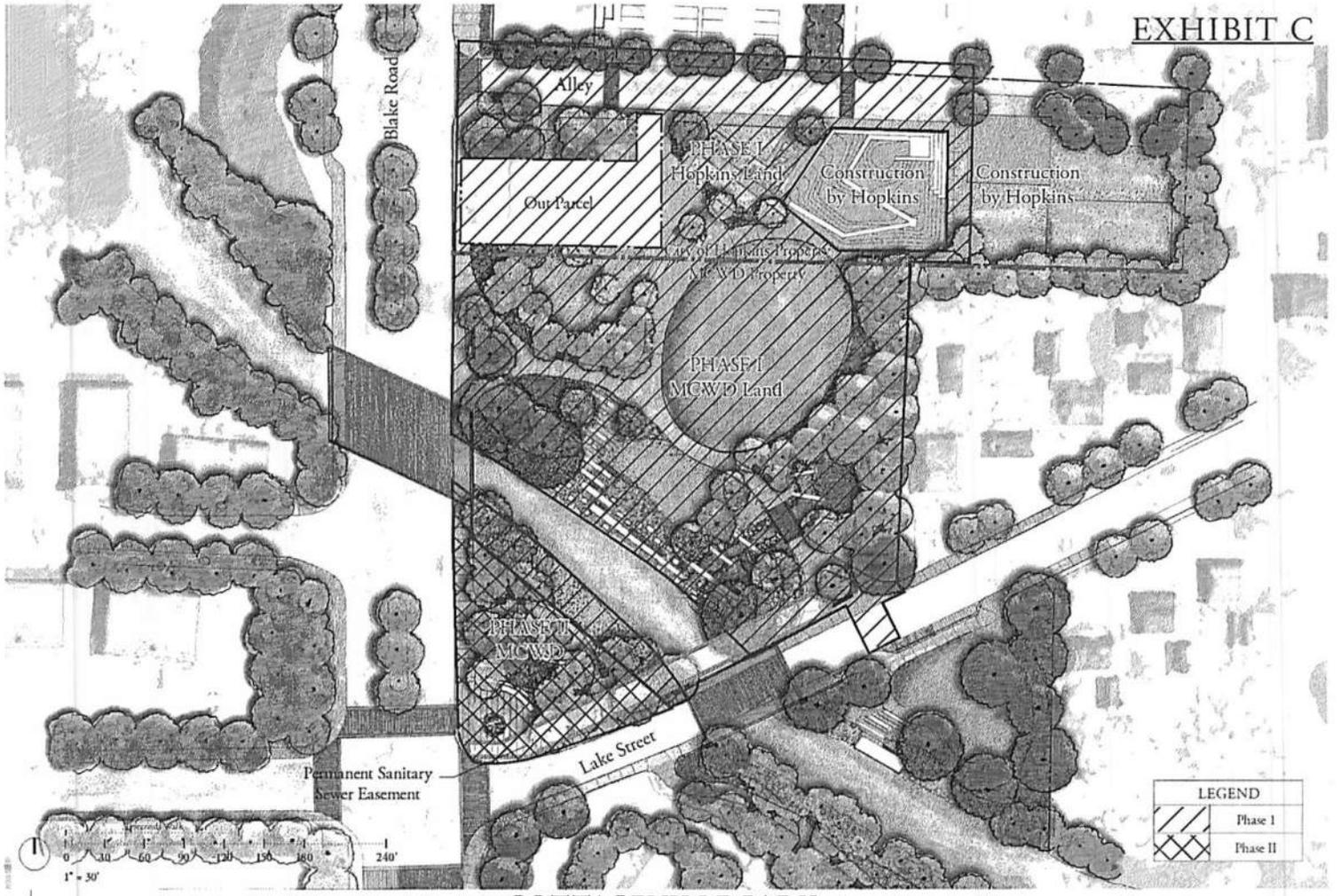
COTTAGEVILLE PARK

Conceptual Master Plan

Hopkins, Minnesota

March 27, 2014

EXHIBIT C



HART HOWERTON

COTTAGEVILLE PARK
Hopkins, Minnesota

Design and Construction Phasing Plan
October 1, 2014