Storm Water Pollution Prevention Program

City of Hopkins
BMI Project No. 0T7.129399

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Certification

Storm Water Pollution Prevention Program

For

City of Hopkins, MN

PROFESSIONAL ENGINEER

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision, and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Signature: Robert E Bean

Typed or Printed Name: Robert E Bean, Jr

Date: _____ License Number: 40410

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I. MCM 1 & 2: EDUCATION, OUTREACH, AND PUBLIC INVOLVEMENT PLAN

A. Introduction

The City of Hopkins' Storm Water Pollution Prevention Program (SWPPP) Minimum Control Measure (MCM) 1 addresses public education and outreach and MCM 2 addresses Public Participation/Involvement. The following plan determines the education focus for the current permit cycle and the programs and tools to be implemented in educating the public about their roles in the protection, preservation, and management of water resources.

1. Party responsible for Education and Outreach Plan implementation: **City Engineer**
2. Public Education, Outreach, and Involvement
   a) During the permit term, educational materials or equivalent outreach shall be distributed to Citizens focused on Yard and Lawn Management.
   b) During the permit term, educational materials or equivalent outreach shall be distributed to Citizens focused on Residential Best Management Practices.
   c) At least once each year, educational materials or equivalent outreach shall be distributed to Citizens focused on illicit discharge recognition and reporting illicit discharges to the permittee.
   d) At least once each year, educational materials or equivalent outreach shall be distributed to Citizens focused on the following:
      - impacts of deicing salt use on receiving waters,
      - methods to reduce deicing salt use, and
      - proper storage of salt or other deicing materials.
   e) At least once each year, educational materials or equivalent outreach shall be distributed to Citizens focused on the following:
      - impacts of pet waste on receiving waters,
      - proper management of pet waste, and
      - any existing permittee regulatory mechanism(s) for pet waste.
   f) The City's SWPPP shall be posted on the City's website to provide continuous opportunity for the public to provide input on the SWPPP's adequacy.
   g) Each calendar year, a minimum of one (1) public involvement activity that includes a pollution prevention or water quality theme (e.g., rain barrel distribution event, rain garden workshop, cleanup event, storm drain stenciling, volunteer water quality monitoring, adopt a storm drain program, household hazardous waste collection day, etc.) shall be provided by the City.
3. Education for City Officials and Staff
   a) At least once each calendar year, training shall be provided to all field staff in illicit discharge recognition (including conditions which could cause illicit discharges) and reporting illicit discharges for further investigation.
   b) Individuals responsible for any portion of the Illicit Discharge Detection and Elimination (IDDE) Program shall receive training commensurate with their

responsibilities as they relate to the program. Individuals include, but is not limited to, those responsible for investigating, locating, eliminating illicit discharges, and/or enforcement. Previously trained individuals shall receive refresher-training every three (3) calendar years following the initial training.

c) Individuals responsible for any portion of the Construction Site Stormwater Runoff Control program shall receive training commensurate with their responsibilities as they relate to the program. Individuals includes, but is not limited to, individuals responsible for conducting site plan reviews, site inspections, and/or enforcement. Previously trained individuals shall receive refresher-training every three (3) calendar years following the initial training.

d) Individuals responsible for any portion of the Post-Construction Stormwater Management program shall receive training commensurate with their responsibilities as they relate to the program. Individuals includes, but is not limited to, individuals responsible for conducting site plan reviews, site inspections, and/or enforcement. Previously trained individuals shall receive refresher-training every three (3) calendar years following the initial training.

e) Individuals performing winter maintenance activities shall receive training each calendar year that includes the following:

- the importance of protecting water quality;
- BMPs to minimize the use of deicers (e.g., proper calibration of equipment and benefits of pretreatment, pre-wetting, and anti-icing); and
- tools and resources to assist in winter maintenance (e.g., deicing application rate guidelines, calibration charts, Smart Salting Assessment Tool).

f) Individuals responsible for any portion of the City's Storm Water Pollution Prevention Program shall receive training commensurate with their responsibilities as they relate to the program, including reporting and assessment activities. Training shall include the following:

- address the importance of protecting water quality, and
- address the requirements of the NPDES requirements as they relate to the program (i.e. Best practices for Municipal Operations, City's Pond Assessment Procedures, operation and maintenance of structural BMPs, outfalls and ponds, and management of TMDL waste load allocations).

4. Minimum elements for education and outreach (MCM 1), as set forth in MPCA Permit that provides Authorization to Discharge Stormwater Associated with Small Municipal Separate Storm Sewer Systems under the NPDES Program (Permit No. MNRO400000).

a) Target audience(s) (e.g., residents, businesses, commercial facilities, institutions, and local organizations.

b) Name or position title of responsible person(s) for overall plan implementation.

c) Specific activities and schedules to reach each target audience.

d) Description of any coordination with and/or use of stormwater education and outreach programs implemented by other entities, if applicable.

5. Minimum elements for public involvement (MCM 2).

a) Each calendar year, the permittee must provide a minimum of one (1)

opportunity for the public to provide input on the adequacy of the SWPPP. The permittee may conduct a public meeting(s) to satisfy this requirement, provided appropriate local public notice requirements are followed and the public is given the opportunity to review and comment on the SWPPP.

b) The permittee must provide access to the SWPPP Document, annual reports, and other documentation that supports or describes the SWPPP (e.g., regulatory mechanism(s), etc.) for public review, upon request. All public data requests are subject to the Minnesota Government Data Practices Act.

c) The permittee must consider oral and written input regarding the SWPPP submitted by the public to the permittee.

d) Each calendar year, the permittee must provide a minimum of one (1) public involvement activity that includes a pollution prevention or water quality theme (e.g., rain barrel distribution event, rain garden workshop, cleanup event, storm drain stenciling, volunteer water quality monitoring, adopt a storm drain program, household hazardous waste collection day, etc.)

B. Target Audience

Educational needs are dependent on the target audience. Each target audience plays a different role in the protection, preservation, and management of water resources. Thus, programs and tools are tailored to different target audiences. This plan lays out the priority area education programs and tools according to the target audiences listed below.

1. Citizens: residents, businesses, commercial facilities, institutions, and organizations
2. Staff, Consultants, and Contractors: planners, engineers, contractors, and City staff
3. City Officials: appointed/elected officials and decision makers (i.e. city councilpersons, planning commissioners, park board members, etc.)

C. Specific Activities and Schedule

1. Public Education, Outreach, and Involvement

a) Information and articles regarding water quality and pollution prevention shall be available to the public on the City's website. The City shall maintain its website with information that provides the audience with general information regarding the effects of polluted stormwater, prevention techniques, and resources for additional information. Information shall include the City's Storm Water Pollution Prevention Program (SWPPP), volunteer opportunities, hazardous material disposal, recycling, and community events.

b) City shall maintain the SWPPP on the City's website to provide continuous opportunity for the public to provide input on the SWPPP's adequacy. Refer to *Written Procedures* for consideration of and response to public input on adequacy of SWPPP.

c) Annually, the City shall provide public involvement opportunities as follows:

- Bulk Item Drop-Off – Dispose of scrap metal, appliances, construction debris, E-waste, and miscellaneous household items.
- Adopt-a-Park or Trail - The City of Hopkins is looking for individuals or groups who will help care for our neighborhood parks and trails. These individuals or groups will commit to picking up litter in the park or trail of their choice a

minimum of one time a month.

- Brush & Yard Waste Drop-off – From April through November, Hopkins residents can drop off their brush and yard waste at the free drop-off site.
- Adopt-a-Drain - Adopt-a-Drain asks residents to adopt a storm drain in their neighborhood and keep it clear of leaves, trash, and other debris to reduce water pollution.

2. Education for City Officials and Staff

a) Every spring, training shall be provided to all field staff in illicit discharge recognition (including conditions which could cause illicit discharges) and reporting illicit discharges for further investigation.

b) Annually, training shall be provided as necessary to individuals responsible for the following:

- Any portion of the Illicit Discharge Detection and Elimination (IDDE) Program. Individuals include, but are not limited to, those responsible for investigating, locating, eliminating illicit discharges, and/or enforcement.
- Any portion of the Construction Site Stormwater Runoff Control program. Individuals includes, but are not limited to, those responsible for conducting site plan reviews, site inspections, and/or enforcement.
- Any portion of the Post-Construction Stormwater Management Program. Individuals includes, but are not limited to, individuals responsible for conducting site plan reviews, site inspections, and/or enforcement.

Individuals shall receive training commensurate with their responsibilities as they relate to the program. After initial training, individuals shall receive refresher training every three (3) calendar years.

c) Annually, training shall be provided to individuals performing winter maintenance activities. Training shall include the following:

- The importance of protecting water quality,
- BMPs to minimize the use of deicers (e.g., proper calibration of equipment and benefits of pretreatment, pre-wetting, and anti-icing); and
- Tools and resources to assist in winter maintenance (e.g., deicing application rate guidelines, calibration charts, Smart Salting Assessment Tool).

d) Annually, training shall be provided to individuals responsible for any portion of the City's Storm Water Pollution Prevention Program. Training will include the following:

- The importance of protecting water quality, and
- address the requirements of the NPDES requirements as they relate to the program (i.e. Best practices for Municipal Operations, City's Pond Assessment Procedures, operation and maintenance of structural BMPs, outfalls and ponds, and management of TMDL waste load allocations).

D. Coordination With Other Entities

1. Watershed Districts

a) Minnehaha Creek Watershed District (MCWD)

b) Nine Mile Creek Watershed District (NMCWD)

c) The City will coordinate with MCWD and/or NMCWD regarding planning efforts, notify Districts of any public or private land use changes, promote education events put on by the Districts, and coordinate activities regarding regulation of surface water management and permitting.

E. Documentation

1. See the *Documentation and Assessment Plan* for items requiring documentation as part of the Education, Outreach and Public Involvement Plan.

F. Annual Assessment

1. See the *Documentation and Assessment Plan* for items requiring annual assessment as part of the Education, Outreach and Public Involvement Plan.

II. MCM 3: ILLICIT DISCHARGE DETECTION AND ELIMINATION PLAN

A. Introduction

The City of Hopkins' Storm Water Pollution Prevention Program (SWPPP) Minimum Control Measure (MCM) 3 addresses illicit discharge detection and elimination. The following plan outlines the tools and procedures to be implemented to detect and eliminate sources of pollution discharge from entering the municipality.

1. Party responsible for IDDE Plan implementation: **City Engineer**
2. Goals:
   a) Improve water quality in local waterways by reducing incidences of pollution.
   b) Increase awareness among residents, municipal staff, businesses, and the public of the direct connection between the storm drain system and local waterways.
   c) Educate residents, municipal staff, businesses, and the public about the hazards associated with illicit discharges and the best management practices (BMPs) available.
   d) Facilitate consistency in response to incidences of illegal discharges to the storm drain system through a coordinated system of procedures and training of municipal staff.
3. Examples of illicit discharge:
   a) Direct or indirect sanitary wastewater discharges that connect to the storm sewer or watercourse (i.e. shop floor drain connected to a storm drain, cross-connection between sanitary sewer and storm sewer systems, damaged sanitary sewer line leaking into a cracked storm sewer line, failing septic system leaking into a water course, etc.).
   b) Materials disposed of illegally into the storm drain system (i.e. used moter oil, paint, grass clippings, etc.).
   c) Activities resulting in illegal discharges routed to the storm drain system (i.e. washing paint brushes, concrete washout, draining swimming pool directly to an inlet, excess use of fertilizer, regular washing of vehicles, etc.).
4. Authorized Non-Stormwater Discharges:
   a) Water line flushing, landscape irrigation, diverted stream flows, rising groundwaters, uncontaminated groundwater infiltration (as defined at 40 CFR 35.2005(b)(20)), uncontaminated pumped groundwater, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, springs, water from crawl space pumps, footing drains, lawn watering, individual residential car washing, flows from riparian habitats and wetlands, dechlorinated swimming pool discharges, street wash water, and discharges or flows from firefighting activities.
5. Minimum elements, as set forth in MPCA Permit that provides Authorization to Discharge Stormwater Associated with Small Municipal Separate Storm Sewer Systems under the NPDES Program (Permit No. MNRO400000).
   a) Municipal Storm Sewer System Mapping (Part 18.3)

b) Regulatory Mechanism (Part 18.4-6)

c) Incorporating IDDE into Maintenance and Inspection Activities (Part 18.7)

d) Staff Training (Part 18.8-9)

e) High Priority Areas (Part 18.10)

f) Procedures for Investigating, Locating, and Eliminating Illicit Discharge (Part 18.11-12)

g) Response Procedures (Part 18.13-14)

h) Documentation (Part 18.15-17)

i) Annual Assessment (Part 18.18)

B. Municipal Storm Sewer System Mapping

a) A map of the City's storm sewer system shall be maintained that depicts the following:

b) All pipes 12 inches or greater in diameter, including stormwater flow direction in those pipes,

c) Outfalls, including unique identification (ID) number, and associated geographic coordinates,

d) Structural stormwater BMPs that are part of the City's storm drain system,

e) All receiving waters.

See attached Maps (**Appendix D**)

C. Regulatory Mechanism

1. Chapter 40, Article 5, Division 2 of the City's current municipal code prohibits illicit discharges. Connections to the stormwater system must contain only stormwater and groundwater, otherwise they are to be eliminated.

D. Incorporating IDDE into Maintenance and Inspection Activities

1. Illicit discharge detection shall be incorporated into all municipal inspection and maintenance activities. This includes active construction sites for compliance with erosion and sediment control, as well as, inspections of pond, outfalls, and structural BMPs to determine integrity and functionality.

E. Staff Training

1. Field staff - At least once each calendar year, training shall be provided to all field staff in illicit discharge recognition (including conditions which could cause illicit discharges) and reporting illicit discharges for further investigation. See *Education, Outreach, and Public Involvement Plan* for more information.

2. IDDE staff - Individuals responsible for any portion of the Illicit Discharge Detection and Elimination (IDDE) Program shall receive training commensurate with their responsibilities as they relate to the program. Individuals include, but is not limited to, those responsible for investigating, locating, eliminating illicit discharges, and/or enforcement. Previously trained individuals shall receive refresher-training every three (3) calendar years following the initial training. See *Education, Outreach, and Public Involvement Plan* for more information.

F. High Priority Areas

1. An inventory of priority areas having been identified as having a higher likelihood for illicit discharges shall be maintained as part of the City's Municipal Storm Sewer System mapping. Priority areas shall be evaluated for potential inclusion based on the following:

   a) Land uses associated with business/industrial activities.

   b) Areas where illicit discharges have been identified in the past.

   c) Areas with storage of significant materials that could result in an illicit discharge.

   d) Areas with older infrastructure, where illegal connections and/or deteriorating sewer lines are more likely to exist.

2. High priority areas identified include the following locations:

   a) Downtown – area between Shady Oak Road in the west, 1st Street in the north, Hwy 169 in the east, and the Chicago, Milwaukee, St. Paul and Pacific Railroad on the South. Area includes multiple gas stations, multiple restaurants, and multiple small hazardous waste generators.

   b) Along Nine Mile Creek – south of Excelsior Boulevard. Area includes industrial businesses.

G. Procedures for Investigating, Locating, and Eliminating Illicit Discharge

1. Illicit discharge identification and notification to the City

   a) Field staff – illicit discharges identified by field staff performing their routine duties, including inspections of construction sites, ponds, outfalls, and BMPs, shall notify the IDDE Plan implementer within 24 hours of detection. Notification by field staff shall include: staff name, potential type of illicit discharge (i.e. sediment, oil, grease, grass clippings, soap, etc.), location, and any other information related to the observed discharge (i.e. maps, pictures, videos, notes, etc.).

   b) Citizen – illicit discharges identified by Citizens shall be directed to the IDDE Plan implementer. Notification should include: identifier's name, potential type of discharge, location, and any other information related to the observed discharge.

   c) High priority area – high priority locations shall be inspected by IDDE staff for illicit discharges once per year. If an illicit discharge is identified, elimination procedures shall be implemented as outlined by this plan.

2. Procedures for investigating and eliminating illicit discharges

   a) Initiation – upon receipt of an illicit discharge notification, an Illicit Discharge Report and Response Form shall be initiated immediately by the IDDE Plan implementer (see **Appendix F**).

   b) Investigation – an investigator shall be assigned by the IDDE Plan implementer as part of the initiation of the Illicit Discharge Report. The investigator will begin investigation of the report within 24 hours. The investigator shall document all labor, materials, and other costs associated with the investigation for invoicing the responsible party. When the source of the discharge is unknown, Drainage Area and Storm System Investigation methods shall be utilized by the investigator to trace the source of discharge.

   c) Drainage Area Investigation - Drainage area investigations shall be used when the

discharge observed at the outfall has a distinct or unique characteristic that can allow field crews to quickly determine the type of activity or non-point source that is generating the discharge. The investigator shall identify likely sources near the reported discharge location by reviewing land use and drainage system maps. The investigator shall then conduct a visual survey of the drainage area to confirm the source of the discharge. The following table lists some potential causes of reported discharges.

Table 7-1 – Common Discharges and Potential Sources

Observed Discharge	Potential Causes
Clogging Sediment	• Construction activity without proper erosion and sediment controls • Roadway sanding operations • Outdoor work areas or material storage areas
Thick Algae Growth	• Fertilizer leak or spill • Landscaping operations • Hydroseeding following construction • Failing or leaking septic system
Oil	• Refueling operations • Vehicle or machinery maintenance activities
Sudsy Discharge	• Power washing of buildings • Vehicle or equipment washing operations • Mobile cleaning crew dumping • Laundry or Cleaner • Household greywater discharge
Clogged Grease	• Restaurant sink drain connection to stormwater system
Sewage	• Failing or leaking septic systems

d) Storm System Investigation – Storm system investigations shall be used when the source of discharge observed at the outfall cannot be quickly attributed to a certain type of activity or non-point source generating the discharge. This method involves progressive investigation at manholes in the storm drain network to narrow down the location where the illegal discharge is entering the drainage system. Field crews shall work progressively upstream from the outfall and inspect manholes until indicators reveal the discharge is no longer present. For particularly large storm drain systems, major branches of the system shall be identified, and the downstream manhole of the branch shall be investigated to reduce area that must be investigated. Storm system investigation shall include the following steps:

- Consult the drainage system map and identify the major branches.
- Starting from the outfall, observe the next upstream manhole or junction to see if there is evidence of polluted discharge. Field crews are looking for the presence of flow during dry weather, foul odors, colors or stained deposits, oily sheen, floatable materials, and/or other unusual observations.
- Repeat observations at each upstream manhole or junction until a junction is found with no evidence of discharge.

- Work downstream from the "clean" manhole or junction to isolate the location where the polluted discharge is entering the storm drain system.
- If discharge is evident from private property, procedures to enter private site shall be initiated.
- Document all findings in field notes.
- If visual inspection of the storm system network is not adequate to isolate the source of the illegal discharge, additional field testing shall be performed. This may include dye testing, smoke testing, or video televising (See **Appendix G**).

e) Equipment - Prior to conducting field work, crews shall assemble all required equipment (see Table 7-2) and review the outfall inspection records or water quality incident reports from the area to become familiar with the background information and potential pollution sources.

Table 4-2 – Field Equipment for Source Investigations	
Minimum 2-person crew	Watch with second hand
Safety Gear – vest, work boots, cones	Flashlight or head lamp
Field Notebook/Pencils	Tool Box – hammer, tape measure, duct tape, zip ties
Map or Aerial Photo of Inspection Area	First Aid Kit
Digital camera w/ charged battery	Clear sample bottles
Cell phone w/ charged battery	Wide mouth container

f) Follow-up Actions - Once the source of an illegal discharge has been identified, the investigator shall notify the property owner or operator of the problem and provide the appropriate educational materials and/or a Notice of Violation (see Response Procedures).

H. Response Procedures

1. Immediate Response Procedures

a) Field crews shall be prepared to take immediate action in the event of encountering one of the following situations:

- An individual is actively introducing illegal substances or materials to the storm drain system.
- A strong chemical odor is emanating from storm drain system.
- Fumes are emanating from storm drain system.
- A significant stream of a chemical or petroleum product is visible flowing in storm system or downstream waters.
- A large chemical plume is evident in stream or river downstream of a City outfall.
- An immediate threat to property, human health or safety, or aquatic life is present.

b) Field crews shall initiate the following actions if immediate response is required:

- Ensure public safety. Instruct people to stay clear of the area.
- Immediately contact 911 to report a major spill, active illegal dumping, or a potential fire threat.
- If the source of the illegal discharge is a spill or leak as defined in Minnesota Statute 115.061, the following offices shall be notified immediately:

  MN Dept. of Public Safety Duty Officer: 651-649-5451 or 1-800-422-0798

  Non-Emergency Police Dispatch: 952-258-5321

  Minnehaha Creek Watershed District: 952-471-0590

  Nine Mile Creek Watershed District:: 952-835-2078
- Take detailed notes and photos/video for subsequent investigation by City or other agencies. At a minimum, the following shall be recorded:

  Location

  Spill material

  Spill volume

  Party responsible for spill

  Impact to resources (infrastructure, surface waters)
- If possible, isolate or contain visible chemical pollution in the effected waterbody with any materials that are accessible. For small discharges earth dams, absorbent pads, and containers may be useful to contain part of the illicit discharge (see **Appendix H** for **Spill Response Plan**).

2. Corrective Actions / Enforcement

   a) The City will respond to identified illicit discharges, illicit connections, or illegal dumping activities using progressive enforcement actions. Corrective actions will focus first on education to promote voluntary compliance and escalate to increasingly severe enforcement actions if voluntary compliance is not obtained.

   b) Voluntary Compliance – for first time offenders, the City shall immediately notify the party responsible of the illegal connection or operation and may provide the responsible party with educational information about the illegal connection or operation, environmental consequences, and/or suggestions on remedial actions. After initial notification, the responsible party will be directed to initiate necessary remedial actions in a timely manner to be determined by the Investigator (time will vary based on nature of illegal connection or operations). Based on the time allotted by the Investigator, a follow-up inspection shall be performed to verify compliance.

   c) Notice of Violation - Whenever the City finds that a person has violated a prohibition or failed to meet a requirement of City Code Chapter 40, Article 5, Division 2, the City may order compliance by a written Notice of Violation to the responsible person. The notice may require without limitation:

- Monitoring, analyses, and reporting.
- Elimination of illicit connections, discharges, or pet waste.
- The installation of proper salt storage facilities and implementation of proper salt handling procedures.
- Abatement of pollution and hazards.
- Restoration of affected property.
- Payment of fine to cover administrative and remediation costs.
- The implementation of source control or treatment BMPs.
- Other actions as deemed necessary by the city.

Refer to Chapter 40, Article 5, Division 2 for complete directions regarding implementation and enforcement of these requirements.

I. Documentation

1. Refer to the *Documentation and Assessment Plan* for items requiring documentation as part of the Illicit Discharge Detection and Elimination Plan.

J. Annual Assessment

1. Refer to the *Documentation and Assessment Plan* for items requiring annual assessment as part of the Illicit Discharge Detection and Elimination Plan.

III. MCM 4: CONSTRUCTION SITE RUNOFF CONTROL

A. Introduction

The City of Hopkins' Storm Water Pollution Prevention Program (SWPPP) Minimum Control Measure (MCM) 4 addresses construction site runoff control. The following plan outlines the tools and procedures to be implemented for erosion, sediment, and waste control on construction sites.

1. Party responsible for construction site runoff control implementation: **City Engineer**
2. Minimum elements, as set forth in MPCA Permit that provides Authorization to Discharge Stormwater Associated with Small Municipal Separate Storm Sewer Systems under the NPDES Program (Permit No. MNRO400000).
    a) Regulatory Mechanism (Part 19.3-5)
    b) Site Plan Review (19.6)
    c) Inspection (19.7-9)
    d) Public report of non-compliance (19.10)
    e) Training (19.11)
    f) Response Procedures (19.12)
    g) Documentation (19.13-15)
    h) Annual Assessment (19.16)

B. Regulatory Mechanism

1. City Code: Chapter 102 of the City's current municipal code outlines the requirements of construction site runoff control, including development of a Storm Water Pollution Prevention Plan, required permits from other agencies, and potential enforcement penalties.
2. MOU with MCWD and NMCWD: Memorandum of Understanding between the City and Districts establishing that WD will apply and enforce their rules within City boundaries.

C. Site Plan Review

1. Refer to *Written Procedures* for direction regarding site plan review for construction site runoff control.

D. Inspection

1. Refer to *Written Procedures* for direction regarding inspection for construction site runoff control.

E. Public Report of Non-compliance

1. Refer to *Written Procedures* for direction regarding public report of non-compliance of construction site runoff control.

F. Training

1. Refer to the *Education, Outreach, and Public Involvement Plan* for required staff training as it relates to construction site runoff control.

G. Response Procedures

1. Refer to *Written Procedures* for direction regarding response procedures.

H. Documentation

1. Refer to the *Documentation and Assessment Plan* for items requiring documentation as part of construction site runoff control.

I. Annual Assessment

1. Refer to the *Documentation and Assessment Plan* for items requiring annual assessment as part of construction site runoff control.

IV. MCM 5: POST-CONSTRUCTION STORMWATER MANAGEMENT

A. Introduction

The City of Hopkins' Storm Water Pollution Prevention Program (SWPPP) Minimum Control Measure (MCM) 5 addresses post-construction stormwater management. The following plan outlines the tools and procedures to be implemented for prevention or reduction of water pollution after construction activity is completed.

1. Party responsible for post-construction stormwater management implementation: **City Engineer**
2. Minimum elements, as set forth in MPCA Permit that provides Authorization to Discharge Stormwater Associated with Small Municipal Separate Storm Sewer Systems under the NPDES Program (Permit No. MNRO400000).
   a) Regulatory Mechanism (20.3-15)
   b) Private BMP Inventory (20.16)
   c) Site Plan Review (20.17)
   d) Training (20.18)
   e) Response Procedures (20.19)
   f) Documentation (20.20-22)
   g) Annual Assessment (20.23)

B. Regulatory Mechanism

1. City Code: Chapter 102 of the City's current municipal code outlines the requirements of the Storm Water Pollution Prevention Plan, required permits from other agencies, and potential enforcement penalties.
2. MOU with MCWD and NMCWD: Memorandum of Understanding between the City and Districts establishing that WD will apply and enforce their rules within City boundaries.
3. Surface Water Management Plan: The City's Surface Water Management Plan serves as a comprehensive planning document to guide the City of Hopkins in conserving, protecting, and managing its surface water resources.

C. Private BMP Inventory

1. Refer to *Written Procedures* for direction regarding private BMP inventory for post-construction stormwater management

D. Site Plan Review

1. Refer to *Written Procedures* for direction regarding site plan review for post-construction stormwater management.

E. Training

1. Refer to the *Education, Outreach, and Public Involvement Plan* for required staff training as it relates to post-construction stormwater management.

F. Response Procedures

1. Refer to *Written Procedures* for direction regarding response procedures.

G. Documentation

1. Refer to the *Documentation and Assessment Plan* for items requiring documentation as part of post-construction stormwater management.

H. Annual Assessment

1. Refer to the *Documentation and Assessment Plan* for items requiring annual assessment as part of post-construction stormwater management.

V. MCM 6: MUNICIPAL OPERATIONS BEST MANAGEMENT PRACTICES

A. Introduction

Party responsible for Municipal Operations Best Management Practices implementation: **Public Works Director**

B. Waste Management, Storage, and Disposal

Improper storage and handling of waste materials can allow several pollutants including oils and greases, toxic and chemical compounds (including nutrients), bacteria, metals, and other wastes to enter waterways through stormwater run-off and non-stormwater discharges. Proper handling, along with recycling and waste reduction will reduce the potential for polluting waterways, groundwater, and recharge points.

1. Ensure that all waste areas and dumpsters are covered and are not leaking.
2. Place waste receptacles indoors or under a roof overhang whenever possible.
3. Keep all container lids always closed unless adding or removing material.
4. Liquid wastes should be kept out of the dumpster and the lid kept closed to keep storm water out.
5. Waste oil, antifreeze, spent solvents, and other liquids from vehicle maintenance activities should be recycled.
6. Spent batteries should be disposed of as hazardous waste or returned for reclamation and reuse.
7. Arrange for waste to be picked up regularly and disposed of at approved disposal facilities. If the amount of generated waste exceeds the capacity of waste containers, obtain more containers, or increase frequency of pickups.
8. Do not wash out waste containers or dumpsters outdoors. Return dumpsters to the owners for cleaning at the owner's facility. If municipally owned containers must be washed, do so at a sink or floor drain so that wastewater goes to the sanitary sewer.
9. Only wash concrete mixing and pouring equipment in designated concrete washout areas at each job site. Never wash into a storm drain inlet.

C. Management of Stockpiles

Stockpile Management procedures and practices are designed to reduce or eliminate air and stormwater pollution from stockpiles of soil, paving materials such as portland cement concrete rubble, reclaimed asphalt pavement (RAP), hot mixed-cold laid bituminous mixes, limestone rock asphalt, pre-coated aggregates, and various patching mixes. Protection of stockpiles is a year-round requirement. To properly manage stockpiles:

1. Locates stockpiles away from concentrated flows of stormwater, drainage courses, and inlets.
2. Protects all stockpiles from stormwater run-on using temporary perimeter sediment barriers such as berms, dikes, fiber rolls, silt fences, sandbag, gravel bags, or straw bale barriers.
3. Manages stockpiles of contaminated soil as follows:
4. Cover stockpiles with plastic sheeting or tarps.

5. Install berms around stockpiles to prevent runoff from leaving the area.
6. Does not stockpile in or near storm drains or watercourses.
7. Place bagged materials on pallets and under cover.
8. While activities associated with the BMP are under way, inspect weekly during the rainy season and at two-week intervals in the non-rainy season to verify continued BMP implementation.
9. Repair and/or replace perimeter controls and covers as needed to keep them functioning properly.

D. Vehicle Fueling, Washing and Maintenance

Activities associated with fueling and cleaning of municipal vehicles and equipment can easily contribute pollutants to stormwater discharges or directly discharge to the municipal separate storm sewer (MS4). Spills and leaks that occur during vehicle and equipment fueling can contribute hydrocarbons, oils, grease, metals, and other toxic chemicals to stormwater run-off or discharge directly into storm sewers or receiving waters. Pollutants from washing and maintaining vehicles can vary from engine oil to chemicals within detergents such as phosphates. Properly designed and constructed fueling and wash areas will reduce the potential for contaminated discharges.

The ideal location for washing vehicles is at a commercial vehicle wash. Commercial vehicle washes can recycle their water on-site as well as contain the it so it will not enter the storm drain. If no commercial vehicle washes are available, then vehicles should be washed indoors (that will drain to sanitary sewers) or on grass/pervious surfaces.

1. General fueling practices:
    a) Place drip pans or absorbent pads under direct fueling location if fueling will occur over a permeable surface.
    b) Do not "top off" fuel tanks.
    c) Do not place used spill response materials in adjacent trash receptacles. Dispose in a proper manner.
    d) Do not leave active fueling operations unattended.
2. General washing practices:
    a) Keep equipment clean; do not allow a buildup of oil/grease.
    b) Place spill clean-up materials in readily available locations by the wash area (clearly mark location of spill clean-up materials).
    c) Clean up spills or any wash water that may improperly discharge and contaminate.
    d) Consider using phosphate-free detergents.
    e) The optimal location for a wash area is indoors where connection to the sanitary sewer is more easily achieved and exposure to rain events is eliminated.
    f) Do not store solvents or degreasers in the wash area.
3. General maintenance practices:
    a) Keep all wash areas neat and orderly.

b) Perform monthly inspections and clean and maintain any sumps or oil/water separators installed at the wash area.

c) Inspect and maintain washing equipment, especially the hoses, wands, and nozzles. Make sure they deliver the proper rate of water and shut-off automatically when not in use.

d) For wash areas that are plumbed to a sanitary sewer, clean the sewer inlet at least weekly.

e) Inspect all fueling equipment and fuel islands at least daily for leaks, drips, corrosion, wear, or damage. Repair or replace all faulty equipment promptly.

E. Routine Street and Parking Lot Sweeping

Responsible Party: **Public Works Director**

Regular street and parking lot sweeping (using sweeper trucks/equipment) removes debris, such as dust and pollutants, which typically end up in streams after being washed into catch basins. Sweeping should be performed at least twice a year on all roads and preferably more in areas of concern, including near streams, land use (industrial areas vs. residential) or heavily trafficked areas.

1. Operate all sweepers according to the manufacturer's recommended procedures.
2. Develop a street sweeping schedule including prioritized roads, secondary roads and frequency of sweeping.
3. Schedule sweeping as follows:
   a) In areas where storm drain plugging or high pollutant loadings occur.
   b) Immediately following special events like street fairs, art shows and parades.
   c) Immediately after street repair projects that involve saw cutting, chip sealing or other operations that might have left wastes or debris on road surfaces.
   d) After leaf collection in the fall.
   e) After salt/sand application in the winter.
   f) During new construction projects involving temporary storage of construction materials like dirt, sand and road base along the roadway.
   g) Immediately following median grass cutting operations.
4. Make sure brushes and water spray hoses are functional before leaving the shop.
5. Clean out solid debris and store in an impervious area or in a temporary disposal area such as a truck or dumpster.
6. Scrape out left over debris from the hopper after the last dump of the day. Dispose of waste in trash or dumpster temporary storage area.
7. Always wash sweepers in a wash area or wash bay that drains to a sanitary sewer.
8. Avoid conducting sweeping operations during rainstorms.

F. Emergency Response

Spill prevention and response is one of the most important Good Housekeeping Practices for municipal operations. During daily activities, municipal employees handle, transport, load, and use products that can be harmful to our waterways if they enter storm drains. Refer to

the Illicit Discharge Detection and Elimination Plan for the Spill Response Plan.

G. Cleaning of Maintenance Equipment, Building Exteriors and Dumpsters

Equipment and building washing can generate dry weather runoff contaminated with detergents, oils, grease, and heavy metals. Equipment and building washing BMPs can eliminate contaminated wash water discharges to the storm sewer system.

1. Proper equipment maintenance includes:
    a) Maintain equipment regularly: Check for leaks or stains, and fix leaks immediately.
    b) Capture leaks and rips during maintenance activities with a drip pan.
    c) If equipment is stored outside, provide a tarp or roof to protect the equipment from precipitation.
2. Proper infrastructure cleaning includes:
    a) Perform the activity during dry periods.
    b) Use non-toxic chemicals for maintenance and minimize or eliminate the use of solvents.
3. Proper Building Repair, Remodeling, and Construction includes:
    a) Do not dump any toxic substance or liquid waste on the pavement, the ground, or toward a storm drain.
    b) Use ground or drop cloths underneath outdoor painting, scraping, and sandblasting work and properly dispose of collected material daily.
4. Proper dumpster cleaning includes:
    a) Do not wash out dumpsters outdoors or in a parking lot.
    b) Dumpsters should be washed in a wash bay or over a floor drain that goes to the sanitary sewer or return dumpsters to the waste disposal contractor for cleaning at the contractor's facility.
    c) Route leaks and other wastewaters from dumpsters to the sanitary sewer system.
    d) Keeping spill clean-up materials easy to access.

H. Use, Storage and Disposal of Significant Materials

The storage, use and disposal of hazardous materials and chemicals require consideration of a number of environmental health and safety factors. These include inventory control, as well as the proper use and disposal of containers and equipment.

1. Proper BMPs for chemicals and hazardous materials:
    a) Keep lids on all containers and store under cover.
    b) Properly close all containers when not in use.
    c) Use secondary containment for hazardous materials and protect from rain. Store hazardous materials in an area where spills will not reach storm drains.
    d) Label all hazardous materials according to hazardous waste regulations.
    e) All hazardous materials should be properly labeled and remain labeled. The purchase date should be placed on the label.
    f) In general, storage areas should not be hot or humid.

2. Proper BMPs for flammable materials:

    a) Flammable materials should be stored in ventilated storage cabinets or approved safety cans. Lids of safety containers should be kept closed, as well as doors of storage cabinets.

    b) Make sure an adequate spill kit with sufficient equipment and supplies is located near storage areas where spills are possible. Clean up any spills, leaks, or discharges immediately.

    c) Flammable and combustible materials must be isolated from ignition sources.

    d) Proper fire suppression equipment should be installed or available in storage or use areas.

3. General BMPs for significant materials:

    a) Do not combine wastes when storing them - this increases safety, recycling and disposal options and reduces disposal costs.

    b) Never mix waste oil with fuel, antifreeze or chlorinated solvents.

    c) Use secondary containment on all bulk fluids stored in amounts more than 55 gallons and wastes to prevent accidental discharge. Secondary containment includes, but is not limited to, berming around storage areas and use of absorbents.

    d) Keep storage areas clean and dry. Conduct regular inspections of storage areas to detect leaks and spills.

    e) Store new or used batteries securely to avoid breakage and acid spills during earthquakes. When stored outdoors, batteries shall be covered with plastic tarp to protect them from rain.

    f) Recycle old batteries.

    g) Wood products treated with chromated copper arsenate, ammoniacal copper zinc arsenate, creosote, or pentachlorophenol should be covered with tarps.

I. Landscaping, Park, and Lawn Maintenance

Responsible Party: **Public Works Director**

Landscaping and lawn care practices have a significant impact on stormwater runoff. Conventional lawn care practices often include watering too frequently, over-fertilizing, and the use of pesticides and/or herbicides to rid lawns of unwanted pests and nuisance or invasive plants. Excess nutrients and pesticides wash away during rain events or when lawns are over-watered. The stormwater management approach to lawn care uses a variety of techniques to reduce pollution in stormwater runoff from lawns.

1. General practices include:

    a) Perform mowing at optimal times, which does not include prior to significant forecasted rain events.

    b) Protect lakes, ponds, wetlands, and/or lagoons adjacent to landscape maintenance activities.

    c) Mulch-mow grasses whenever possible.

    d) Dispose of organic wastes by composting whenever possible. When composting

is not possible, dispose of organic wastes in an approved disposal facility. Do not wash down or dispose of lawn clippings, leaves, tree trimmings, or other landscape waste in or near a storm drain, drainage ditch, or open body of water.

e) Use mulch or other erosion control methods to prevent erosion of exposed soils and flowerbeds.

f) Do not leave grass clippings or trimming residue on impervious areas.

g) Use mechanical methods for vegetation removal where possible.

h) Avoid loosening soil when removing weeds or vegetation.

i) Collect and dispose lawn trimmings, clippings, vegetation, etc.

j) Reduce or prevent exposed soil areas.

k) Only irrigate as much water as needed. Never water at rates that exceed the infiltration rate of the soil.

J. Road Maintenance (**Appendix I**)

Responsible Party: **Public Works Director**

Existing roads and bridges require periodic maintenance. These maintenance activities often generate stormwater pollutants such as heavy metals, sediments, solvents, oils, and fuels.

1. General practices for road and bridge maintenance:

a) Always sweep or vacuum dry material wastes during saw cutting, road stripe removal, or other activities that create dust/sediment.

b) Locate and block adjacent storm drain inlets during maintenance work such as concrete curb and gutter work, resurfacing, paving, striping/marking, or saw cutting.

c) Use drip pans for paving machines and other equipment that may leak fluids.

d) Do not apply road striping paint during windy, wet, or rainy conditions.

e) If wet saws must be used, place drip pans under or watertight barriers around equipment when not in use. Turn of cooling water when saw is not in use.

f) Wash out mixers, delivery trucks, or other equipment in a designated concrete washout area only.

g) Protect storm drains during maintenance.

K. Right-of-Way Maintenance

Responsible Party: **Public Works Director**

1. Open and closed conveyance systems within City right-of-way will be maintained to function as designed and in a manner that will allow them to convey stormwater effectively. Periodic maintenance will include:

a) Mowing

b) Maintenance of vegetation

c) Removal of debris

d) Removal of excess sediment

e) Repair/stabilization of erosion

f) Removal of any obstruction that inhibits drainage

L. Application of Herbicides, Pesticides and Fertilizers

Responsible Party: **Public Works Director**

Fertilizers, herbicides, and pesticides possess a relatively high potential for contributing pollutants to stormwater runoff and non-stormwater discharges both through storage and application. Proper management of materials, effective training, and proper use of materials will reduce the potential of polluting receiving waterways.

1. BMPs that will be implemented to reduce pollutants from pesticides, herbicides, and fertilizers include the following:

   a) Personnel who participate in the application of pesticides, that contain a Restricted Use Pesticide (RUP), for the City will be trained and obtain non-commercial Certification as required by the Minnesota Department Agriculture.

   b) Fertilizers will be applied during the growing seasons- spring, summer, and fall.

   c) Employees will be trained to follow the material safety data sheet(s) (MSDS) of pesticides, including herbicides and insecticides, and fertilizers.

   d) All mixing and loading operations must occur on impervious surfaces.

   e) All state, federal, and local regulations are followed in the use of pesticides, herbicides, and fertilizers.

   f) Pesticides, herbicides, and fertilizers will not be applied during or directly prior to storm events.

   g) Employ application techniques that increase efficiency and allow the lowest effective application rates. Carefully calibrate application equipment and follow all label instructions.

   h) Only pesticides that are quickly absorbed into the soil or plants should be used.

   i) Whenever practicable, integrated pest management techniques will be implemented.

   j) Pesticides will not be sprayed when there is a high possibility of the spray drifting into non-target areas or onto non-target vegetation, insects, or animals.

   k) To prevent possible backflow and contamination of a water supply, never submerge a water supply hose in a chemical tank or container.

   l) Pesticide application for mosquito control may not be applied without following the notification requirements as required by Minnesota Statute 18B.07.

M. Cold Weather Operations (**Appendix I**)

Responsible Party: **Public Works Director**

Road salt or deicers should be stored in covered shelters with a door. Although road salt is spread liberally on roads for safety, it is important that we limit the amount of stored road salt that enters streams. Protecting stored road salt from the elements (wind or precipitation) saves money since very little is wasted and keeps unnecessary salt out of our streams.

1. General practices include:

   a) Road salt spreaders shall be emptied completely when not in use or at the end of the snow season, especially if stored outdoors. Excess salt in spreaders can get

washed out in rains.

b) Regulate the application of deicing salts to prevent oversalting the pavement.

c) Use trucks equipped with salt spreading calibration devices.

d) Use alternative deicing materials, such as sand or salt substitutes, where sensitive ecosystems should be protected.

e) Consider temperature when determining volume of salt to apply.

f) Contain wash water from trucks used for salting and sanding in a holding tank for disposal or discharge into sanitary sewers.

g) Prevent dumping of accumulated snow into surface waters or onto frozen water bodies.

N. References

California Stormwater Quality Association BMP Handbook @ http://www.caasqa.org/bmp-handbooks/municipal-bmp-handbook

EPA Pollution Prevention/Good Housekeeping for Municipal Operators @

http://water.epa.gov/polwaste/npdes/swbmp/Pollution-Prevention-Good-Housekeeping-for-Municipal-Operatators.cfm

LIMC Good Housekeeping Guidance and BMP Manual @

http://www.lancasterintermunicipalcommittee.org/programs_stormwater.php

Partners For A Clean Environment @ http://www.pacepartners.com/stormwater/municipal-operations/72-municipal-stormwater-program-tools#SOP

VI. MCM 6: POND ASSESSMENT PLAN

A. Assessment Procedures

1. Determine Existing Conditions

a) Delineate watersheds for every pond maintained by City.

- Review Storm Sewer Map
- Review LiDAR topographic mapping
- Perform visual inspections

b) Define watershed characteristics (impervious surface percentage, time-of-concentrations, areas, soil types, etc.).

- Review aerial mapping
- Review Land Use Plan
- Review Storm Sewer Map
- Review LiDAR topographic mapping
- Perform visual inspections

c) Define pond characteristics (design permanent volume, existing permanent volume, outlet, normal water level, etc.).

- Review Construction Plans and Record Plans
- Perform visual inspections
- Perform site surveys
- Perform bathymetric surveys
- Perform sediment testing for pollutants

2. Assess TSS and TP Treatment Effectiveness

a) Define TSS and TP treatment effectiveness required for every pond

- Establish permanent volumes required to meet NURP standards (60% TSS removal, 62% PP removal, 34% TP removal) and NPDES standards (1,800 c.f/acre of drainage area)
- Determine additional reductions required to meet TMDLs, if any
- Determine additional reductions required to provide increased water quality benefits

b) Rate pond effectiveness / need for maintenance

- MN Stormwater Manual recommends sediment removal after 50% of permanent pool capacity has been lost
- Compare existing removal efficiencies to required efficiencies
- Review proximity to surface waters
- Review proximity to Impaired waters

- Review TMDL requirements
- Determine Management Level of Sediment
- Rate pond based on following system:

Table 1 – Pond Rating System

Rating	Description
1	• Pond completely ineffective • Pollutant removal efficiency reduced well below 50 % NURP / required standards (60% reduction or more) • Efficiency reduced below 50% NURP / required standards (50-60% reduction) and discharges directly to surface water or located in Impaired Water watershed • Maintenance required as soon as possible to prevent further pollutant discharge
2	• Pollutant removal efficiency reduced below 50% NURP / required standards (50-60% reduction) but does not discharge directly to surface water and is not located in Impaired Water watershed • Pollutant removal efficiency reduced to approximately 50% NURP / required standards and discharges directly to surface water or located in Impaired Water watershed • Maintenance should be provided as soon as funds are available
3	• Pollutant removal efficiency reduced to approximately 50% NURP / required standards • Does not discharge directly to surface water and not located in Impaired Water watershed • Maintenance should be planned for near future
4	• Pollutant removal efficiency reduction approaching 50% NURP / required standards (25-50% reduction) • Pond should be checked yearly to monitor permanent pool volume reduction and determine if change in rating is necessary
5	• Pond recently constructed or dredged, pollutant removal efficiency at maximum level (0-25% reduction) • Pond should be checked for permanent pool volume capacity starting 5 years after initial construction or dredging and every 5 years after until rating decrease is warranted

B. Schedule

1. Determine Existing Conditions
2. Assess TSS and TP Effectiveness

VII. WRITTEN PROCEDURES

A. MCM 2: Public Participation/Involvement

1. Procedures for consideration of and response to public input on adequacy of SWPPP.

a) Public input (written or oral) shall be directed to the City Engineer or a designated representative.

b) City Engineer or designated representative shall review SWPPP regarding input received to determine if any modifications are necessary to address missing or inferior portions of the program.

c) If modifications are necessary, the City will begin process of amending SWPPP accordingly.

d) City shall provide response to person responsible for input within three (3) business days of receipt, providing information on City procedures and potential modifications to be evaluated. Once evaluation of input is complete, City shall provide additional response to person responsible for input regarding revisions to be implemented or reason why no action is to be taken.

B. MCM 3: Illicit Discharge Detection and Elimination (City Ordinance – Chapter 40.5.2)

1. Procedures for maintaining the storm system map.

a) Public Infrastructure – The Storm System Map shall be updated annually with public improvement projects completed in the prior year. Updates will be based on and completed in accordance with availability of the Record Drawings.

b) Private Infrastructure - The Storm System Map shall be updated annually with private improvement projects required to meet governmental requirements and completed in the prior year. Updates will be based on and completed in accordance with availability of the Record Drawings.

2. Procedures for investigating, locating, and eliminating the source of illicit discharges.

a) Refer to Illicit Discharge Detection and Elimination Plan.

3. Procedures for responding to spills, including emergency response procedures to prevent spills from entering the MS4.

a) Refer to Illicit Discharge Detection and Elimination Plan.

C. MCM 4: Construction Site Runoff Control (City Ordinance Chapter 40.5.2 and 102)

1. Procedures for site plan review prior to start of construction activity to ensure compliance with local, State, and Federal requirements.

a) Refer to MCM 5: Post Construction Stormwater Management procedures.

2. Procedures for conducting Construction Site Inspections. Inspections to confirm compliance with the NPDES Construction Stormwater Permit per MS4 requirements.

a) High priority sites – The following sites shall be classified as high priority sites.

- Project located in a sensitive area (by determination of City Engineer).
- Project has history of violations.

b) Inspection frequency

- High priority sites – 1 time per week
- Other active sites – every other week
- Inactive sites – 1 time per month

c) Inspector – Inspector shall be designated by the City Engineer upon Final Plat/Construction Plan approval and be properly trained in Construction Site Runoff Control inspection procedures (see Education and Outreach Plan).

d) Inspection – the Construction Site Inspection Checklist shall be utilized by the Inspector to document each site inspection to determine compliance with erosion, sediment, and waste control requirements (see **Appendix K**). Completed checklists shall be provided to the applicant within 24 hours of the inspection, indicating compliance or non-compliance.

e) Notification of SWPPP Non-Compliance

- *Notice of Violation*. If the City Inspector notices any non-compliance with the SWPPP, correspondence will be provided to the responsible party indicating items requiring correction and a date to complete corrective actions.
- *Notification of action on Financial Security*. The city shall notify the applicant, when the city is going to act on the financial securities part of this Ordinance. The initial contact will be to a party listed on the application and/or the SWPPP. Forty-eight hours after notification by the city or 72 hours after the failure of the erosion control measures, whichever is less the city, at its discretion, may begin corrective work.
- *Erosion off-site*. If erosion breaches the perimeter of the site, the applicant shall immediately develop a cleanup and restoration plan, obtain right-of-entry from the adjoining property owner, and implement the cleanup and restoration plan within 48 hours of obtaining the adjoining property owner's permission. In no case, unless written approval is received from the city, shall more than seven calendar days go by without corrective action being taken. If in the discretion of the city, the applicant does not repair the damage caused by the erosion, the city may do remedial work required and charge the cost to the applicant.
- *Erosion into streets, wetlands or water bodies.* If eroded soils (including tracked soils from construction activities) enter or appear likely to enter streets, wetlands, or other water bodies, prevention strategies, cleanup and repair must be immediate. The applicant shall provide all traffic control and flagging required to protect the traveling public during cleanup operations.
- *Failure to do corrective work.* When an applicant fails to conform to any provision of this policy within the time stipulated, the city may take the following actions:

  (a) Issue a stop work order, withhold the scheduling of inspections, and/or the issuance of a certificate of occupancy.

(b) Revoke any permit issued by the city to the applicant for the site in question or any other of the applicant's sites within the city's jurisdiction.

(c) Direct the correction of the deficiency by city forces or by a separate contract. The issuance of a permit constitutes a right-of-entry for the city or its contractor to enter upon the construction site for the purpose of correcting deficiencies in erosion control.

(d) All costs incurred by the city in correcting stormwater pollution control deficiencies must be reimbursed by the applicant. If payment is not made within 30 days after costs are incurred by the city, payment will be made from the applicant's financial securities as described in City Code Section 1210 (f).

(e) If there is an insufficient financial amount, in the applicant's financial securities as described in section 1210 (f), to cover the costs incurred by the city, then the city may assess the remaining amount against the property. As a condition of the permit, the owner shall waive notice of any assessment hearing to be conducted by the city, concur that the benefit to the property exceeds the amount of the proposed assessment, and waive all rights by virtue of M.S.A. § 429.081 to challenge the amount or validity of assessment.

f) Penalty - Any person, firm or corporation violating any provision of this article shall be fined not less than $5.00 or more than $500.00 for each offense, and a separate offense shall be deemed committed on each day during or on which a violation occurs or continues. Pursuit of penalty will be at the discretion of the City Administrator.

Refer to Chapter 102 of the City Code for complete direction regarding enforcement of these requirements.

3. Procedures for receipt and consideration of reports of noncompliance or other stormwater related information on construction activity submitted by the public.

a) Public input (written or oral) shall be directed to the assigned Inspector for the site in question.

b) Inspector shall review inspection history to determine if report of noncompliance or other stormwater related information has been/is being addressed.

c) If information is new to inspection history and requires action to restore compliance, Inspector shall initiate a site inspection within 24 hours of receipt.

d) Inspector shall provide response to person responsible for input within 24 hours of receipt, providing information on City procedures, determination of compliance, and potential enforcement.

D. MCM 5: Post-Construction Stormwater Management

1. Procedures for site plan review prior to start of construction activity to ensure compliance with local, State, and Federal requirements.

a) Upon receipt of Building Permit, Conditional Use Permit, Site Plan Review, or Zoning application, the **Director of Planning and Economic Development** or designated representative will provide all required information included with the

application to the designated Site Plan Reviewer. At the discretion of the City Engineer, information required may include the following:

- Site Survey
- Site Plan
- Grading Plan
- Erosion and Sediment Control Plan
- Site Restoration Plan
- Stormwater Pollution Prevention Plan
- Stormwater Management Plan and Details
- Hydrologic, Hydraulic, and Water Quality Computations
- Wetland Report by Certified Wetland Specialist
- Wetland Protection/Mitigation Plan
- Soil Borings/Geotechnical Report

b) Site Plan Reviewer – Site Plan Reviewer shall be designated by the City Engineer upon receipt of applicable City application and be properly trained in Post-Construction Stormwater Management procedures (see Education and Outreach Plan).

c) Review – the SWPPP Review Checklist shall be utilized by the Reviewer to document each plan review to ensure compliance with local, State, and Federal requirements (see **Appendix K**). In addition, the Reviewer shall generate a Review Comments letter addressed to the Community Development Director outlining revisions necessary to bring Construction Plans into compliance with all requirements. The Review Comments letter shall include notification that the owner must apply and obtain coverage under the NPDES Construction Stormwater Permit.

d) Approval – the Reviewer shall coordinate with the Community Development Director and applicant to address all issues identified during review/development of the checklist. Once all issues have been resolved, the Reviewer shall stamp Final Construction Plans with: Approved By, Reviewer' Name, and Date and coordinate with the Community Development Director to issue the approved permit.

e) Maintenance Agreement – a Maintenance Agreement shall be required for any projects requiring permanent stormwater management facilities due to local, State, or Federal requirements. The agreement shall be generated in favor of the City using the City's template (see **Appendix J**). The agreement shall define maintenance responsibilities following completion of project, specify types and frequencies of inspection and maintenance activities, designate who will conduct inspection and maintenance activities, and outline reporting requirements. The Agreement shall be recorded with the County per the City's approval process.

f) Other Permits – the Reviewer shall coordinate with the applicant to verify need for other permits. The Review Comment letter shall include a comment requiring copies of the following permits or documentation from the applicable agency that no permit is necessary.

- MPCA NPDES Construction Stormwater Permit
- Minnehaha Creek Watershed District Permit
- Nine Mile Creek Watershed District Permit
- Wetland Conservation Act Permit
- MN Department of Natural Resources Permit
- US Army Corp of Engineers Permit

g) Notice of Violation: If a responsible party fails or refuses to meet the requirements of the maintenance agreement, the city may issue a Notice of Violation.

h) Action by City. If, after deadline set for completion of corrective action in Notice of Violation, the responsible party still fails or refuses to meet the requirements of the maintenance agreement, the City may correct a violation of the design standards or maintenance needs by performing all necessary work to place the stormwater treatment practice in proper working condition. After proper notice, the city may specially assess the owners of the stormwater treatment practice for the cost of repair work and any penalties; and the cost of the work shall be assessed against the property and collected along with ordinary taxes by the county.

i) Emergency action. If circumstances exist such that noncompliance with this Ordinance poses an immediate danger to the public health, safety and welfare, as determined by the city, the city may take emergency preventative action. The city shall also take every reasonable action possible to contact and direct the applicant to take any necessary action. Any cost to the community may be recovered from the applicant's financial security.

j) Penalty. Any person, firm or corporation violating any provision of this article shall be fined not less than $5.00 or more than $500.00 for each offense, and a separate offense shall be deemed committed on each day during or on which a violation occurs or continues.

Refer to Chapter 102 of the City Code for complete direction regarding enforcement of these requirements.

E. MCM 6: Pollution Prevention/Good Housekeeping for Municipal Operations

1. Procedures for City owned and/or operated BMP inspections.

a) Structural Stormwater BMPs – Structural BMPs owned and/or operated by the City (excluding treatment ponds) shall be inspected annually to determine structural integrity, proper function, and maintenance needs. The BMP Inspection Checklist shall be utilized by the Inspector to document each inspection (**see Appendix K**). If maintenance or sediment removal is unnecessary after first two annual inspections after initial installation, inspection frequency shall be adjusted to every other year. If patterns of non-compliance are persistent, inspection frequency shall be increased as deemed necessary by the City.

b) Ponds and Outfalls – Ponds and outfalls owned and/or operated by the City shall be inspected once every five years to determine structural integrity, proper function, and maintenance needs. The Pond and Outfall Inspection Checklists

shall be utilized by the Inspector to document each inspection (**see Appendix K**).

c) Based on inspection findings, the repair, replacement, or maintenance measures necessary to ensure the structural integrity and proper function of structural stormwater BMPs and outfalls shall be determined. Necessary maintenance shall be completed as soon as possible and as City processes and budget allow. If the determined that necessary maintenance cannot be completed within one year of discovery, the City shall develop a schedule(s) for completing the maintenance and document reasons for delay accordingly.

2. Procedures for Privately owned and/or operated BMP inspections.

a) Private BMPs shall be inspected as outlined in the Maintenance Agreement for BMP.

3. Procedures for determining the TSS and TP treatment effectiveness of all City owned/operated ponds constructed and used for the collection and treatment of stormwater.

a) Refer to the Pond Assessment Plan.

F. Documentation

1. Refer to the Documentation and Assessment Plan for items requiring documentation for each Minimum Control Measure.

G. Annual Assessment

1. Refer to the Documentation and Assessment Plan for items requiring annual assessment for each Minimum Control Measure.

VIII. DOCUMENTATION AND ASSESSMENT PLAN

A. Documentation

The following information shall be documented:

1. MCM1: Education and Outreach

   a) Quantities and descriptions of educational materials distributed, including dates distributed. This includes newsletters and website hits.

   b) Staff training for Illicit discharge recognition and reporting. This includes all field staff.

   c) Staff training for illicit discharge detection and elimination. This includes those responsible for investigating, locating, eliminating illicit discharges, and/or enforcement.

   d) Staff training for construction site runoff control. This includes those responsible for conducting site plan reviews, site inspections, and/or enforcement.

   e) Staff training for post-construction stormwater management. This includes those responsible for conducting site plan reviews, site inspections, and/or enforcement.

   f) Staff training for winter maintenance activities. This includes all staff performing any winter maintenance activity (i.e. calibration and maintenance of equipment, deicing operations, and snow plowing/management).

   g) Staff training for SWPPP activities. This includes those responsible for municipal operations (i.e. waste storage and disposal, stockpile management, vehicle maintenance, street sweeping, park management, road maintenance, and application of herbicides, pesticides, and fertilizer), operation and maintenance of structural BMPs (i.e. sump manholes, stormwater treatment devices, separators, ponds, outfalls, etc.), pond and outfall assessments, and management of TMDL waste load allocations.

   h) Staff training documentation shall include: 1) general subject matter covered, 2) names and departments of individuals in attendance, and 3) date of each training event.

2. MCM 2: Public Participation/Involvement

   a) All relevant written input submitted by persons regarding the SWPPP.

   b) All responses from the City to written input received regarding the SWPPP, including any modifications made to the SWPPP as a result of the written input received. Responses to written input shall be provided to the person originally submitting the comment within three (3) business days, providing information on City procedures and potential modifications to be evaluated. Additional response shall be provided once evaluation of input is complete.

   c) Date(s), location(s), and estimated number of participants at events held for purposes of providing public opportunity to provide input on the adequacy of the SWPPP.

   d) Notices provided to the public of any events scheduled for purposes of providing public opportunity to provide input on the adequacy of the SWPPP, including the

Presentation on SWPPP Progress and Implementation and any electronic correspondence (e.g., website, e-mail distribution lists, notices, etc.).

e) Date(s), location(s), description of activities, and estimated number of participants at public involvement events that include a pollution prevention or water quality theme. This includes the Bulk Item Drop-Off, Adopt-a-Park or Trail, Brush & Yard Waste Drop-Off, Adopt-a-Drain, and any other educational or outreach event with a Pollution Prevention or Water Quality theme.

3. MCM 3: Illicit Discharge Detection and Elimination

a) Date(s) and location(s) of IDDE inspections conducted, including any field notes, maps, pictures, videos, and/or test results.

b) Reports of alleged illicit discharges received, including date(s) of the report(s), and any follow-up action(s) taken.

c) Date(s) of discovery of all illicit discharges.

d) Identification of outfalls, or other areas, where illicit discharges have been discovered.

e) Sources (including a description and the responsible party) of illicit discharges (if known).

f) Labor, materials, and other costs associated with the investigation for invoicing the responsible party.

g) Action(s) taken by the City (i.e correspondence, Notice of Violation), including date(s), to address discovered illicit discharges.

h) Enforcement actions, including the following:

- Name of the person responsible for violating the terms and conditions of the City's ordinances.
- Date(s) and location(s) of the observed violation(s).
- Description of the violation(s).
- Corrective action(s) (including completion schedule) issued by the City.
- Referrals to other regulatory organizations (if any).
- Date(s) and proof violation(s) resolved.

4. MCM 4: Construction Site Runoff Control

a) Site Plan Reviews, including the following:

- Project name.
- Location.
- Total acreage disturbed.
- Owner and Operator of proposed construction activity.
- Proof of notification to obtain coverage under the CSW Permit or proof of coverage under the CSW Permit.
- Any stormwater related comments and supporting completed

checklist used by the Reviewer to determine project approval or denial.

- Approved Final Plat/Construction Plans.

b) Construction site inspections, including the following:

- Completed Construction Site Inspection Checklist.
- Any correspondence to the applicant regarding non-compliance with the approved Stormwater Pollution Prevention Plan, including Warning Letters, notice of action against the financial security, and/or notice of potential penalties.

c) Enforcement actions, including the following:

- Name of the person responsible for violating the terms and conditions of the City's ordinances.
- Date(s) and location(s) of the observed violation(s).
- Description of the violation(s).
- Corrective action(s) (including completion schedule) issued by the City.
- Referrals to other regulatory organizations (if any).
- Date(s) and proof violation(s) resolved.

5. MCM 5: Post-Construction Stormwater Management

a) Site Plan Reviews, including the following:

- Supporting documentation used to determine compliance with local, State, and Federal requirements, including any calculations for the permanent stormwater treatment system.
- The water quality volume that will be treated through volume reduction practices (e.g., infiltration or other) compared to the total water quality volume required to be treated.
- Documentation associated with off-site treatment projects authorized by the City, including rationale to support the location of permanent stormwater treatment projects.
- Payments received and used for public stormwater management projects to provide off-site treatment for other projects within the City.
- Any stormwater related comments and supporting completed checklist used by the Reviewer to determine project approval or denial.
- Approved Final Plat/Construction Plans.
- Copies of permits required by other local, State, or Federal agencies.
- Maintenance Agreements generated for privately owned and operated stormwater management facilities constructed to meet local, State, and Federal requirements.

b) Inventory of City owned and/or operated BMPs, including the following:

- Location.
- Year constructed.
- Type of BMP.
- Design plans/reports.

c) Inventory of private BMPs installed to meet governmental requirements, including the following:

- Location.
- Year constructed.
- Type of BMP.
- Design plans/reports.
- Recorded Maintenance Agreement.

d) Enforcement actions, including the following:

- Name of party responsible for violating the terms and conditions of the Maintenance Agreement.
- Date(s) and location(s) of the observed violation(s).
- Description of the violation(s).
- Corrective action(s) (including completion schedule) issued by the City.
- Referrals to other regulatory organizations (if any).
- Date(s) violation(s) resolved.

6. MCM 6: Pollution Prevention / Good Housekeeping for Municipal Operations

a) City owned and/or operated BMPs:

- Date(s) and description of findings, including whether or not an illicit discharge is detected, for all inspections conducted on structural stormwater BMPs, ponds, and outfalls.
- Any adjustments to inspection frequency of structural stormwater BMPs.
- Date(s) and a description of maintenance conducted as a result of inspection findings, including whether or not an illicit discharge is detected.
- Schedule(s) for maintenance of structural stormwater BMPs, ponds, and outfalls.

b) Privately owned and/or operated BMPs:

- Date(s) and description of findings, including whether or not an illicit discharge is detected, for all inspections conducted on private BMPs.
- Date(s) and a description of maintenance conducted as a result of inspection findings, including whether or not an illicit discharge is

detected.

c) Winter maintenance:

- The amount of deicer applied each winter maintenance season to all permittee owned/operated surfaces.

d) Pond sediment excavation

- Unique ID number and geographic coordinates of each stormwater pond from which sediment is removed.
- The volume (e.g., cubic yards) of sediment removed from each stormwater pond.
- Results from any testing of sediment from each removal activity.
- Location(s) of final disposal of sediment from each stormwater pond.

e) TMDL Management

B. Annual Assessment

1. The City shall conduct an annual assessment of the entire Storm Water Pollution Prevention Program to evaluate program compliance, the status of achieving the measurable requirements, and determine how the program might be improved. Measurable requirements are activities that must be documented or tracked as applicable to each MCM (e.g., inventory, trainings, site plan reviews, inspections, enforcement, etc.). The permittee must perform the annual assessment prior to completion of each annual report and document any modifications made to the program as a result of the annual assessment.

Appendix A: 2020 MS4 Part 2 Permit Application

MINNESOTA POLLUTION CONTROL AGENCY
520 Lafayette Road North
St. Paul, MN 55155-4194

MS4 Part 2 Permit Application

Authorization to discharge stormwater associated with small Municipal Separate Storm Sewer System (MS4)

Stormwater Pollution Prevention Program (SWPPP) Document

Doc Type: Permit Application

Instructions: Submitting this application confirms your intent to receive authorization to discharge stormwater under the National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) MS4 General Permit (MNR040000). This application is due within 150 days from the issuance date of the MS4 General Permit (MNR040000). Throughout this application there are text fields with a typical maximum limit of four lines. If you need to provide information in a text field that exceeds the maximum limit, please submit an attachment(s) with supplemental information that is labeled with the corresponding field number (e.g., *9.J.*).

Submittal: This application form and any associated documents (i.e., total maximum daily load (TMDL) application, any supplemental information) must be submitted electronically. To submit this form electronically, open the form using Internet Explorer Web browser or Adobe Acrobat Reader in order for the submit button to work properly. (If you do not have Acrobat Reader, you can download a free version at https://get.adobe.com/reader/.) Send the form to the Minnesota Pollution Control Agency (MPCA) by clicking the submit button at the end of the form (a "send email" window should open with the form attached), you can click on "Send" and then close the form. If you do not see a "send email", save the form to your computer and attach the form to an email message, using "MS4 Part 2 Permit Application" as the subject line to ms4permitprogram.pca@state.mn.us.

Review/Public Notice process: The MPCA will review the application for completeness. Incomplete applications will be returned. If the MPCA determines the application is complete, the MPCA will make a preliminary determination to issue permit coverage and place the application on public notice for 30 days. Once the applicant addresses any applicable comments or hearing requests, the MPCA will make a final determination to issue permit coverage to the applicant.

Please note, this application is intended to provide information about an applicant's existing SWPPP. An applicant that receives permit coverage is responsible for complying with all new applicable requirements set forth in the MS4 General Permit (MNR040000) by deadlines specified in Appendix B of the reissued permit.

Questions: If you have any questions, need additional information, contact MPCA staff. To find the staff assigned to your MS4, refer to the https://stormwater.pca.state.mn.us/index.php?title=MS4_staff_contact_information_and_staff_assignments; or see the staff contact information on the MPCA's MS4 webpage at https://www.pca.state.mn.us/water/municipal-stormwater-ms4.

Note: All questions with an asterisk(*) are **required** fields, and the form will not submit without the fields completed.

General contact information

1. **MS4 Owner** (with ownership or operational responsibility, or control of the MS4)

*MS4 permittee name: 1.A. City of Hopkins *County: 1.B. Hennepin
(City, county, municipality, government agency or other entity)

*Mailing address: 1.C. 1010 1st St S

*City: 1.D. Hopkins *State: 1.E. MN *Zip code: 1.F. 55343

2. **MS4 General contact** (with SWPPP implementation responsibility)

*Last name: 2.A. Klingbeil *First name: 2.B. Eric
(Department head, MS4 coordinator, consultant, etc.)

*Title: 2.C. Assistant City Engineer

*Mailing address: 2.D. 1010 1st St S

*City: 2.E. Hopkins *State: 2.F. MN *Zip code: 2.G. 55433

*Phone (including area code): 2.H. (952) 548-6357 *Email: 2.I. eklingbeil@hopkinsmn.com

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

Last name: 3.A. Engstrom First name: 3.B. Taylor
(Department head, MS4 coordinator, consultant, etc.)

Title: 3.C. Environmental Compliance Specialist Organization: 3.D. WSB

Mailing address: 3.E. 540 Gateway Blvd

City: 3.F. Burnsville State: 3.G. MN Zip code: 3.H. 55337

Phone (including area code): 3.I. (612) 499-8395 Email: 3.J. tengstrom@wsbeng.com

4. **Certification** (All fields are required)

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

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

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

I have read, understood, and accepted all terms and conditions of the NPDES/SDS MS4 General Permit.

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

*Signature: 4.A. Eric Klingbeil
(This document has been electronically signed)

*Title: 4.B. Assistant City Engineer *Date: 4.C. 04/15/2021

*Mailing address: 4.D. 1010 1st St S

*City: 4.E. Hopkins *State: 4.F. MN *Zip code: 4.G. 55433

*Phone (including area code): 4.H. (952) 548-6357 *Email: 4.I. eklingbeil@hopkinsmn.com

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

*5. **Which type of MS4 do you represent?** (Check one)

5.A. ☒ City
5.B. ☐ County
5.C. ☐ Corrections
5.D. ☐ Education
5.E. ☐ Healthcare
5.F. ☐ Township
5.G. ☐ Transportation (i.e., Minnesota Department of Transportation [MnDOT])
5.H. ☐ Watershed District

*6. **Permit item 12.3:** Do you have any partnerships with another regulated small MS4(s) to satisfy one or more requirements of the General Permit?

☒ Yes
☐ No (skip to Q8)

7. **If yes in Q6, provide a description of the partnership(s): (Maximum 10 lines of text)**

The City partners with Minnehaha Creek Watershed District and Nine Mile Creek Watershed District for various erosion control and stormwater management requirements.

MCM 1: Public education and outreach

*8. **Permit item 16.3:** Do you distribute educational materials or equivalent outreach focused on at least two (2) specifically selected stormwater-related issues of high priority? ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

☒ Yes
☐ No (skip to Q11)

9. **If yes in Q8, what are your high-priority topics?** (Check all that apply)

9.A. ☐ Specific TMDL reduction targets
9.B. ☐ Changing local business practices
9.C. ☒ Promoting adoption of residential best management practices (BMPs)
9.D. ☐ Lake improvements through lake associations
9.E. ☐ Household chemicals
9.F. ☒ Yard waste
9.G. ☐ Construction activities
9.H. ☐ Post-construction activities
9.I. ☐ Other (describe below):
9.J.

Additional information for checked items (optional):
9.K.

10. **If yes in Q8, how do you educate the public about stormwater-related issues?** (Check all that apply)

10.A. ☐ Brochure
10.B. ☒ Newsletter
10.C. ☐ Utility bill insert
10.D. ☐ Newspaper ad
10.E. ☐ Radio ad
10.F. ☐ Television ad
10.G. ☐ Cable access channel
10.H. ☒ Website
10.I. ☐ Stormwater-related event
10.J. ☐ Other (describe below):
10.K.

Additional information for checked items (optional):
10.L.

*11. **Permit item 16.4:** At least once each calendar year, do you distribute educational outreach focused on illicit discharge recognition and reporting illicit discharges? ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

☒ Yes
☐ No (skip to Q13)

12. **If yes in Q11, how do you educate the public about illicit discharge recognition and reporting?** (Check all that apply)

12.A. ☐ Brochure
12.B. ☒ Newsletter
12.C. ☐ Utility bill insert

12.D. ☐ Newspaper ad
12.E. ☐ Radio ad
12.F. ☐ Television ad
12.G. ☐ Cable access channel
12.H. ☒ Website
12.I. ☐ Stormwater-related event
12.J. ☐ Other (describe below):
12.K.

Additional information for checked items (optional):
12.L.

If you represent a city or township, please answer questions 13-16; ***if you do not*** *represent a city or township, skip to question 17.*

13. **Permit item 16.5:** At least once each calendar year, do you distribute educational materials or equivalent outreach to residents, businesses, commercial facilities, and institutions, focused on deicing salt use? ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***
☒ Yes
☐ No (skip to Q15)

14. **If yes in Q13, what does your education or outreach cover?** (Check all that apply)
14.A. ☒ The impacts of salt use on receiving waters
14.B. ☒ Methods to reduce salt use
14.C. ☒ Proper storage of salt or other deicing materials
14.D. ☐ Other (describe below):
14.E.

Additional information for checked items (optional):
14.F.

15. **Permit item 16.6:** At least once each calendar year, do you distribute educational materials or equivalent outreach focused on pet waste? ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***
☐ Yes
☒ No (skip to Q17)

16. **If yes in Q15, what do your educational materials or equivalent outreach on pet waste include?** (Check all that apply)
16.A. ☐ Impacts of pet waste on receiving waters
16.B. ☐ Proper management of pet waste
16.C. ☐ Any existing regulatory mechanism(s) for pet waste
16.D. ☐ Other (describe below):
16.E.

Additional information for checked items (optional):

16.F.

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*17. **Permit item 16.7:** Do you have an education and outreach plan?

☒ Yes

☐ No (skip to Q19)

18. **If yes in Q17, which components does your education and outreach plan include?** (Check all that apply)

18.A. ☒ Target audience(s) ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)*** If checked, specify your target audiences:

18.A.1. ☒ Residents

18.A.2. ☒ Businesses

18.A.3. ☐ Commercial facilities

18.A.4. ☐ Institutions

18.A.5. ☐ Local organizations

18.A.6. ☐ Low income residents

18.A.7. ☐ People of color

18.A.8. ☐ Non-native English speaking residents

18.A.9. ☐ Other (describe below):

18.A.10.

18.B. ☒ Name or position title of responsible person(s) for overall plan implementation.

18.B.1. If checked, specify the name(s) or position title(s):

Assistant City Engineer

18.C. ☐ Specific activities and schedules to reach each target audience.

18.C.1. If checked, provide any additional information (optional):

18.D. ☐ A description of any coordination with and/or use of stormwater education and outreach programs implemented by other entities, if applicable.

18.D.1. If checked, provide any additional information (optional):

*19. **Permit item 16.8:** Do you document information relating to MCM 1?

☒ Yes

☐ No (skip to Q21)

20. **If yes in Q19,** what do you document? (Check all that apply)

20.A. ☒ A description of all specific stormwater-related issues you identified in item 16.3

20.B. ☒ All information required under your education and outreach plan in item 16.7

20.C. ☒ Activities held, including dates, to reach each target audience

20.D. ☒ Quantities and descriptions of educational materials distributed, including dates distributed

20.E. ☐ Estimated audience (e.g., number of participants, viewers, readers, listeners, etc.) for each completed education and outreach activity ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

*21. **Permit item 12.4:** Who is responsible for implementation of this MCM? List name(s) or position title(s):

Assistant City Engineer

22. **Provide any additional information about your current education and outreach program that you would like to share (optional): (Maximum 10 lines of text)**

MCM 2: Public participation/involvement

*23. **Permit item 17.3:** Do you provide a minimum of one (1) annual opportunity for the public to provide input on the adequacy of the SWPPP?

☒ Yes
☐ No (skip to Q25)

24. **If yes in Q23, describe the opportunity(ies):**

The City has an informational board available at City Hall and on the City's website educating residents on the SWPPP program and allowing an opportunity to comment.

*25. **Permit item 17.4:** Do you provide access to the SWPPP Document, annual reports, and other documentation that supports or describes the SWPPP (e.g., regulatory mechanism(s), etc.) for public review, upon request?

☒ Yes
☐ No (skip to Q27)

26. **If yes in Q25, how can the public access this information?** (Check all that apply)

26.A. ☒ Hardcopy upon request
26.B. ☐ Our website
26.C. ☐ Available at public event
26.D. ☐ Other (describe below):
26.E.

*27. **Permit item 17.5:** Do you consider oral and written input regarding the SWPPP submitted by the public?

☒ Yes
☐ No

*28. **Permit item 17.6:** Each calendar year, do you provide a minimum of one (1) public involvement activity that includes a pollution prevention or water quality theme? ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

☒ Yes
☐ No (skip to Q30)

29. **If yes in Q28, what are the themes of your public involvement activity/activities?** (Check all that apply)

29.A. ☐ Rain barrel distribution event
29.B. ☐ Rain garden workshop
29.C. ☐ Cleanup event
29.D. ☐ Storm drain stenciling

29.E. ☐ Volunteer water quality monitoring
29.F. ☒ Adopt a storm drain program
29.G. ☐ Household hazardous waste collection day
29.H. ☐ Other (describe below):
29.I.

Additional information for checked items (optional):
29.J.

*30. **Permit item 17.7:** Do you document information relating to MCM 2?
☒ Yes
☐ No (skip to Q32)

31. **If yes in Q30, what do you document?** (Check all that apply)
31.A. ☒ All relevant written input submitted by persons regarding the SWPPP
31.B. ☒ All of your responses to written input received regarding the SWPPP, including any modifications made to the SWPPP as a result of the written input received
31.C. ☒ Date(s), location(s), and estimated number of participants at events held for purposes of compliance with permit item 17.3
31.D. ☒ Notices provided to the public of any events scheduled to meet permit item 17.3, including any electronic correspondence (e.g., website, email distribution lists, notices, etc.)
31.E. ☐ Date(s), location(s), description of activities, and estimated number of participants at events held for the purpose of compliance with permit item 17.6 ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

*32. **Permit item 12.4:** Who is responsible for implementation of this MCM? List name(s) or position title(s):
Assistant City Engineer

33. **Provide any additional information about your current public participation/involvement program that you would like to share (optional): (Maximum 10 lines of text)**

MCM 3: Illicit Discharge Detection and Elimination (IDDE)

*34. **Permit item 18.3:** Do you maintain a storm sewer system map?
☒ Yes
☐ No (skip to Q36)

35. **If yes in Q34, which of the following does your storm sewer map include?** (Check all that apply)
35.A. ☒ All pipes 12 inches or greater in diameter, including stormwater flow direction in those pipes
35.B. ☒ Outfalls, including a unique identification (ID) number, and an associated geographic coordinate
35.C. ☒ Structural stormwater BMPs that are part of your small MS4
35.D. ☒ All receiving waters

*36. **Permit item 18.4:** Do you have a regulatory mechanism(s) that prohibits non-stormwater discharges into your MS4?
☒ Yes
☐ No (skip to Q39)

37. **If yes in Q36, what does your regulatory mechanism(s) consist of?** (Check all that apply)
37.A. ☐ Contract language
37.B. ☒ Ordinance
37.C. ☐ Permits
37.D. ☐ Standards
37.E. ☐ Written policies
37.F. ☐ Operational plans
37.G. ☐ Legal agreements
37.H. ☐ Other mechanism(s) (describe below):
37.I.

38. **If yes in Q36,** provide a website address to the regulatory mechanism(s). If the regulatory mechanism is not available online, briefly describe how a copy of the regulatory mechanism can be obtained**:**

https://library.municode.com/mn/hopkins/codes/code_of_ordinances?nodeId=PTIICOOR_CH40UT_ARTVSTSEDRUT_DIV2ILCODI

If you represent a **city, township, or county** please answer question 39. ***If you do not*** *represent a city, township, or county skip to question 42.*

39. **Permit item 18.5:** Do you have a regulatory mechanism(s) that requires owners or custodians of pets to remove and properly dispose of feces from permittee owned land areas? ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***
☐ Yes
☒ No

If you represent a **city or township**, please answer questions 40-41. ***If you do not*** *represent a city or township, skip to question 42.*

40. **Permit item 18.6:** Do you have a regulatory mechanism(s) that requires proper salt storage at commercial, institutional, and non-NPDES permitted industrial facilities? ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***
☐ Yes
☒ No (Skip to Q42)

41. **If yes in Q40,** what does your regulatory mechanism(s) require? (Check all that apply)
41.A. ☐ Designated salt storage areas must be covered or indoors
41.B. ☐ Designated salt storage areas must be located on an impervious surface
41.C. ☐ Implementation of practices to reduce exposure when transferring material in designated salt storage areas (e.g., sweeping, diversions, and containment)
41.D. ☐ Other (describe below):
41.E.

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*42. **Permit item 18.7:** Do you incorporate illicit discharge detection into all inspection and maintenance activities conducted in permit items 21.9, 21.10, and 21.11?
☒ Yes
☐ No (Skip to Q44)

43. **If yes in Q42**: where feasible, do you conduct illicit discharge inspections during dry-weather conditions (e.g., periods of 72 or more hours of no precipitation)?
☒ Yes
☐ No

*44. **Permit item 18.8:** At least once each calendar year, do you train all field staff in illicit discharge recognition (including conditions which could cause illicit discharges), and reporting illicit discharges for further investigation? ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

☒ Yes
☐ No (Skip to Q47)

45. **If yes in Q44, which field staff do you train?** (Check all that apply)

45.A. ☒ Police
45.B. ☒ Fire department
45.C. ☒ Public works
45.D. ☒ Parks staff
45.E. ☐ Other (describe below):
45.F.

46. **If yes in Q44, how do you train staff?** (Check all that apply)

46.A. ☐ Videos
46.B. ☒ In-person presentations
46.C. ☐ Webinars
46.D. ☒ Training documents
46.E. ☐ Emails
46.F. ☐ Other (describe below):
46.G.

*47. **Permit item 18.9:** Do you ensure that individuals receive training commensurate with their responsibilities as they relate to your IDDE program? Individuals includes, but is not limited to, individuals responsible for investigating, locating, eliminating illicit discharges, and/or enforcement. ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

☒ Yes
☐ No (Skip to Q50)

48. **If yes in Q47, how are these individuals trained?** (Check all that apply)

48.A. ☐ Videos
48.B. ☒ In-person presentations
48.C. ☐ Webinars
48.D. ☒ Training documents
48.E. ☐ Emails
48.F. ☐ Other (describe below):
48.G.

49. **If yes in Q47, do previously trained individuals attend a refresher-training every three (3) calendar years following the initial training?**

☒ Yes
☐ No

*50. **Permit item 18.10:** Do you maintain a written or mapped inventory of priority areas you identify as having a higher likelihood for illicit discharges? ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

☒ Yes
☐ No

*51. **Permit item 18.11:** To the extent allowable under state or local law, do you conduct additional illicit discharge inspections in priority areas?

☒ Yes

☐ No (Skip to Q53)

52. **If yes in Q51,** how often do you conduct illicit discharge inspections in priority areas**:**

Based on complaints or at least annually.

*53. **Permit item 18.12:** Do you have written procedures for investigating, locating, and eliminating the source of illicit discharges? ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

☒ Yes

☐ No (Skip to Q55)

54. **If yes in Q53, what do your procedures include? Check all that apply:** ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

54.A. ☒ A timeframe in which you will investigate a reported illicit discharge

54.A.1. If checked, describe:

Reports of illicit discharges are investigated as soon as possible, but within one business day.

54.B. ☒ Use of visual inspections to detect and track the source of an illicit discharge

54.C. ☒ Tools to investigate and locate an illicit discharge

If checked, what tools do you use? (Check all that apply)

54.C.1. ☒ Mobile cameras

54.C.2. ☒ Collecting and analyzing water samples

54.C.3. ☒ Smoke testing

54.C.4. ☒ Dye testing

54.C.5. ☐ Other (describe below):

54.C.6

54.D ☒ Cleanup methods to remove an illicit discharge or spill:

54.D.1. If checked, describe:

For non-emergency situations, the City requires the responsible party to clean up illicit discharges. If they are unable or unwilling, the City will utilize a street sweeper, vac truck, floor-dry, or other means, as needed. For emergency situations, the City follows their spill response plan which includes assistance from the fire department.

54.E ☒ Name or position title of responsible person(s) for investigating, locating, and eliminating an illicit discharge

54.E.1. If checked, specify the name(s) or position title(s):

Assistant City Engineer

*55. **Permit item 18.13:** Do you have written procedures for responding to spills, including emergency response procedures to prevent spills from entering the MS4?

☒ Yes

☐ No (Skip to Q57)

56. **If yes in Q55, do your written procedures include the immediate notification of the Minnesota Department of Public Safety Duty Officer at 1-800-422-0798 (toll free) or 651-649-5451 (Metro area), if the source of the illicit discharge is a spill or leak as defined in Minn. Stat. § 115.061?**

☒ Yes

☐ No

*57. **Permit item 18.14:** Do you maintain written enforcement response procedures (ERPs) to compel compliance with your regulatory mechanism(s) in Section 18? ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

☒ Yes
☐ No (Skip to Q60)

58. **If yes in Q57, which of the following enforcement tools are available to you?** (Check all that apply)

58.A. ☒ Verbal warning
58.B. ☒ Notice of violation
58.C. ☐ Fine
58.D. ☐ Criminal action
58.E. ☒ Civil penalty
58.F. ☒ Other (describe below):
58.G. Removal of Connection/Discharge

59. **If yes in Q57, do your ERPs include the following?** (Check all that apply)

59.A. ☒ Timeframes to complete corrective actions
59.B. ☒ Name or position title of responsible person(s) for conducting enforcement

*60. **Permit item 18.15:** Do you document information relating to MCM 3?

☒ Yes
☐ No (Skip to Q62)

61. **If yes in Q60, what do you document?** (Check all that apply)

61.A. ☒ Date(s) and location(s) of IDDE inspections conducted in accordance with permit items 18.7 and 18.11
61.B. ☒ Reports of alleged illicit discharges received, including date(s) of the report(s), and any follow-up action(s) you take
61.C. ☒ Date(s) of discovery of all illicit discharges
61.D. ☒ Identification of outfalls, or other areas, where illicit discharges have been discovered
61.E. ☒ Sources (including a description and the responsible party) of illicit discharges (if known)
61.F. ☒ Action(s) you take, including date(s), to address discovered illicit discharges

*62. **Permit item 18.16:** Do you document training relating to permit item 18.8 and 18.9?

☒ Yes
☐ No (Skip to Q64)

63. **If yes in Q62, what training information do you document?** (Check all that apply)

63.A. ☒ General subject matter covered
63.B. ☐ Names and departments of individuals in attendance
(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)
63.C. ☒ Date of each event

*64. **Permit item 18.17:** Do you document enforcement conducted pursuant to the ERPs in item 18.14, including verbal warnings?

☒ Yes
☐ No (Skip to Q66)

65. **If yes in Q64, what do you document relating to ERPs for MCM 3?** (Check all that apply)

65.A. ☒ Name of the person responsible for violating the terms and conditions of your regulatory mechanism(s)
65.B. ☒ Date(s) and location(s) of the observed violation(s)
65.C. ☒ Description of the violation(s)
65.D. ☒ Corrective action(s) (including completion schedule) that you issued
65.E. ☒ Referrals to other regulatory organizations (if any)
65.F. ☒ Date(s) violation(s) resolved

*66. **Permit item 12.4:** Who is responsible for implementation of this MCM? List name(s) or position title(s):

Assistant City Engineer

67. **Provide any additional information about your current illicit discharge detection and elimination program that you would like to share (optional): (Maximum 10 lines of text)**

MCM 4: Construction site stormwater runoff control

*68. **Permit item 19.3:** Do you have a regulatory mechanism(s) that establishes requirements for erosion, sediment, and waste controls?

☒ Yes
☐ No (skip to Q73)

69. **If yes in Q68, what does your regulatory mechanism(s) consist of?** (Check all that apply)

69.A. ☐ Contract language
69.B. ☒ Ordinance
69.C. ☐ Permits
69.D. ☐ Standards
69.E. ☐ Written policies
69.F. ☐ Operational plans
69.G. ☐ Legal agreements
69.H. ☐ Other mechanism(s) (describe below):
69.I.

70. **If yes in Q68, provide a website address to the regulatory mechanism(s). If the regulatory mechanism is not available online, briefly describe how a copy of the regulatory mechanism can be obtained:**

https://library.municode.com/mn/hopkins/codes/code_of_ordinances?nodeId=PTIIILADE_CH102PLZO_ARTXIVSTMA_S102-450PU

71. **If yes in Q68, is your regulatory mechanism(s) at least as stringent as the MPCA's most current Construction Stormwater General Permit (MNR100001) for erosion, sediment, and waste controls by incorporating the Construction Stormwater General Permit by reference, or by incorporating all items in Q72?**

☒ Yes (skip to Q73)
☐ No

72. **If no in Q71, which of the following requirements are incorporated into your regulatory mechanism(s)?** (Check all that apply)

72.A. Erosion prevention practices:

72.A.1. ☐ Before work begins, owner(s)/operator(s) must delineate the location of areas not to be disturbed.

72.A.2. ☐ Owner(s)/operator(s) must minimize the need for disturbance of portions of the project with steep slopes. When steep slopes must be disturbed, owner(s)/operator(s) must use techniques such as phasing and stabilization practices designed for steep slopes (e.g., slope draining and terracing).

72.A.3. ☐ Owner(s)/operator(s) must stabilize all exposed soil areas, including stockpiles. Stabilization must be initiated immediately to limit soil erosion when construction activity has permanently or temporarily ceased on any portion of the site and will not resume for a period exceeding 14 calendar days. Stabilization must be completed no later than 14 calendar days after the construction activity has ceased. Stabilization is not required on constructed base components of roads, parking lots and similar surfaces. Stabilization is not required on temporary stockpiles without significant silt, clay or organic components (e.g., clean aggregate stockpiles, demolition concrete stockpiles, sand stockpiles) but owner(s)/operator(s) must provide sediment controls at the base of the stockpile.

72.A.4. ☐ For Public Waters that the Minnesota Department of Natural Resources (DNR) has promulgated "work in water restrictions" during specified fish spawning time frames, owner(s)/operator(s) must complete stabilization of all exposed soil areas within 200 feet of the water's edge, and that drain to these waters, within 24 hours during the restriction period.

72.A.5. ☐ Owner(s)/operator(s) must stabilize the normal wetted perimeter of the last 200 linear feet of temporary or permanent drainage ditches or swales that drain water from the site within 24 hours after connecting to a surface water or property edge. Owner(s)/operator(s) must complete stabilization of the remaining portions of temporary or permanent ditches or swales within 14 calendar days after connecting to a surface water or property edge and construction in that portion of the ditch temporarily or permanently ceases.

72.A.6. ☐ Temporary or permanent ditches or swales that are being used as a sediment containment system during construction (with properly designed rock-ditch checks, bio rolls, silt dikes, etc.) do not need to be stabilized. Owner(s)/operator(s) must stabilize these areas within 24 hours after their use as a sediment containment system ceases.

72.A.7. ☐ Owner(s)/operator(s) must not use mulch, hydromulch, tackifier, polyacrylamide or similar erosion prevention practices within any portion of the normal wetted perimeter of a temporary or permanent drainage ditch or swale section with a continuous slope of greater than two percent.

72.A.8. ☐ Owner(s)/operator(s) must provide temporary or permanent energy dissipation at all pipe outlets within 24 hours after connection to a surface water or permanent stormwater treatment system.

72.A.9. ☐ Owner(s)/operator(s) must not disturb more land (i.e., phasing) than can be effectively inspected and maintained.

72.B. Sediment control practices:

72.B.1. ☐ Owner(s)/operator(s) must establish sediment control BMPs on all down gradient perimeters of the site and downgradient areas of the site that drain to any surface water, including curb and gutter systems. Owner(s)/operator(s) must locate sediment control practices upgradient of any buffer zones. Owner(s)/operator(s) must install sediment control practices before any upgradient land-disturbing activities begin and must keep the sediment control practices in place until they establish permanent cover.

72.B.2. ☐ If the downgradient sediment controls are overloaded, based on frequent failure or excessive maintenance requirements, owner(s)/operator(s) must install additional upgradient sediment control practices or redundant BMPs to eliminate the overloading and amend the site plans to identify these additional practices.

72.B.3. ☐ Temporary or permanent drainage ditches and sediment basins designed as part of a sediment containment system (e.g., ditches with rock-check dams) require sediment control practices only as appropriate for site conditions.

72.B.4. ☐ A floating silt curtain placed in the water is not a sediment control BMP to satisfy perimeter control requirements in this part except when working on a shoreline or below the waterline. Immediately after the short term construction activity (e.g. installation of rip rap along the shoreline) in that area is complete, owner(s)/operator(s) must install an upland perimeter control practice if exposed soils still drain to a surface water.

72.B.5. ☐ Owner(s)/operator(s) must re-install all sediment control practices adjusted or removed to accommodate short-term activities such as clearing or grubbing, or passage of vehicles, immediately after the short-term activity is completed. Owner(s)/operator(s) must re-install sediment control practices before the next precipitation event even if the short-term activity is not complete.

72.B.6. ☐ Owner(s)/operator(s) must protect all storm drain inlets using appropriate BMPs during construction until they establish permanent cover on all areas with potential for discharging to the inlet.

72.B.7. ☐ Owner(s)/operator(s) may remove inlet protection for a particular inlet if a specific safety concern (e.g., street flooding/freezing) is identified by owner(s)/operator(s) or the jurisdictional authority (e.g., city/county/township/MnDOT engineer). Owner(s)/operator(s) must document the need for removal in the site plans.

72.B.8. ☐ Owner(s)/operator(s) must provide silt fence or other effective sediment controls at the base of stockpiles on the downgradient perimeter.

72.B.9. ☐ Owner(s)/operator(s) must locate stockpiles outside of natural buffers or surface waters, including stormwater conveyances such as curb and gutter systems unless there is a bypass in place for the stormwater.

72.B.10. ☐ Owner(s)/operator(s) must install a vehicle tracking BMP to minimize the track out of sediment from the construction site or onto paved roads within the site.

72.B.11. ☐ Owner(s)/operator(s) must use street sweeping if vehicle tracking BMPs are not adequate to prevent sediment tracking onto the street.

72.B.12. ☐ In any areas of the site where final vegetative stabilization will occur, owner(s)/operator(s) must restrict vehicle and equipment use to minimize soil compaction.

72.B.13. ☐ Owner(s)/operator(s) must preserve topsoil on the site, unless infeasible.

72.B.14. ☐ Owner(s)/operator(s) must direct discharges from BMPs to vegetated areas unless infeasible.

72.B.15. ☐ Owner(s)/operator(s) must preserve a 50 foot natural buffer or, if a buffer is infeasible on the site, provide redundant (double) perimeter sediment controls when a surface water is located within 50 feet of the project's earth disturbances and stormwater flows to the surface water. Owner(s)/operator(s) must install

perimeter sediment controls at least 5 feet apart unless limited by lack of available space. Natural buffers are not required adjacent to road ditches, judicial ditches, county ditches, stormwater conveyance channels, storm drain inlets, and sediment basins. If preserving the buffer is infeasible, owner(s)/operator(s) must document the reasons in the site plans. Sheet piling is a redundant perimeter control if installed in a manner that retains all stormwater.

72.B.16. ☐ Owner(s)/operator(s) must use polymers, flocculants, or other sedimentation treatment chemicals in accordance with accepted engineering practices, dosing specifications and sediment removal design specifications provided by the manufacturer or supplier. Owner(s)/operator(s) must use conventional erosion and sediment controls prior to chemical addition and must direct treated stormwater to a sediment control system for filtration or settlement of the floc prior to discharge.

72.C. Dewatering and basin draining:

72.C.1. ☐ Owner(s)/operator(s) must discharge turbid or sediment-laden waters related to dewatering or basin draining (e.g., pumped discharges, trench/ditch cuts for drainage) to a temporary or permanent sediment basin on the project site unless infeasible. Owner(s)/operator(s) may dewater to surface waters if they visually check to ensure adequate treatment has been obtained and nuisance conditions (see Minn. R. 7050.0210, subp. 2) will not result from the discharge. If owner(s)/operator(s) cannot discharge the water to a sedimentation basin prior to entering a surface water, owner(s)/operator(s) must treat it with appropriate BMPs such that the discharge does not adversely affect the surface water or downstream properties.

72.C.2. ☐ If owner(s)/operator(s) must discharge water that contains oil or grease, owner(s)/operator(s) must use an oil-water separator or suitable filtration device (e.g. cartridge filters, absorbents pads) prior to discharge.

72.C.3. ☐ Owner(s)/operator(s) must discharge all water from dewatering or basin-draining activities in a manner that does not cause erosion or scour in the immediate vicinity of discharge points or inundation of wetlands in the immediate vicinity of discharge points that causes significant adverse impact to the wetland.

72.C.4. ☐ If owner(s)/operator(s) use filters with backwash water, they must haul the backwash water away for disposal, return the backwash water to the beginning of the treatment process, or incorporate the backwash water into the site in a manner that does not cause erosion.

72.D. Inspection and maintenance:

72.D.1. ☐ Owner(s)/operator(s) must ensure that a trained person will inspect the entire construction site at least once every seven (7) days during active construction and within 24 hours after a rainfall event greater than one-half inch in 24 hours.

72.D.2. ☐ Owner(s)/operator(s) must inspect and maintain all permanent stormwater treatment BMPs.

72.D.3. ☐ Owner(s)/operator(s) must inspect all erosion prevention and sediment control BMPs and Pollution Prevention Management Measures to ensure integrity and effectiveness. Owner(s)/operator(s) must repair, replace, or supplement all nonfunctional BMPs with functional BMPs by the end of the next business day after discovery unless another time frame is specified below. Owner(s)/operator(s) may take additional time if field conditions prevent access to the area.

72.D.4. ☐ During each inspection, owner(s)/operator(s) must inspect surface waters, including drainage ditches and conveyance systems but not curb and gutter systems, for evidence of erosion and sediment deposition. Owner(s)/operator(s) must remove all deltas and sediment deposited in surface waters, including drainage ways, catch basins, and other drainage systems and restabilize the areas where sediment removal results in exposed soil. Owner(s)/operator(s) must complete removal and stabilization within seven (7) calendar days of discovery unless precluded by legal, regulatory, or physical access constraints. Owner(s)/operator(s) must use all reasonable efforts to obtain access. If precluded, removal and stabilization must take place within seven (7) calendar days of obtaining access. Owner(s)/operator(s) are responsible for contacting all local, regional, state and federal authorities and receiving any applicable permits, prior to conducting any work in surface waters.

72.D.5. ☐ Owner(s)/operator(s) must inspect construction site vehicle exit locations, streets and curb and gutter systems within and adjacent to the project for sedimentation from erosion or tracked sediment from vehicles. Owner(s)/operator(s) must remove sediment from all paved surfaces within one (1) calendar day of discovery or, if applicable, within a shorter time to avoid a safety hazard to users of public streets.

72.D.6. ☐ Owner(s)/operator(s) must repair, replace, or supplement all perimeter control devices when they become nonfunctional or the sediment reaches one-half of the height of the device.

72.D.7. ☐ Owner(s)/operator(s) must drain temporary and permanent sedimentation basins and remove the sediment when the depth of sediment collected in the basin reaches one-half of the storage volume.

72.D.8. ☐ Owner(s)/operator(s) must ensure that at least one individual present on the site (or available to the project site in three (3) calendar days) is trained in the job duties of overseeing the implementation of, revising and/or amending the site plans and performing inspections for the project.

72.D.9. ☐ Owner(s)/operator(s) may adjust the inspection schedule as follows:

a. inspections of areas with permanent cover can be reduced to once per month, even if construction activity continues on other portions of the site; or
b. where construction sites have permanent cover on all exposed soil areas and no construction activity is occurring anywhere on the site, inspections can be reduced to once per month and, after 12 months, may be suspended completely until construction activity resumes. The MPCA may require inspections to resume if conditions warrant; or

c. where construction activity has been suspended due to frozen ground conditions, inspections may be suspended. Inspections must resume within 24 hours of runoff occurring, or upon resuming construction, whichever comes first.

72.D.10 ☐ Owner(s)/operator(s) must record all inspections and maintenance activities within 24 hours of being conducted and these records must be retained with the site plans. These records must include:

a. date and time of inspections; and

b. name of person(s) conducting inspections; and

c. accurate findings of inspections, including the specific location where corrective actions are needed; and

d. corrective actions taken (including dates, times, and party completing maintenance activities); and

e. date of all rainfall events greater than one-half inch in 24 hours, and the amount of rainfall for each event. Owner(s)/operator(s) must obtain rainfall amounts by either a properly maintained rain gauge installed onsite, a weather station that is within one (1) mile of owner(s)/operator(s)r location, or a weather reporting system that provides site specific rainfall data from radar summaries; and

f. if owner(s)/operator(s) observe a discharge during the inspection, they must record and should photograph and describe the location of the discharge (i.e., color, odor, settled or suspended solids, oil sheen, and other obvious indicators of pollutants); and

g. any amendments to the site plans proposed as a result of the inspection must be documented within seven (7) calendar days.

72.E. Inspection and maintenance:

72.E.1. ☐ Owner(s)/operator(s) must place building products and landscape materials under cover (e.g., plastic sheeting or temporary roofs) or protect them by similarly effective means designed to minimize contact with stormwater. Owner(s)/operator(s) are not required to cover or protect products which are either not a source of contamination to stormwater or are designed to be exposed to stormwater.

72.E.2. ☐ Owner(s)/operator(s) must place pesticides, fertilizers and treatment chemicals under cover (e.g., plastic sheeting or temporary roofs) or protect them by similarly effective means designed to minimize contact with stormwater.

72.E.3. ☐ Owner(s)/operator(s) must store hazardous materials and toxic waste, (including oil, diesel fuel, gasoline, hydraulic fluids, paint solvents, petroleum-based products, wood preservatives, additives, curing compounds, and acids) in sealed containers to prevent spills, leaks or other discharge. Storage and disposal of hazardous waste materials must be in compliance with Minn. R. ch. 7045 including secondary containment as applicable.

72.E.4. ☐ Owner(s)/operator(s) must properly store, collect, and dispose of solid waste in compliance with Minn. R. ch. 7035.

72.E.5. ☐ Owner(s)/operator(s) must position portable toilets so they are secure and will not tip or be knocked over. Owner(s)/operator(s) must dispose of sanitary waste in accordance with Minn. R. ch. 7041.

72.E.6. ☐ Owner(s)/operator(s) must take reasonable steps to prevent the discharge of spilled or leaked chemicals, including fuel, from any area where chemicals or fuel will be loaded or unloaded including the use of drip pans or absorbents unless infeasible. Owner(s)/operator(s) must ensure adequate supplies are available at all times to clean up discharged materials and that an appropriate disposal method is available for recovered spilled materials. Owner(s)/operator(s) must report and clean up spills immediately as required by Minn. Stat. § 115.061, using dry clean up measures where possible.

72.E.7. ☐ Owner(s)/operator(s) must limit vehicle exterior washing and equipment to a defined area of the site. Owner(s)/operator(s) must contain runoff from the washing area in a sediment basin or other similarly effective controls and must dispose of waste from the washing activity properly. Owner(s)/operator(s) must properly use and store soaps, detergents, or solvents.

72.E.8. ☐ Owner(s)/operator(s) must provide effective containment for all liquid and solid wastes generated by washout operations (e.g., concrete, stucco, paint, form release oils, curing compounds and other construction materials) related to the construction activity. Owner(s)/operator(s) must prevent liquid and solid washout wastes from contacting the ground and must design the containment so it does not result in runoff from the washout operations or areas. Owner(s)/operator(s) must properly dispose of liquid and solid wastes in compliance with Minn. R. ch. 7035. Owner(s)/operator(s) must install a sign indicating the location of the washout facility.

72.F. Temporary sediment basins:

72.F.1. ☐ Where ten (10) or more acres of disturbed soil drain to a common location, owner(s)/operator(s) must provide a temporary sediment basin to provide treatment of the runoff before it leaves the construction site or enters surface waters. Owner(s)/operator(s) may convert a temporary sediment basin to a permanent basin after construction is complete. The temporary basin is no longer required when permanent cover has reduced the acreage of disturbed soil to less than ten (10) acres draining to a common location.

72.F.2. ☐ The temporary basin must provide live storage for a calculated volume of runoff from a two (2)-year, 24-hour storm from each acre drained to the basin or 1,800 cubic feet of live storage per acre drained, whichever is greater.

72.F.3. ☐ Where owner(s)/operator(s) have not calculated the two (2)-year, 24-hour storm runoff amount, the temporary sediment basin must provide 3,600 cubic feet of live storage per acre of the basin's drainage area.

72.F.4. ☐ Owner(s)/operator(s) must design basin outlets to prevent short-circuiting and the discharge of floating debris.

72.F.5. ☐ Owner(s)/operator(s) must design the outlet structure to withdraw water from the surface to minimize the discharge of pollutants. Owner(s)/operator(s) may temporarily suspend the use of a surface withdrawal mechanism during frozen conditions. The basin must include a stabilized emergency overflow to prevent failure of pond integrity.

72.F.6. ☐ Owner(s)/operator(s) must provide energy dissipation for the basin outlet within 24 hours after connection to a surface water.

72.F.7. ☐ Owner(s)/operator(s) must locate temporary basins outside of surface waters and any required buffer zones.

72.F.8. ☐ Owner(s)/operator(s) must construct temporary basins prior to disturbing (10) or more acres of soil draining to a common location.

72.F.9. ☐ Where a temporary sediment basin meeting the requirements of this part is infeasible, owner(s)/operator(s) must install effective sediment controls such as smaller sediment basins and/or sediment traps, silt fences, vegetative buffer strips or any appropriate combination of measures as dictated by individual site conditions. In determining whether installing a sediment basin is infeasible, owner(s)/operator(s) must consider public safety and may consider factors such as site soils, slope, and available area on-site. Owner(s)/operator(s) must document this determination of infeasibility in the site plans.

72.G. Termination conditions:

72.G.1. ☐ Owner(s)/operator(s) must complete all construction activity and must install permanent cover over all areas. Vegetative cover must consist of a uniform perennial vegetation with a density of 70 percent of its expected final growth. Vegetation is not required where the function of a specific area dictates no vegetation, such as impervious surfaces or the base of a sand filter.

72.G.2. ☐ Owner(s)/operator(s) must clean the permanent stormwater treatment system of any accumulated sediment and must ensure the system meets all applicable requirements and is operating as designed.

72.F.3. ☐ Owner(s)/operator(s) must remove all sediment from conveyance systems.

72.G.4. ☐ Owner(s)/operator(s) must remove all temporary synthetic erosion prevention and sediment control BMPs. Owner(s)/operator(s) may leave BMPs designed to decompose on-site in place.

72.G.5. ☐ For residential construction only, permit coverage terminates on individual lots if the structure(s) are finished and temporary erosion prevention and downgradient perimeter control is complete and the residence sells to the homeowner.

72.G.6. ☐ For construction projects on agricultural land (e.g., pipelines across cropland), owner(s)/operator(s) must return the disturbed land to its preconstruction agricultural use.

72.H. If applicable, additional requirements for discharges to special and impaired waters:

72.H.1. ☐ Owner(s)/operator(s) must immediately initiate stabilization of exposed soil areas, and complete the stabilization within seven (7) calendar days after the construction activity in that portion of the site temporarily or permanently ceases.

72.H.2. ☐ Owner(s)/operator(s) must provide a temporary sediment basin for common drainage locations that serve an area with five (5) or more acres disturbed at one time.

72.H.3. ☐ Owner(s)/operator(s) must include an undisturbed buffer zone of not less than 100 linear feet from a special water (not including tributaries) and must maintain this buffer zone at all times, both during construction and as a permanent feature post construction, except where a water crossing or other encroachment is necessary to complete the project. Owner(s)/operator(s) must fully document the circumstance and reasons the buffer encroachment is necessary in the site plans and include restoration activities. Owner(s)/operator(s) must minimize all potential water quality, scenic and other environmental impacts of these exceptions by the use of additional or redundant (double) BMPs and must document this in the site plans for the project.

72.H.4. ☐ Owner(s)/operator(s) must conduct routine site inspections once every three (3) days for projects that discharge to prohibited waters.

*73. **Permit item 19.5:** Does your regulatory mechanism(s) require that owners and operators of construction activity develop site plans that must be submitted to you for review and confirmation that regulatory mechanism(s) requirements have been met, prior to the start of construction activity?

☒ Yes
☐ No

*74. **Permit item 19.6:** Do you have written procedures for site plan reviews to ensure compliance with requirements of the regulatory mechanism(s)? ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

☒ Yes
☐ No (Skip to Q76)

75. **If yes in Q74, do your procedures include the following?** (Check all that apply)

75.A. ☐ Written notification to owners and operators of the need to apply for and obtain coverage under the CSW Permit.

75.B. ☐ Use of a written checklist, consistent with the requirements of the regulatory mechanism(s), to document the adequacy of each site plan required.

*76. **Permit item 19.7:** Do you have written procedures for conducting site inspections to determine compliance with your regulatory mechanism(s)?

☒ Yes

☐ No

*77. **Permit item 19.8:** Do you maintain written procedures for identifying high-priority and low-priority sites for inspection? ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

☒ Yes

☐ No (Skip to Q79)

78. **If yes in Q77, do your procedures include the following?** (Check all that apply)

78.A. ☒ A detailed explanation describing how sites will be categorized as either high-priority or low-priority.

If checked, how do you prioritize sites for inspection? (Check all that apply)

78.A.1. ☒ Site topography

78.A.2. ☒ Soil characteristics

78.A.3. ☒ Types of receiving water(s)

78.A.4. ☒ Stage of construction

78.A.5. ☒ Compliance history

78.A.6. ☒ Weather conditions

78.A.7. ☐ Citizen complaints

78.A.8. ☐ Project size

78.A.9. ☐ Other (describe below):

78.A.10.

78.B. ☐ A frequency at which you will conduct inspections for high-priority sites.

If checked, how often will you inspect high-priority sites? (Check only one)

78.B.1. ☐ More than once every seven (7) days

78.B.2. ☐ Once every seven (7) days

78.B.3. ☐ Once every 14 days

78.B.4. ☐ Once every 21 days

78.B.5. ☐ Once every 30 days

78.B.6. ☐ Other (describe below):

78.B.7.

78.C. ☐ A frequency at which you will conduct inspections for low-priority sites.

If checked, how often will you inspect low-priority sites? (Check only one)

78.C.1. ☐ More than once every seven (7) days

78.C.2. ☐ Once every seven (7) days

78.C.3. ☐ Once every 14 days

78.C.4. ☐ Once every 21 days

78.C.5. ☐ Once every 30 days

78.C.6. ☐ Other (describe below):

78.C.7.

78.D. ☒ The name(s) of individual(s) or position title(s) responsible for conducting site inspections:
Assistant City Engineer

*79. **Permit item 19.9:** Do you use a written checklist to document each site inspection when determining compliance with your regulatory mechanism(s)? ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

☒ Yes
☐ No (Skip to Q82)

80. **If yes in Q79, are the following items incorporated in your written checklist?** (Check all that apply)

80.A. ☒ Stabilization of exposed soils (including stockpiles)
80.B. ☒ Stabilization of ditch and swale bottoms
80.C. ☒ Sediment control BMPs on all downgradient perimeters of the project and upgradient of buffer zones
80.D. ☒ Storm drain inlet protection
80.E. ☒ Energy dissipation at pipe outlets
80.F. ☒ Vehicle tracking BMPs
80.G. ☒ Preservation of a 50 foot natural buffer or redundant sediment controls where stormwater flows to a surface water within 50 feet of disturbed soils
80.H. ☒ Owner/operator of construction activity self-inspection records
80.I. ☒ Containment for all liquid and solid wastes generated by washout operations (e.g., concrete, stucco, paint, form release oils, curing compounds, and other construction materials)
80.J. ☒ BMPs maintained and functional

81. **Provide any additional information on your process to document site inspections (optional):**

*82. **Permit item 19.10:** Do you have written procedures for receipt and consideration of reports of noncompliance or other stormwater related information on construction activity submitted to you by the public?

☒ Yes
☐ No (Skip to Q84)

83. **If yes in Q82, please provide your procedures or a description of your procedures (e.g., how the public may submit concerns, typical timeframe for you to investigate reports):**

The public may submit concerns about construction violations through the City's website or by calling the City directly. Reports are investigated within one business day.

*84. **Permit item 19.11:** Do individuals receive training commensurate with their responsibilities as they relate to your Construction Site Stormwater Runoff Control program? Individuals includes, but is not limited to, individuals responsible for conducting site plan reviews, site inspections, and/or enforcement.

☒ Yes
☐ No (Skip to Q87)

85. **If yes in Q84, do previously trained individuals attend a refresher-training every three (3) calendar years following the initial training?** ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

☒ Yes
☐ No

86. **If yes in Q84, what training do your staff who perform site inspections receive?** (Check all that apply)

86.A. ☒ University of Minnesota Erosion and Stormwater Management Certification Program
86.B. ☐ Qualified Compliance Inspector of Stormwater
86.C. ☐ Minnesota Laborers Training Center Stormwater Pollution Prevention Plan Installer or Supervisor
86.D. ☐ Minnesota Utility Contractors Association Erosion Control Training
86.E. ☐ Certified Professional in Erosion and Sediment Control
86.F. ☐ Certified Professional in Stormwater Quality
86.G. ☐ Certified Erosion Sediment and Storm Water Inspector
86.H. ☐ Other (describe below):
86.I.

*87. **Permit item 19.12:** Do you maintain written ERPs to compel compliance with your regulatory mechanism(s) in Section 19? ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

☒ Yes
☐ No (Skip to Q89)

88. **If yes in Q87, which enforcement tools are included in your ERPs?** (Check all that apply)

88.A. ☒ Verbal warning
88.B. ☒ Notice of violation
88.C. ☐ Administrative order
88.D. ☒ Stop work order
88.E. ☐ Fine
88.F. ☐ Forfeit of security bond money
88.G. ☐ Withholding of certificate of occupancy
88.H. ☐ Criminal action
88.I. ☐ Civil penalty
88.J. ☒ Other (describe below):
88.K. Require corrective action, revocation of permit, and abatement

*89. **Please specify name or position title of responsible person(s) for conducting enforcement:**

Assistant City Engineer

*90. **Permit item 19.13:** Do you document each site plan review you conduct?

☒ Yes
☐ No (Skip to Q92)

91. **If yes in Q90, what do you document in your site plan review process?** (Check all that apply)

91.A. ☒ Project name
91.B. ☒ Location
91.C. ☒ Total acreage to be disturbed
91.D. ☒ Owner and operator of the proposed construction activity
91.E. ☐ Proof of notification to obtain coverage under the CSW Permit or proof of coverage under the CSW Permit ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***
91.F. ☐ Any stormwater related comments and supporting completed checklist, to determine project approval or denial ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

*92. **Permit item 19.14:** Do you document training related to permit item 19.11?
☒ Yes
☐ No (Skip to Q94)

93. **If yes in Q92, what do you document?** (Check all that apply)
93.A. ☒ General subject matter covered
93.B. ☐ Name(s) and departments of individuals in attendance
(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)
93.C. ☒ Date of each event

*94. **Permit item 19.15:** Do you document enforcement conducted pursuant to your ERPs in item 19.12, including verbal warnings?
☒ Yes
☐ No (Skip to Q96)

95. **If yes in Q94, what do you document relating to ERPs for MCM 4?** (Check all that apply)
95.A. ☒ Name of the person responsible for violating the terms and conditions of your regulatory mechanism(s)
95.B. ☒ Date(s) and location(s) of the observed violation(s)
95.C. ☒ Description of the violation(s)
95.D. ☒ Corrective action(s) (including completion schedule) that you issued
95.E. ☒ Referrals to other regulatory organizations (if any)
95.F. ☒ Date(s) violation(s) resolved

*96. **Permit item 12.4: Who is responsible for implementation of this MCM? List name(s) or position title(s):**
Assistant City Engineer

97. **Provide any additional information about your current construction site stormwater runoff control program that you would like to share (optional): (Maximum 10 lines of text)**

MCM 5: Post-construction stormwater management

*98. **Permit item 20.3:** Do you have a post-construction stormwater management regulatory mechanism(s)?
☒ Yes
☐ No (skip to Q102)

99. **If yes in Q98, what does your regulatory mechanism(s) consist of?** (Check all that apply)
99.A. ☐ Contract language
99.B. ☒ Ordinance
99.C. ☐ Permits
99.D. ☐ Standards
99.E. ☐ Written policies
99.F. ☐ Operational plans
99.G. ☐ Legal agreements
99.H. ☐ Other mechanism(s) (describe below):
99.I.

100. **If yes in Q98, provide a website address to the regulatory mechanism(s). If the regulatory mechanism is not available online, briefly describe how a copy of the regulatory mechanism can be obtained:**

https://library.municode.com/mn/hopkins/codes/code_of_ordinances?nodeId=PTIIILADE_CH102PLZO_ARTXIVSTMA_S102-450PU

101. **If yes in Q98, which of the following requirements are incorporated into your regulatory mechanism?** (Check all that apply)

101.A. ☒ **Permit item 20.4:** You must require owners of construction activity to submit site plans with post-construction stormwater management BMPs designed with accepted engineering practices to you for review and confirmation that regulatory mechanism(s) requirements have been met, prior to start of construction activity.

101.B. ☒ **Permit item 20.5:** You must require owners of construction activity to treat the water quality volume on any project where the sum of the new impervious surface and the fully reconstructed impervious surface equals one or more acres. ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

101.C. ☐ **Permit item 20.6:** For construction activity (excluding linear projects), the water quality volume must be calculated as one (1) inch times the sum of the new and the fully reconstructed impervious surface. ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

101.D. ☐ **Permit item 20.7:** For linear projects, the water quality volume must be calculated as the larger of one (1) inch times the new impervious surface or one-half (0.5) inch times the sum of the new and the fully reconstructed impervious surface. Where the entire water quality volume cannot be treated within the existing right-of-way, a reasonable attempt to obtain additional right-of-way, easement, or other permission to treat the stormwater during the project planning process must be made. Volume reduction practices must be considered first, as described in item 20.8. Volume reduction practices are not required if the practices cannot be provided cost effectively. If additional right-of-way, easements, or other permission cannot be obtained, owners of construction activity must maximize the treatment of the water quality volume prior to discharge from the MS4. ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

101.E. ☒ **Permit item 20.8:** Volume reduction practices (e.g., infiltration or other) to retain the water quality volume on-site must be considered first when designing the permanent stormwater treatment system. This permit does not consider wet sedimentation basins and filtration systems to be volume reduction practices. If this permit prohibits infiltration as described in item 20.9, other volume reduction practices, a wet sedimentation basin, or filtration basin may be considered.

101.F. ☐ **Permit item 20.9:** Infiltration systems must be prohibited when the system would be constructed in areas:

a. That receive discharges from vehicle fueling and maintenance areas, regardless of the amount of new and fully reconstructed impervious surface. ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

b. Where high levels of contaminants in soil or groundwater may be mobilized by the infiltrating stormwater. To make this determination, the owners and/or operators of construction activity must complete the MPCA's site screening assessment checklist, which is available in the Minnesota Stormwater Manual, or conduct their own assessment. The assessment must be retained with the site plans. ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

c. Where soil infiltration rates are more than 8.3 inches per hour unless soils are amended to slow the infiltration rate below 8.3 inches per hour. ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

d. 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.

e. Of predominately Hydrologic Soil Group D (clay) soils. ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

f. In an Emergency Response Area (ERA) within a Drinking Water Supply Management Area (DWSMA) as defined in Minn. R. 4720.5100, Subp. 13, classified as high or very high vulnerability as defined by the Minnesota Department of Health. ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

g. In an ERA within a DWSMA classified as moderate vulnerability unless you perform or approve a higher level of engineering review sufficient to provide a functioning treatment system and to prevent adverse impacts to groundwater. ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

h. Outside of an ERA within a DWSMA classified as high or very high vulnerability unless you perform or approve a higher level of engineering review sufficient to provide a functioning treatment system and to prevent adverse impacts to groundwater. ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

i. Within 1,000 feet up-gradient or 100 feet down gradient of active karst features. ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

j. That receive stormwater runoff from these types of entities regulated under NPDES for industrial stormwater: automobile salvage yards; scrap recycling and waste recycling facilities; hazardous waste treatment, storage, or disposal facilities; or air transportation facilities that conduct deicing activities.

101.G. ☒ **Permit item 20.10:** For non-linear projects, where the water quality volume cannot cost effectively be treated on the site of the original construction activity, you must identify, or may require owners of the construction activity to identify, locations where off-site treatment projects can be completed. If the entire water quality volume is not addressed on the site of the original construction activity, the remaining water quality volume must be addressed through off-site treatment and, at a minimum, ensure the requirements of permit items 20.11 through 20.14 are met.

101.H. ☒ **Permit item 20.11:** You must ensure off-site treatment project areas are selected in the following order of preference:

a. Locations that yield benefits to the same receiving water that receives runoff from the original construction activity
b. Locations within the same DNR catchment area as the original construction activity
c. Locations in the next adjacent DNR catchment area up-stream
d. Locations anywhere within your jurisdiction

101.I. ☒ **Permit item 20.12:** Off-site treatment 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. Routine maintenance of structural stormwater BMPs already required by this permit cannot be used to meet this requirement.

101.J. ☐ **Permit item 20.13:** Off-site treatment projects must be completed no later than 24 months after the start of the original construction activity. If you determine that more time is needed to complete the treatment project, you must provide the reason(s) and schedule(s) for completing the project in the annual report.

101.K. ☐ **Permit item 20.14:** If you receive payment from the owner of a construction activity for off-site treatment, you must apply any such payment received to a public stormwater project, and all projects must comply with permit items 20.11 through 20.13.

101.L. ☒ **Permit item 20.15:** You must include the establishment of legal mechanism(s) between you and owners of structural stormwater BMPs not owned or operated by you, that have been constructed to meet the requirements in Section 20. The legal mechanism(s) must include provisions that, at a minimum:

a. Allow you to conduct inspections of structural stormwater BMPs not owned or operated by you, perform necessary maintenance, and assess costs for those structural stormwater BMPs when you determine the owner of that structural stormwater BMP has not ensured proper function.
b. Are designed to preserve your right to ensure maintenance responsibility, for structural stormwater BMPs not owned or operated by you, when those responsibilities are legally transferred to another party.
c. Are designed to protect/preserve structural stormwater BMPs. If structural stormwater BMPs change, causing decreased effectiveness, new, repaired, or improved structural stormwater BMPs must be implemented to provide equivalent treatment to the original BMP.

*102. **Permit item 20.16:** Do you maintain a written or mapped inventory of structural stormwater BMPs that you do not own or operate that meet all of the following criteria? ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

a. The structural stormwater BMP includes an executed legal mechanism(s) between you and owners responsible for the long-term maintenance, as required in item 20.15; and
b. The structural stormwater BMP was implemented on or after August 1, 2013.

☒ Yes
☐ No

*103. **Permit item 20.17:** Do you to have written procedures for site plan reviews to ensure compliance with requirements of your regulatory mechanism(s)?

☒ Yes
☐ No

*104. **Permit item 20.18:** Do individuals receive training commensurate with their responsibilities as they relate to your Post-Construction Stormwater Management program? Individuals include, but is not limited to, individuals responsible for conducting site plan reviews and/or enforcement.

☒ Yes
☐ No (Skip to Q106)

105. **If yes in Q104,** do previously trained individuals attend a refresher training every three (3) calendar years following the initial training? ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

☒ Yes
☐ No

*106. **Permit item 20.19:** Do you maintain written ERPs to compel compliance with your regulatory mechanism(s) required in Section 20? ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

☒ Yes
☐ No (Skip to Q108)

107. **If yes in Q106, what enforcement tools are included in your ERPs?** (Check all that apply)

107.A. ☐ Verbal warning
107.B. ☒ Notice of violation
107.C. ☐ Administrative order
107.D. ☐ Fine
107.E. ☐ Criminal action
107.F. ☒ Civil penalty
107.G. ☒ Other (describe below):
107.H. Stop work orders and restoration of lands

*108. **Please specify name or position title of responsible person(s) for conducting enforcement:**

Assistant City Engineer

*109. **Permit item 20.20:** Do you document each site plan review you conduct?

☒ Yes
☐ No (Skip to Q111)

110. **If yes in Q109, what do you document in your site plan review process?** (Check all that apply)

110.A. ☒ Supporting documentation used to determine compliance, including any calculations for the permanent stormwater treatment system.
110.B. ☐ The water quality volume that will be treated through volume reduction practices compared to the total water quality volume required to be treated. ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***
110.C. ☐ Documentation associated with off-site treatment projects you authorize, including rationale to support the location of permanent stormwater treatment projects in accordance with items 20.10 and 20.11. ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***
110.D. ☐ Payments received and used in accordance with permit item 20.14.
110.E. ☒ All legal mechanisms drafted in accordance with permit item 20.15, including date(s) of the agreement(s) and name(s) of all responsible parties involved.

*111. **Permit item 20.21:** Do you document training related to your Post-Construction Stormwater Management program?

☒ Yes
☐ No (Skip to Q113)

112. **If yes in Q111, what are you documenting?** (Check all that apply)

112.A. ☒ General subject matter covered
112.B. ☐ Names and departments of individuals in attendance ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***
112.C. ☒ The date of each event

*113. **Permit item 20.22:** Do you document enforcement conducted pursuant to your ERPs in item 20.19, including verbal warnings?

☒ Yes
☐ No (Skip to Q115)

114. If yes in Q113, what do you document relating to ERPs for MCM 5? (Check all that apply)

114.A. ☒ The name of the person responsible for violating the terms and conditions of your regulatory mechanism(s)
114.B. ☒ The date(s) and location(s) of the observed violation(s)
114.C. ☒ A description of the violation(s)
114.D. ☒ Corrective action(s) issued
114.E. ☒ Referrals to other regulatory organizations
114.F. ☒ The date(s) violation(s) are resolved

*115. **Permit item 12.4:** Who is responsible for implementation of this MCM? List name(s) or position title(s):

Assistant City Engineer

116. **Provide any additional information about your current post-construction stormwater management program that you would like to share (optional): (Maximum 10 lines of text)**

MCM 6: Pollution prevention/Good housekeeping for municipal operations

*117. **Permit item 21.3:** Do you maintain a written or mapped inventory of your owned/operated facilities that contribute pollutants to stormwater discharges?

☒ Yes

☐ No (skip to Q119)

118. **If yes in Q117, which of the following facilities do you own and/or operate?** (Check all that apply)

118.A. ☐ Composting

118.B. ☐ Equipment storage and maintenance

118.C. ☐ Hazardous waste disposal

118.D. ☐ Hazardous waste handling and transfer

118.E. ☐ Landfill(s)

118.F. ☐ Solid waste handling and transfer

118.G. ☐ Park(s)

118.H. ☐ Pesticide storage

118.I. ☐ Public parking lot(s)

118.J. ☐ Public golf course(s)

118.K. ☐ Public swimming pool(s)

118.L. ☒ Public works yard(s)

118.M. ☐ Recycling

118.N. ☒ Salt storage

118.O. ☒ Snow storage

118.P. ☐ Vehicle storage and maintenance (e.g., fueling and washing) yard(s)

118.Q. ☐ Materials storage yard(s)

118.R. ☐ Other (describe below):

118.S.

*119. **Permit item 21.4:** Do you implement BMPs to prevent or reduce pollutants in stormwater discharges from municipal operations?

☒ Yes

☐ No (Skip to Q121)

120. **If yes in Q119, provide additional information on the BMPs you implement to address stormwater discharges from municipal operations (e.g., waste disposal, management of stockpiles, road maintenance):**

Salt is stored under cover and on an impervious surface. Paved surfaces are swept routinely. Stockpiles are contained with perimeter control and temporary stabilization. Dumpsters are monitored for leaks and are covered.

*121. **Permit item 21.5:** Do you implement BMPs at your owned/operated salt storage areas? ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

☒ Yes
☐ No (Skip to Q123)

122. **If yes in Q121, what BMPs do you have in place at salt storage areas?** (Check all that apply)

122.A. ☒ Salt is covered or stored indoors
122.B. ☒ Salt stored on an impervious surface
122.C. ☒ Implementation of practices to reduce exposure when transferring material from salt storage areas
122.D. ☐ Other (describe below):
122.E.

*123. **Permit item 21.6:** Do you implement a written snow and ice management policy for individuals that perform winter maintenance activities for you? ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

☐ Yes
☒ No (Skip to Q125)

124. **If yes in Q123, what practices and procedures for snow and ice control operations are included?** (Check all that apply)

124.A. ☐ Plowing or other snow removal practices
124.B. ☐ Sand use
124.C. ☐ Application of deicing compounds
124.D. ☐ Other (describe below):
124.E.

*125. **Permit item 21.7:** Each calendar year, do all individuals that perform winter maintenance activities for you receive training? ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

☐ Yes
☒ No (Skip to Q127)

126. **If yes in Q125, what does the winter maintenance training include?** (Check all that apply)

126.A. ☐ The importance of protecting water quality
126.B. ☐ BMPs to minimize the use of deicers
126.C. ☐ Tools and resources to assist in winter maintenance (e.g., deicing application rate guidelines, calibration charts, Smart Salting Assessment Tool)
126.D. ☐ Other (describe below):
126.E.

*127. **Permit item 21.8:** Do you maintain written procedures for determining TSS and total phosphorus (TP) treatment effectiveness of all owned/operated ponds constructed and used for the collection and treatment of stormwater?

☒ Yes
☐ No

*128. **Permit item 21.9:** Do you inspect structural stormwater BMPs (excluding stormwater ponds, which are under a separate schedule) each calendar year to determine structural integrity, proper function, and maintenance needs (excluding structural stormwater BMPs where the inspection frequency has been adjusted)?

☒ Yes
☐ No

*129. **Do you have a different inspection frequency (i.e., more or less than each calendar year) for any of your structural stormwater BMPs?**

☐ Yes
☒ No (Skip to Q131)

130. **If yes in Q129, what led to your adjusted inspection frequency?** (Check all that apply)

130.A. ☐ Complaints received or patterns of maintenance indicated a greater frequency was necessary.
130.B. ☐ Determined maintenance or sediment removal was not required after completion of the first two calendar year inspections.
130.C. ☐ Other (describe below):
130.D.

*131. **Permit item 21.10:** Do you inspect all ponds and outfalls (excluding underground outfalls) each permit term in order to determine structural integrity, proper function, and maintenance needs?

☒ Yes
☐ No (Skip to Q133)

132. **If yes in Q131,** describe the frequency of inspections:

Ponds and outfalls are inspected during one year of the permit cycle and as on an as needed basis.

*133. **Permit item 21.12:** Do you implement a stormwater management training program commensurate with individual's responsibilities as they relate to your SWPPP, including reporting and assessment activities? Training materials can be from the U.S. Environmental Protection Agency (EPA), state and regional agencies, or other organizations as appropriate to meet this requirement.

☒ Yes
☐ No (Skip to Q135)

134. **If yes in Q133, what does your stormwater management training program include?** (Check all that apply)

134.A. ☒ The importance of protecting water quality.
134.B. ☒ Cover the requirements of the permit relevant to the responsibilities of the individual.
134.C. ☒ A schedule that establishes initial training for individuals, including new and/or seasonal employees, and recurring training intervals to address changes in procedures, practices, techniques, or requirements.
134.D. ☐ Other (describe below):
134.E.

134.F. Additional information for checked items (optional):

*135. **Permit item 21.13:** Do you document information associated with the operations and maintenance program?

☒ Yes
☐ No (Skip to Q137)

136. **If yes in Q135, what are you documenting?** (Check all that apply)

136.A. ☒ Date(s) and description of findings, including whether or not an illicit discharge is detected, for all inspections conducted in accordance with items 21.9 and 21.10.
136.B. ☒ Any adjustments to inspection frequency as authorized in item 21.9.
136.C. ☒ Date(s) and a description of maintenance conducted as a result of inspection findings, including whether or not an illicit discharge is detected.

136.D. ☐ Schedule(s) for maintenance of structural stormwater BMPs and outfalls when necessary maintenance cannot be completed within one year of discovery ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

136.E. ☒ Stormwater management training events, including general subject matter covered, names and departments of individuals in attendance, and date of each event.

*137. **Permit item 21.14:** Do you document pond sediment excavation and removal activities?

☒ Yes

☐ No (Skip to Q139)

138. **If yes in Q137, what pond sediment excavation and removal activity information is documented?** (Check all that apply)

138.A. ☒ A unique ID number and geographic coordinate of each stormwater pond from which sediment is removed.

138.B. ☒ The volume (e.g., cubic yards) of sediment removed from each stormwater pond.

138.C. ☒ Results from any testing of sediment from each removal activity.

138.D. ☒ Location(s) of final disposal of sediment from each stormwater pond.

138.E. Additional information for checked items (optional):

*139. **Permit item 12.4:** Who is responsible for implementation of this MCM? List name(s) or position title(s).

Assistant City Engineer

140. **Provide any additional information about your current pollution prevention/good housekeeping for municipal operations program that you would like to share (optional): (Maximum 10 lines of text)**

Discharges to Impaired Waters with an EPA-Approved TMDL that Includes an Applicable Waste Load Allocation (WLA)

To determine if you have an applicable WLA(s), please reference the MPCA's MS4 Permit TMDL Application Form webpage at https://stormwater.pca.state.mn.us/index.php?title=Guidance_for_completing_the_MS4_Permit_TMDL_Application_Form.

*141. **Permit item 22.3:** Do you have an applicable WLA where a reduction in pollutant loading is required for bacteria?

☒ Yes

☐ No (Skip to Q146)

142. **If yes in Q141, do you maintain a written or mapped inventory of potential areas and sources of bacteria (e.g., dense populations of waterfowl or other bird, dog parks)? *(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

☐ Yes

☒ No (Skip to Q145)

143. **If yes in Q142, do you maintain a written plan to prioritize reduction activities to address the areas and sources identified in the inventory? The written plan must include BMPs you will implement over the permit term.** ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

☐ Yes

☐ No (Skip to Q145)

144. **If yes in Q143, which of the following are included in your written plan?** (Check all that apply)

144.A. ☐ Water quality monitoring to determine areas of high bacteria loading.

144.B. ☐ Installation of pet waste pick-up bags in parks and open spaces.

144.C. ☐ Elimination of over-spray irrigation at permittee land owned areas.

144.D. ☐ Removal of organic matter via street sweeping.
144.E. ☐ Implementation of infiltration structural stormwater BMPs.
144.F. ☐ Management of areas that attract dense populations of waterfowl (e.g., riparian plantings).
144.G. ☐ Other (describe below):
144.H.

145. **Permit item 12.9:** If yes in Q141, who is or will be responsible for implementation of this required component (i.e., inventory, plan, and BMP implementation)? List name(s) or position title(s):
Assistant City Engineer

*146. **Permit item 22.5:** Do you have an applicable WLA where a reduction in pollutant loading is required for chloride?
☒ Yes
☐ No (Skip to Q151)

147. **If yes in Q146, do you document the amount of deicer applied each winter maintenance season to all your owned/operated surfaces? *(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***
☒ Yes
☐ No

148. **If yes in Q146, each calendar year do you conduct an assessment of your winter maintenance operations to reduce the amount of deicing salt applied to your owned/operated surfaces and determine current and future opportunities to improve BMPs? You may use the MPCA's Smart Salting Assessment Tool or other available resources and methods to complete this assessment. The assessment must be documented. *(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***
☒ Yes
☐ No (Skip to Q150)

149. **If yes in Q148, what does your winter maintenance operations assessment include?** (Check all that apply)
149.A. ☐ Operational changes such as pre-wetting, pre-treating the salt stockpile, increasing plowing prior to deicing, monitoring of road surface temperature, etc.
149.B. ☒ Implementation of new or modified equipment providing pre-wetting, or other capability for minimizing salt use.
149.C. ☒ Regular calibration of equipment.
149.D. ☒ Optimizing mechanical removal to reduce use of deicers.
149.E. ☐ Designation of no salt and/or low salt zones.
149.F. ☐ Other (describe below):
149.G.

149.H. Additional information for checked items (optional):

150. **Permit item 12.9: If yes in Q146, who is or will be responsible for implementation of this required component (i.e., documenting deicer applied and winter maintenance operations assessment)? List name(s) or position title(s):**
Street Surpervisor

*151. **Permit item 22.7:** Do you have an applicable WLA where a reduction in pollutant loading is required for temperature?
☐ Yes
☒ No (Skip to Q155)

152. If yes in Q151, do you maintain a written plan that identifies specific activities you will implement to reduce thermal loading during the permit term? ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

☐ Yes

☐ No (Skip to Q154)

153. **If yes in Q152, what activities does the plan include?** (Check all that apply)

153.A. ☐ Implementation of infiltration BMPs such as bioinfiltration practices

153.B. ☐ Disconnection and/or reduction of impervious surfaces

153.C. ☐ Retrofitting existing structural stormwater BMPs

153.D. ☐ Improvement of riparian vegetation

153.E. ☐ Other (describe below):

153.F.

153.G. Provide any additional information about your written plan (optional):

154. **Permit item 12.9: If yes in Q151, who is or will be responsible for implementation of this required component? List name(s) or position title(s):**

*155. **Permit item 12.8:** Do you have an applicable WLA(s) for oxygen demand, nitrate, TSS, or TP?

☒ Yes - If yes, you **must complete** the corresponding tabs in the *MS4 Permit TMDL Application* (available on the MPCA's website at https://stormwater.pca.state.mn.us/index.php?title=Guidance_for_completing_the_MS4_Permit_TMDL_Application_Form) and submit it with this application.

☐ No

Alum or Ferric Chloride Phosphorus Treatment Systems

*156. **Permit Section 23:** Do you own and/or operate an Alum or Ferric Chloride Phosphorus Treatment System within your MS4?

☐ Yes - If yes, complete questions 157-173 as directed.

☒ No (Skip to Q174)

157. Provide the geographic coordinates of the alum or ferric chloride phosphorus treatment system, in decimal degrees. (Approximate centroid of treatment system within five-foot accuracy):

157.A. Latitude: _____

157.B. Longitude: _____

158. **Who is responsible for the operation of the treatment system? List name(s) or position title(s):**

159.A. **Provide the date the system first became operational (mm/dd/yyyy):** _____

For question 159.B-G, provide information for calendar year 2020.

159.B. **For each month, provide the number of days the system was operational:**

159.B.1. January: _____
159.B.2. February: _____
159.B.3. March: _____
159.B.4. April: _____
159.B.5. May: _____
159.B.6. June: _____
159.B.7. July: _____
159.B.8. August: _____
159.B.9. September: _____
159.B.10. October: _____
159.B.11. November: _____
159.B.12. December: _____

159.C. **What chemical(s) was used for treatment:**

159.C.1. ☐ Alum
159.C.2. ☐ Ferric Chloride

159.D. **Provide the number of gallons of water treated:** _____

159.E. **Provide the number of gallons of alum or ferric chloride treatment used:** _____

159.F. **Provide the calculated pounds of phosphorous removed:** _____

159.G. **Describe any performance issue(s) and the corrective action(s), including the date(s) when corrective action(s) were taken:**

160. **Permit item 23.3: Which of the following requirements are you meeting?** (Check all that apply)

160.A. ☐ Your treatment system is for the treatment of phosphorus in stormwater. Non-stormwater discharges must not be treated by this system.
160.B. ☐ Your treatment system is contained within the conveyances and structural stormwater BMPs of the MS4. The utilized conveyances and structural stormwater BMPs do not include any receiving waters.
160.C. ☐ Phosphorus treatment systems utilizing chemicals other than alum or ferric chloride receive written approval from the MPCA.
160.D. ☐ In-lake phosphorus treatment activities are not authorized.

161. **Permit item 23.3: Which of the following design parameters does your treatment system include?** (Check all that apply)

161.A. ☐ The treatment system is constructed in a manner that diverts the stormwater flow to be treated from the main conveyance system.
161.B. ☐ A high flow bypass is part of the inlet design.
161.C. ☐ A flocculent storage/settling area is incorporated into the design, and adequate maintenance access is provided (minimum of eight feet wide) for the removal of accumulated sediment.

162. **Permit item 23.5:** Do you have a designated person perform visual monitoring of the treatment system for proper performance at least once every seven (7) days, and within 24 hours after a rainfall event greater than 2.5 inches in 24 hours?

☐ Yes
☐ No (Skip to Q164)

163. **If yes in Q162, please list the name(s) of the individual(s) or position title(s):**

164. **Permit item 23.5:** Following visual monitoring which occurs within 24 hours after a rainfall event, do you conduct the next visual monitoring of your system seven (7) days after that rainfall event?

☐ Yes
☐ No

165. **Permit item 23.6:** Does your treatment system utilize three (3) benchmark monitoring stations? Table 1 in Appendix A in the permit must be used for the parameters, units of measure, and frequency of measurement for each station.

☐ Yes
☐ No

166. **Permit item 23.7:** Do you collect grab samples or flow-weighted 24-hour composite samples at your treatment system?

☐ Yes
☐ No

167. **Permit item 23.8:** Are your treatment system samples, excluding potential of hydrogen (pH) samples, analyzed by a laboratory certified by the Minnesota Department of Health and/or the MPCA?

☐ Yes
☐ No

168. **Which of the following do your sample tests include?** (Check all that apply)

168.A. ☐ Sample preservation and test procedures for the analysis of pollutants that conform to 40 CFR Part 136 and Minn. R. 7041.3200.

168.B. ☐ Detection limits for dissolved phosphorus, dissolved aluminum, and dissolved iron that are a minimum of 6 micrograms per liter (µg/L), 10 µg/L, and 20 µg/L, respectively.

168.C ☐ pH that is measured within 15 minutes of sample collection using calibrated and maintained equipment.

169. **Permit item 23.9:** In the following situation(s) do you perform corrective action(s) and immediately notify the Minnesota Department of Public Safety Duty Officer? (Check all that apply)

169.A. ☐ The pH of the discharged water is not within the range of 6.0 and 9.0.

169.B. ☐ Indications of toxicity or measurements exceeding water quality standards which could endanger human health, public drinking water supplies, or the environment.

169.C. ☐ A spill or discharge or alteration resulting in water pollution, as defined in Minn. Stat. § 115.01, subd. 13, of alum or ferric chloride.

170. **Permit item 23.13:** Do you conduct site-specific jar testing using typical and representative water samples in accordance with the most current approved version of ASTM D2035? ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

☐ Yes
☐ No

171. **Permit item 23.14:** Do you have baseline concentrations of the following parameters in the influent and receiving waters at your treatment system location? (Check all that apply)

171.A. ☐ Aluminum or iron

171.B. ☐ Phosphorus

172. **Permit item 23.15:** Do you have the following system parameters and how each was determined at your treatment system location? (Check all that apply)

172.A. ☐ Flocculant settling velocity

172.B. ☐ Minimum required retention time

172.C. ☐ Rate of diversion of stormwater into the system

172.D. ☐ The flow rate from the discharge of the outlet structure

172.E. ☐ Range of expected dosing rates

173. **Permit item 23.16:** Have you developed the following site-specific procedures? (Check all that apply)

173.A. ☐ Procedures for the installation, operation and maintenance of all pumps, generators, control systems, and other equipment.

173.B. ☐ Specific parameters for determining when the solids must be removed from the system and how the solids will be handled and disposed of.

173.C. ☐ Procedures for cleaning up and/or containing a spill of each chemical stored on site.

Complete last page and submit using Adobe Acrobat Reader.

(If you do not have Acrobat Reader, you can download a free version at https://get.adobe.com/reader/.)

Additional information

174. **Provide any additional information about your current Stormwater Pollution Prevention Program (SWPPP) that you would like to share (optional): (Maximum 30 lines of text)**

Complete last page and submit using Adobe Acrobat Reader.

(If you do not have Acrobat Reader, you can download a free version at https://get.adobe.com/reader/.)

Submit Reset

Appendix B: MS4 Staff List

Hopkins MS4 Program Staff List

MS4 Program Responsibilities / Training Requirements

Staff	Title	Applicable Duties	Applicable Training/Certifications	MS4 Program Management			MCM-1: Public Education and Outreach		MCM-2: Public Participation/Outreach	MCM-3:Illicit Discharge Detection and Elimination			MCM-4: Construction Site Runoff Control			MCM-5: Post-Construction Stormwater Management		MCM-6: Pollution Prevention/Good Housekeeping for Municipal Operations		
				Overall SWPPP Management	City Processes, Policies, and Code	Annual Assessment and Reporting	Public Education and Outreach Implementation	Staff Training	Public Involvement	City IDDE Program Overview/Management	Illicit Discharge Recognition and Reporting	Illicit Discharge Investigation, Elimination, and Enforcement	Site Plan Review	Site Inspections	Enforcement	Site Plan Review	Enforcement	Public Works Management	Winter Maintenance / Smart Salting	BMP, Pond, and Outfall Inspection
Eric Klingbeil	City Engineer	MS4 Program Manager, IDDE Plan Implementer		X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X
Vance Campbell	Engineering Coordinator					X														
Mikala Larson	Sustainability Specialist						X													
Ryan Krzos	City Planner				X															
Chris Kearney	Building Official	Code Enforcement			X															
James Ruffin	Building Inspector				X						X									
Justin Arries	Inspector - Plumbing & Mechanical				X						X									
Kersten Elverum	Director of Planning and Economic Development																			
Kurt Howard	Planner				X															
Dustin Pavek	Public Works Director	Illicit discharge recognition			X	X		X	X		X							X	X	X
Sean Moilanen	Public Works - Utilities Superintendent	Illicit discharge recognition									X								X	
Andrew Klobe	Public Works - Utilities Lead	Illicit discharge recognition									X								X	
Andy Beebe	Public Works - Utilities Operator	Illicit discharge recognition									X								X	
Ron Baumgartner	Public Works - Utilities Operator	Illicit discharge recognition									X								X	
Chandra Denault	Public Works - Utilities Locator	Illicit discharge recognition	Smart Salt Certification								X								X	
Kevin Scott	Public Works- Utilities Operator	Illicit discharge recognition									X								X	
Don Olson	Public Works - Facilities Superintendent & Pavilion Manager	Illicit discharge recognition									X								X	
Bob Taylor	Public Works-Street Lead	Illicit discharge recognition	Smart Salt Certification								X								X	
Bob Conrad	Public Works - Forester	Illicit discharge recognition	Smart Salt Certification								X								X	
Derik Mackey	Plow Driver	Illicit discharge recognition	Smart Salt Certification								X								X	
Daron Topel	Plow Driver	Illicit discharge recognition	Smart Salt Certification								X								X	
Matt Rauchwarter	Plow Driver	Illicit discharge recognition									X								X	
Gabe Vasquez	Plow Driver	Illicit discharge recognition									X								X	
Julio Galicia	Plow Driver	Illicit discharge recognition									X								X	
Kyle Ahlstrand	Plow Driver	Illicit discharge recognition									X								X	
Kelly Cronk	Plow Driver	Illicit discharge recognition	Smart Salt Certification								X								X	
Nick Rice	Plow Driver	Illicit discharge recognition	Smart Salt Certification								X								X	
Paul Nelson	Plow Driver	Illicit discharge recognition	Smart Salt Certification								X								X	
Jake Remington	Plow Driver	Illicit discharge recognition	Smart Salt Certification								X								X	
Ryan Johnson	Plow Driver	Illicit discharge recognition	Smart Salt Certification								X								X	
Terry Haigh	Plow Driver	Illicit discharge recognition									X								X	
Eric Huss	Plow Driver	Illicit discharge recognition	Smart Salt Certification								X								X	
Trenton Stafford	Plow Driver	Illicit discharge recognition	Smart Salt Certification								X								X	
Dave Conover	Plow Driver	Illicit discharge recognition									X								X	
Omar Aguillon	Plow Driver	Illicit discharge recognition									X								X	
Charlie Croxdale	Plow Driver	Illicit discharge recognition									X								X	
Miranda Christensen (BMI)	Water Resources Project Engineer	MS4 Program Assistance	Design of SWPPP - UofM; ESC Construction Installation - UofM	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X
Josh Hrabe (BMI)	Chief Resident Project Representative	Project management - Inspector	Construction Site SWPPP Mgr - UofM								X			X						
Brian Aeling (BMI)	SWPPP Inspector	ESC Inspection	ESC Construction Installation - UofM								X			X						X
Kathryn Farber (BMI)	SWPPP Inspector	ESC Inspection	ESC Construction Installation - UofM								X			X						X
Dale Specken	Fire Chief	Illicit discharge recognition						X			X	X								
Mike Wenshau	Deputy Fire Chief	Illicit discharge recognition									X									
Garrett Grniet	Fire Marshal	Illicit discharge recognition									X									
Paul Odden	Fire - Operations Chief	Illicit discharge recognition									X									
Matt Huzuka	Captain	Illicit discharge recognition									X									
Nick Stamboulieh	Firefighter - Rental Inspector	Illicit discharge recognition									X									
Anthony Puckett	Firefighter - Fire Inspector	Illicit discharge recognition									X									
Andy Aldrich	Firefighter - Fire Inspector	Illicit discharge recognition									X									
Brent Johnson	Police Chief	Illicit discharge recognition						X			X									
Brian Bkeberg	Police Department - Reserve Unit Coordinator	Illicit discharge recognition									X									
Anne Marie Buck	Police Services Liaison	Illicit discharge recognition									X									
Craig Kreiling	Captain	Illicit discharge recognition									X									
Kevin Frederick	Lieutenant	Illicit discharge recognition									X									

Appendix C: MS4 Calendar

Appendix D: Maps (Storm Sewer Network Map, Storm Drainage System Map, DWSMA Map, Facility Map,)

Culvert ID	Coordinates
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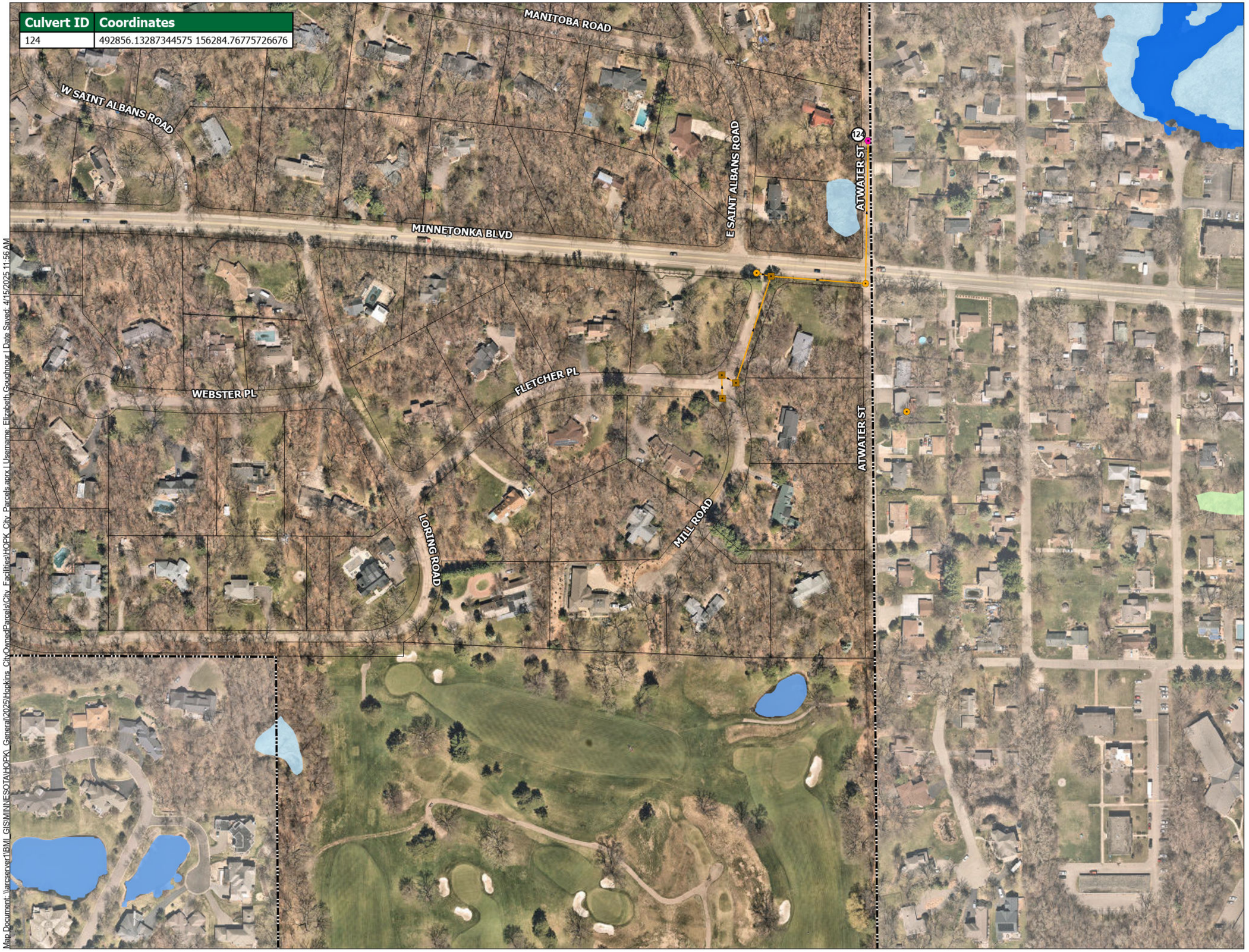

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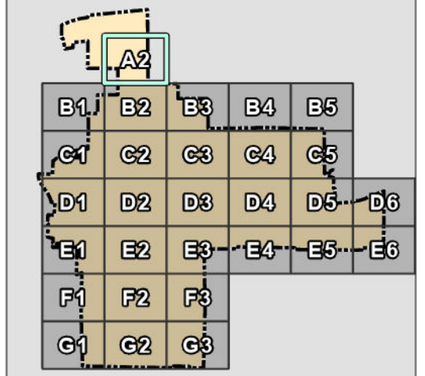
City of Hopkins

Storm Sewer Network

LOCATION MAP



Legend

- Storm Culvert
- Storm Manhole
- Catch Basin
- City Limits
- Parcels
- Minnehaha Creek Watershed

Wetland Type

- Lake
- Riverine
- Freshwater Pond
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland

Storm Pipe Size

- Unknown
- 12"
- 15"
- 18"
- 21"
- 24"
- 30"
- 36"
- 42"

0 200 Feet

Source: City of Hopkins, Hennepin County, NWI

BOLTON & MENK

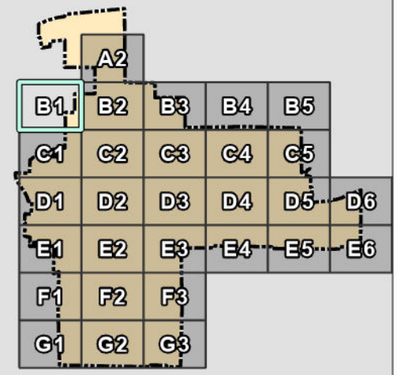
A2

April 2025

City of Hopkins

Storm Sewer Network

LOCATION MAP



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BOLTON & MENK

B1

April 2025

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Culvert ID	Coordinates
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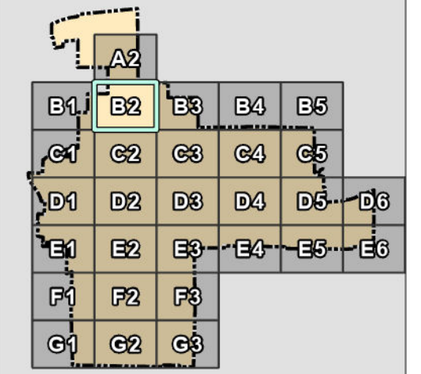
DRILLANE ROAD N
DRILLANE CIR
DRILLANE ROAD S
DRILLANE ROAD
50
ELMO PARK SERVICE ROAD

Map Document: \\arcserver1\BM_GIS\MINNESOTA\HOPK_General\2025\Hopkins_CityOwnedParcels\City_Facilities\HOPK_City_Parcels.aprx | Username: Elizabeth.Goughnour | Date Saved: 4/15/2025 11:56 AM

City of Hopkins

Storm Sewer Network

LOCATION MAP



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Source: City of Hopkins, Hennepin County, NWI

BOLTON & MENK

B2

April 2025

Culvert ID	Coordinates
2	494780.2310593575 153083.4168765247
20	494605.42497852445 152429.02087560296
21	494635.4580549449 152488.53387993574
22	495234.78001903 152430.07697585225
23	494884.71313385665 153295.60378810763
24	494939.5949138552 153291.56573843956
25	495096.8258986026 153223.95399701595
26	495124.7169189453 153012.52594219148
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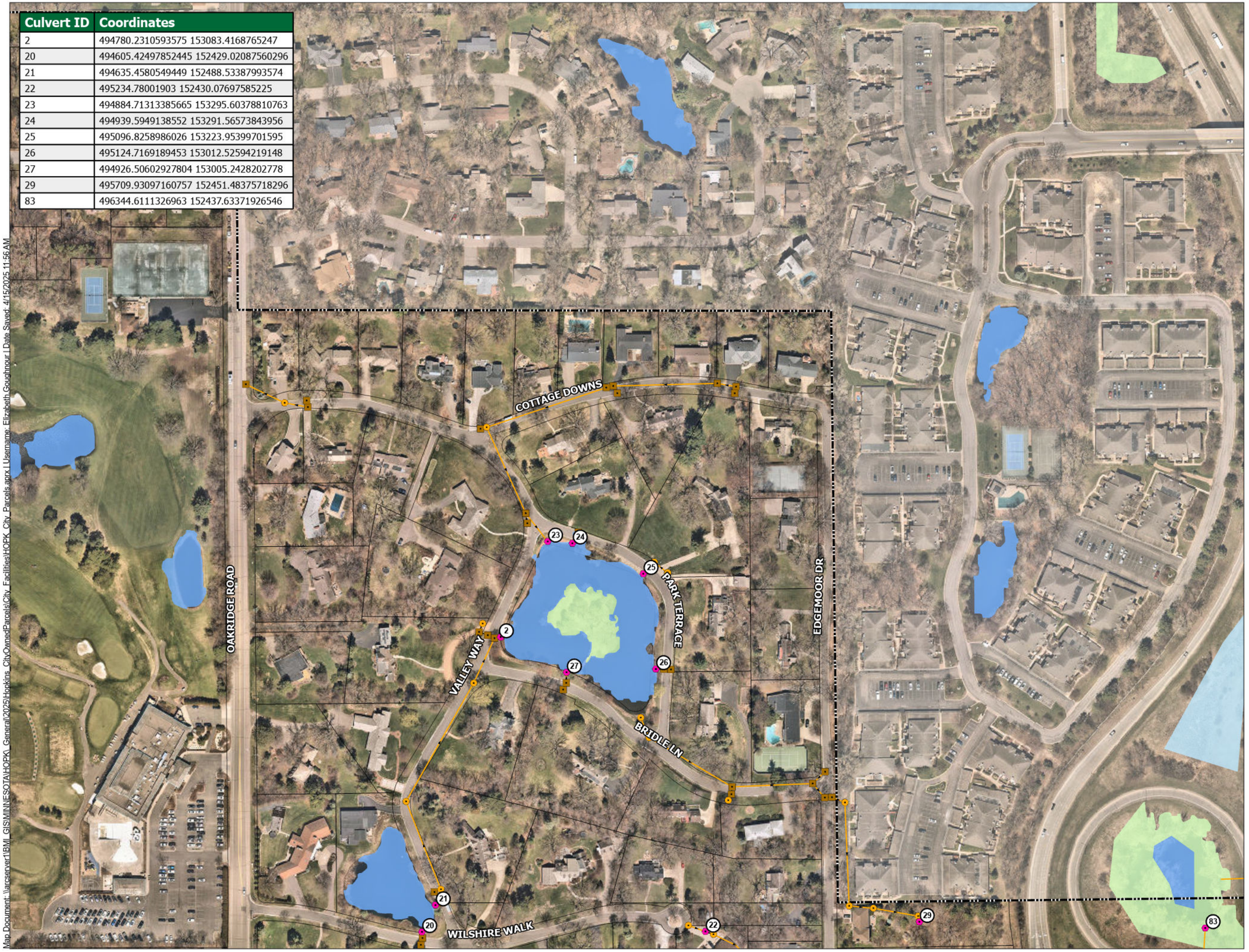

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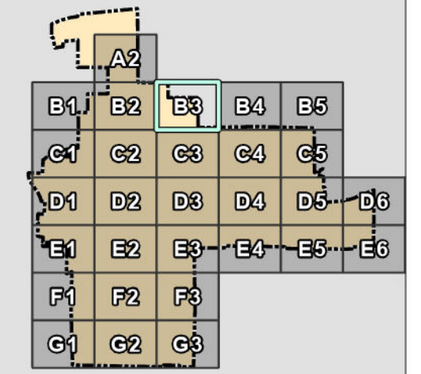
City of Hopkins

Storm Sewer Network

LOCATION MAP



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BOLTON & MENK

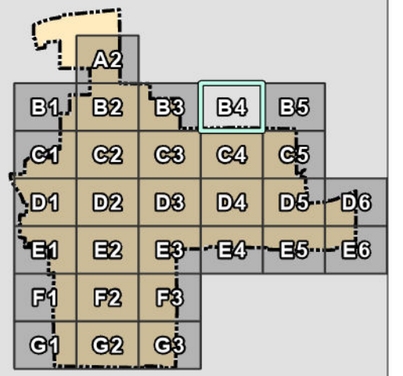
B3

April 2025

City of Hopkins

Storm Sewer Network

LOCATION MAP



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Source: City of Hopkins, Hennepin County, NWI

BOLTON & MENK

B4

April 2025

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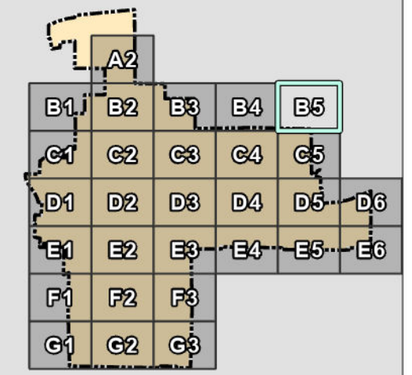
City of Hopkins

Storm Sewer Network

LOCATION MAP



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Source: City of Hopkins, Hennepin County, NWI

BOLTON & MENK

B5

April 2025

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Culvert ID	Coordinates
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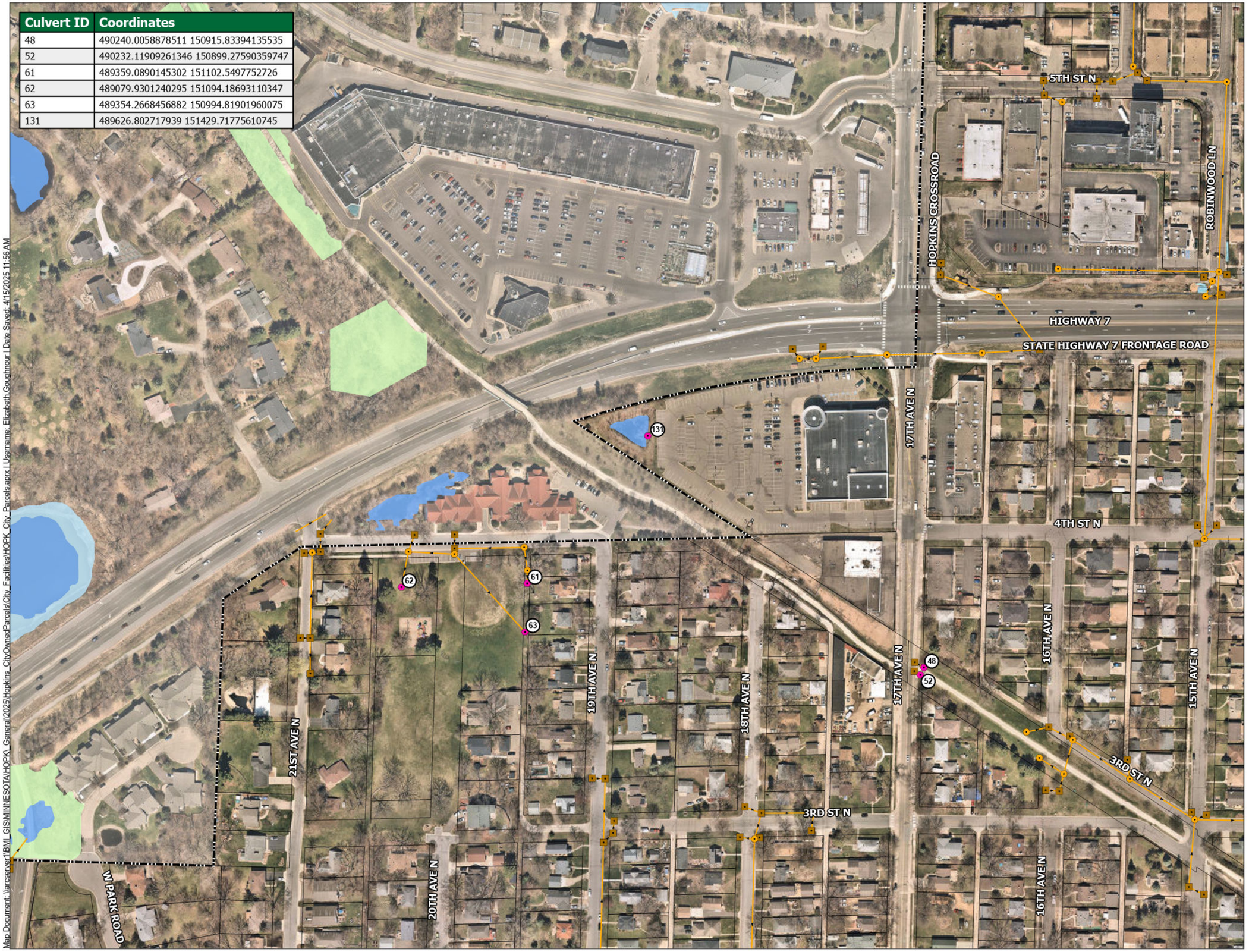
62	489079.9301240295 151094.18693110347
63	489354.2668456882 150994.81901960075
131	489626.802717939 151429.71775610745



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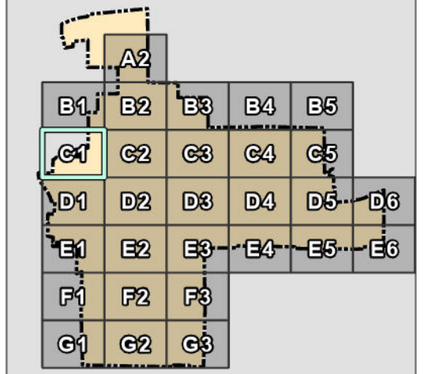
City of Hopkins

Storm Sewer Network

LOCATION MAP



Legend

- Storm Culvert
- Storm Manhole
- Catch Basin
- City Limits
- Parcels
- Minnehaha Creek Watershed

Wetland Type

- Lake
- Riverine
- Freshwater Pond
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland

Storm Pipe Size

- Unknown
- 12"
- 15"
- 18"
- 21"
- 24"
- 30"
- 36"
- 42"

0 200 Feet

Source: City of Hopkins, Hennepin County, NWI

BOLTON & MENK

C1

April 2025

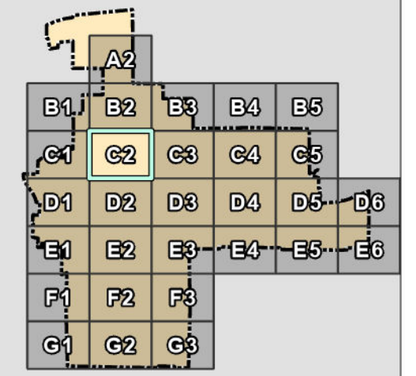
Culvert ID	Coordinates
98	493109.9128776938 151924.51171402633
99	492881.5721270293 152023.3028550148
100	492903.89590127766 151997.5919484347
101	491920.8020669371 151600.78696776927

Map Document: \\arcserver1\BM_GIS\MINNESOTA\HOPK_General\2025\Hopkins_CityOwnedParcels\City_Facilities\HOPK_City_Parcels.aprx | Username: Elizabeth.Goughnour | Date Saved: 4/15/2025 11:56:AM

City of Hopkins

Storm Sewer Network

LOCATION MAP



Legend

- Storm Culvert
- Storm Manhole
- Catch Basin
- City Limits
- Parcels
- Minnehaha Creek Watershed

Wetland Type

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- 30"
- 36"
- 42"

0 200 Feet

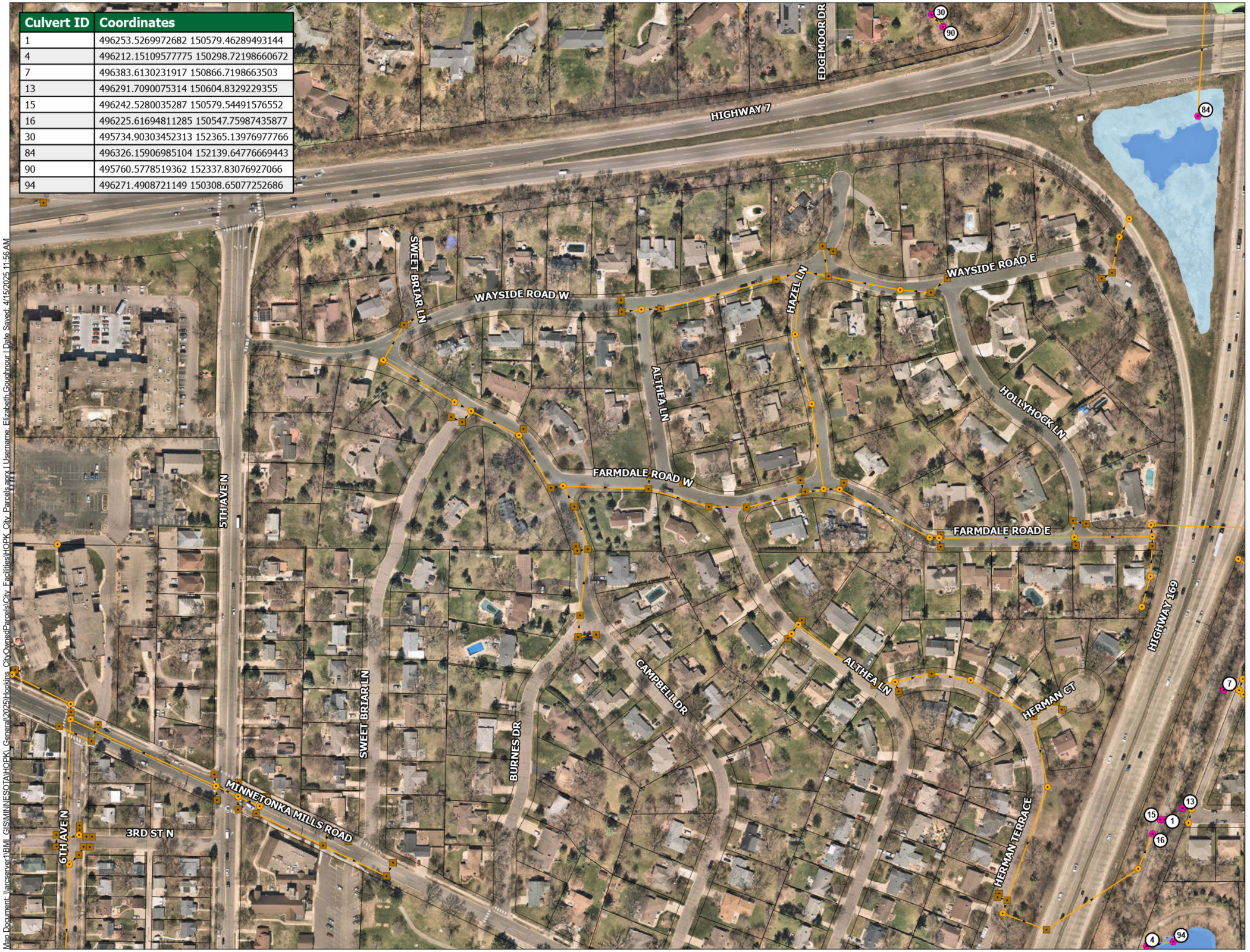
Source: City of Hopkins, Hennepin County, NWI

BOLTON & MENK

C2

April 2025

Culvert ID	Coordinates
1	496253.5269972682 150579.46289493144
4	496212.15109577775 150298.72198660672
7	496383.6130231917 150866.7198663503
13	496291.7090075314 150604.8329229355
15	496242.5280035287 150579.54491576552
16	496225.61694811285 150547.75987435877
30	495734.90303452313 152365.13976977766
84	496326.15906985104 152139.64776669443
90	495760.5778519362 152337.83076927066
94	496271.4908721149 150308.65077252686



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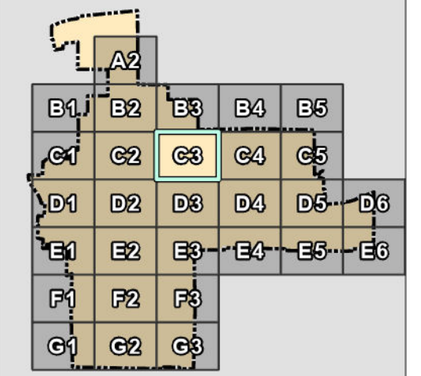
City of Hopkins

Storm Sewer Network

LOCATION MAP



Legend

- Storm Culvert
- Storm Manhole
- Catch Basin
- City Limits
- Parcels
- Minnehaha Creek Watershed

Wetland Type

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- 36"
- 42"

0 200 Feet

Source: City of Hopkins, Hennepin County, NWI

BOLTON & MENK

C3

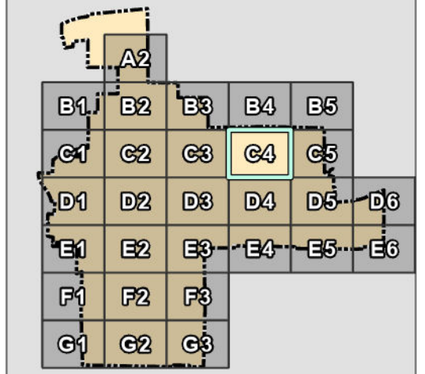
April 2025

Culvert ID	Coordinates
5	498164.3358396888 152355.72771510482
6	498243.3599598557 152372.16797094047
8	498504.4821410179 151211.58794301748
28	496488.0770531148 151225.07872968912
87	496480.9979990274 151140.529030025
88	496505.5159946084 151200.52202026546
89	496461.3838650286 151127.9847637713
92	498828.3450103551 152164.43774335086
106	497931.9268556982 151249.67776185274
107	497891.38887903094 151251.5229025185
115	498136.0366836935 150713.0895961821
116	498135.9559751898 151194.90293702483
117	497468.2604601979 151252.5087929368
118	497363.2859326154 151405.8365702778
119	497374.13007102907 151422.75189076364
120	497989.32076977193 152269.24429227412
121	498829.82893127203 152218.26604777575
122	498848.2015979439 152163.6191754341
123	498624.0130699426 151429.2666415274

City of Hopkins

Storm Sewer Network

LOCATION MAP



Legend

- Storm Culvert
- Storm Manhole
- Catch Basin
- City Limits
- Parcels
- Minnehaha Creek Watershed

Wetland Type

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0 200 Feet

Source: City of Hopkins, Hennepin County, NWI

BOLTON & MENK

C4

April 2025

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Culvert ID	Coordinates
9	499694.4850103557 151198.33501677215
10	499315.976909101 151482.49586577713
11	499445.96385385096 151333.07687327266
12	499619.8778761029 151181.39476193488
125	499606.0485074371 151302.77247193456
126	500431.408733353 150648.17634019256

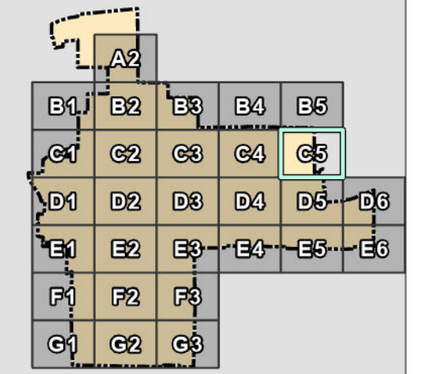
CAMBRIDGE ST
OXFORD ST
MURPHY AVE
TEXAS AVE
HIAWATHA AVE
LAKE ST NE
BLAKE ROAD N
2ND ST NE

Map Document: \\arcserver\1BM_GIS\MINNESOTA\HOPK_General\2025\Hopkins_CityOwnedParcels\City_Facilities\HOPK_City_Parcels.aprx | Username: Elizabeth Goughnour | Date Saved: 4/15/2025 11:56 AM

City of Hopkins

Storm Sewer Network

LOCATION MAP



Legend

- Storm Culvert
- Storm Manhole
- Catch Basin
- City Limits
- Parcels
- Minnehaha Creek Watershed

Wetland Type

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- Riverine
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- 30"
- 36"
- 42"

0 200 Feet

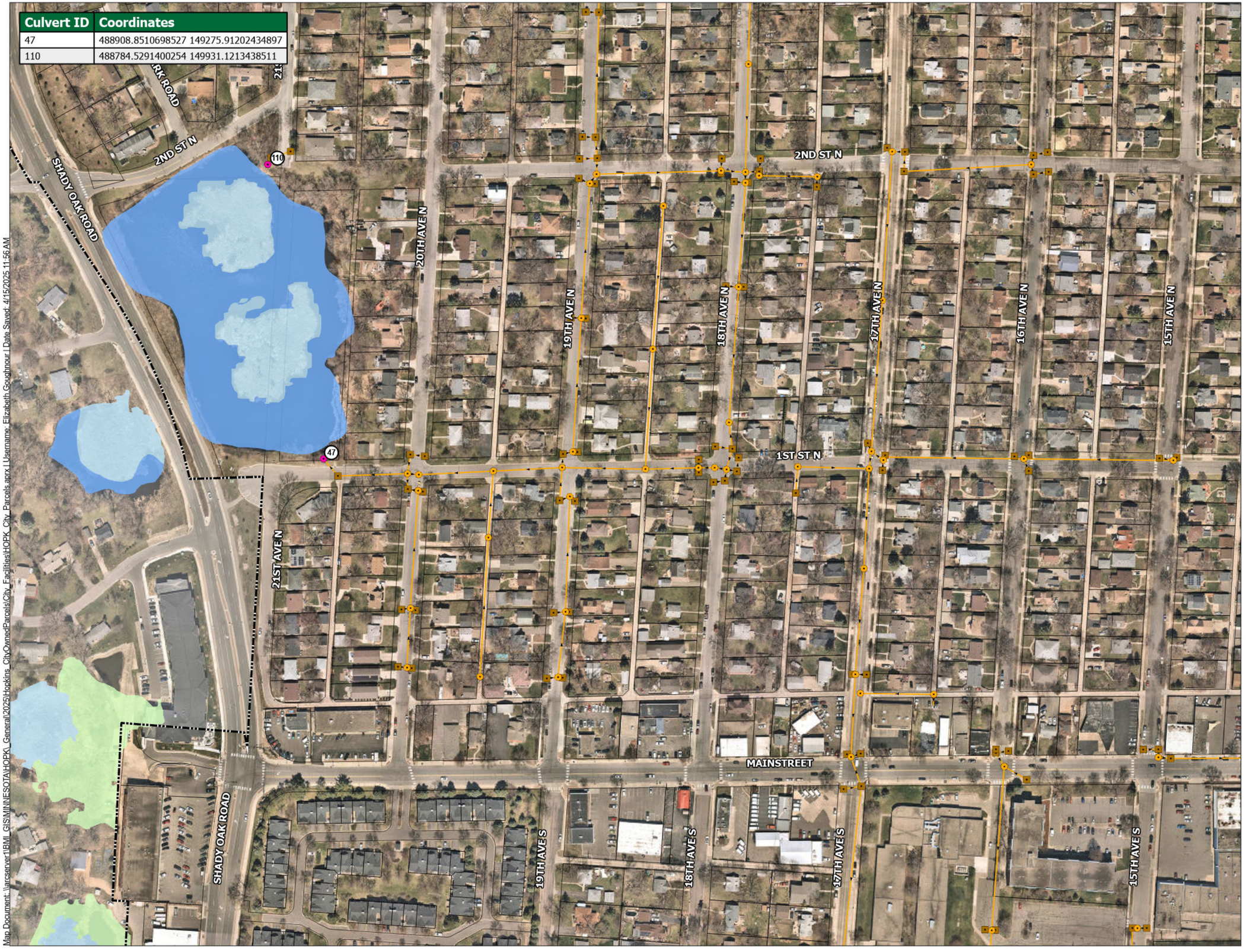
Source: City of Hopkins, Hennepin County, NWI

BOLTON & MENK

C5

April 2025

Culvert ID	Coordinates
47	488908.8510698527 149275.91202434897
110	488784.5291400254 149931.1213438511



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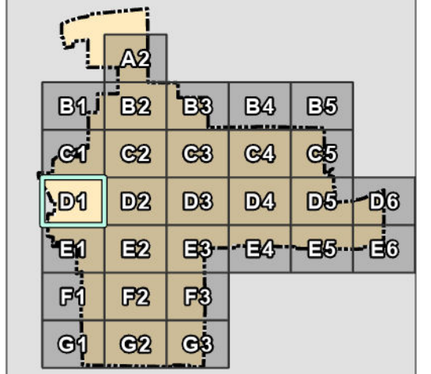
City of Hopkins

Storm Sewer Network

LOCATION MAP



Legend

- Storm Culvert
- Storm Manhole
- Catch Basin
- City Limits
- Parcels
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Wetland Type

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- 36"
- 42"

0 200 Feet

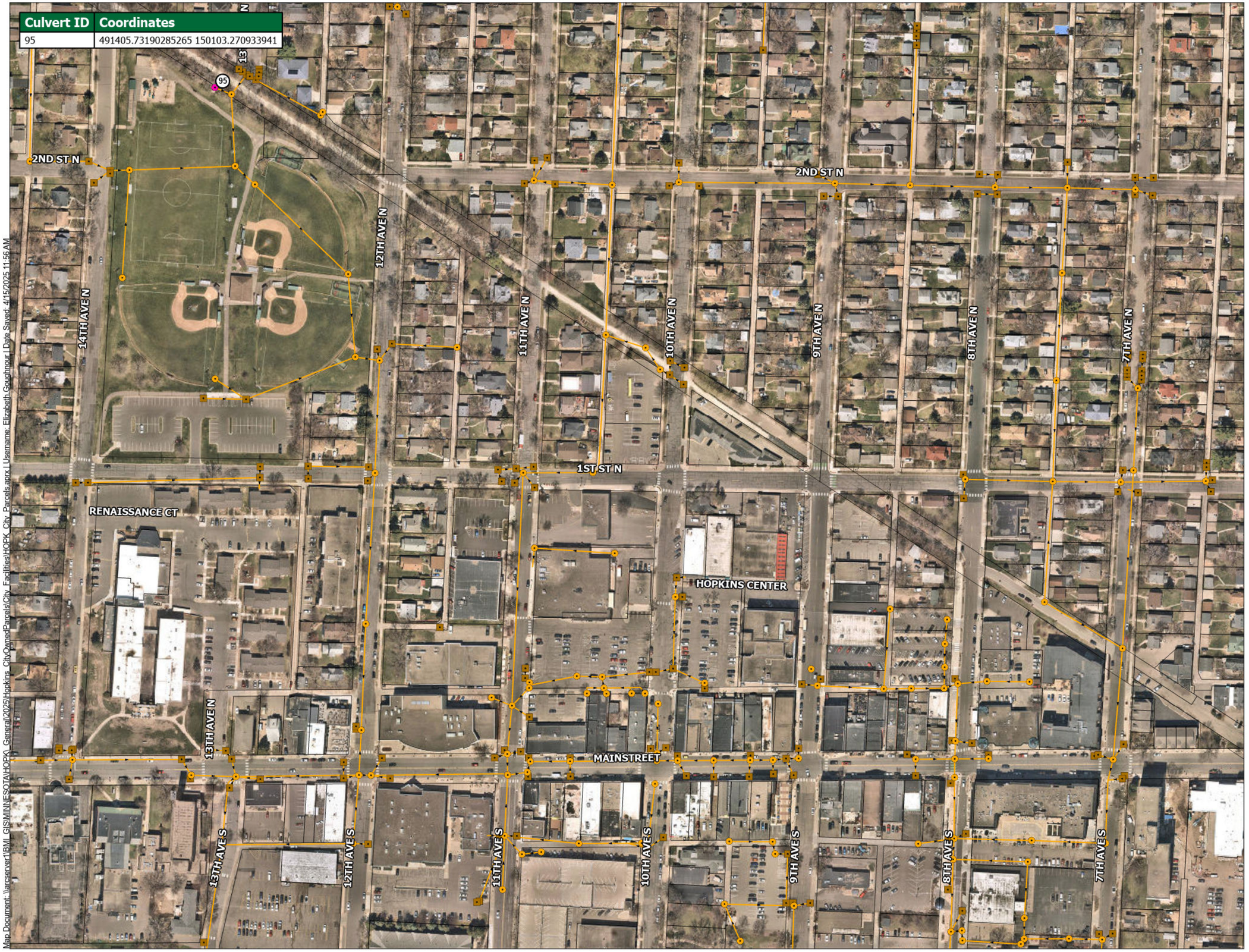
Source: City of Hopkins, Hennepin County, NWI

BOLTON & MENK

D1

April 2025

Culvert ID	Coordinates
95	491405.73190285265 150103.270933941



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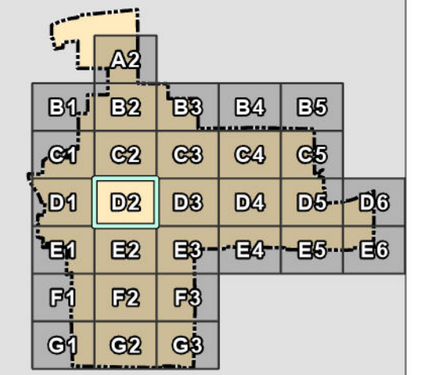
City of Hopkins

Storm Sewer Network

LOCATION MAP



Legend

- Storm Culvert
- Storm Manhole
- Catch Basin
- City Limits
- Parcels
- Minnehaha Creek Watershed

Wetland Type

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- 42"

0 200 Feet

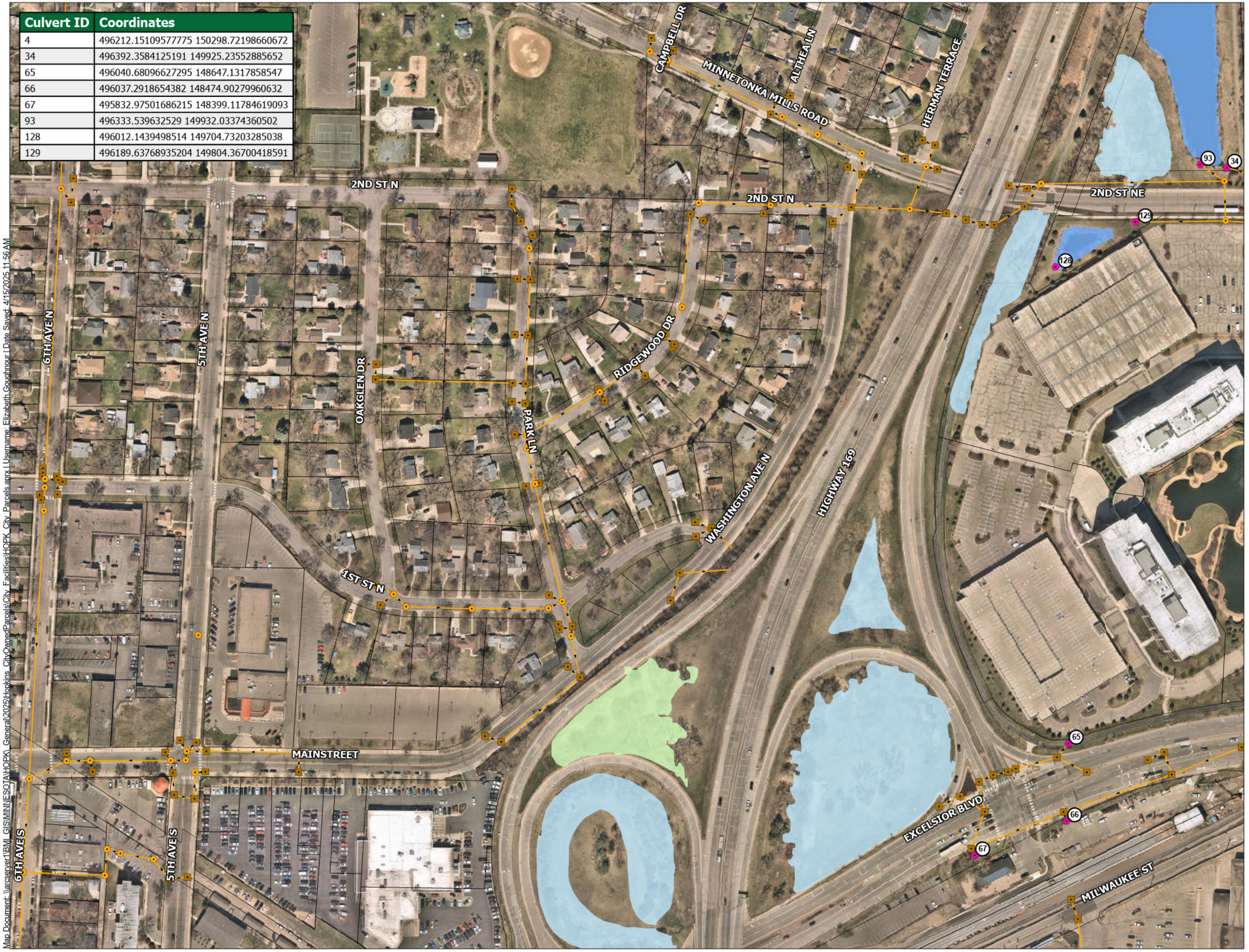
Source: City of Hopkins, Hennepin County, NWI

BOLTON & MENK

D2

April 2025

Culvert ID	Coordinates
4	496212.15109577775 150298.72198660672
34	496392.3584125191 149925.23552885652
65	496040.68096627295 148647.1317858547
66	496037.2918654382 148474.90279960632
67	495832.97501686215 148399.11784619093
93	496333.539632529 149932.03374360502
128	496012.1439498514 149704.73203285038
129	496189.63768935204 149804.36700418591



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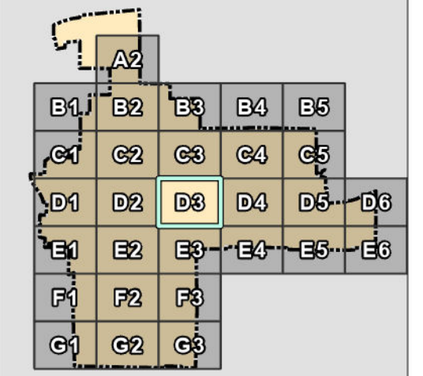
City of Hopkins

Storm Sewer Network

LOCATION MAP



Legend

- Storm Culvert
- Storm Manhole
- Catch Basin
- City Limits
- Parcels
- Minnehaha Creek Watershed

Wetland Type

- Lake
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Storm Pipe Size

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- 12"
- 15"
- 18"
- 21"
- 24"
- 30"
- 36"
- 42"

0 200 Feet

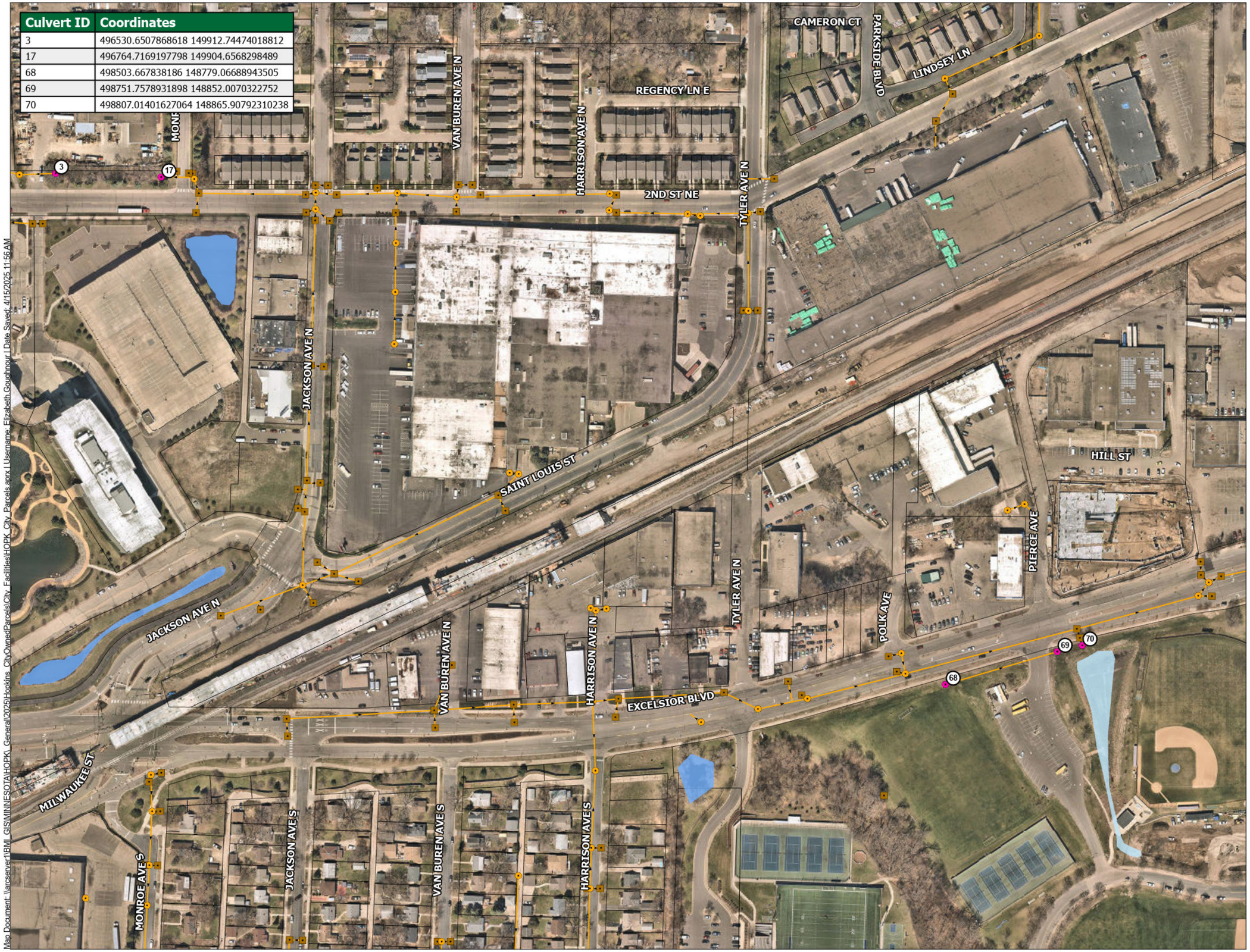
Source: City of Hopkins, Hennepin County, NWI

BOLTON & MENK

D3

April 2025

Culvert ID	Coordinates
3	496530.6507868618 149912.74474018812
17	496764.7169197798 149904.6568298489
68	498503.667838186 148779.06688943505
69	498751.7578931898 148852.0070322752
70	498807.01401627064 148865.90792310238



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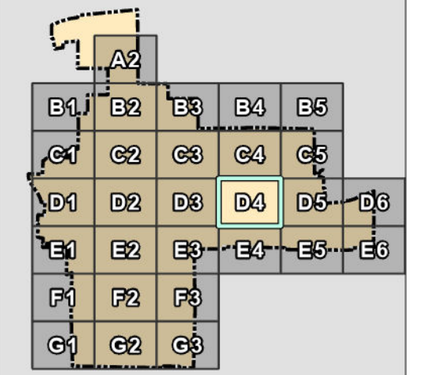
City of Hopkins

Storm Sewer Network

LOCATION MAP



Legend

- Storm Culvert
- Storm Manhole
- Catch Basin
- City Limits
- Parcels
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Wetland Type

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- 36"
- 42"

0 200 Feet

Source: City of Hopkins, Hennepin County, NWI

BOLTON & MENK

D4

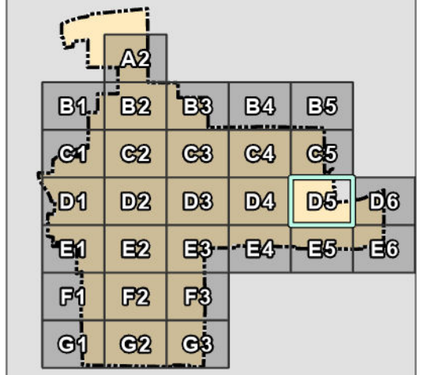
April 2025

Map Document: \\arcserver1\BM_GIS\MINNESOTA\HOPK_General\2025\Hopkins_CityOwnedParcels\City_Facilities\HOPK_City_Parcels.aprx | Username: Elizabeth.Goughnour | Date Saved: 4/15/2025 11:56 AM

City of Hopkins

Storm Sewer Network

LOCATION MAP



Legend

- Storm Culvert
- Storm Manhole
- Catch Basin
- City Limits
- Parcels
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Wetland Type

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0 200 Feet

Source: City of Hopkins, Hennepin County, NWI

BOLTON & MENK

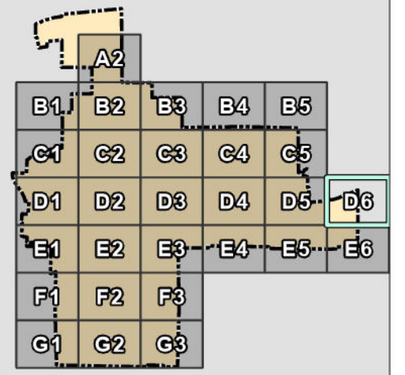
D5

April 2025

City of Hopkins

Storm Sewer Network

LOCATION MAP



Legend

- Storm Culvert
- Storm Manhole
- Catch Basin
- City Limits
- Parcels
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Wetland Type

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Source: City of Hopkins, Hennepin County, NWI

BOLTON & MENK

D6

April 2025

Map Document: \\arcserver1\BM_GIS\MINNESOTA\HOPK_General\2025\Hopkins_CityOwnedParcels\City_Facilities\HOPK_City_Parcels.aprx | Username: Elizabeth.Goughnour | Date Saved: 4/15/2025 11:56 AM

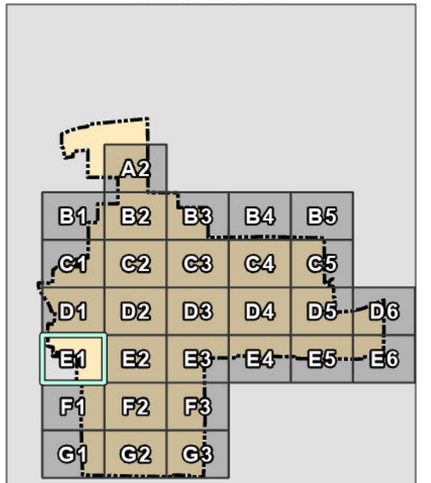
Culvert ID	Coordinates
49	490493.4099086076 147931.43374218047
51	490487.3341333568 147856.4919629395

Map Document: \\arcserver1\BMI_GIS\MINNESOTA\HOPK_General\2025\Hopkins_CityOwnedParcels\City_Facilities\HOPK_City_Parcels.aprx | Username: Elizabeth.Goughnour | Date Saved: 4/15/2025 11:56 AM

City of Hopkins

Storm Sewer Network

LOCATION MAP



Legend

- Storm Culvert
- Storm Manhole
- Catch Basin
- City Limits
- Parcels
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Wetland Type

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- 30"
- 36"
- 42"

0 200 Feet

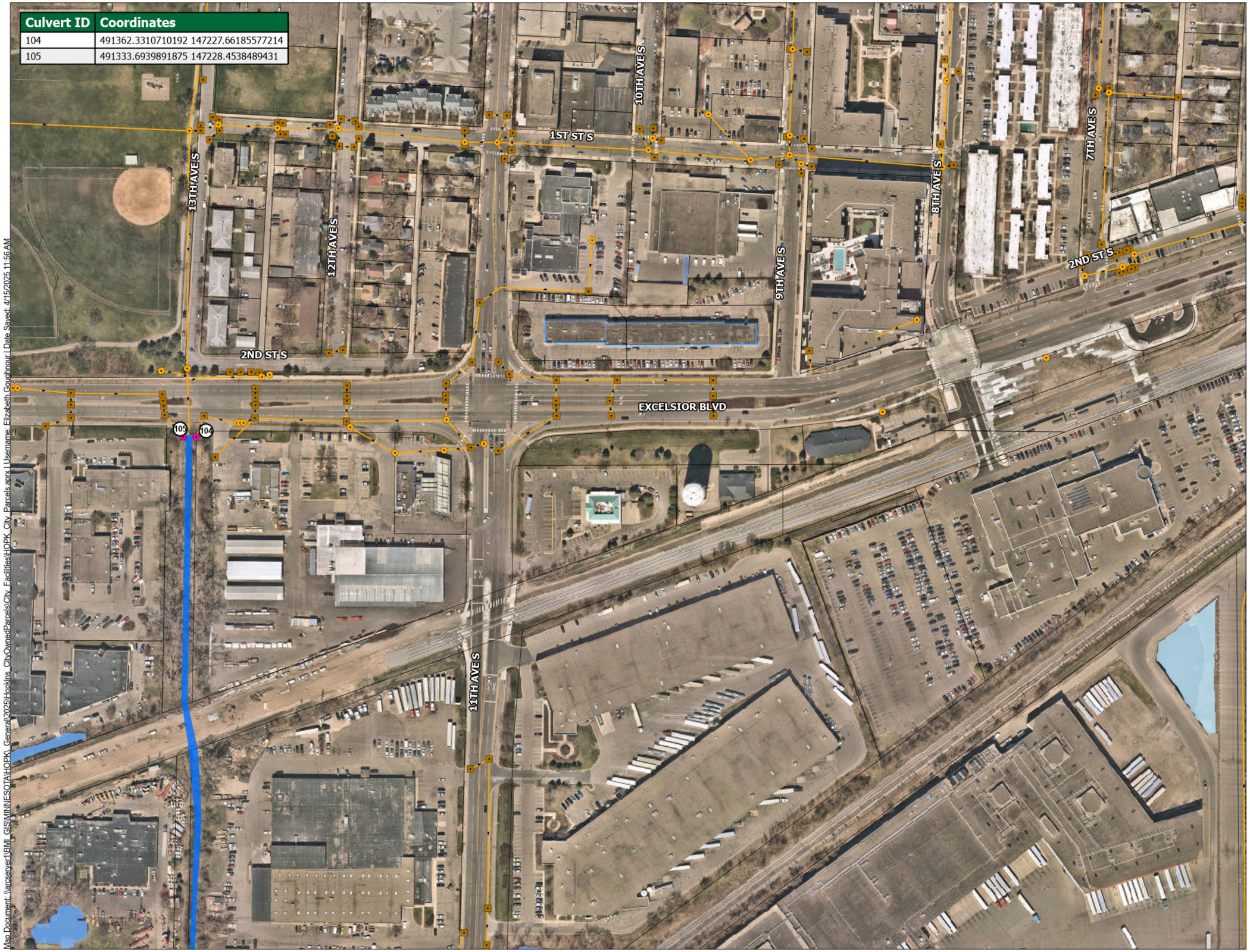
Source: City of Hopkins, Hennepin County, NWI

BOLTON & MENK

E1

April 2025

Culvert ID	Coordinates
104	491362.3310710192 147227.66185577214
105	491333.6939891875 147228.4538489431



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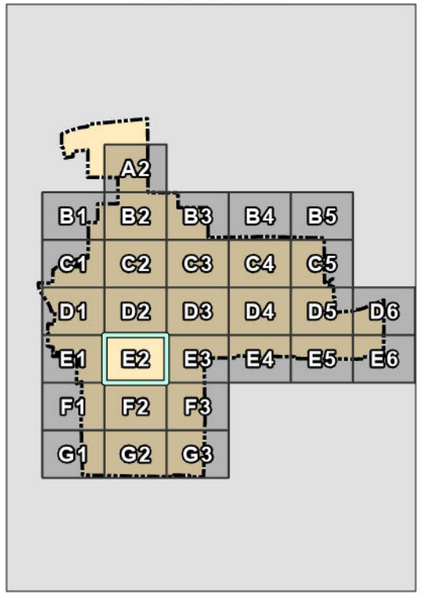
City of Hopkins

Storm Sewer Network

LOCATION MAP



Legend

- Storm Culvert
- Storm Manhole
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- Parcels
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- 36"
- 42"

0 200 Feet

Source: City of Hopkins, Hennepin County, NWI

BOLTON & MENK

E2

April 2025

Culvert ID	Coordinates
85	495015.51011635363 147118.29986977577
96	495350.25190094113 147959.25783352554

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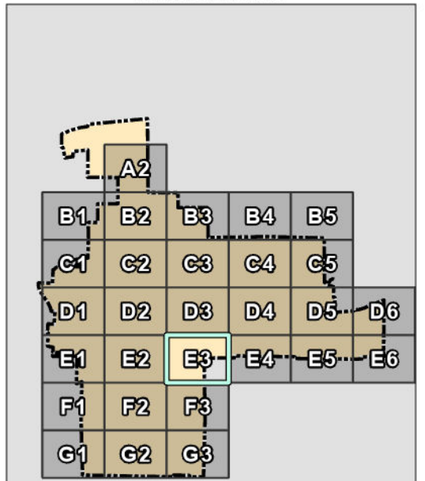
City of Hopkins

Storm Sewer Network

LOCATION MAP



Legend

- Storm Culvert
- Storm Manhole
- Catch Basin
- City Limits
- Parcels
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- 30"
- 36"
- 42"

0 200 Feet

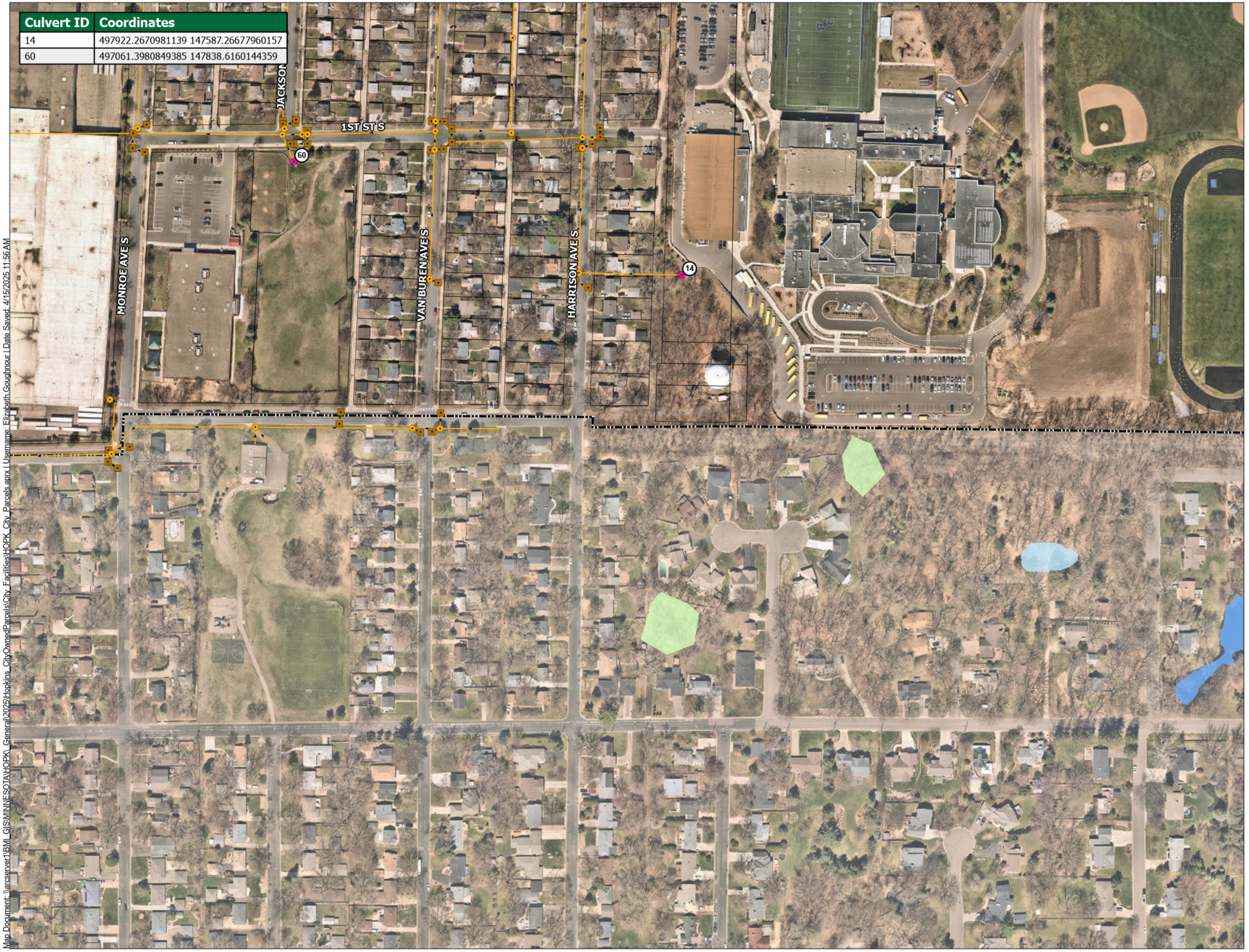
Source: City of Hopkins, Hennepin County, NWI

BOLTON & MENK

E3

April 2025

Culvert ID	Coordinates
14	497922.2670981139 147587.26677960157
60	497061.3980849385 147838.6160144359



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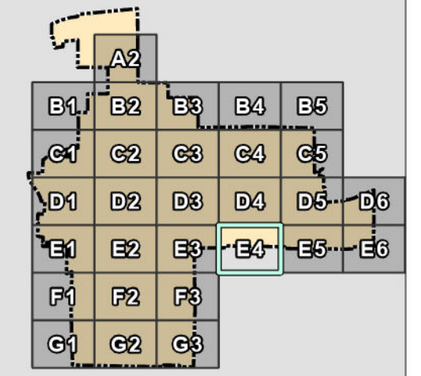
City of Hopkins

Storm Sewer Network

LOCATION MAP



Legend

- Storm Culvert
- Storm Manhole
- Catch Basin
- City Limits
- Parcels
- Minnehaha Creek Watershed

Wetland Type

- Lake
- Riverine
- Freshwater Pond
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland

Storm Pipe Size

- Unknown
- 12"
- 15"
- 18"
- 21"
- 24"
- 30"
- 36"
- 42"

0 200 Feet

Source: City of Hopkins, Hennepin County, NWI

BOLTON & MENK

E4

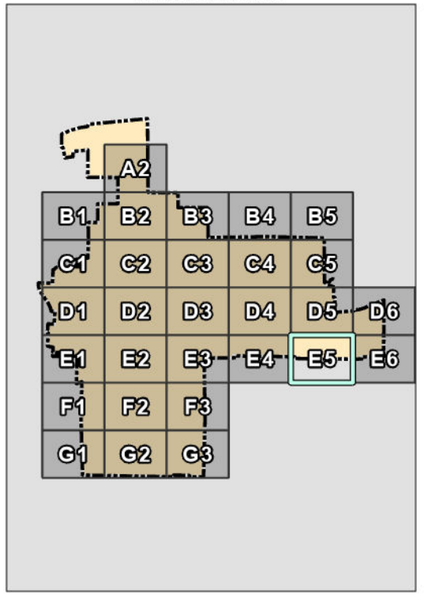
April 2025

Map Document: \\arcserver1\BM_GIS\MINNESOTA\HOPK_General\2025\Hopkins_CityOwnedParcels\City_Facilities\HOPK_City_Parcels.aprx | Username: Elizabeth.Goudreau | Date Saved: 4/15/2025 11:56 AM

City of Hopkins

Storm Sewer Network

LOCATION MAP



Legend

- Storm Culvert
- Storm Manhole
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Source: City of Hopkins, Hennepin County, NWI

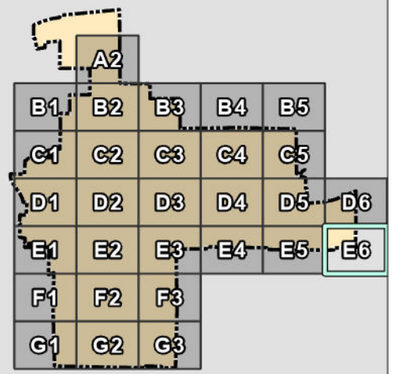
BOLTON & MENK

E5

City of Hopkins

Storm Sewer Network

LOCATION MAP



Legend

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0 200 Feet

Source: City of Hopkins, Hennepin County, NWI

BOLTON & MENK

E6

April 2025

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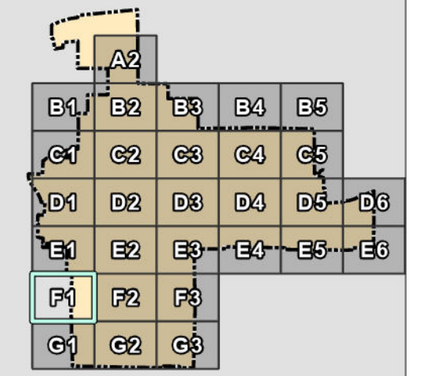
Culvert ID	Coordinates
46	490612.344053939 144944.42003118992

City of Hopkins

Storm Sewer Network

LOCATION MAP



Legend

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Source: City of Hopkins, Hennepin County, NWI

BOLTON & MENK

F1

April 2025

Map Document: \\arcserver1\BMI_GIS\MINNESOTA\HOPK_General\2025\Hopkins_CityOwnedParcels\City_Facilities\HOPK_City_Parcels.aprx | Username: Elizabeth.Goughnour | Date Saved: 4/15/2025 11:56 AM

Culvert ID	Coordinates
18	491804.59396602213 145264.1730006039
19	491201.23788927495 144477.13979777694
40	492504.8300983608 144725.1127270162
41	492551.6210152805 144666.92288276553
42	492310.75699569285 144310.686718598
54	491345.87703569233 145985.22700469196
55	491345.44888694584 145893.52180752158
56	491354.01087769866 145893.52180752158
57	491355.72314460576 145985.22700469196
58	492030.56201802194 145139.0298781842
59	491999.72907444835 145158.57478660345
71	491330.95810227096 145887.2869118601
97	492724.6600392759 144672.35495851934
102	492161.9078839421 144595.83280184865
103	492177.9219595194 144634.3107432723

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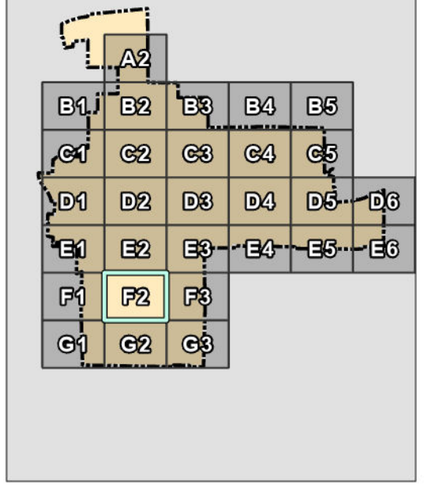
City of Hopkins

Storm Sewer Network

LOCATION MAP



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0 200 Feet

Source: City of Hopkins, Hennepin County, NWI

BOLTON & MENK

F2

April 2025

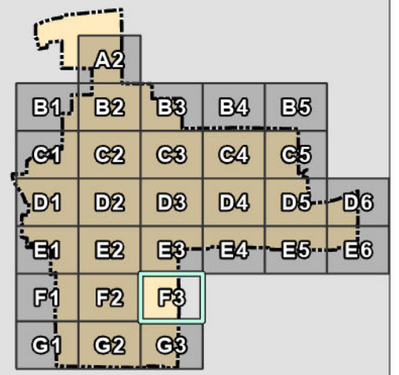
Culvert ID	Coordinates
43	494796.9879156053 144358.44482518733
44	494816.83695727587 144368.64493602514
86	495148.5068976134 145993.1918837726

Map Document: \\arcserver1\BM_GIS\MINNESOTA\HOPK_General\2025\Hopkins_CityOwnedParcels\City_Facilities\HOPK_City_Parcels.aprx | Username: Elizabeth.Goughnour | Date Saved: 4/15/2025 11:56 AM

City of Hopkins

Storm Sewer Network

LOCATION MAP



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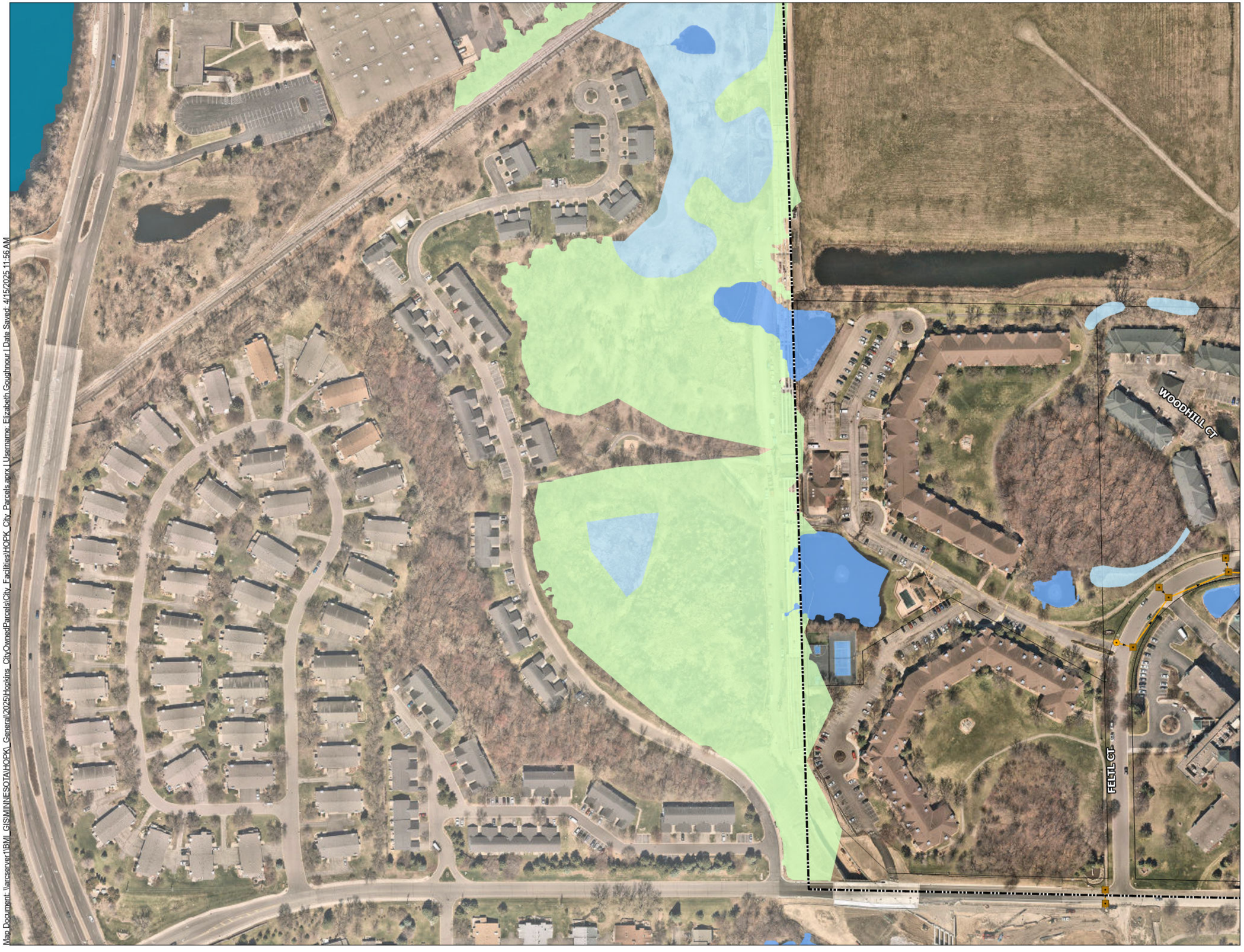
BOLTON & MENK

F3



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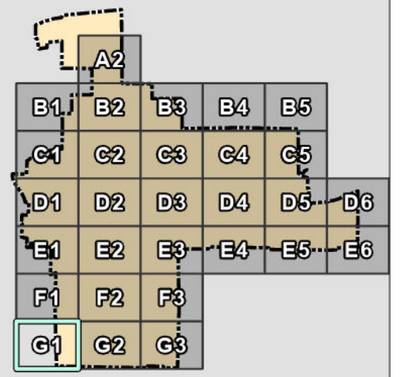
City of Hopkins

Storm Sewer Network

LOCATION MAP



Legend

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0 200 Feet

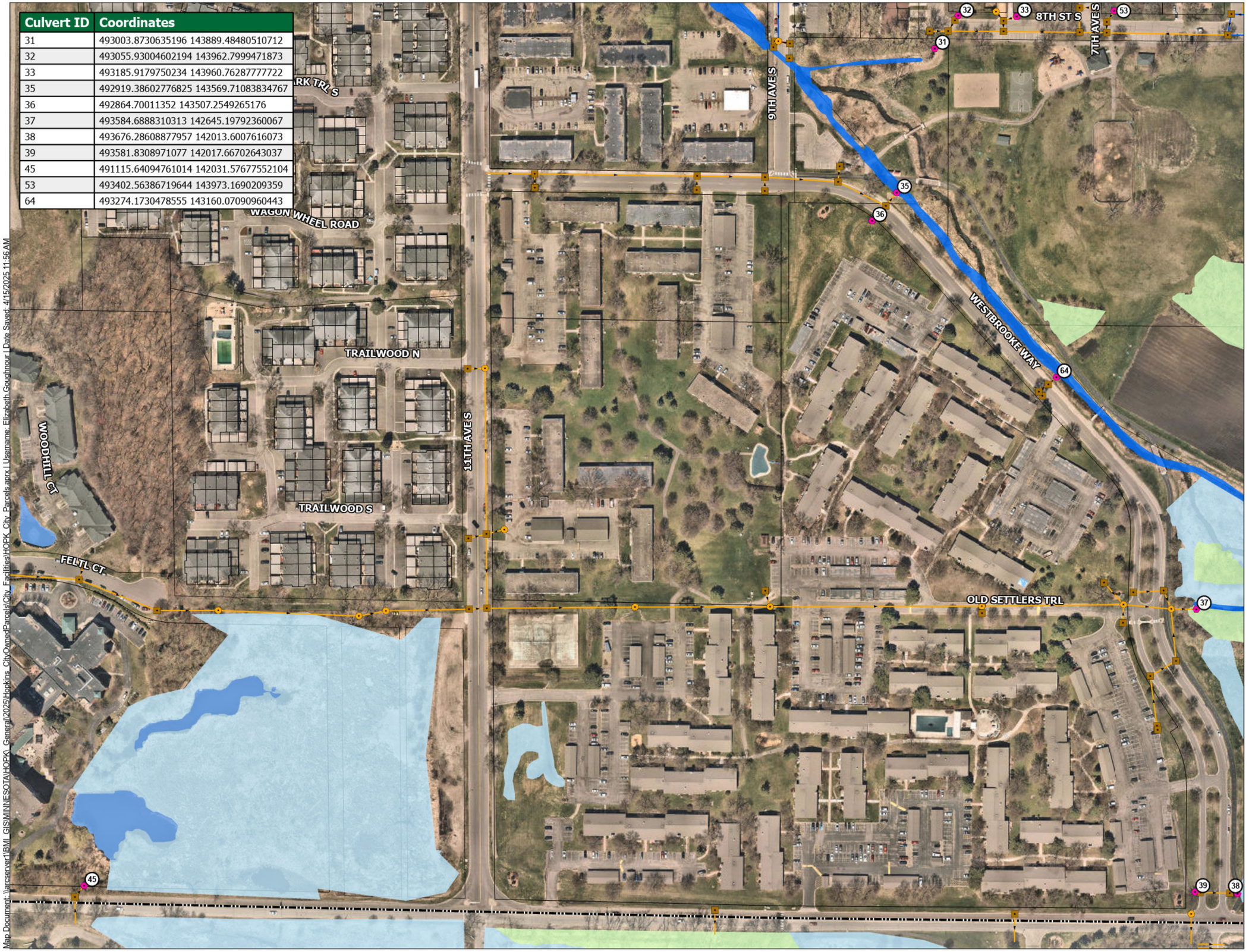
Source: City of Hopkins, Hennepin County, NWI

BOLTON & MENK

G1

April 2025

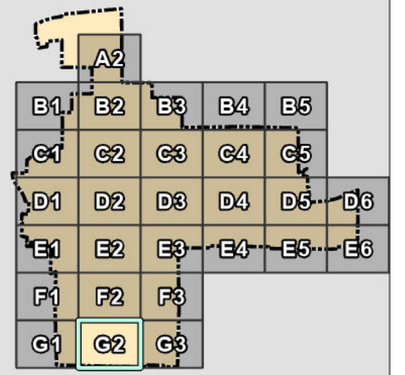
Culvert ID	Coordinates
31	493003.8730635196 143889.48480510712
32	493055.93004602194 143962.7999471873
33	493185.9179750234 143960.76287777722
35	492919.38602776825 143569.71083834767
36	492864.70011352 143507.2549265176
37	493584.6888310313 142645.19792360067
38	493676.28608877957 142013.6007616073
39	493581.8308971077 142017.66702643037
45	491115.64094761014 142031.57677552104
53	493402.56386719644 143973.1690209359
64	493274.1730478555 143160.07090960443



City of Hopkins

Storm Sewer Network

LOCATION MAP



Legend

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0 200 Feet

Source: City of Hopkins, Hennepin County, NWI

BOLTON & MENK

G2

April 2025

Map Document: \\arcserver1\BM_GIS\MINNESOTA\HOPK_General\2025\Hopkins_CityOwnedParcels\City_Facilities\HOPK_City_Parcels.aprx | Username: Elizabeth.Goughnour | Date Saved: 4/15/2025 11:56 AM

Culvert ID	Coordinates
91	493955.51814185083 143789.87476810813

91

2ND AVE S

NINE MILE COVE N

NINE MILE COVE S

NINE MILE COVE E

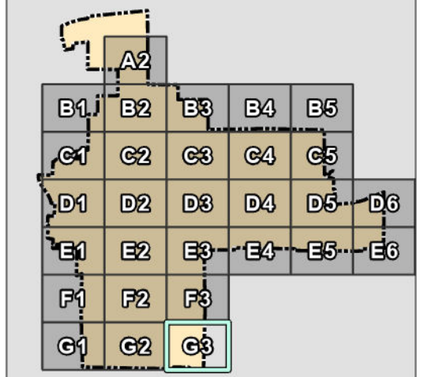
HIGHWAY 169

Map Document: \\arcserver1\BMI_GIS\MINNESOTA\HOPK_General\2025\Hopkins_CityOwnedParcels\City_Facilities\HOPK_City_Parcels.aprx | Username: Elizabeth.Goughnour | Date Saved: 4/15/2025 11:56 AM

City of Hopkins

Storm Sewer Network

LOCATION MAP



Legend

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- 42"

0 200 Feet

Source: City of Hopkins, Hennepin County, NWI

BOLTON & MENK

G3

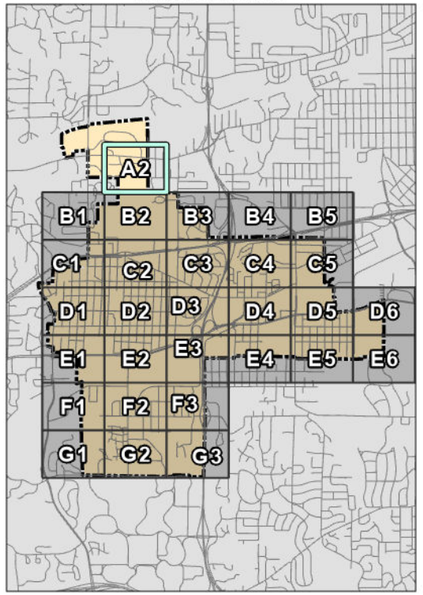
April 2025

Outfall ID	Coordinates
64	492856.13287344575 156284.76775726676

City of Hopkins

Storm Drainage System

LOCATION MAP



Legend

BMI GIS Storm Data

- Storm Outfalls
- High Priority Outfalls
- Storm Culverts
- Storm Manhole
- Catch Basin
- Storm Pipe

Hopkins GIS Storm Data

- Flared End Outlet
- Storm Outlets
- Storm Outfalls

- City Limits
- Parcels
- Minnehaha Creek Watershed Boundary
- Watercourse
- Wetlands
- Hopkins Ponds
- Lakes

0 200 Feet

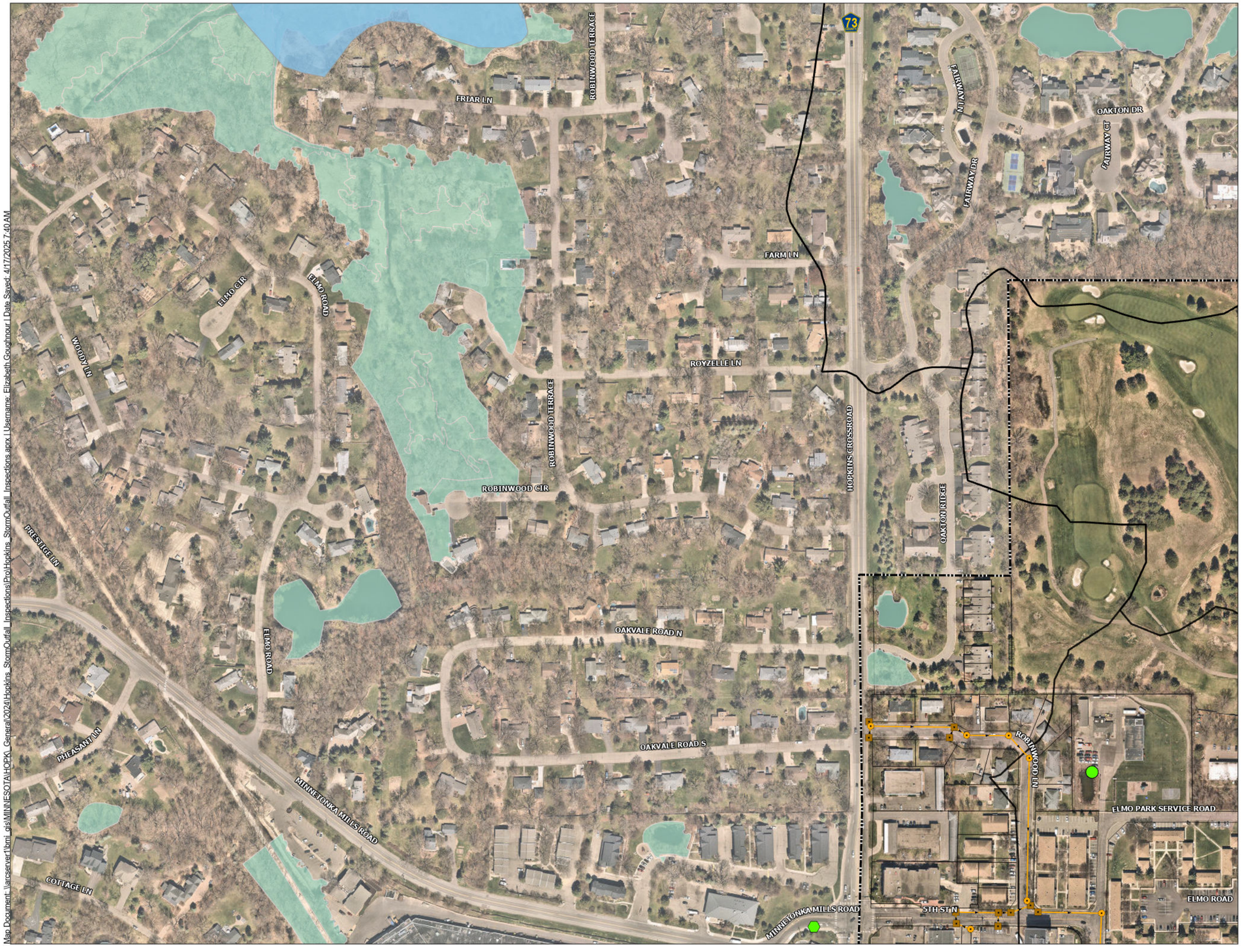
Source: City of Hopkins, Hennepin County, NWI, MnDOT, MDNR

BOLTON & MENK

A2

April 2025

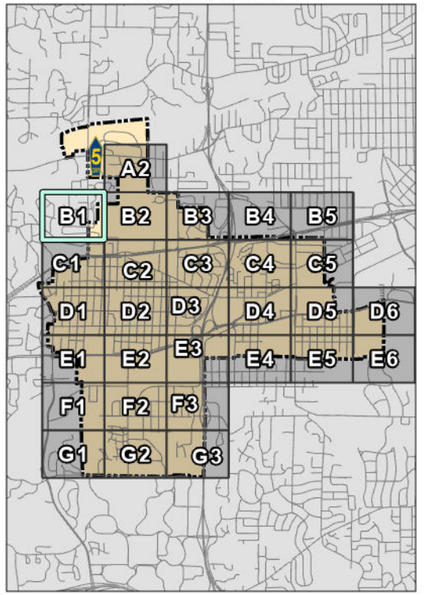
Map Document: \\arcserver1\bmi_gis\MINNESOTA\HOPK_General\2024\Hopkins_StormOutfall_Inspections\Pro\Hopkins_StormOutfall_Inspections.aprx | Username: Elizabeth.Goughnour | Date Saved: 4/17/2025 7:40 AM



City of Hopkins

Storm Drainage System

LOCATION MAP



Legend

BMI GIS Storm Data

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0 200 Feet

Source: City of Hopkins, Hennepin County, NWI, MnDOT, MDNR

BOLTON & MENK

B1

April 2025

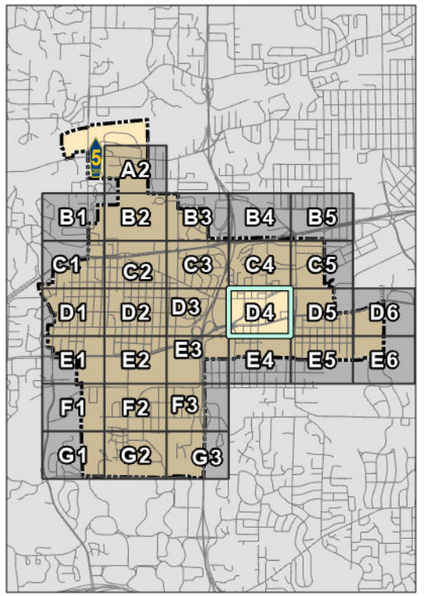
Map Document: \\arcserver1\bmi_gis\MINNESOTA\HOPK_General\2024\Hopkins_StormOutfall_Inspections\Pro\Hopkins_StormOutfall_Inspections.aprx | Username: Elizabeth.Goughnour | Date Saved: 4/17/2025 7:40 AM

Outfall ID	Coordinates
35	498751.7578931898 148852.0070322752
36	498807.01401627064 148865.90792310238
45	496271.4908721149 150308.65077252686
69	496189.63768935204 149804.36700418591

City of Hopkins

Storm Drainage System

LOCATION MAP



Legend

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- Hopkins Ponds
- Lakes

0 200 Feet

Source: City of Hopkins, Hennepin County, NWI, MnDOT, MDNR

BOLTON & MENK

D4

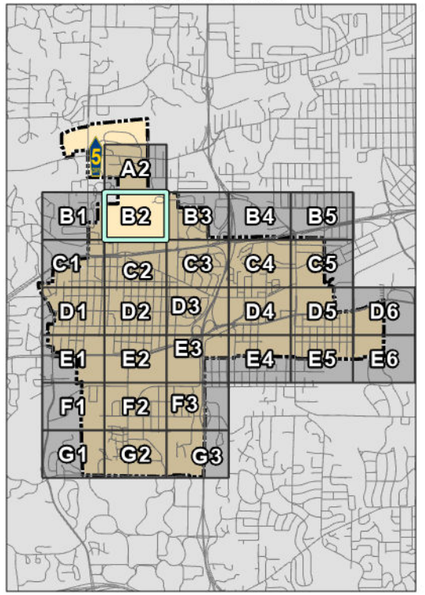
April 2025

Map Document: \\arcserver1\hml_gis\MINNESOTA\HOPK_General\2024\Hopkins_StormOutfall_Inspections\Pro\Hopkins_StormOutfall_Inspections.aprx | Username: Elizabeth.Goughnour | Date Saved: 4/17/2025 7:40 AM

City of Hopkins

Storm Drainage System

LOCATION MAP



Legend

BMI GIS Storm Data

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0 200 Feet

Source: City of Hopkins, Hennepin County, NWI, MnDOT, MDNR

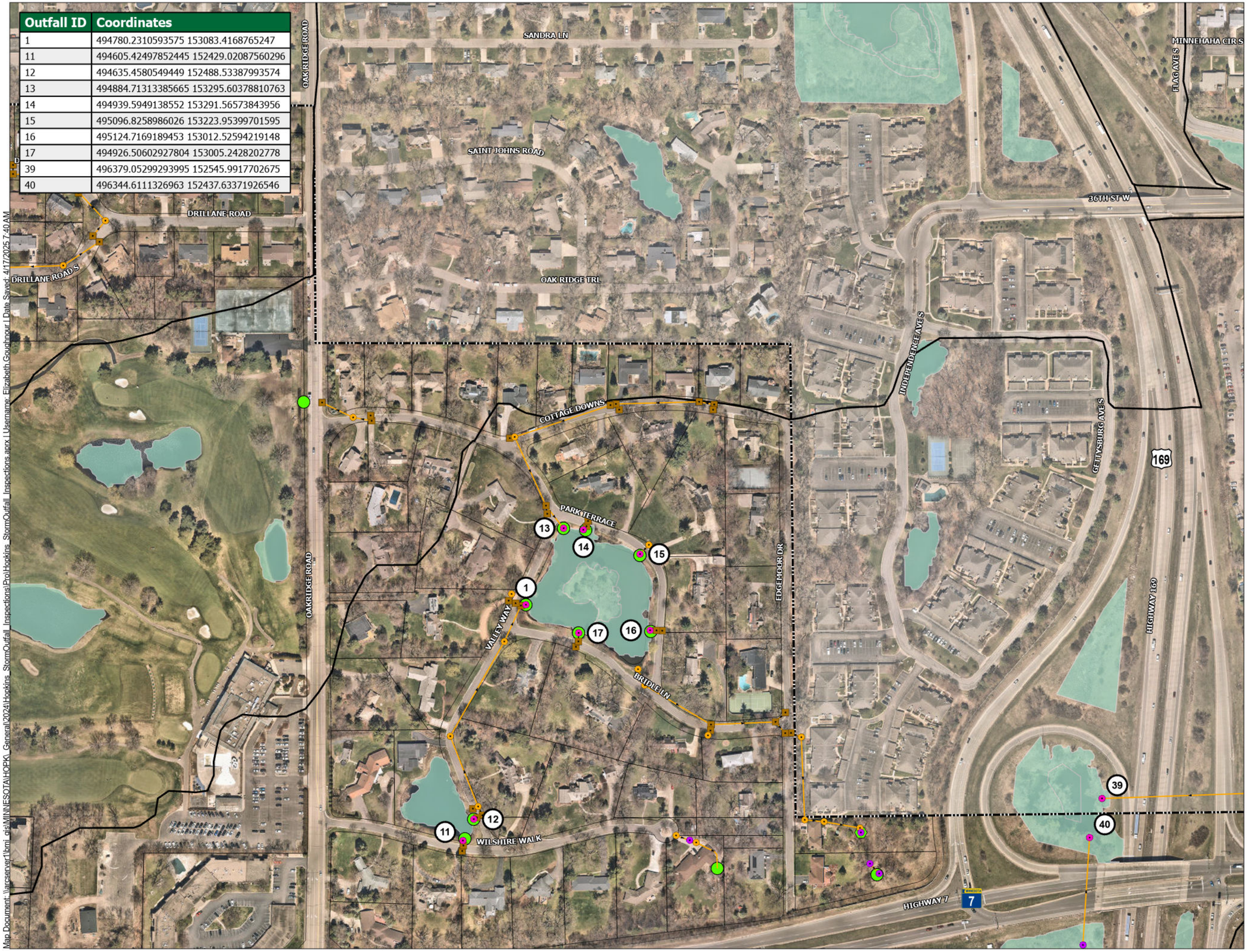
BOLTON & MENK

B2

April 2025

Map Document: \\arcsever1\bmi_gis\MINNESOTA\HOPK_General\2024\Hopkins_StormOutfall_Inspections\Pro\Hopkins_StormOutfall_Inspections.aprx | Username: Elizabeth.Goughnour | Date Saved: 4/17/2025 7:40 AM

Outfall ID	Coordinates
1	494780.2310593575 153083.4168765247
11	494605.42497852445 152429.02087560296
12	494635.4580549449 152488.53387993574
13	494884.71313385665 153295.60378810763
14	494939.5949138552 153291.56573843956
15	495096.8258986026 153223.95399701595
16	495124.7169189453 153012.52594219148
17	494926.50602927804 153005.2428202778
39	496379.05299293995 152545.9917702675
40	496344.6111326963 152437.63371926546



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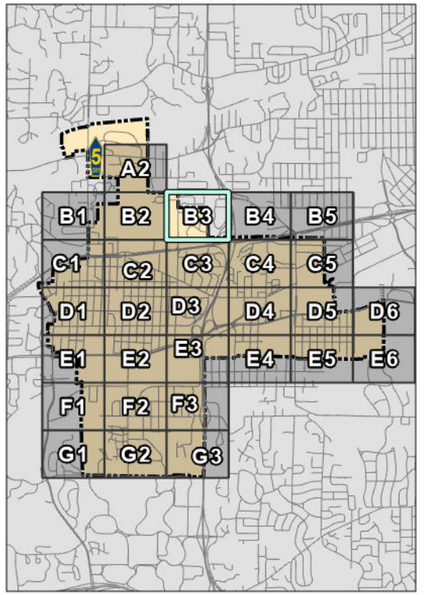
City of Hopkins

Storm Drainage System

LOCATION MAP



Legend

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0 200 Feet

Source: City of Hopkins, Hennepin County, NWI, MnDOT, MDNR

BOLTON & MENK

B3

April 2025

Outfall ID	Coordinates
2	498164.3358396888 152355.72771510482
3	498243.3599598557 152372.16797094047
39	496379.05299293995 152545.9917702675
40	496344.6111326963 152437.63371926546
44	498828.3450103551 152164.43774335086
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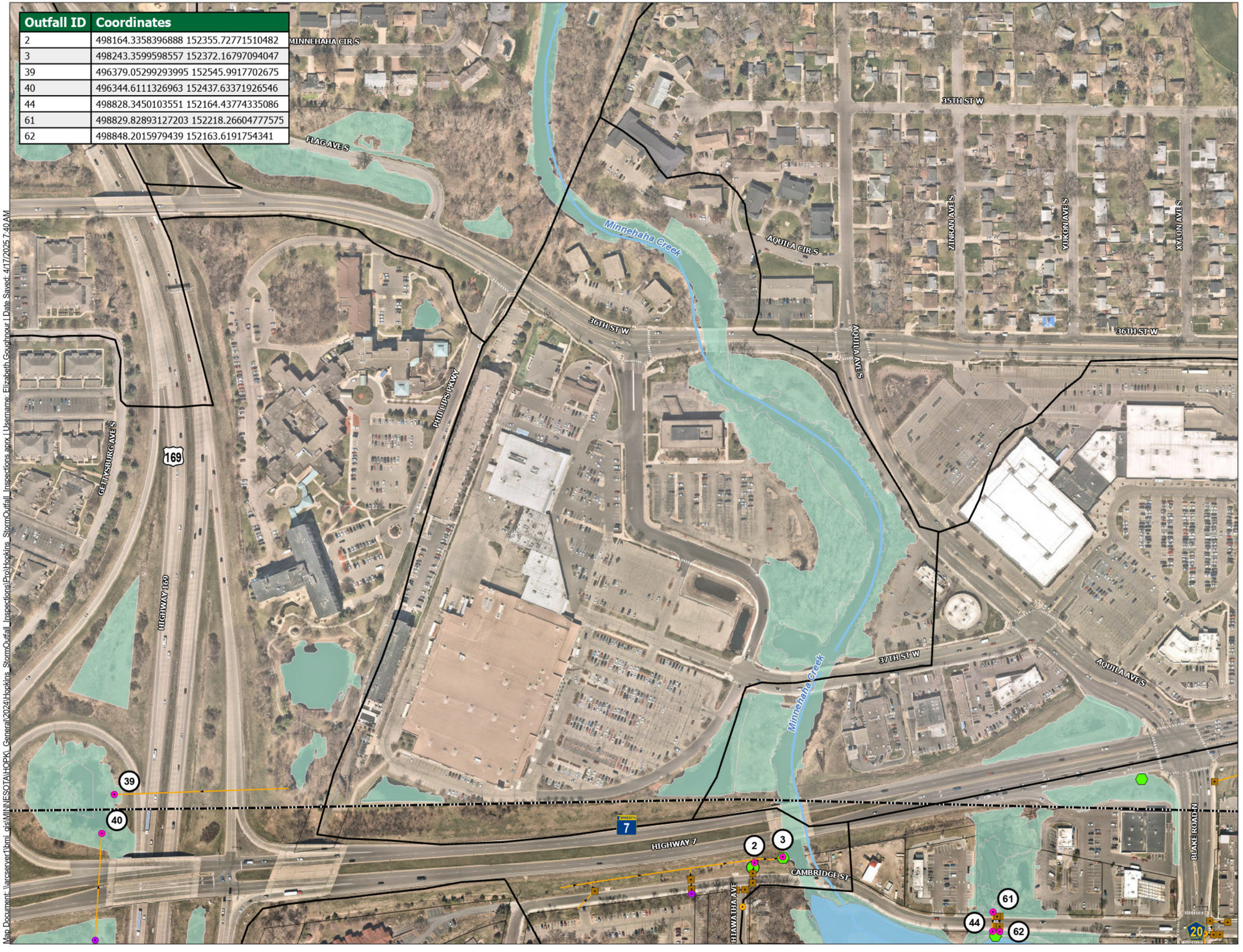
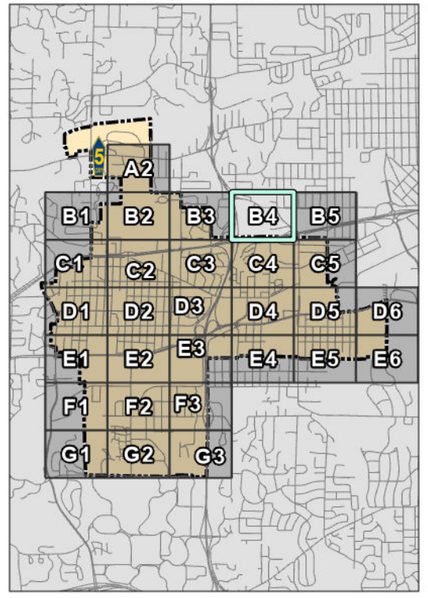
62	498848.2015979439 152163.6191754341



City of Hopkins

Storm Drainage System

LOCATION MAP



Legend

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0 200 Feet

Source: City of Hopkins, Hennepin County, NWI, MnDOT, MDNR

BOLTON & MENK

B4

April 2025

Map Document: \\arcserver1\bmi_gis\MINNESOTA\HOPK_General\2024\Hopkins_StormOutfall_Inspections\ProjHopkins_StormOutfall_Inspections.aprx | Username: Elizabeth.Goughnour | Date Saved: 4/17/2025 7:40 AM

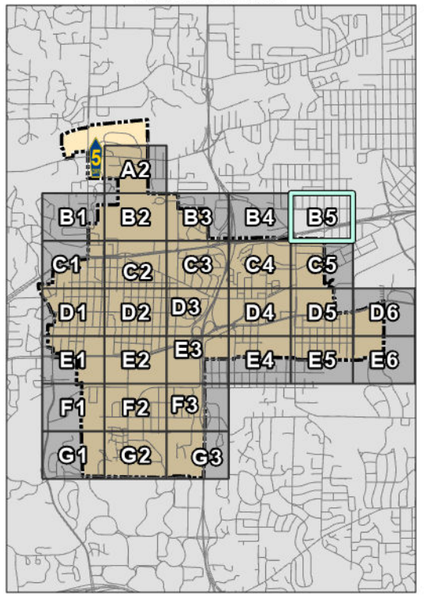
Outfall ID	Coordinates
44	498828.3450103551 152164.43774335086
61	498829.82893127203 152218.26604777575
62	498848.2015979439 152163.6191754341

Map Document: \\arcserver1\bmi_gis\MINNESOTA\HOPKI_General\2024\Hopkins_StormOutfall_Inspections\Pro\Hopkins_StormOutfall_Inspections.aprx | Username: Elizabeth.Goughnour | Date Saved: 4/17/2025 7:40 AM

City of Hopkins

Storm Drainage System

LOCATION MAP



Legend

BMI GIS Storm Data

- Storm Outfalls
- High Priority Outfalls
- Storm Culverts
- Storm Manhole
- Catch Basin
- Storm Pipe

Hopkins GIS Storm Data

- Flared End Outlet
- Storm Outlets
- Storm Outfalls

- City Limits
- Parcels
- Minnehaha Creek Watershed Boundary
- Watercourse
- Wetlands
- Hopkins Ponds
- Lakes

0 200 Feet

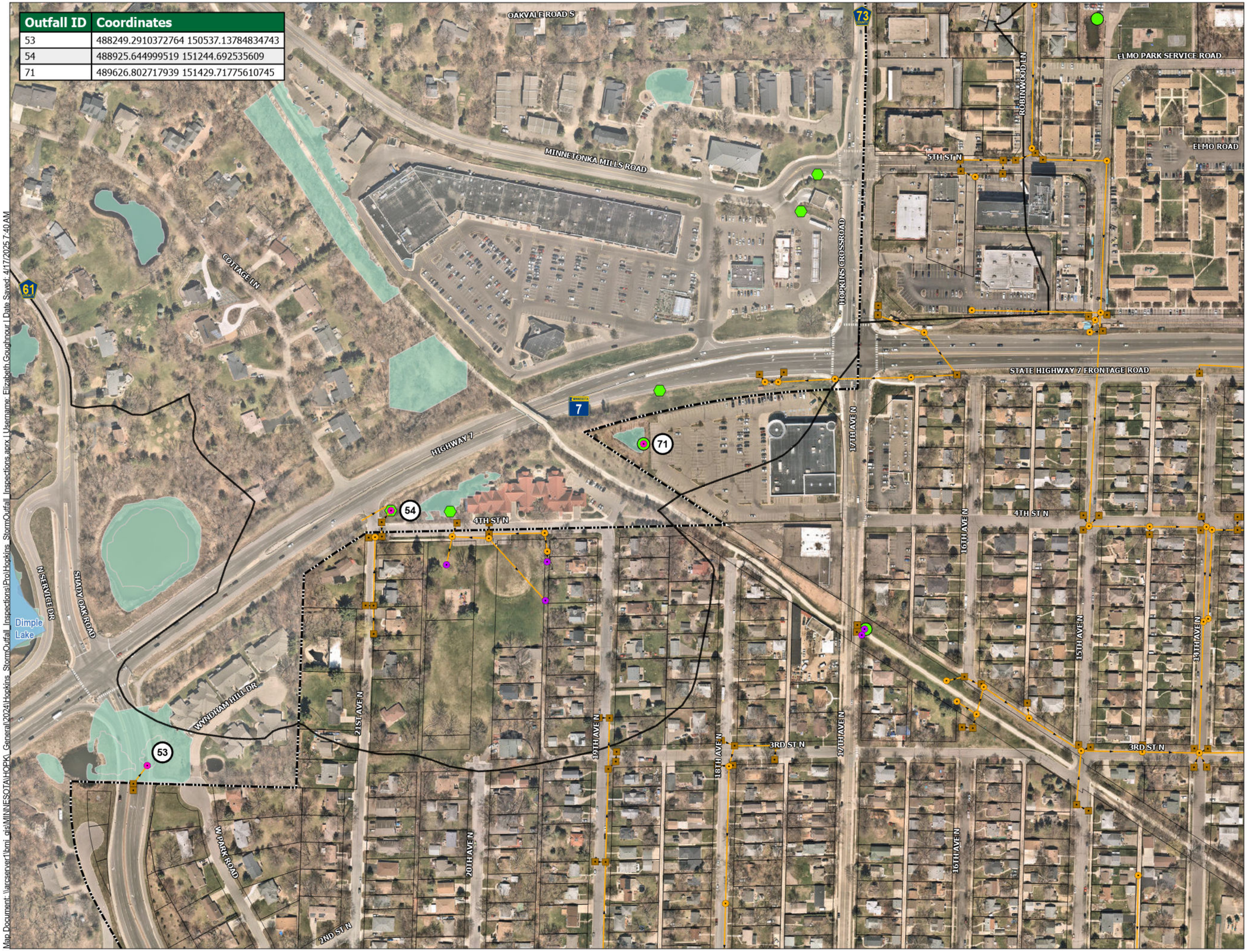
Source: City of Hopkins, Hennepin County, NWI, MnDOT, MDNR

BOLTON & MENK

B5

April 2025

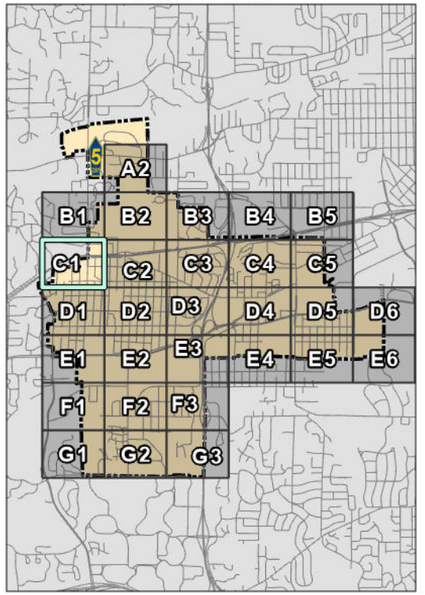
Outfall ID	Coordinates
53	488249.2910372764 150537.13784834743
54	488925.644999519 151244.692535609
71	489626.802717939 151429.71775610745



City of Hopkins

Storm Drainage System

LOCATION MAP



Legend

BMI GIS Storm Data

- Storm Outfalls
- High Priority Outfalls
- Storm Culverts
- Storm Manhole
- Catch Basin
- Storm Pipe

Hopkins GIS Storm Data

- Flared End Outlet
- Storm Outlets
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- Watercourse
- Wetlands
- Hopkins Ponds
- Lakes

0 200 Feet

Source: City of Hopkins, Hennepin County, NWI, MnDOT, MDNR

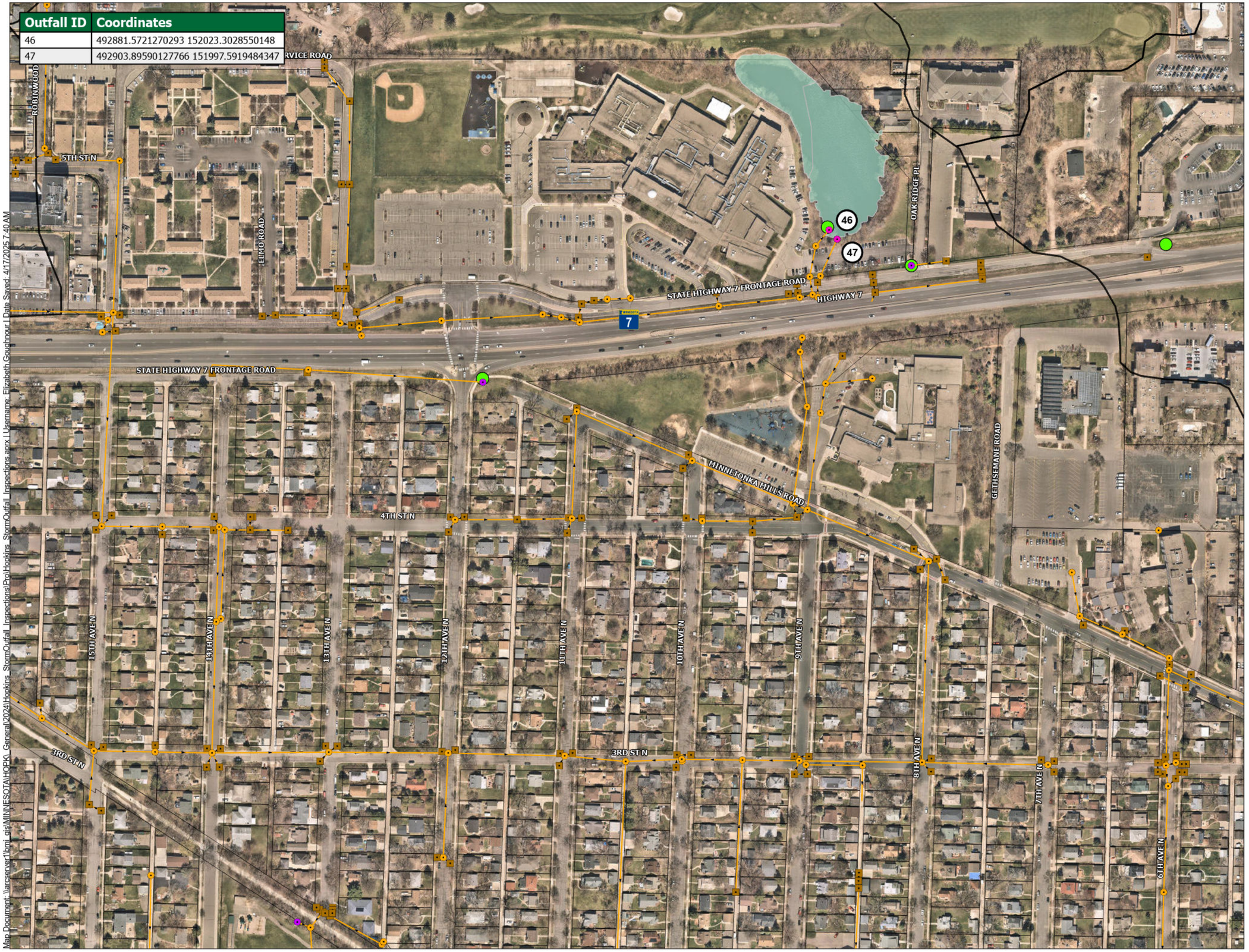
BOLTON & MENK

C1

April 2025

Map Document: \\arcserver1\bmi_gis\MINNESOTA\HOPK_General\2024\Hopkins_StormOutfall_Inspections\Pro\Hopkins_StormOutfall_Inspections.aprx | Username: Elizabeth.Goughnour | Date Saved: 4/17/2025 7:40 AM

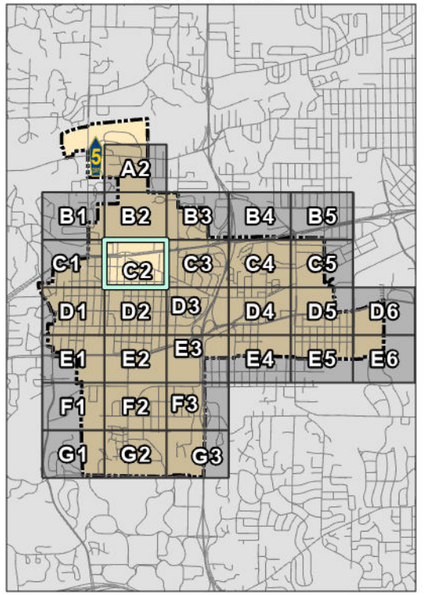
Outfall ID	Coordinates
46	492881.5721270293 152023.3028550148
47	492903.89590127766 151997.5919484347



City of Hopkins

Storm Drainage System

LOCATION MAP



Legend

BMI GIS Storm Data

- Storm Outfalls
- High Priority Outfalls
- Storm Culverts
- Storm Manhole
- Catch Basin
- Storm Pipe

Hopkins GIS Storm Data

- Flared End Outlet
- Storm Outlets
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- Watercourse
- Wetlands
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- Lakes

0 200 Feet

Source: City of Hopkins, Hennepin County, NWI, MnDOT, MDNR

BOLTON & MENK

C2

April 2025

Map Document: \\arcserver1\bmi_gis\MINNESOTA\HOPK_General\2024\Hopkins_StormOutfall_Inspections\Pro\Hopkins_StormOutfall_Inspections.aprx | Username: Elizabeth.Gouchnour | Date Saved: 4/17/2025 7:40 AM

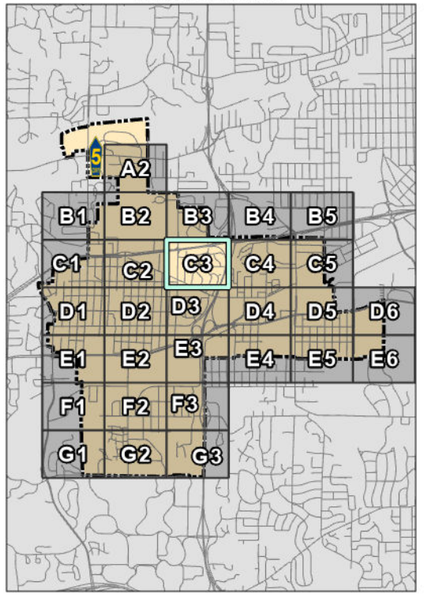
Outfall ID	Coordinates
11	494605.42497852445 152429.02087560296
12	494635.4580549449 152488.53387993574
39	496379.05299293995 152545.9917702675
40	496344.6111326963 152437.63371926546
45	496271.4908721149 150308.65077252686

Map Document: \\arcserver1\bmi_gis\MINNESOTA\HOPK_General\2024\Hopkins_StormOutfall_Inspections\ProHopkins_StormOutfall_Inspections.aprx | Username: Elizabeth.Gouchnour | Date Saved: 4/17/2025 7:40 AM

City of Hopkins

Storm Drainage System

LOCATION MAP



Legend

BMI GIS Storm Data

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- High Priority Outfalls
- Storm Culverts
- Storm Manhole
- Catch Basin
- Storm Pipe

Hopkins GIS Storm Data

- Flared End Outlet
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- Hopkins Ponds
- Lakes

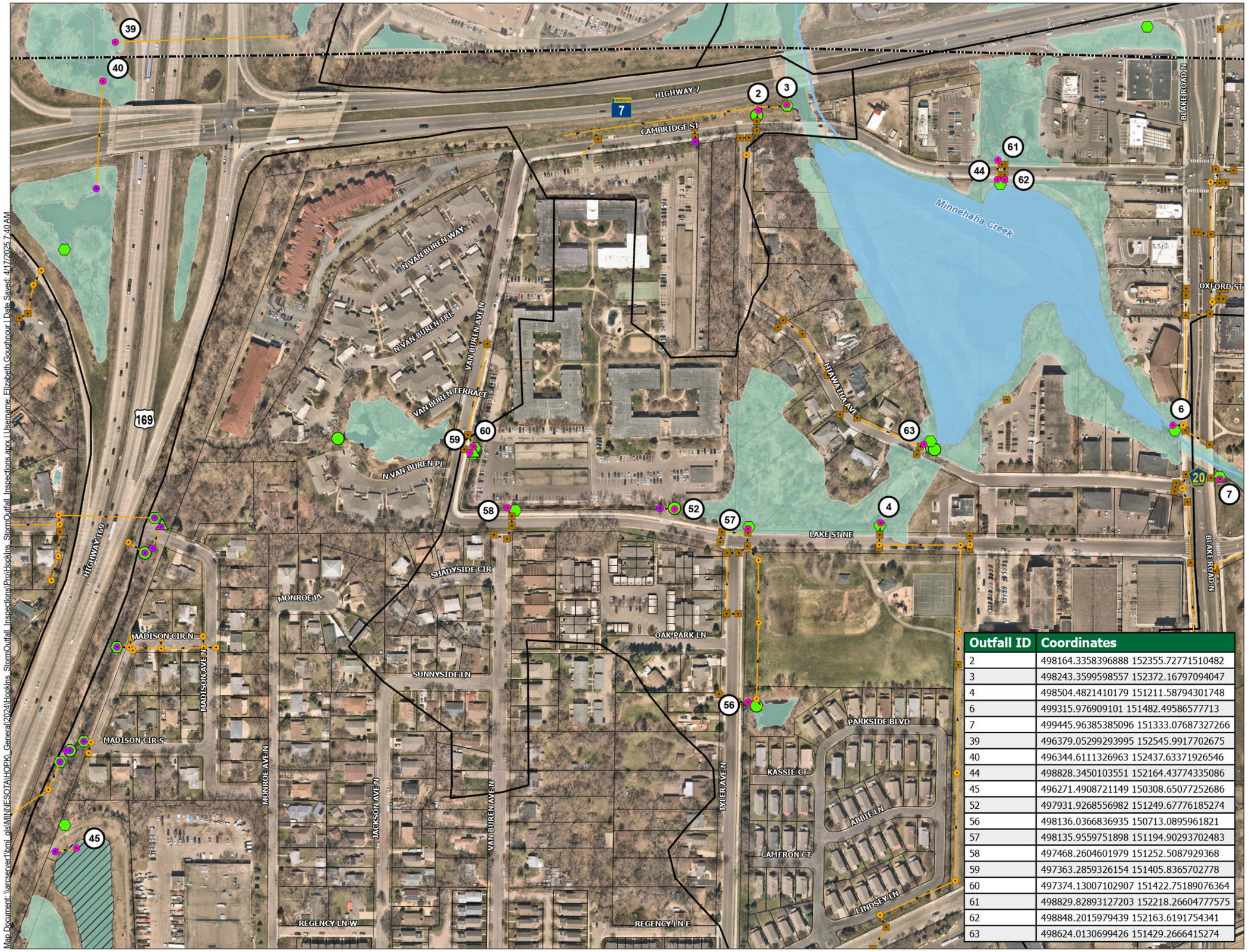
0 200 Feet

Source: City of Hopkins, Hennepin County, NWI, MnDOT, MDNR

BOLTON & MENK

C3

April 2025

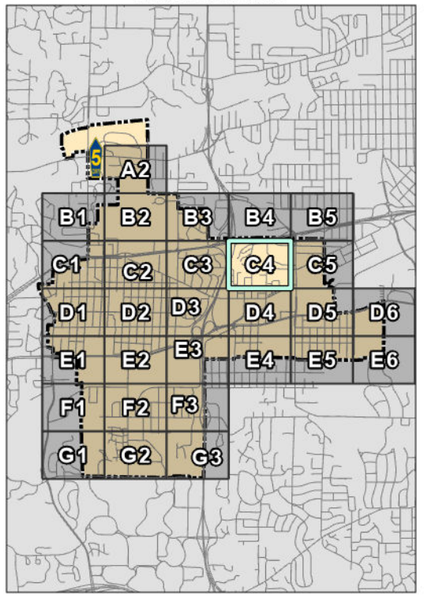


Outfall ID	Coordinates
2	498164.3358396888 152355.72771510482
3	498243.3599598557 152372.16797094047
4	498504.4821410179 151211.58794301748
6	499315.976909101 151482.49586577713
7	499445.96385385096 151333.07687327266
39	496379.05299293995 152545.9917702675
40	496344.6111326963 152437.63371926546
44	498828.3450103551 152164.43774335086
45	496271.4908721149 150308.65077252686
52	497931.9268556982 151249.67776185274
56	498136.0366836935 150713.0895961821
57	498135.9559751898 151194.90293702483
58	497468.2604601979 151252.5087929368
59	497363.2859326154 151405.8365702778
60	497374.13007102907 151422.75189076364
61	498829.82893127203 152218.26604777575
62	498848.2015979439 152163.6191754341
63	498624.0130699426 151429.2666415274

City of Hopkins

Storm Drainage System

LOCATION MAP



Legend

BMI GIS Storm Data

- Storm Outfalls
- High Priority Outfalls
- Storm Culverts
- Storm Manhole
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Hopkins GIS Storm Data

- Flared End Outlet
- Storm Outlets
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- Lakes

0 200 Feet

Source: City of Hopkins, Hennepin County, NWI, MnDOT, MDNR

BOLTON & MENK

C4

April 2025

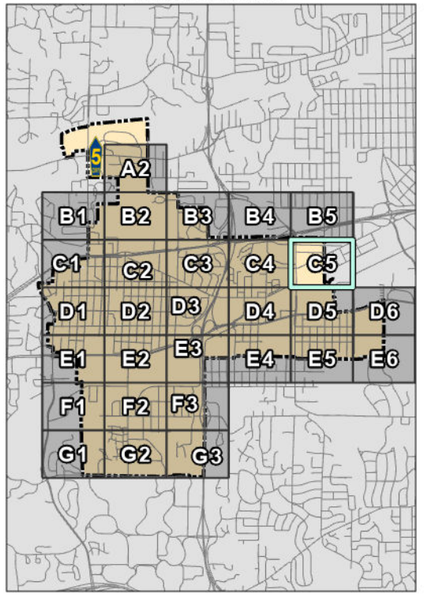
Map Document: \\arcserver1\bmi_gis\MINNESOTA\HOPK_General\2024\Hopkins_StormOutfall_Inspections\ProHopkins_StormOutfall_Inspections.aprx | Username: Elizabeth.Goughnour | Date Saved: 4/17/2025 7:40 AM

Outfall ID	Coordinates
5	499694.4850103557 151198.33501677215
6	499315.976909101 151482.49586577713
7	499445.96385385096 151333.07687327266
8	499619.8778761029 151181.39476193488
44	498828.3450103551 152164.43774335086
61	498829.82893127203 152218.26604777575
62	498848.2015979439 152163.6191754341
65	499606.0485074371 151302.77247193456
66	500431.408733353 150648.17634019256
67	500673.65529610217 151695.71099051833

City of Hopkins

Storm Drainage System

LOCATION MAP



Legend

BMI GIS Storm Data

- Storm Outfalls
- High Priority Outfalls
- Storm Culverts
- Storm Manhole
- Catch Basin
- Storm Pipe

Hopkins GIS Storm Data

- Flared End Outlet
- Storm Outlets
- Storm Outfalls

- City Limits
- Parcels
- Minnehaha Creek Watershed Boundary
- Watercourse
- Wetlands
- Hopkins Ponds
- Lakes

0 200 Feet

Source: City of Hopkins, Hennepin County, NWI, MnDOT, MDNR

BOLTON & MENK

C5

April 2025

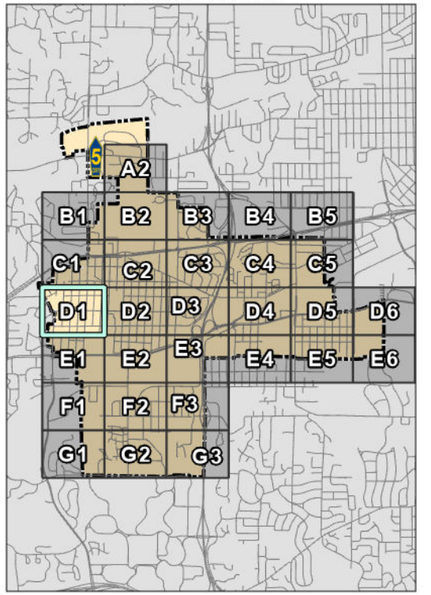
Map Document: \\arcserver1\bmi_gis\MINNESOTA\HOPK_General\2024\Hopkins_StormOutfall_Inspections\Pro\Hopkins_StormOutfall_Inspections.aprx | Username: Elizabeth.Goughnour | Date Saved: 4/17/2025 7:40 AM

Outfall ID	Coordinates
27	488908.8510698527 149275.91202434897
53	488249.2910372764 150537.13784834743
55	488784.5291400254 149931.1213438511

City of Hopkins

Storm Drainage System

LOCATION MAP



Legend

BMI GIS Storm Data

- Storm Outfalls
- High Priority Outfalls
- Storm Culverts
- Storm Manhole
- Catch Basin
- Storm Pipe

Hopkins GIS Storm Data

- Flared End Outlet
- Storm Outlets
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- Wetlands
- Hopkins Ponds
- Lakes

0 200 Feet

Source: City of Hopkins, Hennepin County, NWI, MnDOT, MDNR

BOLTON & MENK

D1

April 2025

Map Document: \\arcserver1\bmi_gis\MINNESOTA\HOPK_General\2024\Hopkins_StormOutfall_Inspections\ProHopkins_StormOutfall_Inspections.aprx | Username: Elizabeth.Coughnour | Date Saved: 4/17/2025 7:40 AM

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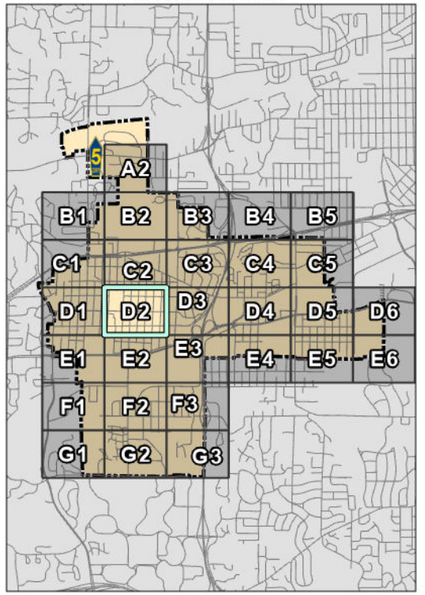
City of Hopkins

Storm Drainage System

LOCATION MAP



Legend

BMI GIS Storm Data

- Storm Outfalls
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Hopkins GIS Storm Data

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- Storm Outlets
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0 200 Feet

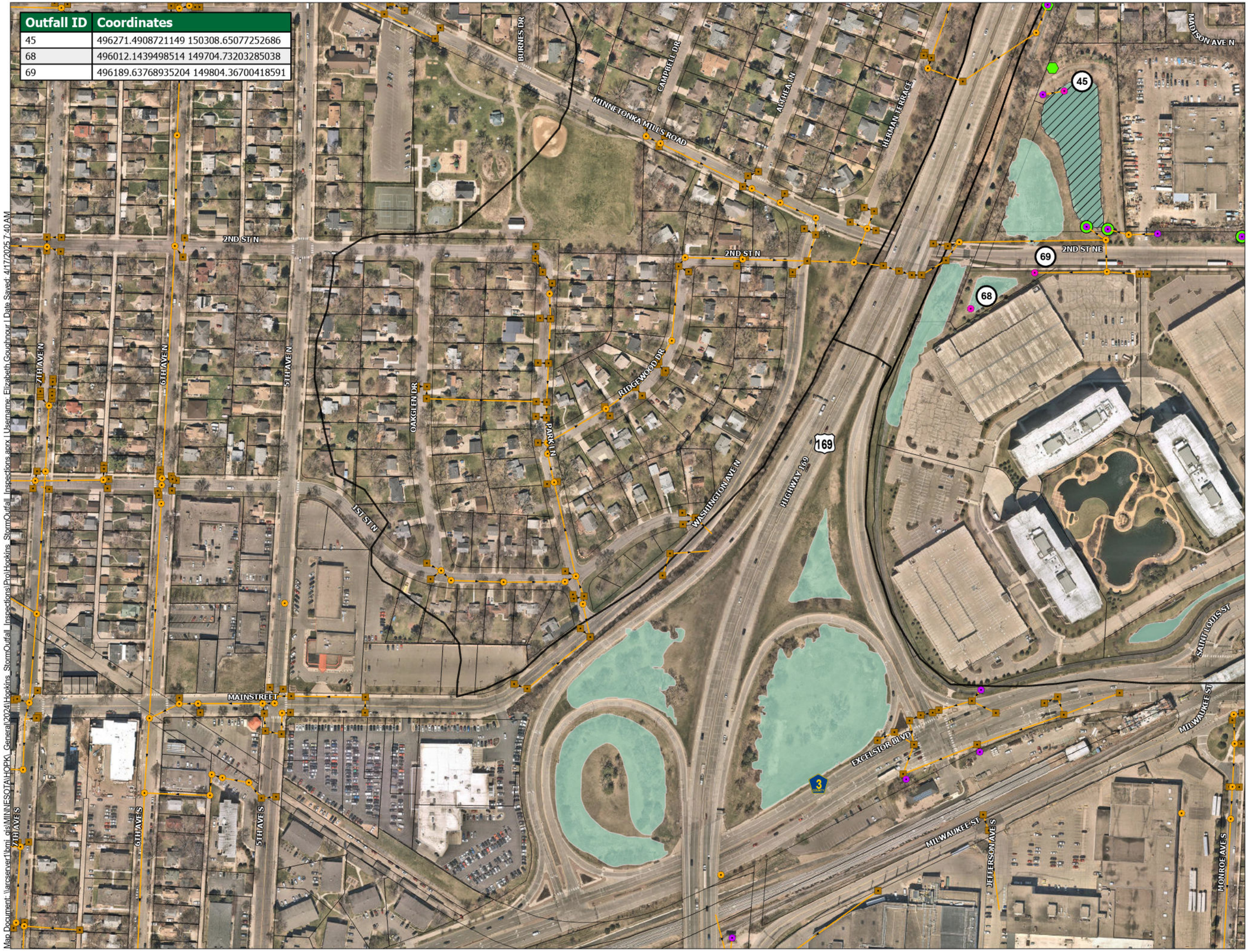
Source: City of Hopkins, Hennepin County, NWI, MnDOT, MDNR

BOLTON & MENK

D2

April 2025

Outfall ID	Coordinates
45	496271.4908721149 150308.65077252686
68	496012.1439498514 149704.73203285038
69	496189.63768935204 149804.36700418591



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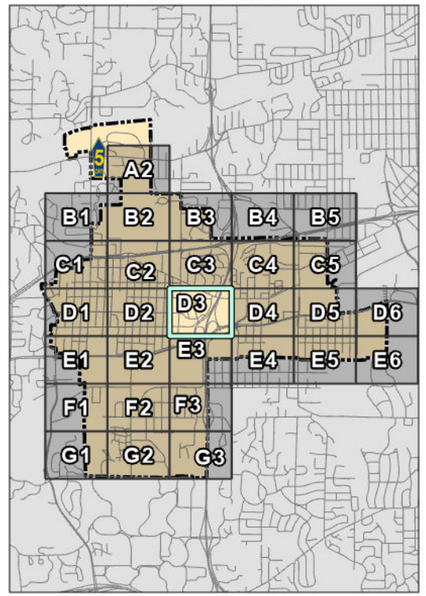
City of Hopkins

Storm Drainage System

LOCATION MAP



Legend

BMI GIS Storm Data

- Storm Outfalls
- High Priority Outfalls
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Hopkins GIS Storm Data

- Flared End Outlet
- Storm Outlets
- Storm Outfalls

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- Hopkins Ponds
- Lakes

0 200 Feet

Source: City of Hopkins, Hennepin County, NWI, MnDOT, MDNR

BOLTON & MENK

D3

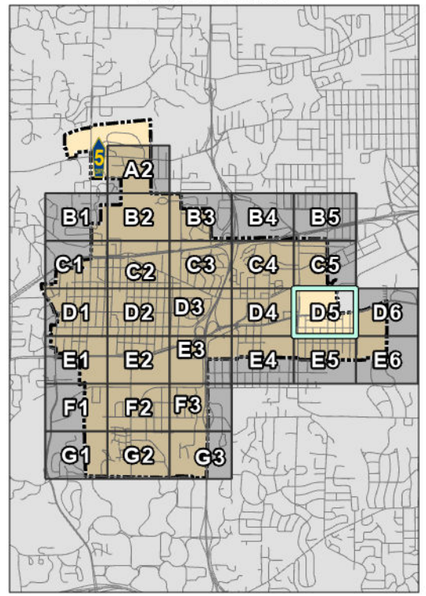
April 2025

Map Document: \\arcserver1\bmi_gis\MINNESOTA\HOPK_General\2024\Hopkins_StormOutfall_Inspections\Pro\Hopkins_StormOutfall_Inspections.aprx | Username: Elizabeth.Goughnour | Date Saved: 4/17/2025 7:40 AM

City of Hopkins

Storm Drainage System

LOCATION MAP



Legend

BMI GIS Storm Data

- Storm Outfalls
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Hopkins GIS Storm Data

- Flared End Outlet
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- Lakes

0 200 Feet

Source: City of Hopkins, Hennepin County, NWI, MnDOT, MDNR

BOLTON & MENK

D5

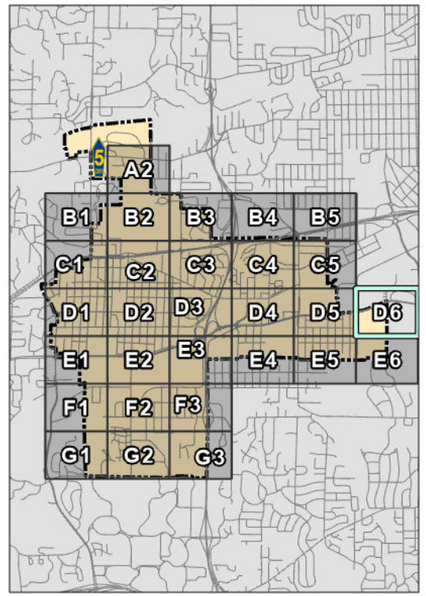
April 2025

Map Document: \\arcserver1\bmi_gis\MINNESOTA\HOPK_General\2024\Hopkins_StormOutfall_Inspections\ProHopkins_StormOutfall_Inspections.aprx | Username: Elizabeth.Goughnour | Date Saved: 4/17/2025 7:40 AM

City of Hopkins

Storm Drainage System

LOCATION MAP



Legend

BMI GIS Storm Data

- Storm Outfalls
- High Priority Outfalls
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- Storm Manhole
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- Storm Pipe

Hopkins GIS Storm Data

- Flared End Outlet
- Storm Outlets
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- Watercourse
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- Hopkins Ponds
- Lakes

0 200 Feet

Source: City of Hopkins, Hennepin County, NWI, MnDOT, MDNR

BOLTON & MENK

D6

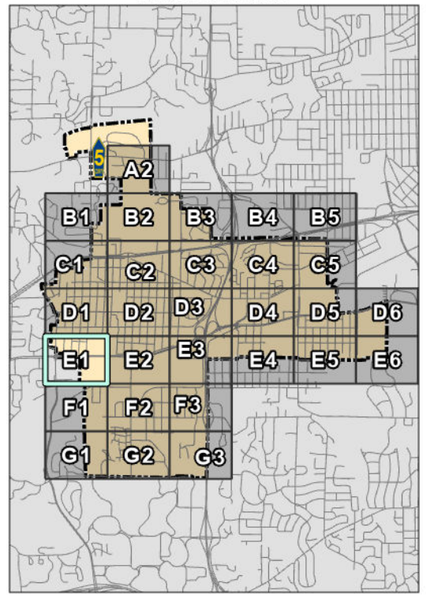
April 2025

Map Document: \\arcserver1\bmi_gis\MINNESOTA\HOPK_General\2024\Hopkins_StormOutfall_Inspections\ProHopkins_StormOutfall_Inspections.aprx | Username: Elizabeth.Goughnour | Date Saved: 4/17/2025 7:40 AM

City of Hopkins

Storm Drainage System

LOCATION MAP



Legend

BMI GIS Storm Data

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Hopkins GIS Storm Data

- Flared End Outlet
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- Watercourse
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- Lakes

0 200 Feet

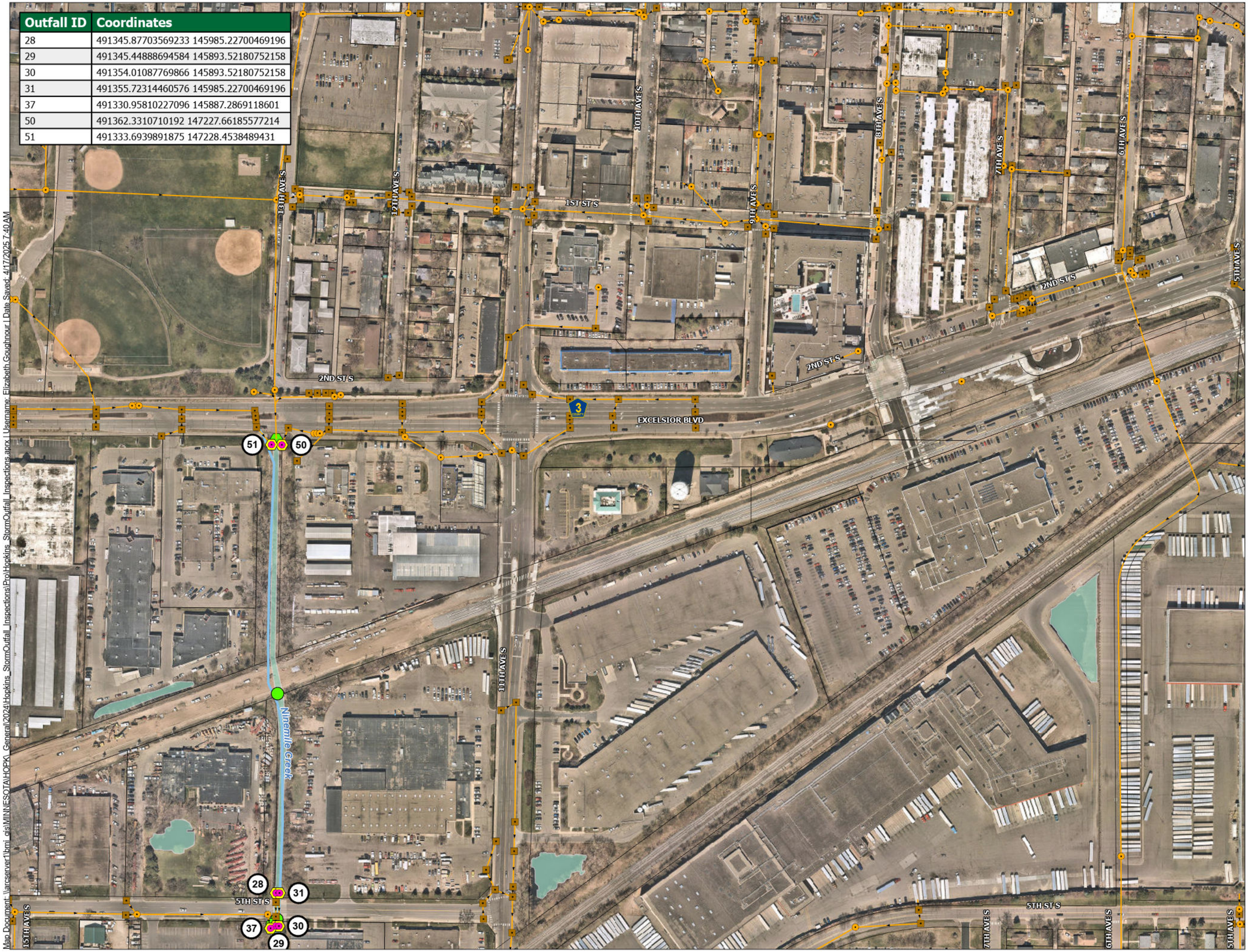
Source: City of Hopkins, Hennepin County, NWI, MnDOT, MDNR

BOLTON & MENK

E1

April 2025

Outfall ID	Coordinates
28	491345.87703569233 145985.22700469196
29	491345.44888694584 145893.52180752158
30	491354.01087769866 145893.52180752158
31	491355.72314460576 145985.22700469196
37	491330.95810227096 145887.2869118601
50	491362.3310710192 147227.66185577214
51	491333.6939891875 147228.4538489431



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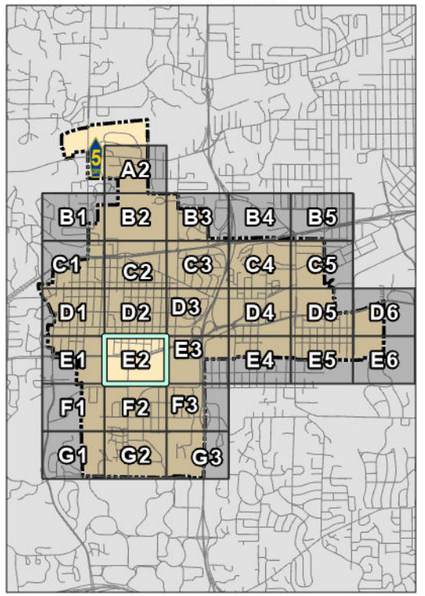
City of Hopkins

Storm Drainage System

LOCATION MAP



Legend

BMI GIS Storm Data

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Hopkins GIS Storm Data

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0 200 Feet

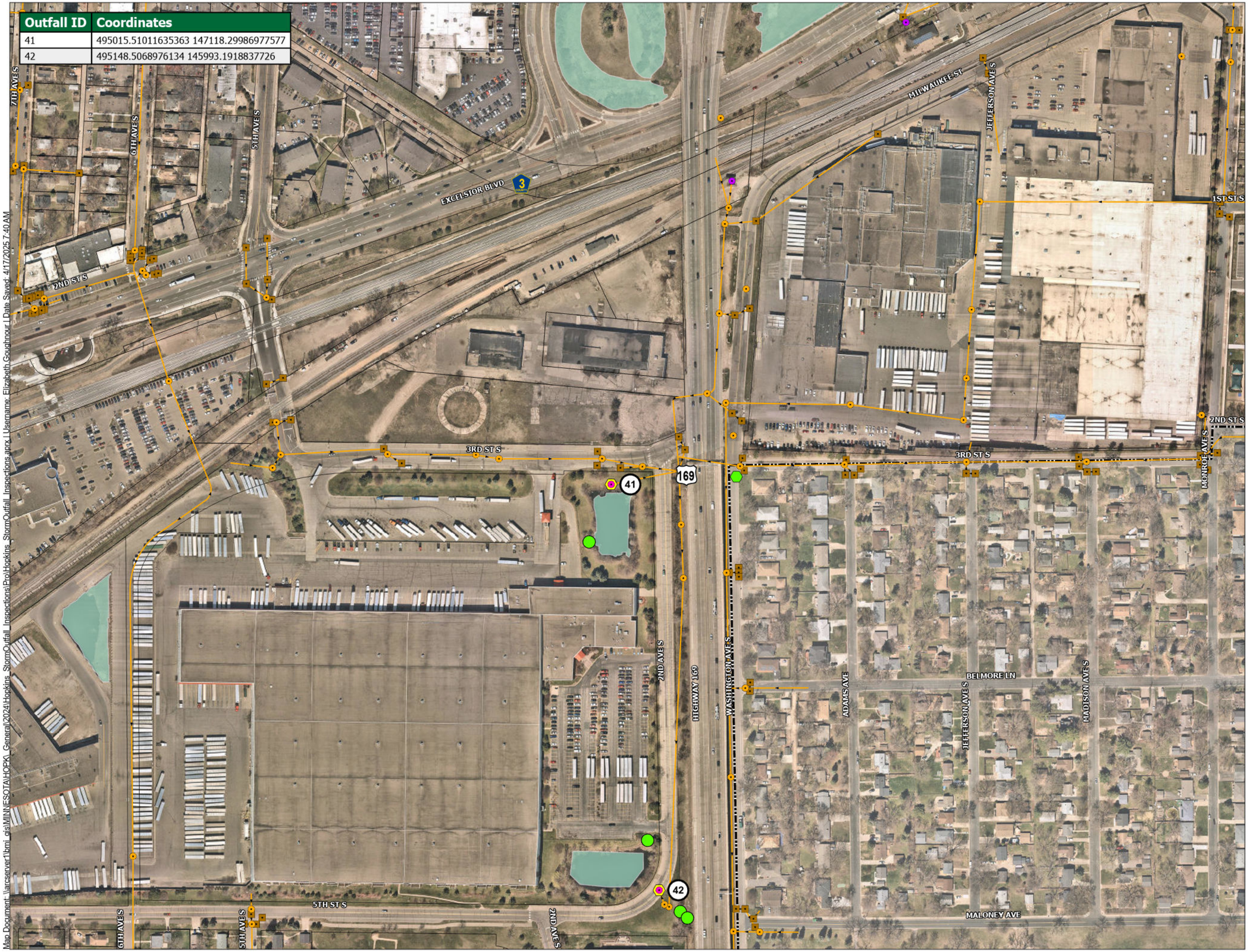
Source: City of Hopkins, Hennepin County, NWI, MnDOT, MDNR

BOLTON & MENK

E2

April 2025

Outfall ID	Coordinates
41	495015.51011635363 147118.29986977577
42	495148.5068976134 145993.1918837726

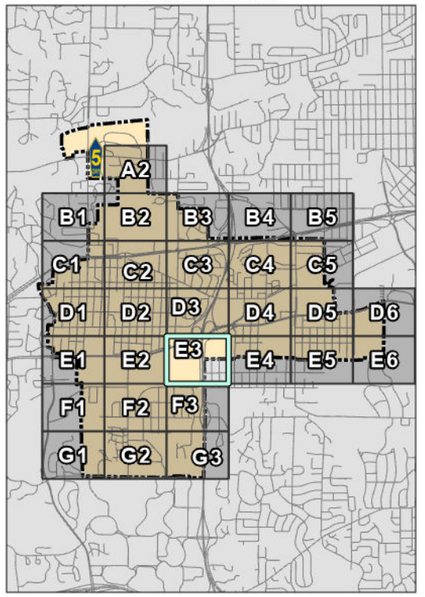


Map Document: \\arcserver1\bmi_gis\MINNESOTA\HOPKI_General\2024\Hopkins_StormOutfall_Inspections\ProHopkins_StormOutfall_Inspections.aprx | Username: Elizabeth.Goughnour | Date Saved: 4/17/2025 7:40 AM

City of Hopkins

Storm Drainage System

LOCATION MAP



Legend

BMI GIS Storm Data

- Storm Outfalls
- High Priority Outfalls
- Storm Culverts
- Storm Manhole
- Catch Basin
- Storm Pipe

Hopkins GIS Storm Data

- Flared End Outlet
- Storm Outlets
- Storm Outfalls

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- Parcels
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- Hopkins Ponds
- Lakes

0 200 Feet

Source: City of Hopkins, Hennepin County, NWI, MnDOT, MDNR

BOLTON & MENK

E3

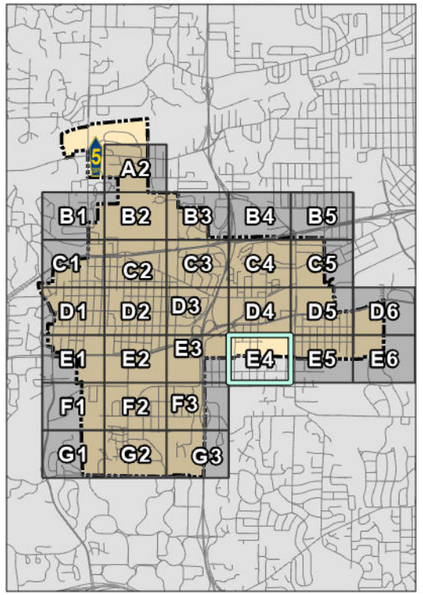
April 2025

Map Document: \\arcserver1\bmi_gis\MINNESOTA\HOPKI_General\2024\Hopkins_StormOutfall_Inspections\ProHopkins_StormOutfall_Inspections.aprx | Username: Elizabeth.Goughnour | Date Saved: 4/17/2025 7:40 AM

City of Hopkins

Storm Drainage System

LOCATION MAP



Legend

BMI GIS Storm Data

- Storm Outfalls
- High Priority Outfalls
- Storm Culverts
- Storm Manhole
- Catch Basin
- Storm Pipe

Hopkins GIS Storm Data

- Flared End Outlet
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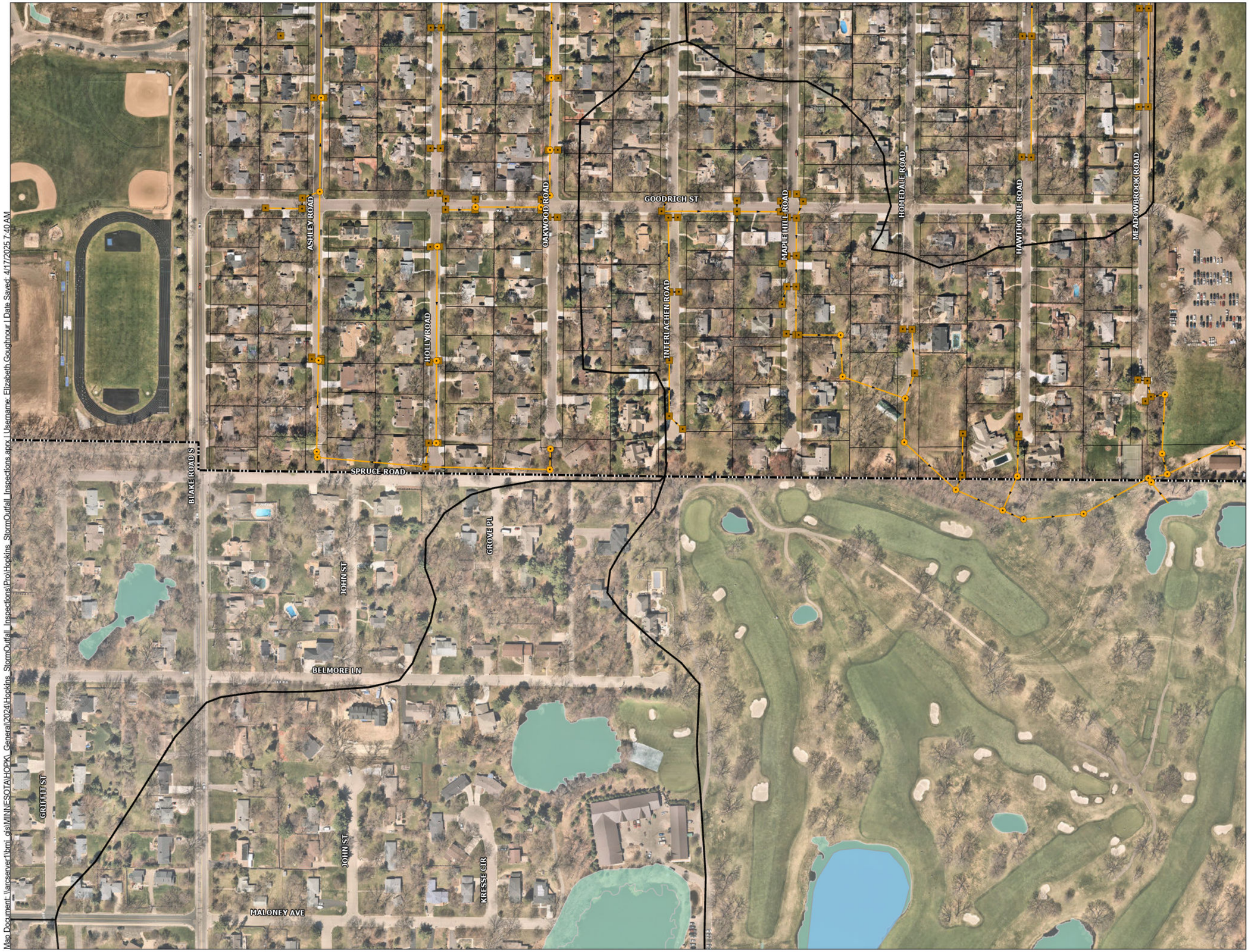
0 200 Feet

Source: City of Hopkins, Hennepin County, NWI, MnDOT, MDNR

BOLTON & MENK

E4

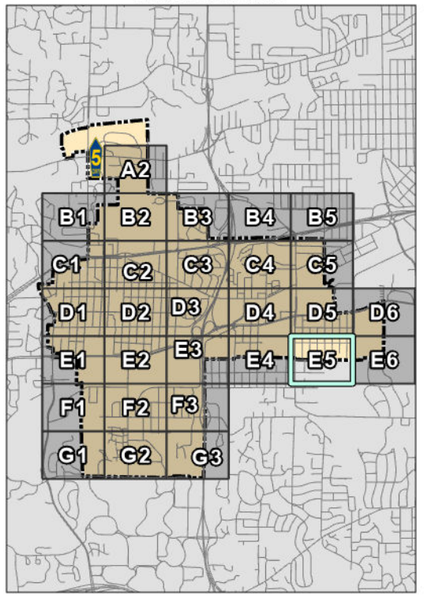
April 2025



City of Hopkins

Storm Drainage System

LOCATION MAP



Legend

BMI GIS Storm Data

- Storm Outfalls
- High Priority Outfalls
- Storm Culverts
- Storm Manhole
- Catch Basin
- Storm Pipe

Hopkins GIS Storm Data

- Flared End Outlet
- Storm Outlets
- Storm Outfalls
- City Limits
- Parcels
- Minnehaha Creek Watershed Boundary
- Watercourse
- Wetlands
- Hopkins Ponds
- Lakes

0 200 Feet

Source: City of Hopkins, Hennepin County, NWI, MnDOT, MDNR

BOLTON & MENK

E5

April 2025

Map Document: \\arcserver1\bmi_gis\MINNESOTA\HOPK_General\2024\Hopkins_StormOutfall_Inspections\ProHopkins_StormOutfall_Inspections.aprx | Username: Elizabeth.Goughnour | Date Saved: 4/17/2025 7:40 AM

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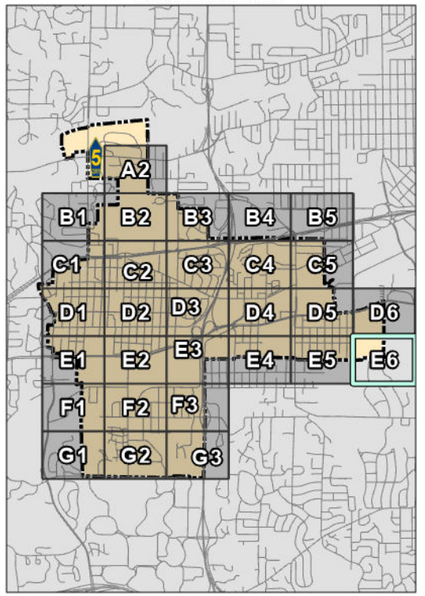
City of Hopkins

Storm Drainage System

LOCATION MAP



Legend

BMI GIS Storm Data

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Hopkins GIS Storm Data

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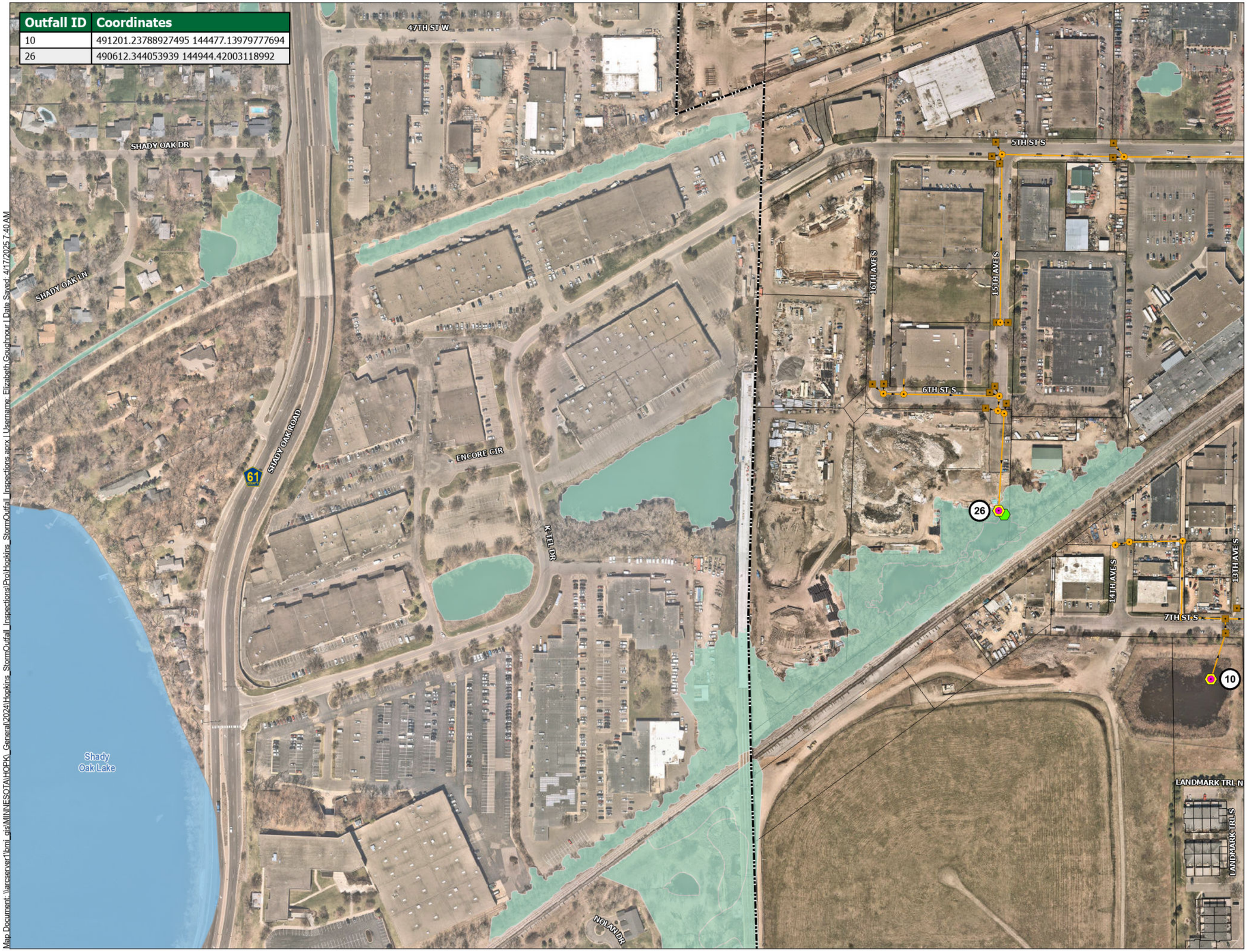
0 200 Feet

Source: City of Hopkins, Hennepin County, NWI, MnDOT, MDNR

BOLTON & MENK

E6

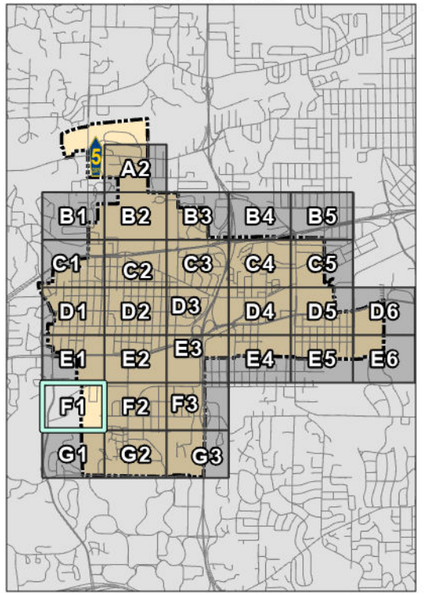
Outfall ID	Coordinates
10	491201.23788927495 144477.13979777694
26	490612.344053939 144944.42003118992



City of Hopkins

Storm Drainage System

LOCATION MAP



Legend

BMI GIS Storm Data

- Storm Outfalls
- High Priority Outfalls
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Hopkins GIS Storm Data

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- Hopkins Ponds
- Lakes

0 200 Feet

Source: City of Hopkins, Hennepin County, NWI, MnDOT, MDNR

BOLTON & MENK

F1

April 2025

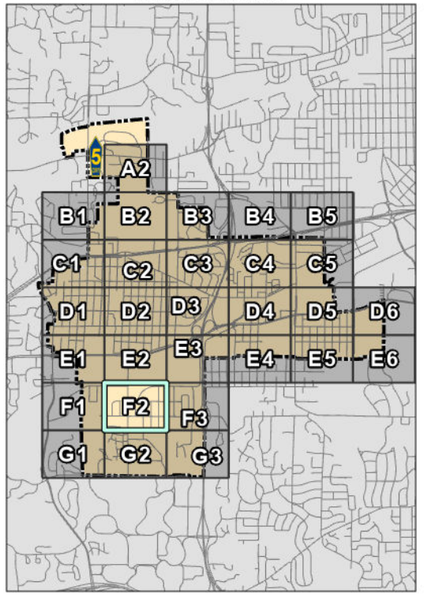
Map Document: \\arcserver1\bmi_gis\MINNESOTA\HOPK_General\2024\Hopkins_StormOutfall_Inspections\Pro\Hopkins_StormOutfall_Inspections.aprx | Username: Elizabeth.Goughnour | Date Saved: 4/17/2025 7:40 AM

Outfall ID	Coordinates
9	491804.59396602213 145264.1730006039
10	491201.23788927495 144477.13979777694
18	493003.8730635196 143889.48480510712
22	492310.75699569285 144310.686718598
26	490612.344053939 144944.42003118992
28	491345.87703569233 145985.22700469196
29	491345.44888694584 145893.52180752158
30	491354.01087769866 145893.52180752158
31	491355.72314460576 145985.22700469196
32	492030.56201802194 145139.0298781842
33	491999.72907444835 145158.57478660345
37	491330.95810227096 145887.2869118601
43	493955.51814185083 143789.87476810813
48	492161.9078839421 144595.83280184865
49	492177.9219595194 144634.3107432723

City of Hopkins

Storm Drainage System

LOCATION MAP



Legend

BMI GIS Storm Data

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Hopkins GIS Storm Data

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0 200 Feet

Source: City of Hopkins, Hennepin County, NWI, MnDOT, MDNR

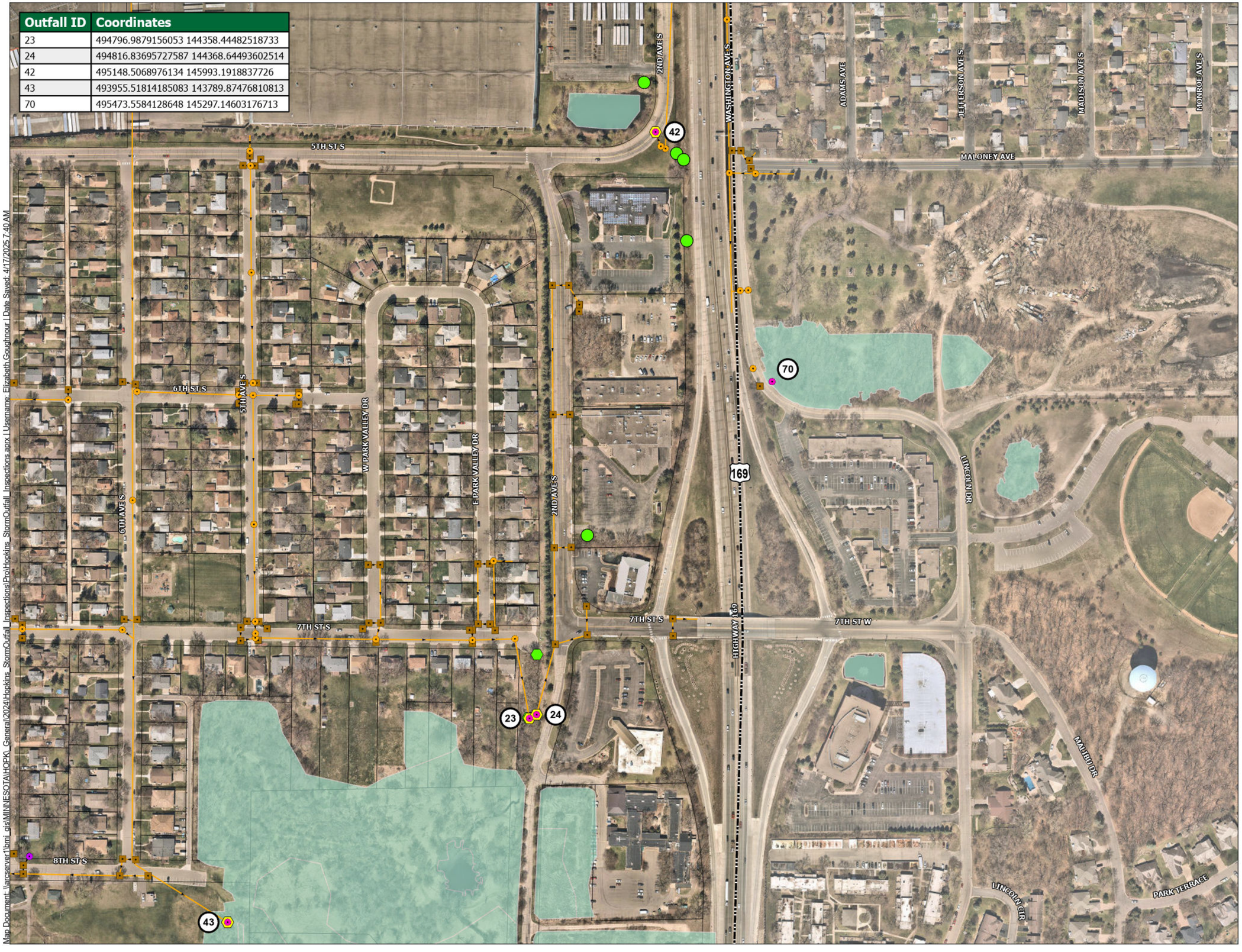
BOLTON & MENK

F2

April 2025

Map Document: \\arcserver1\bmi_gis\MINNESOTA\HOPK_General\2024\Hopkins_StormOutfall_Inspections\Pro\Hopkins_StormOutfall_Inspections.aprx | Username: Elizabeth.Goughnour | Date Saved: 4/17/2025 7:40 AM

Outfall ID	Coordinates
23	494796.9879156053 144358.44482518733
24	494816.83695727587 144368.64493602514
42	495148.5068976134 145993.1918837726
43	493955.51814185083 143789.87476810813
70	495473.5584128648 145297.14603176713



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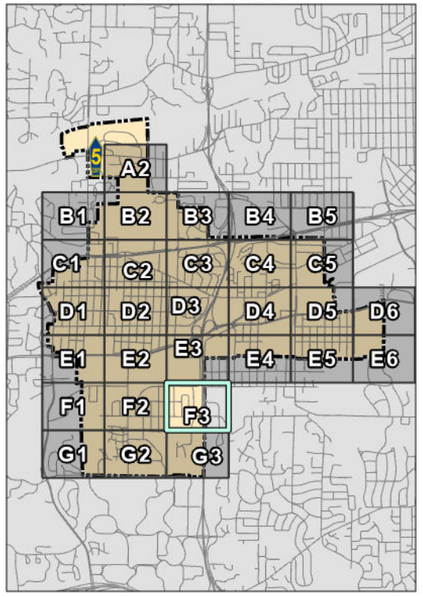
City of Hopkins

Storm Drainage System

LOCATION MAP



Legend

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Hopkins GIS Storm Data

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0 200 Feet

Source: City of Hopkins, Hennepin County, NWI, MnDOT, MDNR

BOLTON & MENK

F3

April 2025

Outfall ID	Coordinates
25	491115.64094761014 142031.57677552104
38	490650.37514585257 141974.14283527434

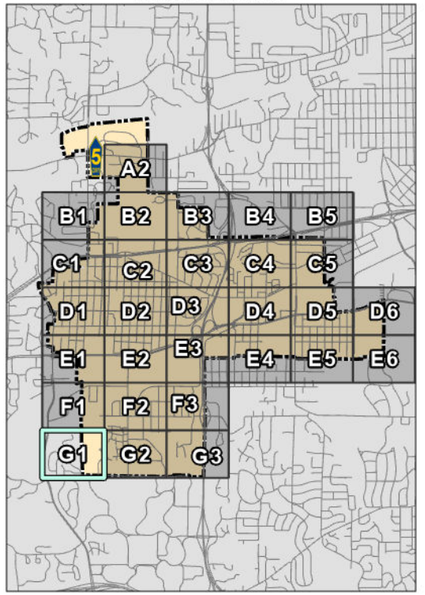
Shady Oak Lake
SHADY OAK ROAD
61
BEACHSIDE DR
WATERS EDGE DR
DOMINICK DR
NOLAN DR
DEER RIDGE LN
SMETANA ROAD
SANIBEL DR
POMPANO DR
FELTL ROAD
FELTL CT.
WOODHILL CT
WAGON WHEEL ROAD
LANDMARK TRL N
LANDMARK TRL S
38
25

Map Document: \\arcserver1\bmi_gis\MINNESOTA\HOPK_General\2024\Hopkins_StormOutfall_Inspections\Pro\Hopkins_StormOutfall_Inspections.aprx | Username: Elizabeth.Goughnour | Date Saved: 4/17/2025 7:40 AM

City of Hopkins

Storm Drainage System

LOCATION MAP



Legend

BMI GIS Storm Data
- Storm Outfalls
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- Storm Culverts
- Storm Manhole
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Hopkins GIS Storm Data
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- Watercourse
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- Lakes

0 200 Feet

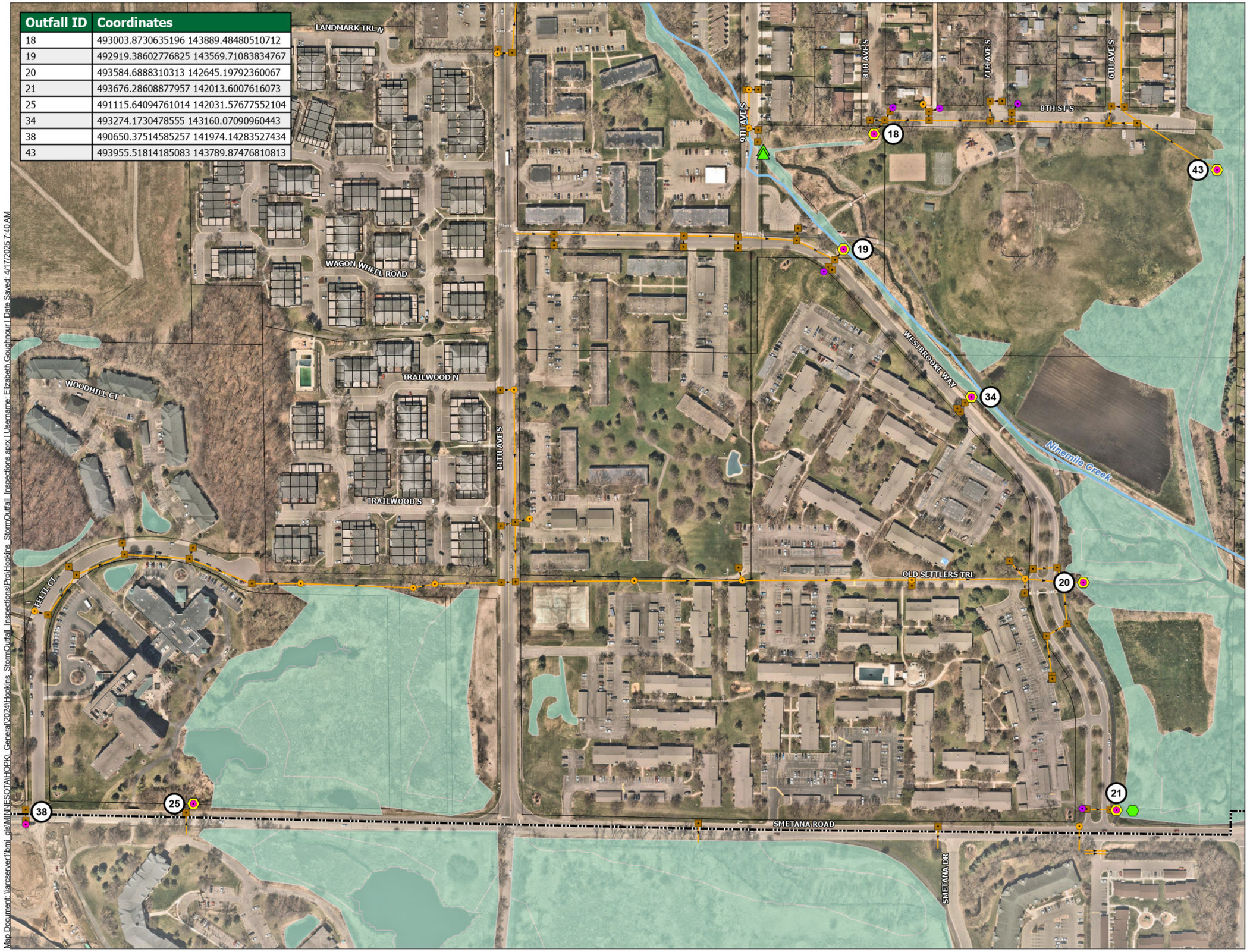
Source: City of Hopkins, Hennepin County, NWI, MnDOT, MDNR

BOLTON & MENK

G1

April 2025

Outfall ID	Coordinates
18	493003.8730635196 143889.48480510712
19	492919.38602776825 143569.71083834767
20	493584.6888310313 142645.19792360067
21	493676.28608877957 142013.6007616073
25	491115.64094761014 142031.57677552104
34	493274.1730478555 143160.07090960443
38	490650.37514585257 141974.14283527434
43	493955.51814185083 143789.87476810813



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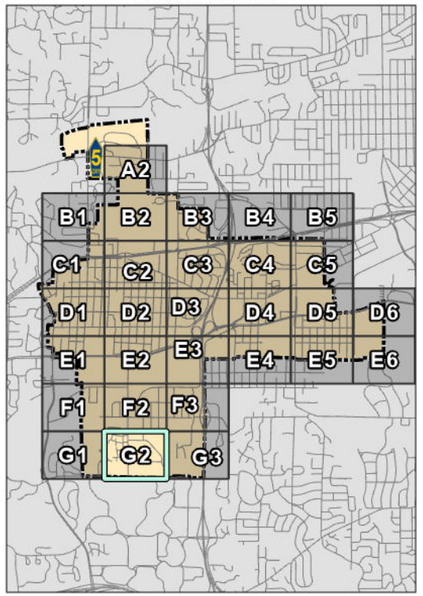
City of Hopkins

Storm Drainage System

LOCATION MAP



Legend

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0 200 Feet

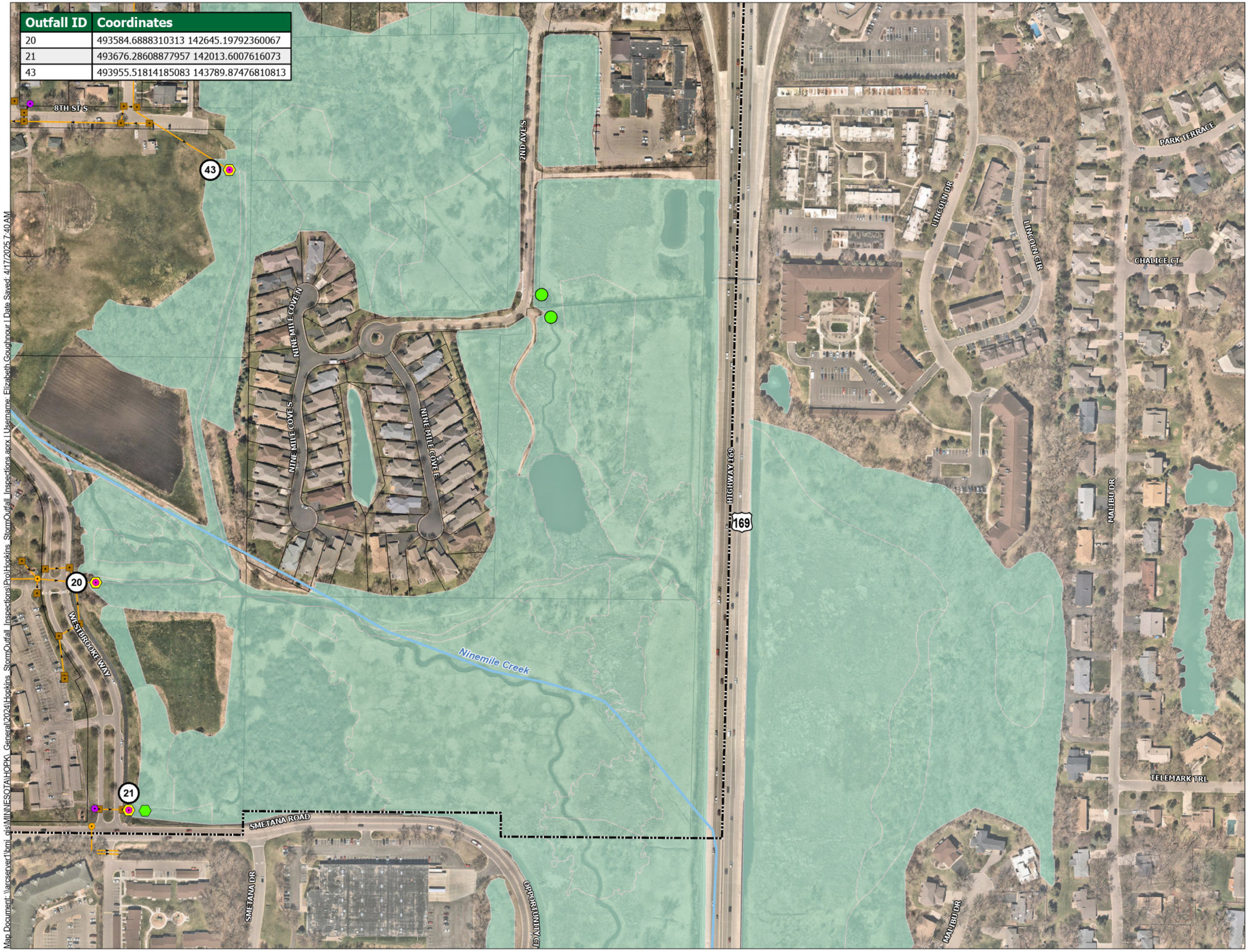
Source: City of Hopkins, Hennepin County, NWI, MnDOT, MDNR

BOLTON & MENK

G2

April 2025

Outfall ID	Coordinates
20	493584.6888310313 142645.19792360067
21	493676.28608877957 142013.6007616073
43	493955.51814185083 143789.87476810813



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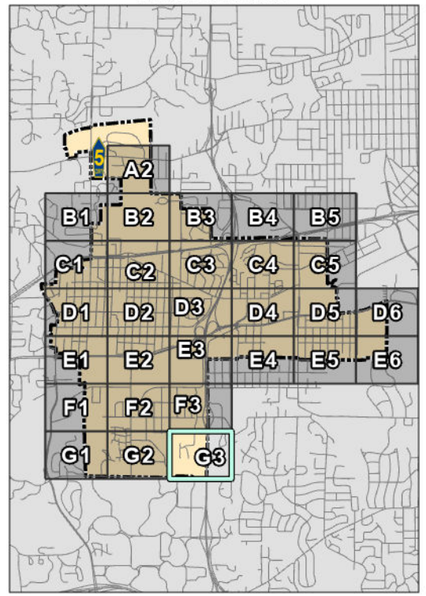
City of Hopkins

Storm Drainage System

LOCATION MAP



Legend

BMI GIS Storm Data

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Hopkins GIS Storm Data

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0 200 Feet

Source: City of Hopkins, Hennepin County, NWI, MnDOT, MDNR

BOLTON & MENK

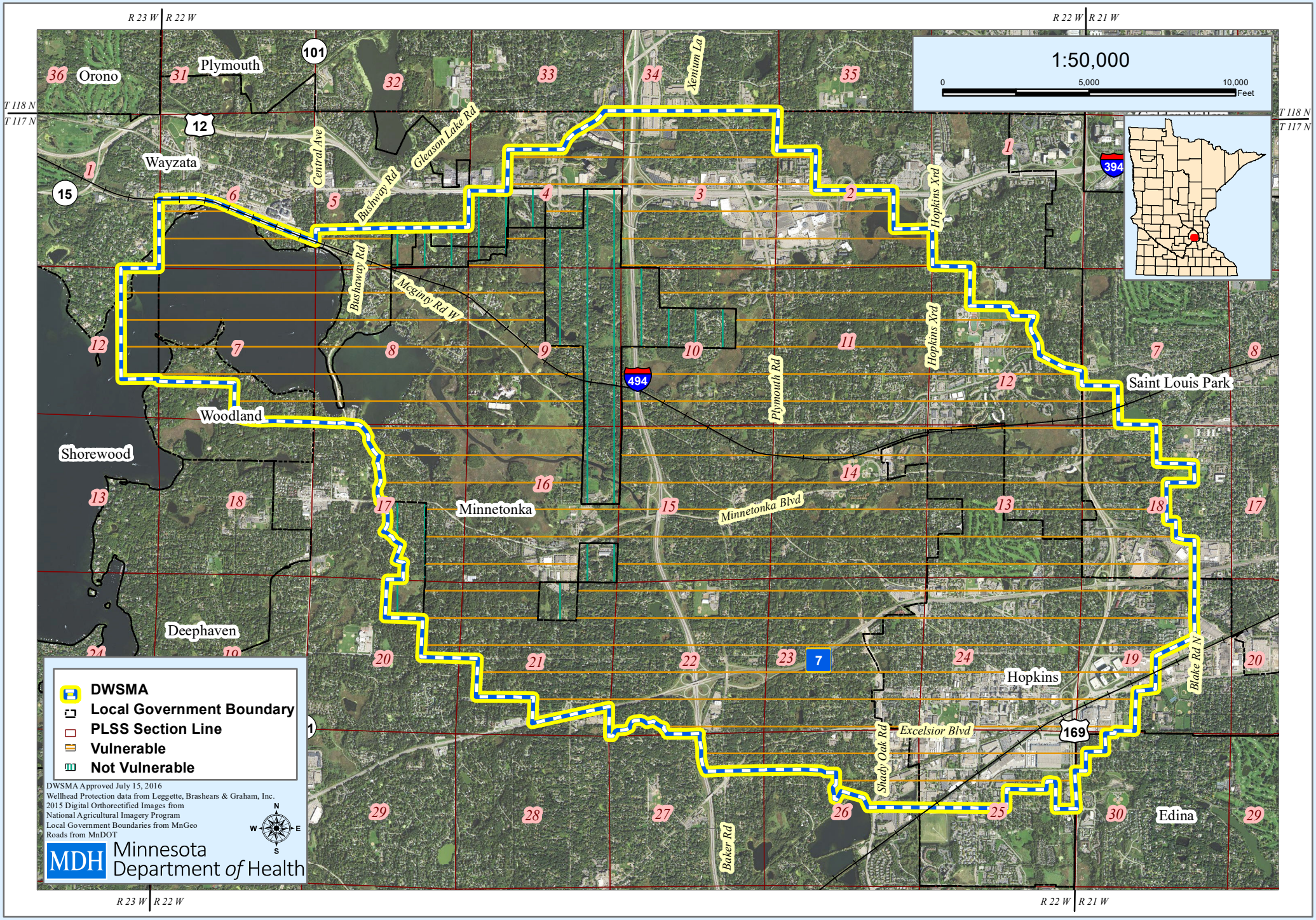
G3

April 2025

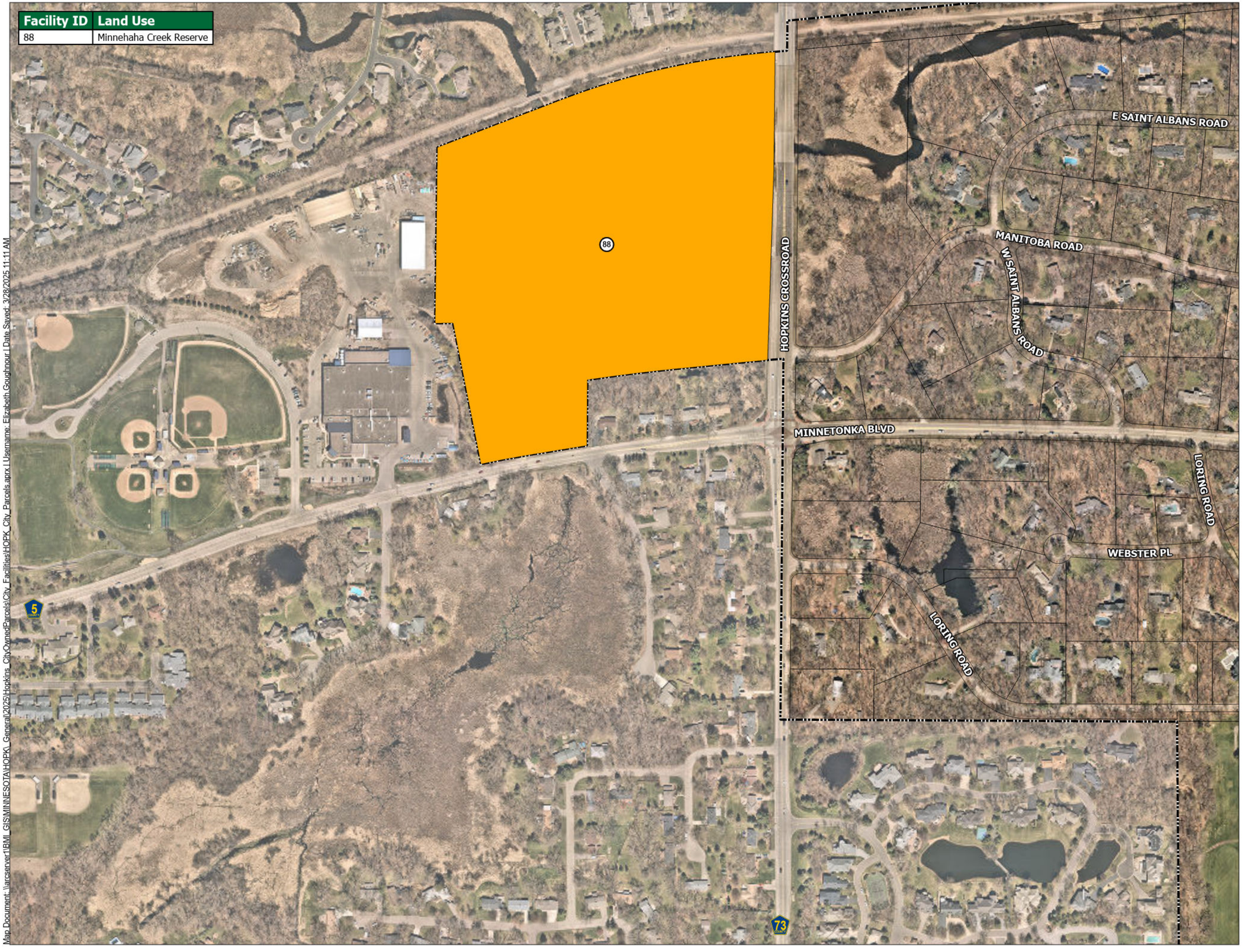
Hopkins
Hennepin County
Minnesota

Hopkins Drinking Water Supply Management Area (DWSMA) MN-00899 - Variable Vulnerability

Minnesota Department of Health
Environmental Health
Source Water Protection Unit



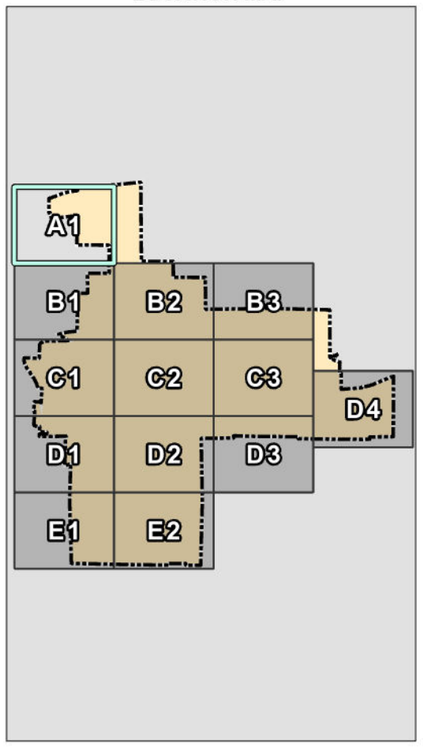
Facility ID	Land Use
88	Minnehaha Creek Reserve



City of Hopkins

City Owned Parcels

LOCATION MAP



Legend

- City Owned Parcels
- City Limits
- Parcels
- Winter Storage Area

0 300 Feet

Source: City of Hopkins, Hennepin County

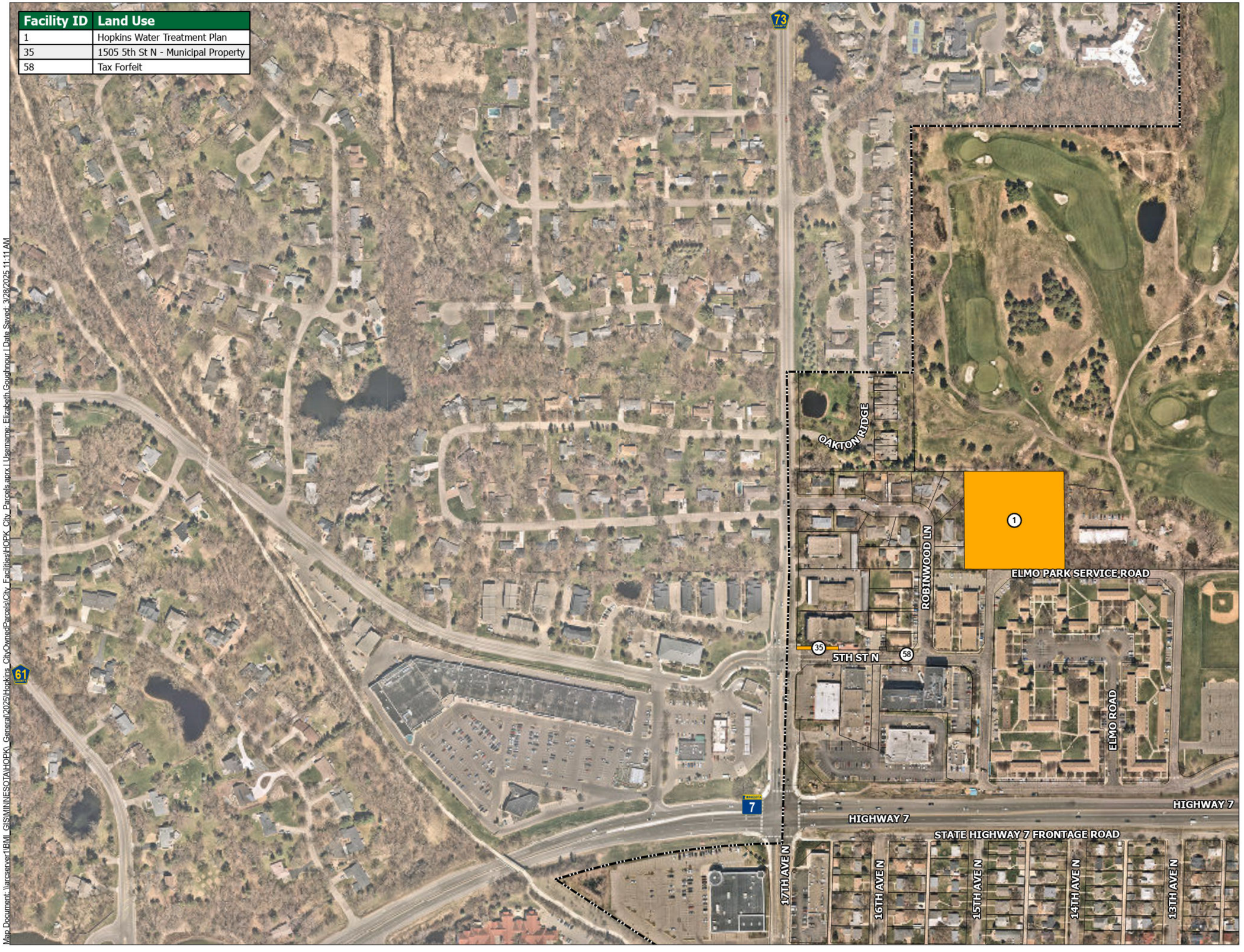
BOLTON & MENK

A1

April 2025

Map Document: \\arcserver1\BMI_GIS\MINNESOTA\HOPK_General\2025\Hopkins_CityOwnedParcels\City_Facilities\HOPK_City_Parcels.aprx | Username: Elizabeth.Goughnour | Date Saved: 3/28/2025 11:11 AM

Facility ID	Land Use
1	Hopkins Water Treatment Plan
35	1505 5th St N - Municipal Property
58	Tax Forfeit



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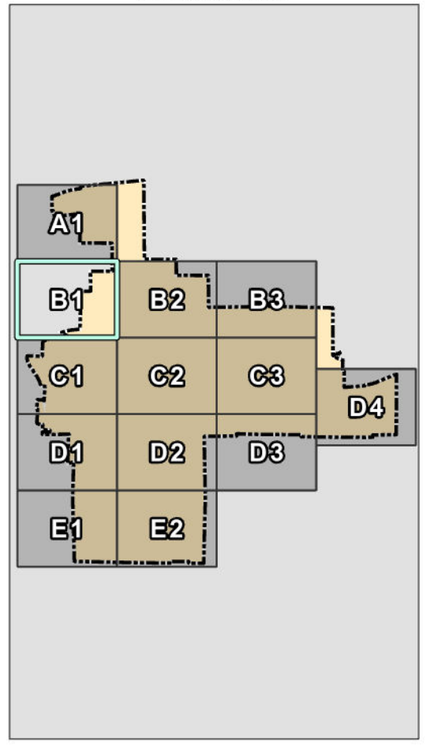
City of Hopkins

City Owned Parcels

LOCATION MAP



Legend

- City Owned Parcels
- City Limits
- Parcels
- Winter Storage Area

0 300 Feet

Source: City of Hopkins, Hennepin County

BOLTON & MENK

B1

April 2025

Facility ID	Land Use
30	Municipal Public Enterprise - 516 Oak Ridge Place
99	Municipal Public Enterprise - 516 Oak Ridge Place

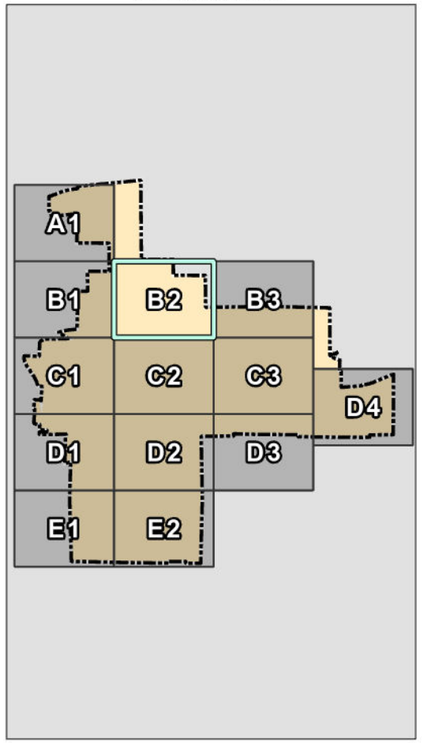
DRILLANE ROAD N
DRILLANE ROAD
DRILLANE CIR
DRILLANE ROAD S
COTTAGE DOWNS
OAKRIDGE ROAD
VALLEY WAY
BRIDLE LN
PARK TERRACE
EDGEMOOR DR
WILSHIRE WALK
OAK RIDGE PL
STATE HIGHWAY 7 FRONTAGE ROAD
HIGHWAY 7
SWEET BRIAR LN
WAYSIDE ROAD W
WAYSIDE ROAD E
HOLLYHOCK LN
FARMDALE ROAD W
ALTHEA LN
HAZEL LN
5TH AVE N
GETHSEMANE ROAD
12TH AVE N
11TH AVE N
MINNETONKA MILLS ROAD

Map Document: \\arcserver\1\BMI_GIS\MINNESOTA\HOPK_General\2025\Hopkins_CityOwnedParcels\City_Facilities\HOPK_City_Parcels.aprx | Username: Elizabeth.Goughnour | Date Saved: 3/28/2025 11:11 AM

City of Hopkins

City Owned Parcels

LOCATION MAP



Legend

- City Owned Parcels
- City Limits
- Parcels
- Winter Storage Area

0 300 Feet

Source: City of Hopkins, Hennepin County

BOLTON & MENK

B2

April 2025

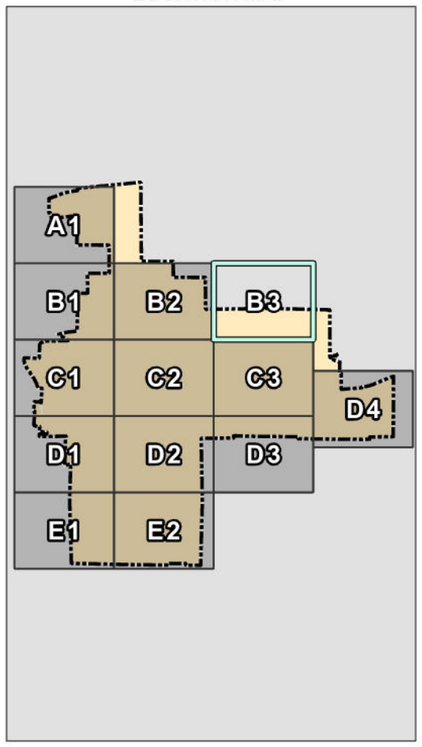
Facility ID	Land Use
2	Cottageville Park
3	Cottageville Park
4	Cottageville Park
5	Pond - 1035 Cambridge St
7	The Cottonwood Nature Reserve
15	Hiawatha Oaks Preserve
18	Minnehaha Creek - 1035 Cambridge St
19	Minnehaha Creek - 1035 Cambridge St
89	Municipal Property - 1201 Oxford Street
90	Pond - 1035 Cambridge St
91	Hiawatha Oaks Preserve

Map Document: \\arcserver1\BMI_GIS\MINNESOTA\HOPK_General\2025\Hopkins_CityOwnedParcels\City_Facilities\HOPK_City_Parcels.aprx | Username: Elizabeth.Goughnour | Date Saved: 3/28/2025 11:11 AM

City of Hopkins

City Owned Parcels

LOCATION MAP



Legend

- City Owned Parcels
- City Limits
- Parcels
- Winter Storage Area

0 300 Feet

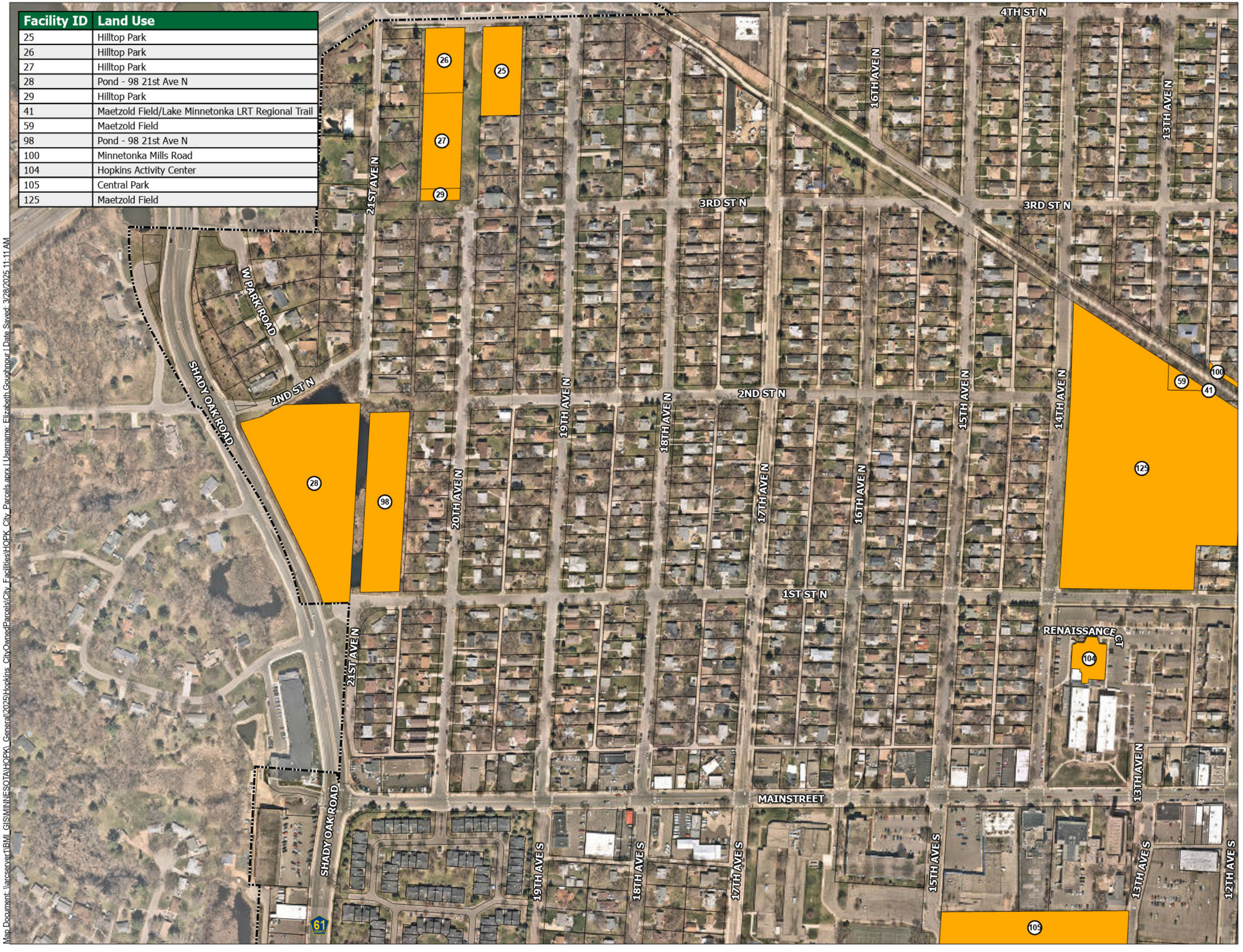
Source: City of Hopkins, Hennepin County

BOLTON & MENK

B3

April 2025

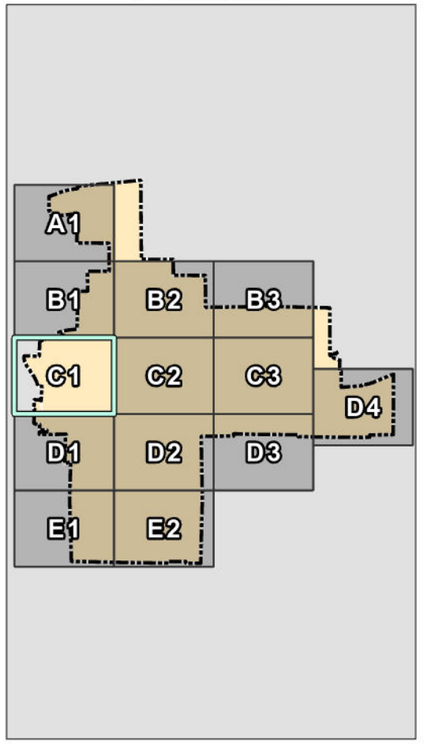
Facility ID	Land Use
25	Hilltop Park
26	Hilltop Park
27	Hilltop Park
28	Pond - 98 21st Ave N
29	Hilltop Park
41	Maetzold Field/Lake Minnetonka LRT Regional Trail
59	Maetzold Field
98	Pond - 98 21st Ave N
100	Minnetonka Mills Road
104	Hopkins Activity Center
105	Central Park
125	Maetzold Field



City of Hopkins

City Owned Parcels

LOCATION MAP



Legend

- City Owned Parcels
- City Limits
- Parcels
- Winter Storage Area

0 300 Feet

Source: City of Hopkins, Hennepin County

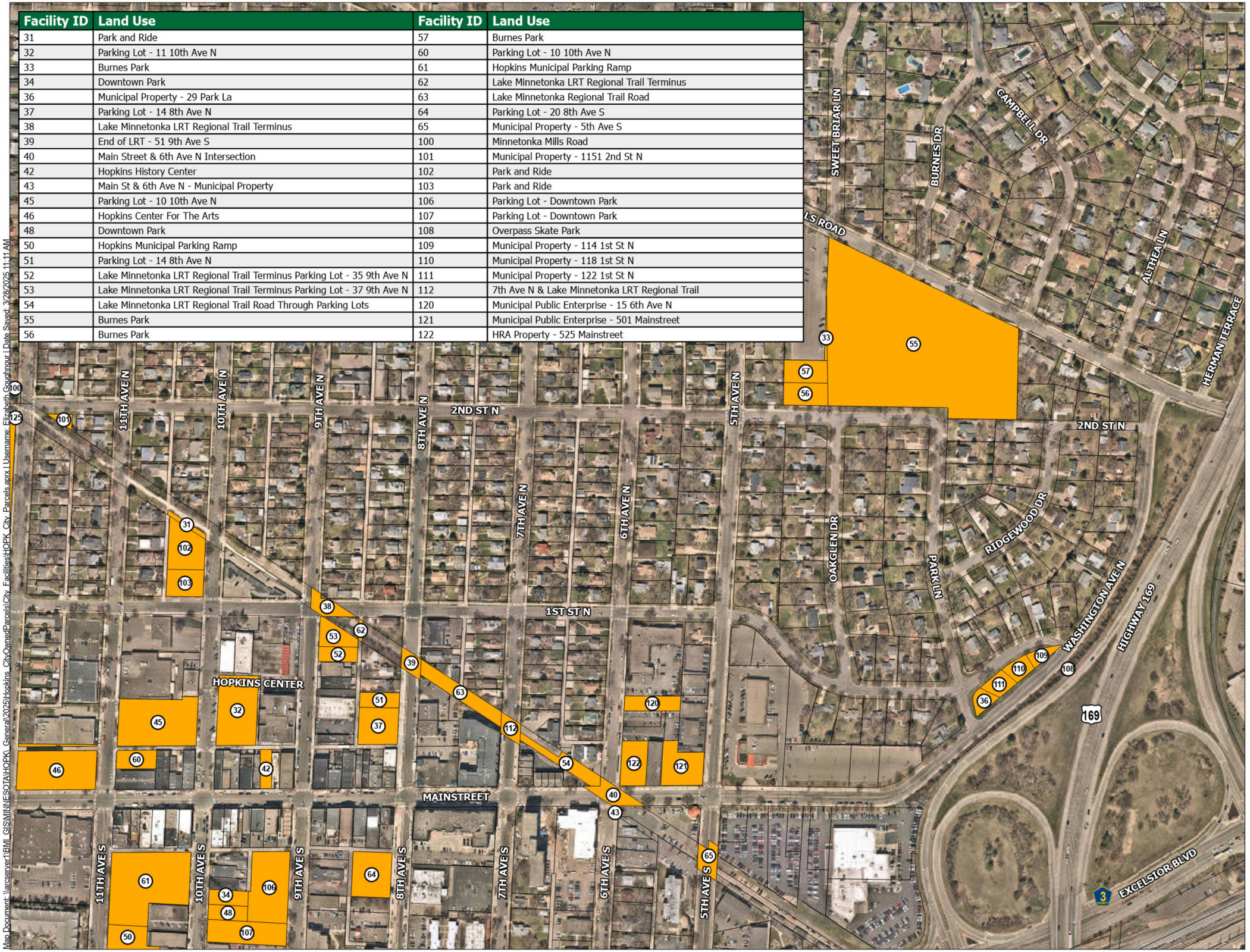
BOLTON & MENK

C1

April 2025

Map Document: \\arcserver1\BMI_GIS\MINNESOTA\HOPK_General\2025\Hopkins_CityOwnedParcels\City_Facilities\HOPK_City_Parcels.aprx | Username: Elizabeth.Goughnour | Date Saved: 3/28/2025 11:11 AM

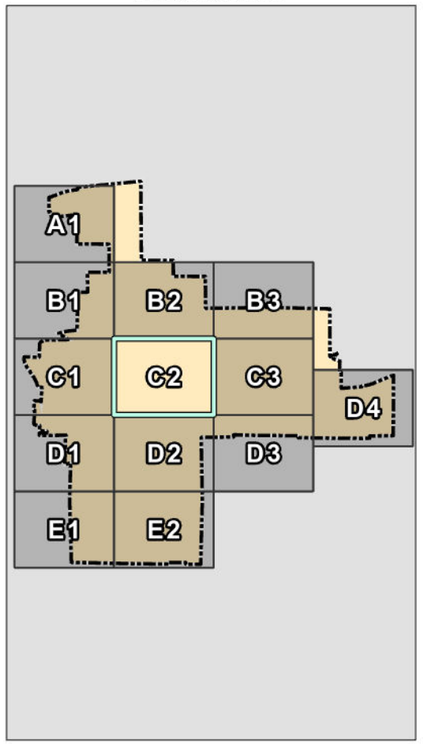
Facility ID	Land Use	Facility ID	Land Use
31	Park and Ride	57	Burnes Park
32	Parking Lot - 11 10th Ave N	60	Parking Lot - 10 10th Ave N
33	Burnes Park	61	Hopkins Municipal Parking Ramp
34	Downtown Park	62	Lake Minnetonka LRT Regional Trail Terminus
36	Municipal Property - 29 Park La	63	Lake Minnetonka Regional Trail Road
37	Parking Lot - 14 8th Ave N	64	Parking Lot - 20 8th Ave S
38	Lake Minnetonka LRT Regional Trail Terminus	65	Municipal Property - 5th Ave S
39	End of LRT - 51 9th Ave S	100	Minnetonka Mills Road
40	Main Street & 6th Ave N Intersection	101	Municipal Property - 1151 2nd St N
42	Hopkins History Center	102	Park and Ride
43	Main St & 6th Ave N - Municipal Property	103	Park and Ride
45	Parking Lot - 10 10th Ave N	106	Parking Lot - Downtown Park
46	Hopkins Center For The Arts	107	Parking Lot - Downtown Park
48	Downtown Park	108	Overpass Skate Park
50	Hopkins Municipal Parking Ramp	109	Municipal Property - 114 1st St N
51	Parking Lot - 14 8th Ave N	110	Municipal Property - 118 1st St N
52	Lake Minnetonka LRT Regional Trail Terminus Parking Lot - 35 9th Ave N	111	Municipal Property - 122 1st St N
53	Lake Minnetonka LRT Regional Trail Terminus Parking Lot - 37 9th Ave N	112	7th Ave N & Lake Minnetonka LRT Regional Trail
54	Lake Minnetonka LRT Regional Trail Road Through Parking Lots	120	Municipal Public Enterprise - 15 6th Ave N
55	Burnes Park	121	Municipal Public Enterprise - 501 Mainstreet
56	Burnes Park	122	HRA Property - 525 Mainstreet



City of Hopkins

City Owned Parcels

LOCATION MAP



Legend

- City Owned Parcels
- City Limits
- Parcels
- Winter Storage Area

0 300 Feet

Source: City of Hopkins, Hennepin County

BOLTON & MENK

C2

Map Document: \\arcserver1\BM_GIS\MINNESOTA\HOPK_General\2025\Hopkins_CityOwnedParcels\City_Facilities\HOPK_City_Parcels.aprx | Username: Elizabeth.Goudreau | Date Saved: 3/28/2025 11:11 AM

Facility ID	Land Use
6	Oakes Park
7	The Cottonwood Nature Reserve
8	The Cottonwood Nature Reserve
9	Municipal Property - 8931 Excelsior Blvd
10	Municipal Property - 8971 Excelsior Blvd
11	Municipal Property - 9131 Excelsior Blvd
12	Municipal Property - 9191 Excelsior Blvd
14	Highway Right of way
16	The Cottonwood Nature Reserve
20	Municipal Property - 9095 Excelsior Blvd
92	Municipal Property - 9171 Excelsior Blvd
93	Municipal Property - Excelsior Blvd

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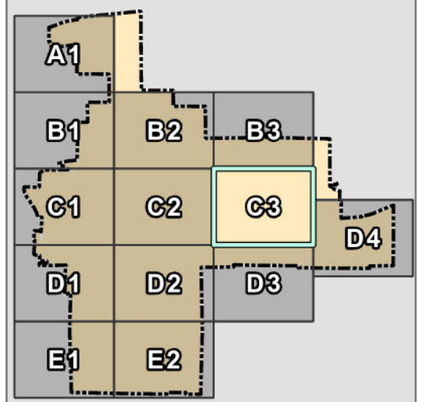
City of Hopkins

City Owned Parcels

LOCATION MAP



Legend

- City Owned Parcels
- City Limits
- Parcels
- Winter Storage Area

0 300 Feet

Source: City of Hopkins, Hennepin County

BOLTON & MENK

C3

Facility ID	Land Use
47	City Of Hopkins Public Works Department
105	Central Park

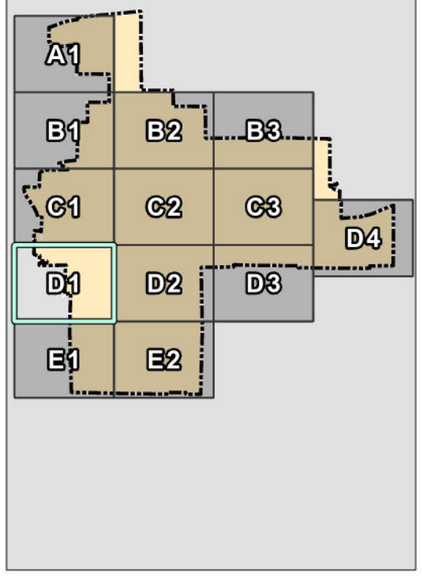
SHADY OAK ROAD
20TH AVE S
19TH AVE S
18TH AVE S
17TH AVE S
1ST ST S
13TH AVE S
12TH AVE S
2ND ST S
EXCELSIOR BLVD
5TH ST S
16TH AVE S
15TH AVE S
6TH ST S
47
105
3
61

Map Document: \\arcserver1\BM_GIS\MINNESOTA\HOPK_General\2025\Hopkins_CityOwnedParcels\City_Facilities\HOPK_City_Parcels.aprx | Username: Elizabeth.Goughnour | Date Saved: 3/28/2025 11:11 AM

City of Hopkins

City Owned Parcels

LOCATION MAP



Legend

- City Owned Parcels
- City Limits
- Parcels
- Winter Storage Area

0 300 Feet

Source: City of Hopkins, Hennepin County

BOLTON & MENK

D1

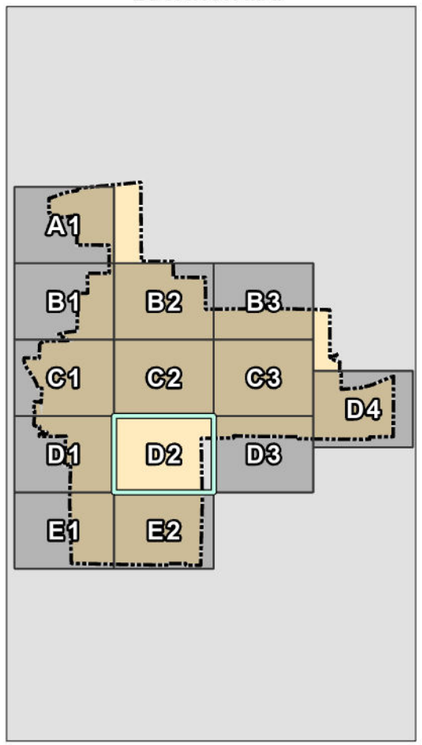
April 2025

Facility ID	Land Use
44	Minnesota River Bluffs Trail
49	Municipal Property
50	Hopkins Municipal Parking Ramp
66	Hopkins Water Treatment Department
69	Minnehaha Creek
73	Buffer Park
75	Minnehaha Creek
76	Minnehaha Creek
77	Minnehaha Creek
113	Downtown Hopkins Lightrail Station
114	Drainage Ditch - Excelsior Blvd & 5th Ave S
123	HRA Property - 525 Mainstreet

City of Hopkins

City Owned Parcels

LOCATION MAP



Legend

- City Owned Parcels
- City Limits
- Parcels
- Winter Storage Area

0 300 Feet

Source: City of Hopkins, Hennepin County

BOLTON & MENK

D2

April 2025

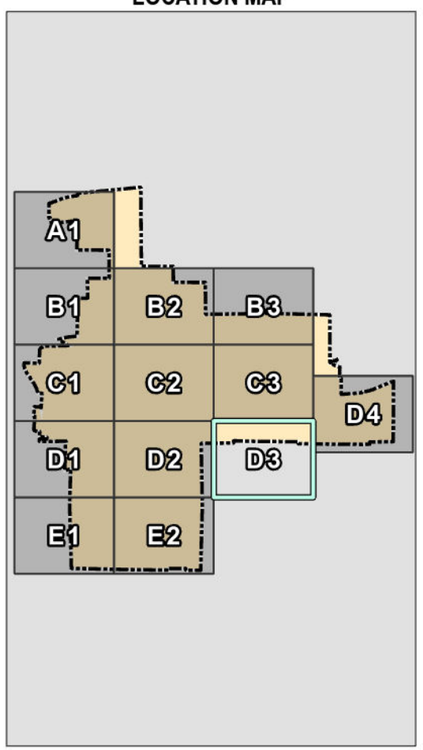
Map Document: (\\arcserver1\BM_GIS\MINNESOTA\HOPK_General\2025\Hopkins_CityOwnedParcels\City_Facilities\HOPK_City_Parcels.aprx LUsername: Elizabeth.Goughnour LDate Saved: 3/28/2025 11:11 AM

Facility ID	Land Use
13	151 Tyler Ave S - Water Tower
17	Harley Hopkins Park
21	151 Tyler Ave S - Water Tower
87	Not showing on map
94	151 Tyler Ave S - Municipal Property - Water Tower
95	151 Tyler Ave S - Municipal Property - Water Tower
96	151 Tyler Ave S - Municipal Property - Water Tower
97	Ashley Rd & Spruce Rd - Municipal Property - PID 1911721440105

City of Hopkins

City Owned Parcels

LOCATION MAP



Legend

- City Owned Parcels
- City Limits
- Parcels
- Winter Storage Area

0 300 Feet

Source: City of Hopkins, Hennepin County

BOLTON & MENK

D3

April 2025

Map Document: \\arcserver1\BMI_GIS\MINNESOTA\HOPK_General\2025\Hopkins_CityOwnedParcels\City_Facilities\HOPK_City_Parcels.aprx | Username: Elizabeth.Goughnour | Date Saved: 3/28/2025 11:11 AM

Facility ID	Land Use
22	Municipal Property
23	Interlachen Park
24	Interlachen Park
86	Interlachen Park
119	Interlachen Park

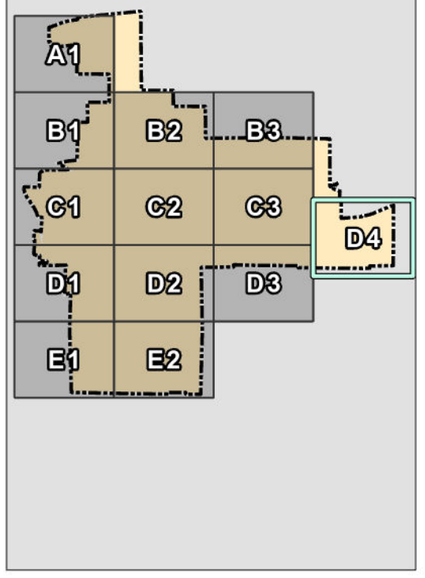
POWELL ROAD
EXCELSIOR BLVD
EXCELSIOR BLVD
PRESTON LN
INTERLACHEN ROAD
BOYCE ST
MAPLE HILL ROAD
HOMEDALE ROAD
HAWTHORNE ROAD
MEADOWBROOK ROAD
HOLLY ROAD
OAKWOOD ROAD
GOODRICH ST
22
24
119
23
86

Map Document: \\arcserver1\BMI_GIS\MINNESOTA\HOPK_General\2025\Hopkins_CityOwnedParcels\City_Facilities\HOPK_City_Parcels.aprx | Username: Elizabeth.Goughnour | Date Saved: 3/28/2025 11:11 AM

City of Hopkins

City Owned Parcels

LOCATION MAP



Legend

- City Owned Parcels
- City Limits
- Parcels
- Winter Storage Area

0 300 Feet

Source: City of Hopkins, Hennepin County

BOLTON & MENK

D4

April 2025

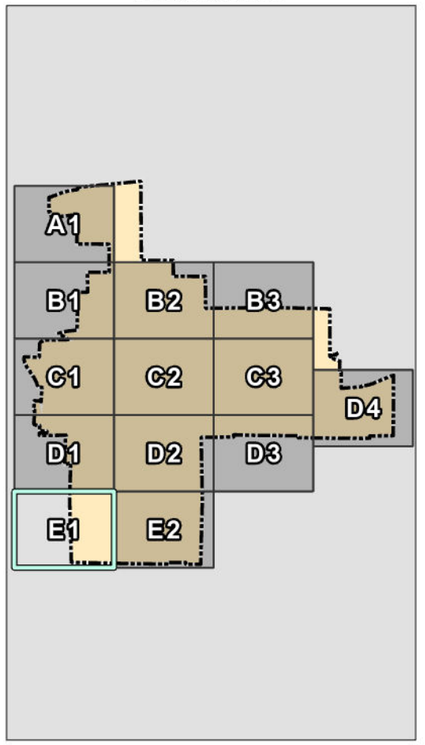
Facility ID	Land Use
70	Pollution Control - Landfill
82	Pond - 7th St S & 13rd Ave S
83	Pollution Control - Landfill
116	Pollution Control - Landfill
117	Wetland - PID 2511722340032

Map Document: \\arcserver1\BMI_GIS\MINNESOTA\HOPK_General\2025\Hopkins_CityOwnedParcels\City_Facilities\HOPK_City_Parcels.aprx | Username: Elizabeth.Goughnour | Date Saved: 3/28/2025 11:11 AM

City of Hopkins

City Owned Parcels

LOCATION MAP



Legend

- City Owned Parcels
- City Limits
- Parcels
- Winter Storage Area

0 300 Feet

Source: City of Hopkins, Hennepin County

BOLTON & MENK

E1

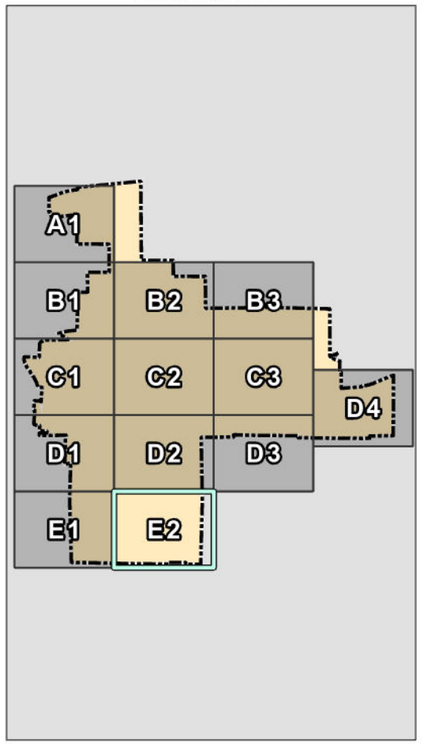
April 2025

Facility ID	Land Use
67	Tax Forfeit
68	Tax Forfeit
71	Park Valley
72	Valley Park
74	Valley Park
75	Minnehaha Creek
78	Valley Park
79	Valley Park
80	Tax Forfeit
81	Tax Forfeit
84	Valley Park
85	Valley Park - Wetland
115	Tax Forfeit
117	Wetland - PID 2511722340032
118	Valley Park - Wetland
124	Tax Forfeit

City of Hopkins

City Owned Parcels

LOCATION MAP



Legend

- City Owned Parcels
- City Limits
- Parcels
- Winter Storage Area

0 300 Feet

Source: City of Hopkins, Hennepin County

BOLTON & MENK

E2

April 2025

Map Document: \\arcserver1\BMI_GIS\MINNESOTA\HOPK_General\2025\Hopkins_CityOwnedParcels\City_Facilities\HOPK_City_Parcels.aprx | Username: Elizabeth.Gouchnour | Date Saved: 3/28/2025 11:11 AM

Appendix E: Municipal Facility Inventory

City of Hopkins		Municipal Operations Best Management Practices											
		1	2	3	4	5	6	7	8	9	10	11	12
Facility ID	Facility Name / Land Use	Proper Waste Management, Storage, & Disposal	Proper Stockpile Management	Proper Vehicle Fueling, Washing, & Maintenance	Routine Pavement Sweeping	Proper Emergency Response Procedures	Cleaning of Maintenance Equipment Buildings, & Dumpsters	Proper Use, Storage, and Disposal of Significant Materials	Proper Lawn and Landscape Maintenance	Proper Road Maintenance	Proper Right-of-Way Maintenance	Proper Application of Herbicides, Pesticides, and Fertilizers	Proper Snow Removal and Deicing Operations
1	Hopkins Water Treatment Plant / Elmo Park	X	X	X	X	X	X	X	X	X	X	X	X
2	Cottageville Park	X					X		X			X	X
3	Cottageville Park	X					X		X			X	X
4	Cottageville Park	X					X		X			X	X
5	Pond - 1035 Cambridge St	X									X		
6	Oakes Park	X					X		X			X	X
7	The Cottonwood Nature Reserve	X							X		X	X	
8	The Cottonwood Nature Reserve	X							X		X	X	
9	Municipal Property - 8931 Excelsior Blvd	X							X			X	
10	Municipal Property - 8971 Excelsior Blvd	X							X			X	
11	Municipal Property - 9131 Excelsior Blvd	X							X			X	
12	Municipal Property - 9191 Excelsior Blvd	X							X			X	
13	151 Tyler Ave S - Water Tower	X	X				X	X	X			X	
14	Highway Right of way	X			X					X	X		X
15	Hiawatha Oaks Preserve	X							X		X	X	
16	The Cottonwood Nature Reserve	X							X		X	X	
17	Harley Hopkins Park	X					X		X			X	X
18	Minnehaha Creek - 1035 Cambridge St	X										X	
19	Minnehaha Creek - 1035 Cambridge St	X										X	
20	Municipal Property - 9095 Excelsior Blvd	X							X			X	
21	151 Tyler Ave S - Water Tower	X	X				X	X	X			X	
22	Municipal Property	X										X	
23	Interlachen Park	X					X		X			X	X
24	Interlachen Park	X					X		X			X	X
25	Hilltop Park	X					X		X			X	X
26	Hilltop Park	X					X		X			X	X
27	Hilltop Park	X					X		X			X	X
28	Pond - 98 21st Ave N	X										X	
29	Hilltop Park	X					X		X			X	X
30	Municipal Public Enterprise - 516 Oak Ridge Place	X							X			X	
31	Park and Ride	X		X	X					X			X
32	Parking Lot - 11 10th Ave N	X			X					X			X
33	Burnes Park	X					X		X			X	X
34	Downtown Park	X					X		X			X	X
35	1505 5th St N - Municipal Property	X							X			X	
36	Municipal Property - 29 Park La	X							X			X	
37	Parking Lot - 14 8th Ave N	X			X					X			X
38	Lake Minnetonka LRT Regional Trail Terminus	X							X			X	X
39	End of LRT - 51 9th Ave S	X										X	X
40	Main Street & 6th Ave N Intersection	X								X	X		X
41	Maetzold Field/Lake Minnetonka LRT Regional Trail	X							X			X	X
42	Hopkins History Center	X					X		X	X		X	X
43	Main St & 6th Ave N - Municipal Property	X							X			X	
44	Minnesota River Bluffs Trail	X							X			X	X
45	Parking Lot - 10 10th Ave N	X			X					X			X
46	Hopkins Center For The Arts	X				X	X		X	X		X	X
47	City Of Hopkins Public Works Department	X	X	X	X	X	X	X	X	X	X	X	X
48	Downtown Park	X					X		X			X	X
49	Municipal Property	X							X			X	
50	Hopkins Municipal Parking Ramp	X			X					X			X
51	Parking Lot - 14 8th Ave N	X			X					X			X
52	Lake Minnetonka LRT Regional Trail Terminus Parking Lot - 35 9th Ave N	X			X					X			X
53	Lake Minnetonka LRT Regional Trail Terminus Parking Lot - 37 9th Ave N	X			X					X			X
54	Lake Minnetonka LRT Regional Trail Road Through Parking Lots	X			X					X			X
55	Burnes Park	X					X		X			X	X
56	Burnes Park	X					X		X			X	X

City of Hopkins		Municipal Operations Best Management Practices											
		1	2	3	4	5	6	7	8	9	10	11	12
Facility ID	Facility Name / Land Use	Proper Waste Management, Storage, & Disposal	Proper Stockpile Management	Proper Vehicle Fueling, Washing, & Maintenance	Routine Pavement Sweeping	Proper Emergency Response Procedures	Cleaning of Maintenance Equipment Buildings, & Dumpsters	Proper Use, Storage, and Disposal of Significant Materials	Proper Lawn and Landscape Maintenance	Proper Road Maintenance	Proper Right-of-Way Maintenance	Proper Application of Herbicides, Pesticides, and Fertilizers	Proper Snow Removal and Deicing Operations
57	Burnes Park	X					X		X			X	X
58	Tax Forfit	X											
59	Maetzold Field	X					X		X			X	
60	Parking Lot - 10 10th Ave N	X			X								X
61	Hopkins Municipal Parking Ramp	X			X							X	X
62	Lake Minnetonka LRT Regional Trail Terminus	X					X			X			X
63	Lake Minnetonka Regional Trail Road	X			X					X	X		X
64	Parking Lot - 20 8th Ave S	X			X					X			X
65	Municipal Property - 5th Ave S	X							X			X	
66	Hopkins Water Treatment Department	X	X	X	X	X	X	X	X	X		X	X
67	Tax Forfit	X											
68	Tax Forfit	X											
69	Minnehaha Creek	X							X			X	
70	Pollution Control - Landfill	X	X	X	X	X	X	X	X	X		X	X
71	Park Valley	X							X			X	
72	Valley Park	X					X		X			X	
73	Buffer Park	X					X		X			X	
74	Valley Park	X					X		X			X	
75	Minnehaha Creek	X							X			X	
76	Minnehaha Creek	X							X			X	
77	Minnehaha Creek	X							X			X	
78	Valley Park	X					X		X			X	
79	Valley Park	X					X		X			X	
80	Tax Forfit	X											
81	Tax Forfit	X											
82	Pond - 7th St S & 13rd Ave S	X										X	
83	Pollution Control - Landfill	X	X	X	X	X	X	X	X	X		X	X
84	Valley Park	X					X		X			X	
85	Valley Park - Wetland	X										X	
86	Interlachen Park	X					X		X			X	
87	Not showing on map	X											
88	Minnehaha Creek Reserve	X	X					X	X	X	X	X	
89	Municipal Property - 1201 Oxford Street	X							X			X	X
90	Pond - 1035 Cambridge St	X										X	
91	Hiawatha Oaks Preserve	X							X		X	X	
92	Municipal Property - 9171 Excelsior Blvd	X							X			X	
93	Municipal Property - Excelsior Blvd	X							X			X	
94	151 Tyler Ave S - Municipal Property - Water Tower	X	X				X	X	X			X	X
95	151 Tyler Ave S - Municipal Property - Water Tower	X	X				X	X	X			X	X
96	151 Tyler Ave S - Municipal Property - Water Tower	X	X				X	X	X			X	X
97	Ashley Rd & Spruce Rd - Municipal Property - PID 1911721440105	X							X			X	
98	Pond - 98 21st Ave N	X										X	
99	Municipal Public Enterprise - 516 Oak Ridge Place	X							X			X	
100	Minnetonka Mills Road	X			X					X	X		X
101	Municipal Property - 1151 2nd St N	X							X			X	
102	Park and Ride	X		X	X				X	X			X
103	Park and Ride	X		X	X				X	X			X
104	Hopkins Activity Center	X			X	X	X	X	X	X		X	X
105	Central Park	X					X		X			X	
106	Parking Lot - Downtown Park	X			X					X		X	
107	Parking Lot - Downtown Park	X			X					X		X	
108	Overpass Skate Park	X					X		X				
109	Municipal Property - 114 1st St N	X							X			X	
110	Municipal Property - 118 1st St N	X							X			X	
111	Municipal Property - 122 1st St N	X							X			X	
112	7th Ave N & Lake Minnetonka LRT Regional Trail	X								X			

City of Hopkins		Municipal Operations Best Management Practices											
		1	2	3	4	5	6	7	8	9	10	11	12
Facility ID	Facility Name / Land Use	Proper Waste Management, Storage, & Disposal	Proper Stockpile Management	Proper Vehicle Fueling, Washing, & Maintenance	Routine Pavement Sweeping	Proper Emergency Response Procedures	Cleaning of Maintenance Equipment Buildings, & Dumpsters	Proper Use, Storage, and Disposal of Significant Materials	Proper Lawn and Landscape Maintenance	Proper Road Maintenance	Proper Right-of-Way Maintenance	Proper Application of Herbicides, Pesticides, and Fertilizers	Proper Snow Removal and Deicing Operations
113	Downtown Hopkins Lightrail Station	X		X	X		X			X			
114	Drainage Ditch - Excelsior Blvd & 5th Ave S	X									X	X	
115	Tax Forfit	X											
116	Pollution Control - Landfill	X	X	X	X	X	X	X	X	X		X	X
117	Wetland - PID 2511722340032	X										X	
118	Valley Park - Wetland	X										X	
119	Interlachen Park	X					X		X			X	
120	Municipal Public Enterprise - 15 6th Ave N	X							X			X	
121	Municipal Public Enterprise - 501 Mainstreet	X							X			X	
122	HRA PROPERTY - 525 Mainstreet	X							X			X	
123	HRA PROPERTY	X							X			X	
124	Tax Forfit	X											
125	Maetzold Field	X					X		X			X	

Appendix F: Illicit Discharge Report and Response Form

CITY OF HOPKINS, MN

ILLICIT DISCHARGE REPORT AND RESPONSE FORM

Illicit Discharge Identification

Date: _____ Reported by: _____
Time: _____ Phone No: _____
Weather: _____ Temperature: _____
Location: _____
Spill Material: _____
Spill Volume: _____
Other Information: _____

Received by: _____

Investigation

Date: _____ Assigned Investigator: _____
Watershed Description: _____
Storm Drain/Outfall ID: _____
Illicit Discharge Confirmed Entering Storm Drain System/Receiving Waters? ☐ YES ☐ NO

Discharge Material:
☐ HAZARDOUS WASTE ☐ WASTEWATER ☐ PAINT ☐ SALT
☐ OIL/GREASE ☐ SEDIMENT ☐ GRASS/LEAF CLIPPINGS ☐ ANIMAL WASTE
☐ OTHER

Estimated Quantity: _____
Additional Information: _____

Samples Collected: ☐ YES ☐ NO Photo(s) Taken: ☐ YES ☐ NO

Land Use:
☐ RESIDENTIAL
☐ COMMERCIAL/INDUSTRIAL Industrial NPDES Permit: ☐ YES ☐ NO
☐ PUBLIC/PARK

Source Description: _____
Responsible Party: _____

Attachments:
☐ PICTURES ☐ VIDEO ☐ FIELD NOTES ☐ MAPS
☐ TEST RESULTS ☐ MONITORING REPORT ☐ EST OF LABOR/MAT'LS/COSTS

Actions/Enforcement

Voluntary Compliance: ☐ YES ☐ NO Notice of Violation: ☐ YES ☐ NO

Corrective Actions Req'd:
☐ PERFORM MONITORING
☐ ELIMINATE CONNECTION/DISCHARGE
☐ ELIMINATE/DISPOSE PET WASTE
☐ INSTALL PROPER SALT STORAGE FACILITIES / IMPLEMENT PROPER SALT HANDLING PROCEDURES
☐ REMEDIATION/RESTORATION REQUIRED
☐ PAYMENT OF FINE TO COVER ADMINISTRATIVE OR REMEDIATION COSTS
☐ IMPLEMENT SOURCE CONTROL OR TREATMENT BMPS

Proof of Correction/Attachments:
☐ PICTURES ☐ VIDEO ☐ TEST RESULTS ☐ MONITORING REPORT
☐ PAID INVOICE ☐ CORRESPONDENCE ☐ NOTICE OF VIOLATION

Date Closed: _____

Appendix G: IDDE Investigation Techniques

Table 56: Techniques to Locate the Discharge		
Technique	**Best Applications**	**Limitations**
Dye Testing	• Discharge limited to a very small drainage area (<10 properties is ideal) • Discharge probably caused by a connection from an individual property • Commercial or industrial land use	• May be difficult to gain access to some properties
Video Testing	• Continuous discharges • Discharge limited to a single pipe segment • Communities who own equipment for other investigations	• Relatively expensive equipment • Cannot capture non-flowing discharges • Often cannot capture discharges from pipes submerged in the storm drain
Smoke Testing	• Cross-connection with the sanitary sewer • Identifying other underground sources (e.g., leaking storage techniques) caused by damage to the storm drain	• Poor notification to public can cause alarm • Cannot detect all illicit discharges

TIP

The Wayne County Department of the Environment provides excellent training materials on on-site investigations, as well as other illicit discharge techniques. More information about this training can be accessed from their website: http://www.wcdoe.org/Watershed/Programs___Srvcs_/IDEP/idep.htm.

Figure 63: Dye Testing Plumbing (NEIWPCC, 2003)

Dye Testing

Dye testing is an excellent indicator of illicit connections and is conducted by introducing non-toxic dye into toilets, sinks, shop drains and other plumbing fixtures (see Figure 63). The discovery of dye in the storm drain, rather than the sanitary sewer, conclusively determines that the illicit connection exists.

Before commencing dye tests, crews should review storm drain and sewer maps to identify lateral sewer connections and how they can be accessed. In addition, property owners must be notified to obtain entry permission. For industrial or commercial properties, crews should carry a letter to document their legal authority to gain access to the property. If time permits, the letter can be sent in advance of the dye testing. For residential properties, communication can be more challenging. Unlike commercial properties, crews are not guaranteed access to homes, and should call ahead to ensure that the owner will be home on the day of testing.

Communication with other local agencies is also important since any dye released to the storm drain could be mistaken for a spill or pollution episode. To avoid a costly and embarrassing response to a false alarm,

crews should contact key spill response agencies using a "quick fax" that describes when and where dye testing is occurring (Tuomari and Thomson, 2002). In addition, crews should carry a list of phone numbers to call spill response agencies in the event dye is released to a stream.

At least two staff are needed to conduct dye tests – one to flush dye down the plumbing fixtures and one to look for dye in the downstream manhole(s). In some cases, three staff may be preferred, with two staff entering the private residence or building for both safety and liability purposes.

The basic equipment to conduct dye tests is listed in Table 57 and is not highly specialized. Often, the key choice is the type of dye to use for testing. Several options are profiled in Table 58. In most cases, liquid dye is used, although solid dye tablets can also be placed in a mesh bag and lowered into the manhole on a rope (Figure 64). If a

Table 57: Key Field Equipment for Dye Testing
(Source: Wayne County, MI, 2000)

Maps, Documents
- Sewer and storm drain maps (sufficient detail to locate manholes)
- Site plan and building diagram
- Letter describing the investigation
- Identification (e.g., badge or ID card)
- Educational materials (to supplement pollution prevention efforts)
- List of agencies to contact if the dye discharges to a stream.
- Name of contact at the facility

Equipment to Find and Lift the Manhole Safely (small manhole often in a lawn)
- Probe
- Metal detector
- Crow bar
- Safety equipment (hard hats, eye protection, gloves, safety vests, steel-toed boots, traffic control equipment, protective clothing, gas monitor)

Equipment for Actual Dye Testing and Communications
- 2-way radio
- Dye (liquid or "test strips")
- High powered lamps or flashlights
- Water hoses
- Camera

Figure 64: Dye in a mesh bag is placed into an upstream manhole (left); Dye observed at a downstream manhole traces the path of the storm drain (right)

longer pipe network is being tested, and dye is not expected to appear for several hours, charcoal packets can be used to detect the dye (GCHD, 2002). Charcoal packets can be secured and left in place for a week or two, and then analyzed for the presence of dye. Instructions for using charcoal packets in dye testing can be accessed at the following website: http://bayinfo.tamug.tamu.edu/gbeppubs/ms4.pdf.

The basic drill for dye tests consists of three simple steps. First, flush or wash dye down the drain, fixture or manhole. Second, pop open downgradient sanitary sewer manholes and check to see if any dye appears. If none is detected in the sewer manhole after an hour or so, check downgradient storm drain manholes or outfalls for the presence of dye. Although dye testing is fairly straightforward, some tips to make testing go more smoothly are offered in Table 59.

Table 58: Dye Testing Options

Product	Applications
Dye Tablets	• Compressed powder, useful for releasing dye over time • Less messy than powder form • Easy to handle, no mess, quick dissolve • Flow mapping and tracing in storm and sewer drains • Plumbing system tracing • Septic system analysis • Leak detection
Liquid Concentrate	• Very concentrated, disperses quickly • Works well in all volumes of flow • Recommended when metering of input is required • Flow mapping and tracing in storm and sewer drains • Plumbing system tracing • Septic system analysis • Leak detection
Dye Strips	• Similar to liquid but less messy
Powder	• Can be very messy and must dissolve in liquid to reach full potential • Recommended for very small applications or for very large applications where liquid is undesirable • Leak detection
Dye Wax Cakes	• Recommended for moderate-sized bodies of water • Flow mapping and tracing in storm and sewer drains
Dye Wax Donuts	• Recommended for large sized bodies of water (lakes, rivers, ponds) • Flow mapping and tracing in storm and sewer drains • Leak detection

Table 59: Tips for Successful Dye Testing
(Adapted from Tuomari and Thompson, 2002)

Dye Selection
- Green and liquid dyes are the easiest to see.
- Dye test strips can be a good alternative for residential or some commercial applications. (Liquid can leave a permanent stain).
- Check the sanitary sewer before using dyes to get a "base color." In some cases, (e.g., a print shop with a permitted discharge to the sanitary sewer), the sewage may have an existing color that would mask a dye.
- Choose two dye colors, and alternate between them when testing multiple fixtures.

Selecting Fixtures to Test
- Check the plumbing plan for the site to isolate fixtures that are separately connected.
- For industrial facilities, check most floor drains (these are often misdirected).
- For plumbing fixtures, test a representative fixture (e.g., a bathroom sink).
- Test some locations separately (e.g., washing machines and floor drains), which may be misdirected.
- If conducting dye investigations on multiple floors, start from the basement and work your way up.
- At all fixtures, make sure to flush with plenty of water to ensure that the dye moves through the system.

Selecting a Sewer Manhole for Observations
- Pick the closest manhole possible to make observations (typically a sewer lateral).
- If this is not possible, choose the nearest downstream manhole.

Communications Between Crew Members
- The individual conducting the dye testing calls in to the field person to report the color dye used, and when it is dropped into the system.
- The field person then calls back when dye is observed in the manhole.
- If dye is not observed (e.g., after two separate flushes have occurred), dye testing is halted until the dye appears.

Locating Missing Dye
- The investigation is not complete until the dye is found. Some reasons for dye not appearing include:
- The building is actually hooked up to a septic system.
- The sewer line is clogged.
- There is a leak in the sewer line or lateral pipe.

Video Testing

Video testing works by guiding a mobile video camera through the storm drain pipe to locate the actual connection producing an illicit discharge. Video testing shows flows and leaks within the pipe that may indicate an illicit discharge, and can show cracks and other pipe damage that enable sewage or contaminated water to flow into the storm drain pipe.

Video testing is useful when access to properties is constrained, such as residential neighborhoods. Video testing can also be expensive, unless the community already owns and uses the equipment for sewer inspections. This technique will not detect all types of discharges, particularly when the illicit connection is not flowing at the time of the video survey.

Different types of video camera equipment are used, depending on the diameter and condition of the storm sewer being tested.

Field crews should review storm drain maps, and preferably visit the site before selecting the video equipment for the test. A field visit helps determine the camera size needed to fit into the pipe, and if the storm drain has standing water.

In addition to standard safety equipment required for all manhole inspections, video testing requires a Closed-Circuit Television (CCTV) and supporting items. Many commercially available camera systems are specifically adapted to televise storm sewers, ranging from large truck or van-mounted systems to much smaller portable cameras. Cameras can be self-propelled or towed. Some specifications to look for include:

- The camera should be capable of radial view for inspection of the top, bottom, and sides of the pipe and for looking up lateral connections.
- The camera should be color.
- Lighting should be supplied by a lamp on the camera that can light the entire periphery of the pipe.

When inspecting the storm sewer, the CCTV is oriented to keep the lens as close as possible to the center of the pipe. The camera can be self-propelled through the pipe using a tractor or crawler unit or it may be towed through on a skid unit (see Figures 65 and 66). If the storm drain has ponded water, the camera should be attached to a raft, which floats through the storm sewer from one manhole to the next. To see details of the sewer, the camera and lights should be able to swivel both horizontally and vertically. A video record of the inspection should be made for future reference and repairs (see Figure 67).

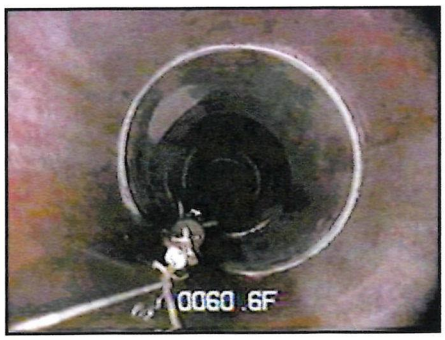


Figure 65: Camera being towed

Smoke Testing

Smoke testing is another "bottom up" approach to isolate illicit discharges. It works by introducing smoke into the storm drain system and observing where the smoke surfaces. The use of smoke testing to detect illicit discharges is a relatively new application, although many communities have used it to check for infiltration and inflow into their sanitary sewer network. Smoke testing can find improper

Figure 66: Tractor-mounted camera

Figure 67: Review of an inspection video

connections, or damage to the storm drain system (Figure 68). This technique works best when the discharge is confined to the upper reaches of the storm drain network, where pipe diameters are to small for video testing and gaining access to multiple properties renders dye testing infeasible.

Notifying the public about the date and purpose of smoke testing before starting is critical. The smoke used is non-toxic, but can cause respiratory irritation, which can be a problem for some residents. Residents should be notified at least two weeks prior to testing, and should be provided the following information (Hurco Technologies, Inc., 2003):

- Date testing will occur
- Reason for smoke testing
- Precautions they can take to prevent smoke from entering their homes or businesses
- What they need to do if smoke enters their home or business, and any health concerns associated with the smoke
- A number residents can call to relay any particular health concerns (e.g., chronic respiratory problems)

Program managers should also notify local media to get the word out if extensive smoke testing is planned (e.g., television, newspaper, and radio). On the actual day of testing, local fire, police departments and 911 call centers should be notified to handle any calls from the public (Hurco Technologies, Inc., 2003).

The basic equipment needed for smoke testing includes manhole safety equipment, a smoke source, smoke blower, and sewer plugs. Two smoke sources can be used for smoke testing. The first is a smoke "bomb," or "candle" that burns at a controlled rate and releases very white smoke visible at relatively low concentrations (Figure 69). Smoke bombs are suspended beneath a blower in a manhole. Candles are available in 30 second to three minute sizes. Once opened, smoke bombs should be kept in a dry location and should be used within one year.

The second smoke source is liquid smoke, which is a petroleum-based product that is injected into the hot exhaust of a blower where it is heated and vaporized (Figure 70). The length of smoke production can vary depending on the length of the pipe being

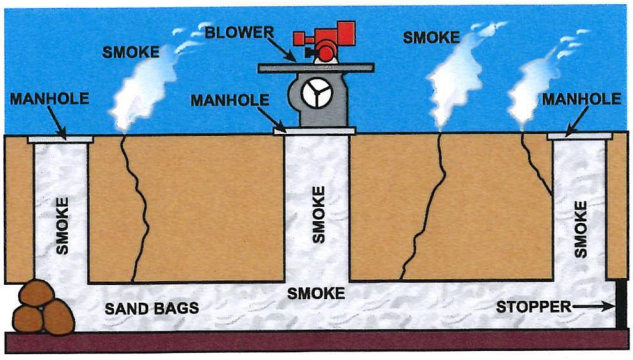


Figure 68: Smoke Testing System Schematic

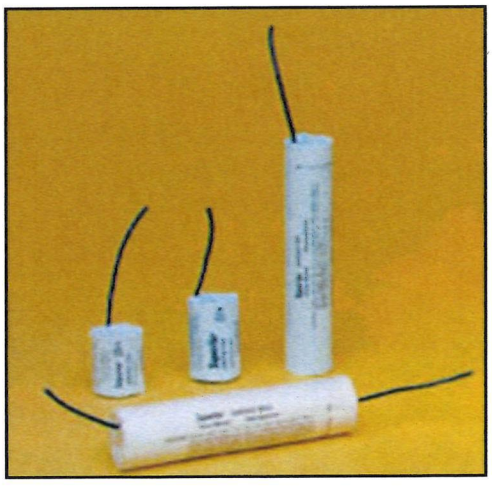


Figure 69: Smoke Candles

Figure 70: Smoke blower

tested. In general, liquid smoke is not as consistently visible and does not travel as far as smoke from bombs (USA Blue Book).

Smoke blowers provide a high volume of air that forces smoke through the storm drain pipe. Two types of blowers are commonly used: "squirrel cage" blowers and direct-drive propeller blowers. Squirrel cage blowers are large and may weigh more than 100 pounds, but allow the operator to generate more controlled smoke output. Direct-drive propeller blowers are considerably lighter and more compact, which allows for easier transport and positioning.

Three basic steps are involved in smoke testing. First, the storm drain is sealed off by plugging storm drain inlets. Next, the smoke is released and forced by the blower through the storm drain system. Lastly, the crew looks for any escape of smoke above-ground to find potential leaks.

One of three methods can be used to seal off the storm drain. Sandbags can be lowered into place with a rope from the street surface. Alternatively, beach balls that have a diameter slightly larger than the drain can be inserted into the pipe. The beach ball is then placed in a mesh bag with a rope attached to it so it can be secured and retrieved. If the beach ball gets stuck in the pipe, it can simply be punctured, deflated and removed. Finally, expandable plugs are available, and may be inserted from the ground surface.

Blowers should be set up next to the open manhole after the smoke is started. Only one manhole is tested at a time. If smoke candles are used, crews simply light the candle, place it in a bucket, and lower it in the manhole. The crew then watches to see where smoke escapes from the pipe. The two most common situations that indicate an illicit discharge are when smoke is seen rising from internal plumbing fixtures (typically reported by residents) or from sewer vents. Sewer vents extend upward from the sewer lateral to release gas buildup, and are not supposed to be connected to the storm drain system.

13.4 Septic System Investigations

The techniques for tracing illicit discharges are different in rural or low-density residential watersheds. Often, these watersheds lack sanitary sewer service and storm water is conveyed through ditches or swales, rather than enclosed pipes. Consequently, many illicit discharges enter the stream as indirect discharges, through surface breakouts of septic fields or through straight pipe discharges from bypassed septic systems.

The two broad techniques used to find individual septic systems—on-site investigations and infrared imagery—are described in this section.

Appendix H: Spill Response Plan

Spill Response Plan

A. Requirements

Emergency Notification REQUIRED if there is a spill of a hazardous material or more than 5 gallons of a petroleum product AND it can reach surface water or sewers, or can reach ground/soil you must call:

- Local Authorities Call 9-1-1 first, if there is a threat to life or property
- City: Eric Klingbeil, City Engineer – 952-548-6357
- Minnesota Duty Officer 1-800-422-0798 or (651) 649-5451 if public safety or environmental threat and/or state notification for reportable spills is required
- The National Response Center 1-800-424-8802 if Duty Officer states federal notification required

Be prepared to provide the following information to the Minnesota Duty Officer:

- Name of caller
- Date, time, and location of incident
- Telephone number for call-backs
- What local officials have been contacted (fire, police, sheriff)

Additional information that may be required for special circumstances:

Notification of a Spill	Requesting State Assistance
• Materials and quantity involved • Incident location (address, coordinates) • Party responsible for incident • Telephone # of responsible party • Surface waters or infrastructure impacted	• Type of assistance requested (information, specialized equipment/labor) • Name of requesting agency • Materials, quantity, and personnel • Coordination with other local, County, and other agencies

B. Spill Response

1. Approach
   a) Use safety
   b) Use safety first in responding to spills. Do not endanger yourself or others by entering a hazardous environment. If there is a fire or medical attention is needed, call 911 immediately.
   c) Avoid exposure. Approach the spill from upwind and stay clear of spills, vapors, fumes, and smoke.
2. Secure the Site
   a) Isolate the spill.

b) Direct people away from site; divert traffic and pedestrians as necessary.

c) Stop the source of spill, if possible.

d) Eliminate any potential ignition sources, if possible.

3. Identify Hazards

a) Identify the spilled material, if possible.

b) Note characteristics of material (odor, color, sheen), warning labels, container types, activities that are contributing to incident.

4. Assess Conditions

a) Ascertain the appropriate first response and need for additional help.

b) Note potential threats (fire, explosion, mixing with something else).

c) Note resources available to contain the spill.

d) Note persons/infrastructure at risk.

5. Reporting

a) Contact the Minnesota Department of Public Safety Duty Officer at 1-800-422-0798 (toll free) or 651-649-5451 (Metro area), if the spill of any substance or material may cause or has caused pollution of waters of the state.

b) Report spills that may cause pollution (toxic, flammable, corrosive, or dangerous industrial chemicals).

c) Report petroleum spills of 5 gallons or greater in volume.

6. Containment

a) Put on appropriate personal protective equipment (PPE), such as boots, gloves, and safety glasses.

b) Place berms or available material around perimeter of spill.

c) Provide protection of nearest storm water conveyance (inlet, gutter, culvert).

d) Apply absorbent material, starting at downstream edge of spill.

7. Clean Up

a) Only personnel with proper training shall perform clean up.

b) Clean small spills according to their Material Safety Data Sheet.

c) Do not wash or hose spill into the street or storm drain system.

d) Ventilate area and eliminate any sources of ignition.

e) Clean spills quickly.

f) Use “dry” clean up methods if possible (sweeping, shoveling, scraping).

g) Place waste in appropriate containers.

h) Dispose of spill material in accordance with State and Federal regulations.

i) If personnel with proper training are not available, leave the area and notify emergency responders.

8. Follow Up and Documentation

   a) Clean and decontaminate all reusable spill cleanup equipment.

   b) Restock spill response materials and personal protection equipment as soon as possible.

   c) Document spill (see Documentation and Assessment Plan).

Appendix I: Maintenance Plans (Road Maintenance Plan), Snow Management Policy

CITY OF HOPKINS
PUBLIC WORKS
POLICY _____

SNOW AND ICE CONTROL POLICIES/PROCEDURES

I. PURPOSE

1.01 To outline policies and procedures regarding snow removal and ice control on streets, alleys, parking lots, sidewalks and trails maintained by the City of Hopkins.

II. POLICIES

2.01 City streets must be passable to allow normal traffic flow and emergency vehicles to respond to all areas within the City. In providing snow and ice control, the City endeavors to maintain adequate traction for vehicles properly equipped for winter driving conditions. The City, however does not guarantee bare, dry pavement after each snowfall or that streets are totally free of ice and snow.

2.02 The Public Works Department will, in the execution of snow removal and all functions, promote harmonious relations within the department and with other Hopkins City Departments and with the public and will provide expeditious and cost efficient operations.

2.03 The Police Department is responsible for monitoring street conditions and advising the Public Works Department of any hazardous or unusual conditions.

2.04 The Pubic Works Department is responsible for performing ice control and snow removal. Snow will generally be removed within 24 hours of the start of the snowfall. This requires 8 to 12 hours of operations for a "normal" snowfall of 2 to 6 inches. Ice control will be performed whenever necessary, as per current procedures.

2.05 Hopkins City Code 1305.31 prohibits parking on any public street after a snowfall of two (2) inches or more in depth [determined by City monitoring device(s)] until the snow has been plowed to the curb or removed. Snow removal warning signs have been installed at the corporate limits of major thoroughfares. Vehicles may be tagged and towed to allow snow removal.

2.06 Minnesota Statute 160.27 and Hopkins City Code 800.01 prohibit plowing, shoveling, blowing, or placing snow onto public roadways and boulevards. Placing snow onto a public roadway can subject a person to civil liability if a road hazard, such as a slippery area, frozen rut, or bump occurs and causes a traffic accident.

2.07 Hopkins City Code 820.03 requires an owner and the occupant of any property adjacent to a public sidewalk to remove snow or ice within 12 hours of its deposit.

The City maintains public sidewalks adjacent to City owned buildings and certain other public sidewalks and park trails designated by City policies.

2.08 Mailboxes damaged during snow removal will not be replaced by the City, unless there is physical evidence that the snow removal vehicle actually hit the mailbox. If due to snow buildup on the boulevards, mailboxes are tipped or knocked over from the weight of the snow, it shall be the responsibility of the property owner to repair or replace the mailbox. If the City is responsible, the mailbox will be replaced with comparable quality items. Residents are responsible for keeping the mailbox cleared for Post Office deliveries.

2.09 Refuse containers (City supplied and private), must be accessible for pick up and placed off street or alley to allow snow removal. This is the responsibility of the property owner and/or occupant. The container may have to be placed in the driveway to allow this. Property owners and/or occupants are responsible for keeping containers cleared for pick up.

2.10 Ice skating rinks will generally be cleared of snow within 24 hours of the start of the snowfall. This requires approximately 8 hours of operations for a "normal" snowfall. In the event of unusual large snowfalls, personnel normally assigned to rink plowing may be needed to clear streets and sidewalks which could delay rink clearing operations.

III. PROCEDURES

3.01 Notification:

a. The Police Department is responsible, 24 hours per day, for monitoring street conditions and snow fall amount. When conditions warrant, the Police are responsible for notification of the Street Superintendent or other designee.

b. The Street Superintendent or his designee, after notification by the Police, or by a decision based on weather forecasts or obvious conditions, is responsible for notification of all necessary Public Works personnel to accomplish snow removal and/or ice control.

c. If salt/sand trucks are used, they shall check in and out with the Police dispatch, by radio so that operations can be coordinated.

d. The Street Superintendent will notify the police supervisor and/or police dispatcher as soon as possible after a decision to plow is made, and will decide which areas should be prioritized for towing.

e. The Police Department shall arrange for notification of the City towing contractor and coordinate all towing operations, impounding and vehicle release.

f. When snow plow operations overtake the impounding vehicles the police supervisor shall contact the Street Superintendent, and a joint decision made to continue, change locations, or halt towing operations.

3.02 Streets, alleys and public parking lots: (See Map 1)

a. Ice control will be accomplished by distributing a sand/salt mixture when determined necessary by Police patrol or the Street Superintendent. The basic priorities are as follows:

1. Intersections where City streets adjoin County and State highways, school and pedestrian crossings, railroad crossings, bridge decks, and all collector street stop sign intersections.

2. Local street intersections and special hill or curve areas.

3. Conditions deemed by Street superintendent, equipment operators and/or the Police to be hazardous.

b. Street crews shall be alerted when two (2) inches of snow have accumulated and snow is continuing to fall. If time schedules permit and snowfall is minor, plowing will start immediately after snowfall ceases and continue to completion.

c. Streets, alleys, and public parking lots are plowed by designated routes simultaneously. In unusually large snowfall, collector streets may receive primary attention to maintain traffic flow.

d. Normal snow removal operations begin in the early morning following a storm and proceed using the following sequence:

1. First day (plowing ONLY)

- Start at 2:00 A.M. and work until all streets, alleys, and parking lots are cleared.

2. Second day and succeeding days for cleanup.

- Start at 3:00 A.M. and work 8 hours.

- Sanding trucks start at 5:00 A.M. and work 8 hours.

e. Banks of accumulated snow along streets may require "winging" back to accommodate more snow. This will be done only if absolutely necessary. Snow piles at corners and elsewhere causing obstructions will periodically be removed.

3.03 Downtown Cleanup: (See Map 2)

a. The normal order of downtown cleanup shall be as follows:

1. North-South Avenues from First Street North to Co. Road #3, 8th Avenue through 11th Avenue.
2. 12th avenue from 1st Street North to 1st Street South.
3. Mainstreet alleys, 8th Avenue through 12th Avenue.
4. The Mall from 5th Avenue to 12th Avenue.
5. The east end of Mainstreet from 5th Avenue to Park Lane.
6. 5th Avenue from 1st. Street North to Co. Road #3.
7. The west end of Mainstreet from 12th Avenue to Shady Oak Road.
8. Parking lots:
   - North of Mainstreet
   - South of Mainstreet.
9. 6th Avenue from Mainstreet to *the alley south of* Mainstreet
10. 7th Avenue from Mainstreet to the RR Right-of-way north and the 2nd alley south of Mainstreet
11. 14th Avenue from Mainstreet to 1st Street North
12. Outlying areas where haul away is necessary.

b. Parking lots and outlying area cleanup will be done *during regular hours of 7:30 - 4:00 unless otherwise* directed.

c. Bus shelters are cleaned during regular working hours by the Traffic Service Division with assistance from Streets and Building Maintenance Divisions.

3.04 Sidewalks and Trails: (See Map 3)

a. Public Sidewalks maintained by the City will normally be cleared by the following times if possible.

1. Downtown City owned property - 8:00 A.M.
2. City Hall - 8:00 A.M.
3. Dow Towers - 9:00 A.M.
4. 20th Avenue Townhouses -- 12:00 A.M.
5. Miscellaneous sidewalks and trails will be cleared during the street plowing operation.

b. Sidewalks will be cleared by a coordinated effort of the Street, Parks and Building Maintenance Divisions.

c. Park trails will be cleared at Burnes, Central, Downtown, Oakes, and Valley Parks by the Parks Maintenance Division. The Streets Division will assist where feasible. Other trails will be cleared or groomed as per current City Policy.

3.05 Ice Rinks:

a. Ice rinks will be cleared by the Parks Maintenance Division as needed during normal maintenance shift operations. Rinks shall be cleared within 8 hours of the end of snow fall. Unusually large snowfalls may require a longer clearing period to allow other higher priority snow clearing operations.

3.06 Miscellaneous:

a. Water/Sewer facilities will be cleared by the Water/Sewer Division with assistance from the Parks and Streets Maintenance Divisions, if necessary. Facilities will be opened expeditiously to allow adequate maintenance and emergency response.

Revised 10/17/88

Appendix J: Agreements (Municipal and Private)

Appendix K: Checklists

MS4 Annual Assessment

Municipal Stormwater Permit Program
City of Hopkins

The Annual SWPPP Assessment shall be performed prior to completion of each Annual Report. Use this form to evaluate program compliance, appropriateness of BMP practices, and progress towards identified measurable goals.
Note: This annual assessment shall be done to comply with the requirements of NPDES/SDS Permit MN R100001.

Reviewer(s): _____ Date: _____

0. Program Management

	S = Satisfactory M = Marginal U = Unsatisfactory NA = Not Applicable	S	M	U	NA
0.1	A SWPPP Organization Staff List has been generated to identify individual responsibilities and training needs as they relate to the program.				
0.2	Internal communication and coordination to implement SWPPP was adequate.	☐	☐	☐	☐
0.3	Utilization of outside groups and/or partnerships to implement SWPPP was adequate.	☐	☐	☐	☐
0.4	Annual report was submitted on June 30th.	☐	☐	☐	☐
0.5	City is prepared for permit compliance evaluation/audit.	☐	☐	☐	☐

Comments:

Recommended Actions:

1. MCM 1 – Public Education and Outreach (Section 16.1)

	S = Satisfactory M = Marginal U = Unsatisfactory NA = Not Applicable	S	M	U	NA
16.2	Implemented a public education program to distribute educational materials or equivalent outreach that informs the public of the impact stormwater discharges have on waterbodies and that includes actions citizens, businesses, and other local organizations can take to reduce the discharge of pollutants to stormwater.	☐	☐	☐	☐
16.3	Distributed educational materials or conducted equivalent outreach activities on stormwater-related issue(s) of high priority.	☐	☐	☐	☐
16.4	Distributed materials or conducted equivalent outreach activities on illicit discharge recognition and reporting.	☐	☐	☐	☐
16.5	Distributed materials or conducted equivalent outreach activities on the following: a. Impacts of deicing salt use on receiving waters; b. Methods to reduce deicing salt use; and c. Proper storage of salt or other deicing materials.	☐	☐	☐	☐
16.6	Distributed materials or conducted equivalent outreach activities on pet waste. The educational materials or equivalent outreach must include information on the following: a. Impacts of pet waste on receiving waters; b. Proper management of pet waste; and c. Any existing regulatory mechanism(s) for pet waste.	☐	☐	☐	☐
16.7	Implemented an education and outreach plan that consists of the following: a. Target audience(s) (e.g., residents, businesses, commercial facilities, institutions, and local organizations; consideration should be given to low-income residents, people of color, and non-native English speaking residents. A resource to help identify these areas is available on the Agency's environmental justice website);	☐	☐	☐	☐

	b. Name or position title of responsible person(s) for overall plan implementation; c. Specific activities and schedules to reach each target audience; and d. A description of any coordination with and/or use of stormwater education and outreach programs implemented by other entities, if applicable.				
16.8	Documentated the following: a. A description of all specific stormwater-related issues identified by the permittee. b. All information required under the permittee's education and outreach plan. c. Activities held, including dates, to reach each target audience. d. Quantities and descriptions of educational materials distributed, including dates distributed. e. Estimated audience (e.g., number of participants, viewers, readers, listeners, etc.) for each completed education and outreach activity.	☐	☐	☐	☐
16.9	Completed annual assessment of the public education program to evaluate program compliance, the status of achieving the measurable requirements in Section 16 and determine how the program might be improved.	☐	☐	☐	☐

Comments:

Recommended Actions:

2. MCM 2 – Public Participation and Involvement (Section 17.1)

	S = Satisfactory M = Marginal U = Unsatisfactory NA = Not Applicable	**S**	**M**	**U**	**NA**
17.2	Implemented a Public Participation/Involvement program to solicit public input on the SWPPP and involve the public in activities that improve or protect water quality.	☐	☐	☐	☐
17.3	Provided a minimum of one (1) opportunity annually for the public to provide input on the adequacy of the SWPPP.	☐	☐	☐	☐
17.4	Provided access to the SWPPP Document, annual reports, and other documentation that supports or describes the SWPPP (e.g., regulatory mechanism(s), etc.) for public review, upon request.	☐	☐	☐	☐
17.5	Considered oral and written input regarding the SWPPP submitted by the public. Written procedures outline reception of comments.				
17.6	Provided a minimum of one (1) public involvement activity that includes a pollution prevention or water quality theme (e.g., rain barrel distribution event, rain garden workshop, cleanup event, storm drain stenciling, volunteer water quality monitoring, adopt a storm drain program, household hazardous waste collection day, etc.).	☐	☐	☐	☐
17.7	Documented the following: a. All relevant written input submitted by persons regarding the SWPPP. b. All responses from the permittee to written input received regarding the SWPPP, including any modifications made to the SWPPP as a result of the written input received. c. Date(s), location(s), and estimated number of participants at events. d. Notices provided to the public of any events, including any electronic correspondence (e.g., website, e-mail distribution lists, notices, etc.).	☐	☐	☐	☐
17.8	Completed annual assessment of the Public Participation/Involvement program to evaluate program compliance, the status of achieving the measurable requirements in Section 17, and determine how the program might be improved.	☐	☐	☐	☐

Comments:

Recommended Actions:

3. MCM 3 – Illicit Discharge Detection and Elimination (Section 18.1)

	S = Satisfactory M = Marginal U = Unsatisfactory NA = Not Applicable	S	M	U	NA
18.2	Implemented and enforced a program to detect and eliminate illicit discharges into the MS4.	☐	☐	☐	☐
18.3	Completed annual storm sewer system map updates that depict the following: a. All pipes 12 inches or greater in diameter, including stormwater flow direction. b. Outfalls, including a unique identification (ID) number assigned by the permittee, and an associated geographic coordinates. c. Structural stormwater BMPs that are part of the permittee's MS4. d. All receiving waters.	☐	☐	☐	☐
18.4	Implemented and enforced a regulatory mechanism(s) that prohibits non-stormwater discharges into the permittee's MS4.	☐	☐	☐	☐
18.5	Mechanism(s) requires owners or custodians of pets to remove and properly dispose of feces on permittee owned land areas.	☐	☐	☐	☐
18.6	Mechanism(s) requires proper salt storage at commercial, institutional, and non-NPDES permitted industrial facilities. At a minimum, the regulatory mechanism(s) requires the following: a. Designated salt storage areas must be covered or indoors. b. Designated salt storage areas must be located on an impervious surface. c. Implementation of practices to reduce exposure when transferring material in designated salt storage areas (e.g., sweeping, diversions, and/or containment).	☐	☐	☐	☐
18.7	Incorporated illicit discharge detection into all maintenance and inspection activities.	☐	☐	☐	☐
18.8	Trained all field staff annually in illicit discharge recognition (including conditions which could cause illicit discharges) and reporting illicit discharges for further investigation. Field staff included police, fire department, public works, and parks staff.	☐	☐	☐	☐
18.9	Trained individuals commensurate with their responsibilities as they relate to the IDDE program. Individuals included those responsible for investigating, locating, eliminating illicit discharges, and/or enforcement. Previously trained individuals must attend a refresher-training every three (3) calendar years following the initial training.	☐	☐	☐	☐
18.10	Maintained a written or mapped inventory of priority areas identified as having a higher likelihood for illicit discharges. Inventory included the following: a. Land uses associated with business/industrial activities; b. Areas where illicit discharges have been identified in the past; and c. Areas with storage of significant materials that could result in an illicit discharge.	☐	☐	☐	☐
18.11	Conducted additional illicit discharge inspections in high priority areas.	☐	☐	☐	☐
18.12	Implemented written procedures for investigating, locating, and eliminating the source of illicit discharges. At a minimum, the written procedures must include: a. A timeframe in which the permittee will investigate a reported illicit discharge. b. Use of visual inspections to detect and track the source of an illicit discharge. c. Tools available to the permittee to investigate and locate an illicit discharge (e.g., mobile cameras, collecting and analyzing water samples, smoke testing, dye testing, etc.). d. Cleanup methods available to the permittee to remove an illicit discharge or spill. e. Name or position title of responsible person(s) for investigating, locating, and eliminating an illicit discharge.	☐	☐	☐	☐

18.13	Implemented written procedures for responding to spills, including emergency response procedures to prevent spills from entering the MS4. The written procedures must also include the immediate notification of the Minnesota Department of Public Safety Duty Officer at 1-800-422-0798 (toll free) or 651-649-5451 (Metro area), if the source of the illicit discharge is a spill or leak as defined in Minn. Stat. 115.061.	☐	☐	☐	☐
18.14	Maintained written enforcement response procedures (ERPs) to compel compliance with the permittee's regulatory mechanism(s) in Section 18. At a minimum, the written ERPs must include: a. A description of enforcement tools available to the permittee and guidelines for the use of each tool. b. Timeframes to complete corrective actions. c. Name or position title of responsible person(s) for conducting enforcement.	☐	☐	☐	☐
18.15	Documented the following information: a. Date(s) and location(s) of IDDE inspections. b. Reports of alleged illicit discharges received, including date(s) of the report(s), and any follow-up action(s) taken. c. Date(s) of discovery of all illicit discharges; d. Identification of outfalls, or other areas, where illicit discharges have been discovered; e. Sources (including a description and the responsible party) of illicit discharges (if known); and f. Action(s) taken by the permittee, including date(s), to address discovered illicit discharges.	☐	☐	☐	☐
18.16	For training, documented the following: a. General subject matter covered; b. Names and departments of individuals in attendance; and c. Date of each event.	☐	☐	☐	☐
18.17	Documented any enforcement conducted pursuant to the ERPs in item 18.14, including verbal warnings. At a minimum, the permittee must document the following: a. Name of the person responsible for violating the terms and conditions of the permittee's regulatory mechanism(s); b. Date(s) and location(s) of the observed violation(s); c. Description of the violation(s); d. Corrective action(s) (including completion schedule) issued by the permittee; e. Referrals to other regulatory organizations (if any); and f. Date(s) violation(s) resolved.	☐	☐	☐	☐
18.18	Completed annual assessment of the IDDE program to evaluate program compliance, the status of achieving the measurable requirements in Section 18, and determine how the program might be improved.	☐	☐	☐	☐

Comments:

Recommended Actions:

4. MCM 4 – Construction Site Stormwater Runoff Control (Section 19.1)

	S = Satisfactory M = Marginal U = Unsatisfactory NA = Not Applicable	**S**	**M**	**U**	**NA**
19.2	Implemented and enforced a Construction Site Stormwater Runoff Control program. The program must address construction activity with a land disturbance of greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale, within the permittee's jurisdiction and that discharge to the permittee's MS4.	☐	☐	☐	☐

19.3	Implemented and enforced a regulatory mechanism(s) that establishes requirements for erosion, sediment, and waste controls that are at least as stringent as the Minnesota Pollution Control Agency's most current Construction Stormwater (CSW) General Permit (MNR100001).	☐	☐	☐	☐
19.4	When the CSW Permit is reissued, the permittee must revise their regulatory mechanism(s), if necessary, within 12 months of the issuance date of that permit, to be at least as stringent as the requirements for erosion, sediment, and waste controls described in the CSW Permit.	☐	☐	☐	☐
19.5	The regulatory mechanism(s) requires that owners and operators of construction activity develop site plans that must be submitted to the permittee for review and confirmation that regulatory mechanism(s) requirements have been met, prior to the start of construction activity. The regulatory mechanism(s) requires the owners and operators of construction activity to keep site plans up-to-date with regard to stormwater runoff controls. The regulatory mechanism(s) requires that site plans incorporate the following erosion, sediment, and waste controls that are at least as stringent as described in the CSW Permit: a. Erosion prevention practices; b. Sediment control practices; c. Dewatering and basin draining; d. Inspection and maintenance; e. Pollution prevention management measures; f. Temporary sediment basins; and g. Termination conditions.	☐	☐	☐	☐
19.6	Implemented written procedures for site plan reviews conducted prior to the start of construction activity to ensure compliance with requirements of the regulatory mechanism(s). At a minimum, the procedures must include: a. Written notification to owners and operators proposing construction activity, including projects less than one acre that are part of a larger common plan of development or sale, of the need to apply for and obtain coverage under the CSW Permit; and b. Use of a written checklist, consistent with the requirements of the regulatory mechanism(s), to document the adequacy of each site plan required in item 19.5.	☐	☐	☐	☐
19.7	Implemented an inspection program that includes written procedures for conducting site inspections to determine compliance with the permittee's regulatory mechanism(s). The inspection program must also meet the requirements in items 19.8 and 19.9.	☐	☐	☐	☐
19.8	Maintained written procedures for identifying high-priority and low-priority sites for inspection. At a minimum, the written procedures must include: a. A detailed explanation describing how sites will be categorized as either high-priority or low-priority; b. A frequency at which the permittee will conduct inspections for high-priority sites; c. A frequency at which the permittee will conduct inspections for low-priority sites; and d. The name(s) of individual(s) or position title(s) responsible for conducting site inspections.	☐	☐	☐	☐
19.9	Implemented a written checklist to document each site inspection when determining compliance with the permittee's regulatory mechanism(s). At a minimum, the checklist must include the permittee's inspection findings on the following areas, as applicable to each site: a. Stabilization of exposed soils (including stockpiles); b. Stabilization of ditch and swale bottoms; c. Sediment control BMPs on all downgradient perimeters of the project and upgradient of buffer zones; d. Storm drain inlet protection;	☐	☐	☐	☐

	e. Energy dissipation at pipe outlets; f. Vehicle tracking BMPs; g. Preservation of a 50 foot natural buffer or redundant sediment controls where stormwater flows to a surface water within 50 feet of disturbed soils; h. Owner/operator of construction activity self-inspection records; i. Containment for all liquid and solid wastes generated by washout operations (e.g., concrete, stucco, paint, form release oils, curing compounds, and other construction materials); and j. BMPs maintained and functional.				
19.10	Implemented written procedures for receipt and consideration of reports of noncompliance or other stormwater related information on construction activity submitted by the public.	☐	☐	☐	☐
19.11	Trained individuals commensurate with their responsibilities as they relate to the Construction Site Stormwater Runoff Control program. Individuals include those responsible for conducting site plan reviews, site inspections, and/or enforcement. Previously trained individuals must attend a refresher-training every three (3) calendar years following the initial training.	☐	☐	☐	☐
19.12	Maintained written enforcement response procedures (ERPs) to compel compliance with the regulatory mechanism(s) in item 19.3. At a minimum, the written ERPs must include: a. A description of enforcement tools available to the permittee and guidelines for the use of each tool; and b. Name or position title of responsible person(s) for conducting enforcement.	☐	☐	☐	☐
19.13	For each site plan review conducted by the permittee, the permittee must document the following: a. Project name; b. Location; c. Total acreage to be disturbed; d. Owner and operator of the proposed construction activity; e. Proof of notification to obtain coverage under the CSW Permit, as required in item 19.6, or proof of coverage under the CSW Permit; and f. Any stormwater related comments and supporting completed checklist, as required in item 19.6, used to determine project approval or denial.	☐	☐	☐	☐
19.14	For training, documented the following: a. General subject matter covered; b. Names and departments of individuals in attendance; and c. Date of each event.	☐	☐	☐	☐
19.15	Documented any enforcement conducted pursuant to the ERPs in item 19.12, including verbal warnings. At a minimum, the following must be documented: a. Name of the person responsible for violating the terms and conditions of the permittee's regulatory mechanism(s); b. Date(s) and location(s) of the observed violation(s); c. Description of the violation(s); d. Corrective action(s) (including completion schedule) issued by the permittee; e. Referrals to other regulatory organizations (if any); and f. Date(s) violation(s) resolved.	☐	☐	☐	☐
19.16	Completed annual assessment of the Construction Site Stormwater Runoff Control program to evaluate program compliance, the status of achieving the measurable requirements in Section 19, and determine how the program might be improved.	☐	☐	☐	☐

Comments:

Recommended Actions:

5. MCM 5 – Post Construction Stormwater Management (Section 20.0)

	S = Satisfactory M = Marginal U = Unsatisfactory NA = Not Applicable	S	M	U	NA
20.2	Implemented and enforced a Post-Construction Stormwater Management program that prevents or reduces water pollution after construction activity is completed. The program must address construction activity with land disturbance of greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale, within the permittee's jurisdiction and that discharge to the permittee's MS4.	☐	☐	☐	☐
20.3	Implemented and enforced a regulatory mechanism(s) that incorporates items 20.4 through 20.15.	☐	☐	☐	☐
20.4	The regulatory mechanism(s) requires owners of construction activity to submit site plans with post-construction stormwater management BMPs designed with accepted engineering practices for review and confirmation that regulatory mechanism(s) requirements have been met, prior to start of construction activity.	☐	☐	☐	☐
20.5	Regulatory mechanism(s) requires owners of construction activity to treat the water quality volume on any project where the sum of the new impervious surface and the fully reconstructed impervious surface equals one or more acres.	☐	☐	☐	☐
20.6	For construction activities, except linear projects, the water quality volume is calculated as one (1) inch times the sum of the new and the fully reconstructed impervious surface.	☐	☐	☐	☐
20.7	For linear projects, the water quality volume is calculated as the larger of one (1) inch times the new impervious surface or one-half (0.5) inch times the sum of the new and the fully reconstructed impervious surface. Where the entire water quality volume cannot be treated within the existing right-of-way, a reasonable attempt to obtain additional right-of-way,easement, or other permission to treat the stormwater during the project planning process must be made. Volume reduction practices must be considered first, as described in item 20.8. Volume reduction practices are not required if the practices cannot be provided cost effectively. If additional right-of-way, easements, or other permission cannot be obtained, owners of construction activity must maximize the treatment of the water quality volume prior to discharge from the MS4.	☐	☐	☐	☐
20.8	Volume reduction practices (e.g., infiltration or other) to retain the water quality volume on-site must be considered first when designing the permanent stormwater treatment system. Wet sedimentation basins and filtration systems are not considered to be volume reduction practices. If the infiltration is prohibited as described in item 20.9, other volume reduction practices, a wet sedimentation basin, or filtration basin may be considered.	☐	☐	☐	☐
20.9	Infiltration systems must be prohibited when the system would be constructed in areas: a. that receive discharges from vehicle fueling and maintenance areas, regardless of the amount of new and fully reconstructed impervious surface; b. where high levels of contaminants in soil or groundwater may be mobilized by the infiltrating stormwater. To make this determination, the owners and/or operators of construction activity must complete the MPCA's Site Screening Assessment Checklist, which is available in the Minnesota Stormwater Manual, or conduct their own assessment. The assessment must be retained with the site plans; c. where soil infiltration rates are more than 8.3 inches per hour unless soils are amended to slow the infiltration rate below 8.3 inches per hour; d. 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; e. of predominately Hydrologic Soil Group D (clay) soils;	☐	☐	☐	☐

	f. in an Emergency Response Area (ERA) within a Drinking Water Supply Management Area (DWSMA) as defined in Minn. R. 4720.5100, Subp. 13, classified as high or very high vulnerability as defined by the Minnesota Department of Health; g. in an ERA within a DWSMA classified as moderate vulnerability unless the permittee performs or approves a higher level of engineering review sufficient to provide a functioning treatment system and to prevent adverse impacts to groundwater; h. outside of an ERA within a DWSMA classified as high or very high vulnerability unless the permittee performs or approves a higher level of engineering review sufficient to provide a functioning treatment system and to prevent adverse impacts to groundwater; i. within 1,000 feet up-gradient or 100 feet down gradient of active karst features; or j. that receive stormwater runoff from these types of entities regulated under NPDES for industrial stormwater: automobile salvage yards; scrap recycling and waste recycling facilities; hazardous waste treatment, storage, or disposal facilities; or air transportation facilities that conduct deicing activities.				
20.10	For non-linear projects, where the water quality volume cannot cost effectively be treated on the site of the original construction activity, locations where off-site treatment projects can be completed must be identified. If the entire water quality volume is not addressed on the site of the original construction activity, the remaining water quality volume must be addressed through off-site treatment and, at a minimum, ensure the requirements of items 20.11 through 20.14 are met.	☐	☐	☐	☐
20.11	The off-site treatment project areas must be selected in the following order of preference: a. locations that yield benefits to the same receiving water that receives runoff from the original construction activity; b. locations within the same Department of Natural Resource (DNR) catchment area as the original construction activity; c. locations in the next adjacent DNR catchment area up-stream; or d. locations anywhere within the permittee's jurisdiction.	☐	☐	☐	☐
20.12	Off-site treatment 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. Routine maintenance of structural stormwater BMPs already required cannot be used to meet this requirement.	☐	☐	☐	☐
20.13	Off-site treatment projects must be completed no later than 24 months after the start of the original construction activity. If more time is needed to complete the treatment project, reason(s) and schedule(s) for completing the project must be provided in the annual report.	☐	☐	☐	☐
20.14	If payment is received from a private owner of a construction activity for off-site treatment, payment received must be applied to a public stormwater project, and all projects must comply with the requirements in items 20.11 through 20.13.	☐	☐	☐	☐
20.15	The regulatory mechanism(s) includes the establishment of legal mechanism(s) between the City and owners of structural stormwater BMPs not owned or operated by the City, that have been constructed to meet the requirements in Section 20. The legal mechanism(s) must include provisions that, at a minimum: a. allow the City 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 City determines the owner of that structural stormwater BMP has not ensured proper function; b. are designed to preserve the City's right to ensure maintenance responsibility, for structural stormwater BMPs not owned or operated by the City, when those responsibilities are legally transferred to another party; and	☐	☐	☐	☐

	c. are designed to protect/preserve structural stormwater BMPs. If structural stormwater BMPs change, causing decreased effectiveness, new, repaired, or improved structural stormwater BMPs must be implemented to provide equivalent treatment to the original BMP.				
20.16	Maintained a written or mapped inventory of structural stormwater BMPs not owned or operated by the permittee that meet all of the following criteria: a. the structural stormwater BMP includes an executed legal mechanism(s) between the permittee and owners responsible for the long-term maintenance, as required in item 20.15; and b. the structural stormwater BMP was implemented on or after August 1, 2013.	☐	☐	☐	☐
20.17	implement written procedures for site plan reviews conducted by the permittee prior to the start of construction activity, to ensure compliance with requirements of the permittee's regulatory mechanism(s).	☐	☐	☐	☐
20.18	Trained individuals commensurate with their responsibilities as they relate to the Post-Construction Stormwater Management program. Individuals includes, but is not limited to, those responsible for conducting site plan reviews and/or enforcement. Previously trained individuals must attend a refresher-training every three (3) calendar years following the initial training.	☐	☐	☐	☐
20.19	Maintained written enforcement response procedures (ERPs) to compel compliance with the regulatory mechanism(s) required. At a minimum, the written ERPs must include: a. a description of enforcement tools available to the permittee and guidelines for the use of each tool; and b. name or position title of responsible person(s) for conducting enforcement.	☐	☐	☐	☐
20.20	For each site plan review conducted, documented the following: a. supporting documentation used to determine compliance with Section 20, including any calculations for the permanent stormwater treatment system; b. the water quality volume that will be treated through volume reduction practices (e.g., infiltration or other) compared to the total water quality volume required to be treated; c. documentation associated with off-site treatment projects authorized by the permittee, including rationale to support the location of permanent stormwater treatment projects in accordance with items 20.10 and 20.11; d. payments received and used in accordance with item 20.14; and e. all legal mechanisms drafted in accordance with item 20.15, including date(s) of the agreement(s) and name(s) of all responsible parties involved.	☐	☐	☐	☐
20.21	For training required in item 20.18, documented the following: a. general subject matter covered; b. names and departments of individuals in attendance; and c. date of each event.	☐	☐	☐	☐
20.22	Documented any enforcement conducted pursuant to the ERPs in item 20.19, including verbal warnings. At a minimum, documented the following: a. name of the person responsible for violating the terms and conditions of the permittee's regulatory mechanism(s); b. date(s) and location(s) of the observed violation(s); c. description of the violation(s); d. corrective action(s) (including completion schedule) issued by the permittee; e. referrals to other regulatory organizations (if any); and f. date(s) violation(s) resolved.	☐	☐	☐	☐
20.23	Completed annual assessment of the Post-Construction Stormwater Management program to evaluate program compliance, the status of achieving the measurable requirements in Section 20, and determine how the program	☐	☐	☐	☐

	might be improved.				

Comments:

Recommended Actions:

6. MCM 6 – Pollution Prevention/Good Housekeeping for Municipal Operations (Section 21.1)

	S = Satisfactory M = Marginal U = Unsatisfactory NA = Not Applicable	**S**	**M**	**U**	**NA**
21.2	Implemened an operations and maintenance program that prevents or reduces the discharge of pollutants to the MS4 from City owned/operated facilities and operations. The requirements of Section 21 were incorporated into the program.	☐	☐	☐	☐
21.3	Maintained a written or mapped inventory of City owned/operated facilities that contribute pollutants to stormwater discharges. Implement BMPs that prevent or reduce pollutants in stormwater discharges from all inventoried facilities. Facilities to be inventoried may include, but is not limited to: a. composting; b. equipment storage and maintenance; c. hazardous waste disposal; d. hazardous waste handling and transfer; e. landfills; f. solid waste handling and transfer; g. parks; h. pesticide storage; i. public parking lots; j. public golf courses; k. public swimming pools; l. public works yards; m. recycling; n. salt storage; o. snow storage; p. vehicle storage and maintenance (e.g., fueling and washing) yards; and q. materials storage yards.	☐	☐	☐	☐
21.4	Implemented BMPs that prevent or reduce pollutants in stormwater discharges from the following municipal operations that may contribute pollutants to stormwater discharges, where applicable: a. waste disposal and storage, including dumpsters; b. management of temporary and permanent stockpiles of materials such as street sweepings, snow, sand and sediment removal piles (e.g., effective sediment controls at the base of stockpiles on the downgradient perimeter); c. vehicle fueling, washing, and maintenance; d. routine street and parking lot sweeping; e. emergency response; f. cleaning of maintenance equipment, building exteriors, dumpsters, and the disposal of associated waste and wastewater; g. use, storage, and disposal of significant materials; h. landscaping, park, and lawn maintenance; i. road maintenance, including pothole repair, road shoulder maintenance, pavement marking, sealing, and repaving; j. right-of-way maintenance, including mowing; and	☐	☐	☐	☐

	k. application of herbicides, pesticides, and fertilizers.				
21.5	Implemented the following BMPs at permittee owned/operated salt storage areas: a. cover or store salt indoors; b. store salt on an impervious surface; and c. implement practices to reduce exposure when transferring material from salt storage areas (e.g., sweeping, diversions, and/or containment).	☐	☐	☐	☐
21.6	Implemented a written snow and ice management policy for individuals that perform winter maintenance activities for the City. The policy must establish practices and procedures for snow and ice control operations (e.g., plowing or other snow removal practices, sand use, and application of deicing compounds).	☐	☐	☐	☐
21.7	Trained all individuals that perform winter maintenance activities for the City that includes the following: a. the importance of protecting water quality; b. BMPs to minimize the use of deicers (e.g., proper calibration of equipment and benefits of pretreatment, pre-wetting, and anti-icing); and c. tools and resources to assist in winter maintenance (e.g., deicing application rate guidelines, calibration charts, Smart Salting Assessment Tool).	☐	☐	☐	☐
21.8	Maintained written procedures 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.	☐	☐	☐	☐
21.9	Inspected structural stormwater BMPs (excluding stormwater ponds, which are under a separate schedule below) annually to determine structural integrity, proper function, and maintenance needs unless the permittee determines either of the following conditions apply: a. complaints received or patterns of maintenance indicate a greater frequency is necessary; or b. maintenance or sediment removal is not required after completion of the first two calendar year inspections; in which case the permittee may reduce the frequency of inspections to once every two (2) calendar years.	☐	☐	☐	☐
21.10	Prior to the November 15, 2025, conducted at least one inspection of all ponds and outfalls (excluding underground outfalls) in order to determine structural integrity, proper function, and maintenance needs.	☐	☐	☐	☐
21.11	Based on inspection findings, determined if repair, replacement, or maintenance measures were necessary to ensure the structural integrity and proper function of structural stormwater BMPs and outfalls. Completed necessary maintenance as soon as possible. If maintenance was determined that it cannot be completed within one year of discovery, a schedule(s) for completing the maintenance has been documented.	☐	☐	☐	☐
21.12	Implemented a stormwater management training program commensurate with individual's responsibilities as they relate to the SWPPP, including reporting and assessment activities. The training program must: a. address the importance of protecting water quality; b. cover the requirements of the permit relevant to the responsibilities of the individual not already addressed in items 18.8, 18.9, 19.11, 20.18, and 21.7; and c. include a schedule that establishes initial training for individuals, including new and/or seasonal employees, and recurring training intervals to address changes in procedures, practices, techniques, or requirements.	☐	☐	☐	☐
21.13	Documented the following information associated with the operations and maintenance program: a. date(s) and description of findings, including whether or not an illicit discharge is detected, for all inspections conducted in accordance with items 21.9 and 21.10; b. any adjustments to inspection frequency as authorized in item 21.9;	☐	☐	☐	☐

	c. date(s) and a description of maintenance conducted as a result of inspection findings, including whether or not an illicit discharge is detected; d. schedule(s) for maintenance of structural stormwater BMPs and outfalls as required in item 21.11; and e. stormwater management training events, including general subject matter covered, names and departments of individuals in attendance, and date of each event.				
21.14	Documented pond sediment excavation and removal activities, including: a. a unique ID number and geographic coordinates of each stormwater pond from which sediment is removed; b. the volume (e.g., cubic yards) of sediment removed from each stormwater pond; c. results from any testing of sediment from each removal activity; and d. location(s) of final disposal of sediment from each stormwater pond.	☐	☐	☐	☐
21.15	Completed annual assessment of the operations and maintenance program to evaluate program compliance, the status of achieving the measurable requirements in Section 21, and determine how the program might be improved.	☐	☐	☐	☐

Comments:

Recommended Actions:

7. Discharges to Impaired Waters with a USEPA-Approved TMDL that Includes an Applicable WLA (Section 22.1)

	S = Satisfactory M = Marginal U = Unsatisfactory NA = Not Applicable	**S**	**M**	**U**	**NA**
22.2	If an applicable WLA is not being met for oxygen demand, nitrate, TSS, or TP, a summary of progress toward achieving those applicable WLAs was provided with the annual report. The summary included the following information: a. a list of all BMPs applied towards achieving applicable WLAs for oxygen demand, nitrate, TSS, and TP; b. the implementation status of BMPs included in the compliance schedule; and c. an updated estimate of cumulative TSS and TP load reductions.	☐	☐	☐	☐
22.3	If an applicable WLA is not being met where a reduction in pollutant loading is required for bacteria, a written or mapped inventory was maintained of potential areas and sources of bacteria (e.g., dense populations of waterfowl or other bird, dog parks).	☐	☐	☐	☐
22.4	If an applicable WLA is not being met where a reduction in pollutant loading is required for bacteria, a written plan was maintained to prioritize reduction activities to address the areas and sources identified in the inventory in item 22.3. The written plan includes BMPs to be implemented, which may include, but is not limited to: a. water quality monitoring to determine areas of high bacteria loading; b. installation of pet waste pick-up bags in parks and open spaces; c. elimination of over-spray irrigation that may occur at permittee owned areas; d. removal of organic matter via street sweeping; e. implementation of infiltration structural stormwater BMPs; or f. management of areas that attract dense populations of waterfowl (e.g., riparian plantings).	☐	☐	☐	☐
22.5	If an applicable WLA is not being met where a reduction in pollutant loading is required for chloride, the amount of deicer applied each winter maintenance season to all City owned/operated surfaces was documented.	☐	☐	☐	☐
22.6	If an applicable WLA is not being met where a reduction in pollutant loading is required for chloride, an annual assessment was conducted of the winter maintenance operations to reduce the amount of deicing salt applied to City	☐	☐	☐	☐

	owned/operated surfaces and determine current and future opportunities to improve BMPs. The assessment may include, but is not limited to: a. operational changes such as pre-wetting, pre-treating the salt stockpile, increasing plowing prior to deicing, monitoring of road surface temperature, etc.; b. implementation of new or modified equipment providing pre-wetting, or other capability for minimizing salt use; c. regular calibration of equipment; d. optimizing mechanical removal to reduce use of deicers; or e. designation of no salt and/or low salt zones.				
22.7	If an applicable WLA is not being met where a reduction in pollutant loading is required for temperature, a written plan was maintained that identifies specific activities to be implemented to reduce thermal loading. The written plan may include, but is not limited to: a. implementation of infiltration BMPs such as bioinfiltration practices; b. disconnection and/or reduction of impervious surfaces; c. retrofitting existing structural stormwater BMPs; or d. improvement of riparian vegetation.	☐	☐	☐	☐

Comments:

Recommended Actions:

8. Alum or Ferric Chloride Phosphorus Treatment Systems (Section 23.1)

	S = Satisfactory M = Marginal U = Unsatisfactory NA = Not Applicable	**S**	**M**	**U**	**NA**
23.2	If an alum and/or ferric chloride phosphorus treatment systems were utilized, the requirements of Section 23 were complied with.	☐	☐	☐	☐
23.3	Alum and/or ferric chloride phosphorus treatment systems complied with the following: a. the treatment systems were used exclusively for the treatment of phosphorus in stormwater; b. the treatment systems were contained within the conveyances and structural stormwater BMPs of the MS4. The utilized conveyances and structural stormwater BMPs did not include any receiving waters; c. phosphorus treatment systems utilizing chemicals other than alum or ferric chloride received written approval from the MPCA.	☐	☐	☐	☐
23.4	Alum and/or ferric chloride phosphorus treatment systems met the following design parameters: a. systems were constructed in a manner that diverts the stormwater flow to be treated from the main conveyance system; b. a high flow bypass was included as part of the inlet design; and c. a flocculant storage/settling area was incorporated into the design, and adequate maintenance access was provided (minimum of 8 feet wide) for the removal of accumulated sediment.	☐	☐	☐	☐
23.5	A designated person performed visual monitoring of the treatment systems for proper performance at least once every seven (7) days, and within 24 hours after a rainfall event greater than 2.5 inches in 24 hours. Following visual monitoring which occurs within 24 hours after a rainfall event, the next visual monitoring was conducted within seven (7) days after that rainfall event.	☐	☐	☐	☐
23.6	Three (3) benchmark monitoring stations were established. Table 1 in Appendix A of the MS4 General Permit was used for the parameters, units of measure, and frequency of measurement for each station.	☐	☐	☐	☐
23.7	Samples were collected as grab samples or flow-weighted 24-hour composite samples.	☐	☐	☐	☐

23.8	Each sample, excluding pH samples, were analyzed by a laboratory certified by the Minnesota Department of Health and/or the MPCA, and: a. sample preservation and test procedures for the analysis of pollutants conformed to 40 CFR Part 136 and Minn. R. 7041.3200; b. detection limits for dissolved phosphorus, dissolved aluminum, and dissolved iron were a minimum of 6 micrograms per liter, 10 micrograms per liter, and 20 micrograms per liter, respectively; and c. pH was measured within 15 minutes of sample collection using calibrated and maintained equipment.	☐	☐	☐	☐
23.9	In the following situations, corrective action(s) were performed and the Minnesota Department of Public Safety Duty Officer at 1-800-422-0798 (toll free) or 651-649-5451 (Metro area) were notified immediately: a. the pH of the discharged water was not within the range of 6.0 and 9.0; b. an indication of toxicity or measurements exceeding water quality standards which could endanger human health, public drinking water supplies, or the environment; or c. a spill or discharge or alteration resulting in water pollution as defined in Minn. Stat. 115.01, subd. 13, of alum or ferric chloride.	☐	☐	☐	☐
23.10	If the permittee discovers indications of toxicity or measurements exceeding water quality standards that the permittee determines does not endanger human health, public drinking water supplies, or the environment, the permittee must report the non-compliance to the Commissioner as required in item 26.12.	☐	☐	☐	☐

23.11	The permittee must submit the following information with the annual report. The annual report must include a month-by-month summary of:
	a. date(s) of operation;
	b. chemical(s) used for treatment;
	c. gallons of water treated;
	d. gallons of alum or ferric chloride treatment used;
	e. calculated pounds of phosphorus removed; and
	f. any performance issues and the corrective action(s), including the date(s) when corrective action(s) were taken.
		☐	☐	☐	☐

23.12	A record of the design parameters in items 23.13 through 23.15 was kept on-site.	☐	☐	☐	☐
23.13	Site-specific jar testing was conducted using typical and representative water samples in accordance with the most current approved version of ASTM D2035.	☐	☐	☐	☐
23.14	Baseline concentrations of the following parameters in the influent and receiving waters was developed: a. aluminum or iron; and b. phosphorus.	☐	☐	☐	☐
23.15	The following system parameters and how each was determined was documented: a. flocculant settling velocity; b. minimum required retention time; c. rate of diversion of stormwater into the system; d. the flow rate from the discharge of the outlet structure; and e. range of expected dosing rates.	☐	☐	☐	☐
23.16	The following site-specific procedures were developed and a copy was kept on-site: a. procedures for the installation, operation and maintenance of all pumps, generators, control systems, and other equipment; b. specific parameters for determining when the solids must be removed from the system and how the solids will be handled and disposed of; and c. procedures for cleaning up and/or containing a spill of each chemical stored on-site.	☐	☐	☐	☐

Comments:

Recommended Actions:

9. Stormwater Pollution Prevention Program (SWPPP) Modification (Section 24.1)

	S = Satisfactory M = Marginal U = Unsatisfactory NA = Not Applicable	S	M	U	NA
24.2	If modifications to the SWPPP are necessary, the requirements of Section 24 were complied with.	☐	☐	☐	☐
24.3	Modifications to the SWPPP (other than modifications authorized in item 24.4) were approved by the Commissioner in accordance with the procedures of Minn. R. 7001. Requests were made in writing, setting forth schedules for compliance. The requests discussed alternative program modifications, assured compliance with requirements of the permit, and met other applicable laws.	☐	☐	☐	☐
24.4	Modifications to the SWPPP were made that did not require prior approval of the Commissioner (provided the Commissioner was notified of the modification in the annual report for the year the modification was made). Modifications not requiring prior approval falls under one of the following categories: a. a BMP is added, and none subtracted, from the SWPPP; or b. a less effective BMP is replaced with a more effective BMP. The alternate BMP must address the same, or similar, concerns as the ineffective or failed BMP	☐	☐	☐	☐

Comments:

Recommended Actions:

MINNESOTA POLLUTION CONTROL AGENCY
520 Lafayette Road North
St. Paul, MN 55155-4194

Construction stormwater inspection checklist

Construction Stormwater Program

Doc Type: Permitting Checklist

Note: This inspection checklist is an option for small construction sites. Large construction sites and linear projects require more extensive/more location specific inspection requirements. This inspection report does not address all aspects of the National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) Construction Stormwater Permit (Permit) issued on August 1, 2018. The completion of this checklist does not guarantee that all permit requirements are in compliance; it is the responsibility of the Permittee(s) to read and understand the permit requirements.

Facility information

Site name: _____

Site address: _____ Permit number: _____

City: _____ State: _____ Zip code: _____

Inspection information

Inspector name: _____ Phone number: _____

Organization/Company name: _____

Date (mm/dd/yyyy): _____ Time: _____ ☐ am ☐ pm

Is the inspector trained in sediment and erosion control and is it documented in the Stormwater Pollution Prevention Plan (SWPPP)?
☐ Yes ☐ No

Is this inspection routine or in response to a storm event: ☐ 7 day ☐ Rain

Rainfall amount (if applicable): _____

Is site within one aerial mile of special or impaired water that can potentially receive discharge from the site? ☐ Yes ☐ No

If yes, follow Section 23 and other applicable permit requirements.

Note: If NA is selected at any time, specify **why** in the comment area for that section.

Erosion prevention requirements (Section 8.1)

		Yes	No	NA
1.	Are soils stabilized where no construction activity has occurred for 14 days (including stockpiles)? (7 days where applicable, or 24 hours during Minnesota Department of Natural Resources [DNR] Fish Spawning restrictions)	☐	☐	☐
2.	Has the need to disturb steep slopes been minimized?	☐	☐	☐
3.	If steep slopes are disturbed, are stabilization practices designed for steep slopes used?	☐	☐	☐
4.	All ditches/swales stabilized 200' back from point of discharge or property edge within 24 hours? (Mulch, hydromulch, tackifier, or similar best management practices [BMPs] are not acceptable in ditches/swales if the slope is greater than 2%)	☐	☐	☐
5.	Do pipe outlets have energy dissipation (within 24 hours of connection)?	☐	☐	☐
6.	Is construction phasing being followed in accordance with the SWPPP?	☐	☐	☐
7.	Are areas not to be disturbed marked off (flags, signs, etc.)?	☐	☐	☐

Comments:

Sediment control requirements (Section 9.1))

	Yes	No	NA
1. Are perimeter sediment controls installed properly on all down gradient perimeters?	☐	☐	☐
2. Are appropriate BMPs installed protecting inlets, catch basins, and culvert inlets?	☐	☐	☐
3. Is a 50 foot natural buffer preserved around all surface waters during construction?	☐	☐	☐
If No, have redundant sediment controls been installed?	☐	☐	☐
4. Do all erodible stockpiles have perimeter control in place?	☐	☐	☐
5. Is there a temporary sediment basin on site, and is it built as required in Section 14 of the permit?	☐	☐	☐
6. Is soil compaction being minimized where not designed for compaction?	☐	☐	☐
7. Is topsoil being preserved unless infeasible?	☐	☐	☐
8. If chemical flocculants are used, is there a chemical flocculant plan in place?	☐	☐	☐

Comments:

Maintenance and inspections (Section 11)

	Yes	No	NA
1. Are all previously stabilized areas maintaining ground cover?	☐	☐	☐
2. Are perimeter controls maintained and functioning properly, sediment removed when one-half full?	☐	☐	☐
3. Are inlet protection devices maintained and adequately protecting inlets?	☐	☐	☐
4. Are the temporary sediment basins being maintained and functioning properly?	☐	☐	☐
5. Are vehicle tracking BMPs at site exists in place and maintained and functioning properly?	☐	☐	☐
6. Is all tracked sediment being removed within 24 hours?	☐	☐	☐
7. Have all surface waters, ditches, conveyances, and discharge points been inspected?	☐	☐	
8. Were any discharges seen during this inspection (i.e., sediment, turbid water, or otherwise)?	☐	☐	

If yes, record the location of all points of discharge. Photograph and describe the discharge (size, color, odor, foam, oil sheen, time, etc.). Describe how the discharge will be addressed. Was the discharge a sediment delta? If yes, will the delta be recovered within seven days and in accordance with item 11.5 of the permit?

Comments:

Pollution prevention (Section 12)

	Yes	No	NA
1. Are all construction materials that can leach pollutants under cover or protected?	☐	☐	☐
2. Are hazardous materials being properly stored?	☐	☐	☐
3. Are appropriate BMPs being used to prevent discharges associated with fueling and maintenance of equipment or vehicles?	☐	☐	☐
4. Are all solid wastes being properly contained and disposed of?	☐	☐	☐
5. Is there a concrete/other material washout area on site and is it being used?	☐	☐	☐
6. Is the concrete washout area marked with a sign?	☐	☐	☐
7. Are the concrete/other material washout areas properly maintained?	☐	☐	☐

Comments:

Other

	Yes	No	NA
1. Is a copy of the SWPPP, inspection records, and training documentation located on the construction site, or can it be made available within 72 hours?	☐	☐	☐
2. Has the SWPPP been followed and implemented on site, and amended as needed?	☐	☐	☐
3. Is any dewatering occurring on site?	☐	☐	☐
If yes, what BMPs are being used to ensure that clean water is leaving the site and the discharge is not causing erosion or scour?			
4. Will a permanent stormwater management system be created for this project if required and in accordance with Section 15 of the permit (if adding an acre or more of new impervious surface)?	☐	☐	☐
If yes, describe:			
5. If infiltration/filtration systems are being constructed, are they marked and protected from compaction and sedimentation?	☐	☐	☐

6. Description of areas of non-compliance noted during the inspection, required corrective actions, and recommended date of completion of corrective actions:

7. Proposed amendments to the SWPPP:

8. Potential areas of future concern:

9. Additional comments:

Disclosures:

- After discovery, the permit requires many of the deficiencies that may be found on site be corrected within a specified period of time. See permit for more details.
- The Permittee(s) is/are responsible for the inspection and maintenance of temporary and permanent water quality management BMPs as well as erosion prevention and sediment control BMPs until another Permittee has obtained coverage under this Permit according to Section 3, or the project has met the termination conditions of the permit and a Notice of Termination has been submitted to the Minnesota Pollution Control Agency.

MINNESOTA POLLUTION CONTROL AGENCY
520 Lafayette Road North
St. Paul, MN 55155-4194

SWPPP checklist

Construction Stormwater Program

Stormwater Pollution Prevention Plan (SWPPP)

Doc Type: Stormwater Pollution Prevention Plan (SWPPP)

C000					

Background: This checklist is used by Minnesota Pollution Control Agency (MPCA) staff for Stormwater Pollution Prevention Plan (SWPPP) reviews. It is provided as an additional resource intended for SWPPP designers for construction projects to assure all required elements of a SWPPP are included. Use of this checklist will help you to determine if your SWPPP is complete, though not all checklist items are applicable to all projects. This checklist can be used for all size projects; however, the guidance document "Stormwater Compliance Assistance Toolkit for Small Construction Operators," contains a SWPPP template designed specifically for small site projects. This guidance is available on the MPCA Construction Stormwater webpage at: https://www.pca.state.mn.us/water/construction-stormwater.

Note - *This checklist is for your information and use is voluntary. The checklist does not need to be returned to the MPCA.*

Review information

Applicant: _____ Project name: _____

Application date: _____ Reviewer name: _____

Reason for review:

Yes	N/A		Notes
☐	☐	**Mandatory (over 50 acres and discharging to a special or impaired water)**	
☐	☐	**Random audit**	
☐	☐	**Enforcement case**	
		Case lead:	

SWPPP contains a combination of:

Yes	N/A		Notes
☐	☐	**Narrative**	
☐	☐	**Plan sheets**	
☐	☐	**Standard detail sheets (where appropriate)**	

SWPPP information

Yes	N/A	SWPPP narrative should contain the following:	Notes
☐	☐	A description of the nature of the construction activity	
☐	☐	The person knowledgeable and experienced in the application of erosion prevention and sediment control best management practices (BMPs) who will oversee the implementation of the SWPPP	
☐	☐	The person, organization, or entity (name or title) responsible for long-term operation and maintenance of the permanent stormwater treatment system	
☐	☐	Documentation for all trained individuals	
☐	☐	A description of installation timing for all erosion prevention and sediment control BMPs	
☐	☐	A description of the permanent cover methods for all exposed soil areas (may be in narrative or on plan sheets)	
☐	☐	Any stormwater mitigation measures proposed as part of environmental, endangered species, archaeological or other required local, state or federal reviews conducted for the project	
☐	☐	Identify discharges to any U.S. Environmental Protection Agency (EPA)-approved Total Maximum Daily Load (TMDL) for the pollutants/stressors described in item 23.7	

Yes	N/A	SWPPP narrative should contain the following (continued):
☐	☐	A description of the permanent stormwater treatment system
☐	☐	A description of procedures to amend the SWPPP
☐	☐	A description of methods used to minimize soil compaction and preserve topsoil
☐	☐	In designing the stormwater controls, the SWPPP must account for:
☐	☐	The expected amount, frequency, intensity and duration of precipitation
☐	☐	The nature of stormwater runoff and run-on at the site, including factors such as expected flow from impervious surfaces, slopes and site drainage features
☐	☐	The range of soil particles expected to be present
☐	☐	The stormwater volume, velocity, and peak flowrates to minimize discharge of pollutants in stormwater and to minimize channel and streambank erosion and scour in the immediate vicinity of discharge points
☐	☐	A description of any specific chemicals and chemical treatment systems used for enhancing the sedimentation and how compliance with item 9.18 will be achieved
☐	☐	Acres of impervious surfaces (pre- and post-construction)
☐	☐	If permittees determine compliance with the following requirements is infeasible, document the determination:
☐	☐	Temporary sediment basins (must describe alternative BMPs used)
☐	☐	If the permanent treatment system for linear projects cannot be constructed within the right-of-way (reasonable attempt to obtain the right-of-way must be made)
☐	☐	Buffer zones
☐	☐	The full volume reduction requirement
☐	☐	Any required site assessments for groundwater or soil contamination
☐	☐	Tabulated quantities of all erosion prevention and sediment control BMPs anticipated for the life of the project

Notes

Yes	N/A	The plan sheets should contain the following:
☐	☐	A site map or maps including:
☐	☐	Existing and final grades
☐	☐	Drainage area boundaries
☐	☐	Direction of stormwater flow
☐	☐	All discharge points where stormwater is leaving the site or entering a surface water
☐	☐	Soil types
☐	☐	Impervious surfaces
☐	☐	Locations of potential pollutant generating activities (as identified in Section 12)
☐	☐	Areas of steep slope (3:1 or greater)
☐	☐	All surface waters, existing wetlands, and stormwater ponds/basins within one aerial mile that receive stormwater from the construction site, during or after construction *Note: If they do not fit on the plan sheets, use an arrow to note the direction and distance*

Notes

Yes	N/A	The plan sheets should contain the following (continued):	Notes
		Yes N/A	
☐	☐	Construction activity areas that are adjacent to and drain to Public Waters for which the Minnesota Department of Natural Resources (DNR) has promulgated "work in water restrictions" during specified fish spawning time frames	
☐	☐	50 foot buffer zones	
☐	☐	100 foot permanent buffer zones	
☐	☐	Locations and types of all temporary and permanent erosion prevention and sediment control BMPs	
☐	☐	Locations of areas where construction will be phased to minimize duration of exposed soil areas	
Yes	**N/A**	**Standard plates or specifications:**	
☐	☐	Are standard plates or specifications included where appropriate?	

Construction activity requirements

Yes	N/A	Erosion prevention measures:	Notes
☐	☐	Exposed soils (including stockpiles) have erosion protection/cover initiated immediately and completed within 14 days (or 7 days per Section 23)	
☐	☐	For DNR Public Waters with "work in waters restrictions" during specified fish spawning time frames, stabilization must be completed for all exposed soil areas within 200 feet of the water's edge, and draining to the water, within 24 hours during the restriction period	
☐	☐	The wetted perimeter of the last 200 linear feet of ditches must be stabilized within 24 hours of connecting to a surface water or property line	
☐	☐	Temporary or permanent ditches or swales that are being used as a sediment containment system during construction must be stabilized within 24 hours after no longer being used as a sediment containment system	
☐	☐	Pipe outlets must have energy dissipation within 24 hours of connecting to a surface water or permanent stormwater treatment system	
☐	☐	Mulch, hydromulch, tackifier, polyacrylamide, or similar erosion prevention practices cannot be used within the normal wetted perimeter of drainage ditches or swale sections with a continuous slope greater than 2%	

Yes	N/A	Sediment control measures:	Notes
☐	☐	Sediment control practices are established on downgradient perimeters and upgradient of any buffer zones	
☐	☐	Sediment control practices are established at the base of stockpiles on the downgradient perimeter	
☐	☐	Stockpiles are located outside of natural buffers or surface waters, including stormwater conveyances (e.g., curb and gutter systems) unless there is a bypass	
☐	☐	Inlet protection BMPs included	
☐	☐	Vehicle tracking BMPs established where vehicles are exiting the site to minimize street tracking	

Yes	N/A	Sediment control measures (continued):	Notes
☐	☐	Plans to preserve topsoil (unless infeasible)	
☐	☐	Plans to minimize soil compaction	
☐	☐	Direct discharges from BMPs to vegetated areas, unless infeasible	
☐	☐	50-foot natural buffers are preserved **or** (if maintaining buffer is infeasible) redundant sediment controls are provided when a surface water is located within 50 feet of the project's earth disturbances and drains to the surface water	

Yes	N/A	Dewatering and basin draining:	Notes
☐	☐	If dewatering is required on the site, there must be a plan in place to prevent nuisance conditions, erosion, and inundation of wetlands	
☐	☐	If using filters with backwash water, backwash water must be hauled away for disposal, returned to the beginning of the treatment process, or incorporated into the site in a manner that does not erode into runoff	

Yes	N/A	Inspection requirements:	Notes
☐	☐	The SWPPP must identify the trained person (as identified in item 21.2.b) who will conduct inspections	
☐	☐	Inspections must be performed once every 7 days	
☐	☐	Inspections must be performed within 24 hours of a rain event greater than 0.5 inches in 24 hours	
☐	☐	Inspection and Maintenance records should include:	

Yes	N/A	
☐	☐	Date and time of inspection
☐	☐	Name of person(s) conducting inspections
☐	☐	Findings of inspections, including the specific location where corrective actions are needed
☐	☐	Corrective actions taken (including dates, times, and party completing maintenance activities)
☐	☐	Date and amount of rainfall events greater than 0.5 inch in 24 hours
☐	☐	Rainfall amounts must be obtained by a properly maintained rain gauge installed onsite, or by a weather station that is within one mile or by a weather reporting system
☐	☐	Requirements to observe any discharge that may be occurring during the inspection. Discharge should also be described and photographed

Yes	N/A	Maintenance requirements:	Notes
☐	☐	All nonfunctional BMPs must be repaired, replaced, or supplemented with functional BMPs by the end of the next business day after discovery, or as soon as field conditions allow.	
☐	☐	Perimeter control devices must be repaired, replaced, or supplemented when nonfunctional or sediment reaches one-half the height of the device.	
☐	☐	Temporary and permanent sediment basins must be drained and sediment removed when the depth of sediment collected reaches one-half storage volume	

Yes	N/A	Maintenance requirements (continued):	Notes
☐	☐	All sediment deposits and deltas must be removed from surface waters (including drainage ways, catch basins, and other drainage systems) and the removal areas restabilized within seven days	
☐	☐	Sediment on paved surfaces (e.g., sediment tracked from vehicles) must be removed within one calendar day of discovery	
☐	☐	Permanent stormwater treatment BMPs must be inspected and maintained	

Yes	N/A	Pollution prevention management measures:	Notes
☐	☐	Proper storage, handling, and disposal of construction products, materials, and wastes is required	
☐	☐	SWPPP should address fueling and maintenance of equipment or vehicles and spill prevention and response	
☐	☐	Limit exterior vehicle and equipment washing to a defined area of the site	
☐	☐	The SWPPP should include a description of the containment for concrete and other washout waste	
☐	☐	Portable toilets must be positioned so that they are secure	

Yes	N/A	Permit termination conditions:	Notes
☐	☐	Permanent uniform perennial vegetative cover must be established at 70% density of its expected final growth	
☐	☐	The permanent stormwater treatment system is constructed, meets all requirements, and is operating as designed	
☐	☐	All temporary synthetic erosion prevention and sediment control BMPs must be removed	
☐	☐	Clean out sediment from conveyance systems and permanent stormwater treatment systems (return to design capacity)	
☐	☐	For residential sites, install temporary erosion protection and downgradient perimeter control and distribute the MPCA's Homeowner Fact Sheet	
☐	☐	Submit a Notice of Termination (NOT) to the MPCA	

Design requirements

Yes	N/A	Temporary sediment basins:	Notes
☐	☐	If yes:	

Yes	N/A	
☐	☐	Basins must provide live storage for runoff from a 2-year, 24-hour storm (minimum 1,800 ft^3/acre) or, with no calculative minimum, provide 3,600 ft^3/acre
☐	☐	Outlets must be designed to remove floating debris
☐	☐	Outlets must be designed to allow complete drawdown
☐	☐	Outlets must be designed to withdraw water from the surface
☐	☐	Outlets must have energy dissipation within 24 hours of connecting to a surface water

Yes N/A Temporary sediment basins (continued):

If yes:

Yes	N/A	
☐	☐	Basins must be designed to prevent short circuiting
☐	☐	Basins must have a stabilized emergency overflow
☐	☐	Basins must be situated outside of surface waters and any required buffer zones

Notes

Yes N/A Permanent stormwater treatment system:

- ☐ ☐ Include calculations for the permanent stormwater treatment system (water quality volume of one inch times the net increase of impervious surfaces created by the project to be retained on site)
- ☐ ☐ Volume reduction practices must be considered first
- ☐ ☐ Is infiltration prohibited due to the practice being constructed in or receiving discharges from one of the following?

Yes	N/A	
☐	☐	Areas where vehicle fueling and maintenance occur
☐	☐	Areas with less than three (3) feet of separation distance from the bottom of the infiltration system to the seasonally saturated soils or the top of bedrock
☐	☐	Areas where industrial facilities are not authorized to infiltrate industrial stormwater under a National Pollutant Discharge Elimination System (NPDES)/State Disposal System (SDS) Industrial Stormwater Permit issued by the MPCA:

  - ☐ Automobile salvage yards
  - ☐ Scrap recycling and waste recycling facilities
  - ☐ Hazardous waste treatment, storage or disposal facilities
  - ☐ Air transportation facilities that conduct deicing activities

Yes	N/A	
☐	☐	Areas where high levels of contaminants in soil or groundwater may be mobilized by the infiltrating stormwater
☐	☐	Areas of predominantly Hydrological Soil Group D (clay) soils
☐	☐	Areas within 1,000 feet upgradient, or 100 feet downgradient of active karst features
☐	☐	Areas within a Drinking Water Supply Management Area (DWSMA) as defined in Minn. R. 4720.5100, subp. 13, if the system will be located in:

  - ☐ An Emergency Response Area (ERA) within a DWSMA classified as having high or very high vulnerability
  - ☐ An ERA within a DWSMA classified as having moderate vulnerability unless a regulated MS4 Permittee has performed or approved a higher level of engineering review

Notes

Yes	N/A	Permanent stormwater treatment system (continued):	Notes
		☐ Outside of an ERA within a DWSMA classified as having high or very high vulnerability unless a regulated MS4 Permittee has performed or approved a higher level of engineering review	
☐	☐	Areas where soil infiltration rates are field measured at more than 8.3 inches per hour unless soils are amended to slow the infiltration rate below 8.3 inches per hour	
☐	☐	If infiltration is prohibited:	

Yes	N/A	
☐	☐	Other methods of volume reduction are considered
☐	☐	The water quality volume is treated by a wet sedimentation basin, filtration system, regional ponding or equivalent methods prior to the discharge of stormwater to surface waters.

☐	☐	If proximity to bedrock precludes the installation of any of the permanent stormwater management practices, some treatment has been provided:	

Yes	N/A	
☐	☐	Grassed swales
☐	☐	Smaller ponds
☐	☐	Grit chambers

Yes	N/A	Permanent treatment method selected:	Notes
☐	☐	Infiltration (e.g., infiltration basins, infiltration trenches, rain gardens, swales with check dams, natural depressions)	

Yes	N/A	
☐	☐	Include at least one soil boring, test pit or infiltrometer test in the location of the infiltration practice
☐	☐	If the infiltration rate has been field-measured, the rate has been divided by two for design purposes
☐	☐	Appropriate testing has been conducted to ensure a minimum of three feet of separation from the bottom of the infiltration practice to the seasonally saturated soils and/or bedrock
☐	☐	The system has been designed to maintain pre-existing hydrologic conditions of wetlands in the vicinity (e.g., do not breach a perched water table that is supporting a wetland)
☐	☐	The SWPPP includes requirements to avoid excavating the infiltration system within three feet of final grade before the drainage area is stabilized
☐	☐	If the infiltration system is excavated within three feet of final grade, rigorous erosion prevention and sediment control BMPs are used to keep all runoff and sediment out of the infiltration system

Yes N/A Permanent treatment method selected (continued):

☐ ☐ Infiltration (continued)

Yes	N/A	
☐	☐	A pretreatment device is planned
☐	☐	All stormwater routed to the practice can be discharged in 48 hours *Note: Any additional flows must bypass the system through a stabilized discharge point*
☐	☐	There is a way to visually verify the system is operating as designed
☐	☐	Adequate maintenance access is provided

Notes

☐ ☐ Filtration (e.g., sand filters, biofiltration areas, swales using underdrains and check dams, and underground sand filters)

Yes	N/A	
☐	☐	The filtration system is designed to remove at least 80% of total suspended solids (TSS)
☐	☐	The SWPPP includes requirements to not install the filter media until the drainage area is fully stabilized
☐	☐	If the filter media is installed before the drainage area is fully stabilized, rigorous erosion prevention and sediment control BMPs are used to keep all runoff and sediment out of the filtration practice
☐	☐	A pretreatment device is planned
☐	☐	All stormwater routed to the practice can be discharged in 48 hours or less
☐	☐	There is a way to visually verify the system is operating as designed
☐	☐	Appropriate testing has been conducted to ensure a minimum of three feet of separation from the bottom of the filtration practice to the seasonally saturated soils and/or bedrock
☐	☐	If there is less than three feet of separation, the filter has been designed with an impermeable liner
☐	☐	Adequate maintenance access is provided

Notes

☐ ☐ Wet sedimentation basin

Yes	N/A	
☐	☐	The basin must provide live storage of one inch (or the remainder of volume not reduced) of runoff from new impervious surfaces
☐	☐	The basin must provide a permanent volume of 1,800 feet^3 below the outlet pipe for each acre draining to the basin
☐	☐	The permanent pool depth is between 3 feet and 10 feet

Notes

☐ ☐ Wet sedimentation basin (continued)

- ☐ ☐ The basin is configured to minimize scour or resuspension of solids
- ☐ ☐ Outlets must be designed to discharge at less than 5.66 cubic feet per second (cfs) per acre of pond
- ☐ ☐ Outlets must be designed to prevent short circuiting
- ☐ ☐ Outlets must be designed to prevent the discharge of floatables
- ☐ ☐ A stabilized emergency overflow is provided
- ☐ ☐ Adequate maintenance access is provided
- ☐ ☐ The basin is located outside of surface waters and any buffer zones required in item 23.11
- ☐ ☐ If the basin is in active karst terrain, the basin must be designed with an impermeable liner

Notes

☐ ☐ Regional wet sedimentation basin

Yes	N/A	
☐	☐	Provide written authorization from the owner of the regional basin
☐	☐	Ensure that there will be no significant degradation of waterways between the project and the regional basin
☐	☐	The regional basin design conforms to the permit requirements for a wet sedimentation basin

Notes

Yes	N/A	**Record retention requirements:**
☐	☐	The SWPPP (including all changes to it) must be kept at the site during construction by the permittee who has operational control of that portion of the site

Notes

Yes N/A Additional requirements for discharges to Special (Prohibited, Restricted, Other) and Impaired Waters:

☐ ☐ Does this site drain to a discharge point on the project that is within one aerial mile of a Special or Impaired Water?

Which type of special or impaired water?	BMP category	Notes
Prohibited waters		
☐ Wilderness areas	23.9, 23.10, 23.11, 23.13, 23.14	
☐ Part of Lake Superior	23.9, 23.10, 23.11, 23.13, 23.14	
☐ Scientific and natural areas	23.9, 23.10, 23.11, 23.13, 23.14	
Restricted waters		
☐ Lake Superior (apart from Prohibited)	23.9, 23.10, 23.11	
☐ Scenic and recreational river segments	23.9, 23.10, 23.11	
☐ Lake Trout lakes	23.9, 23.10, 23.11	
☐ Calcareous fens	23.9, 23.10, 23.11	
Other special waters		
☐ Trout lakes	23.9, 23.10, 23.11	
☐ Trout streams	23.9, 23.10, 23.11, 23.12	
Impaired water		
☐ Impaired for phosphorus, turbidity, TSS, dissolved oxygen or aquatic biota	23.9, 23.10	

BMP category	Requirement	Notes
☐ 23.9	Stabilization initiated immediately and completed within seven days	
☐ 23.10	Temporary sediment basin provided for areas of five acres or more that drain to a common location	
☐ 23.11	Include and maintain at all times an undisturbed buffer zone of not less than 100 linear feet from a special water	
☐ 23.12	Temperature controls	
☐ 23.13	Conduct routine site inspections once every three days when draining to Prohibited Waters	
☐ 23.14	If discharges to prohibited waters cannot provide volume reduction equal to one inch times the net increase of impervious surfaces, permittees must develop a permanent stormwater treatment system design that will result in no net increase of TSS or phosphorus to the prohibited water	

Yes	N/A	Requirements for discharges to wetlands:
☐	☐	Does this site have a discharge with the potential for adverse impacts to wetlands?

If yes:

Yes	N/A	
☐	☐	Has the wetland mitigation sequence (avoid, minimize, mitigate) been followed/satisfied? Permittee must demonstrate this through one of the following:
☐	☐	The potential adverse impacts are addressed by permits/approvals from an official statewide program (e.g., U.S. Army Corps of Engineers, Minnesota DNR, Wetland Conservation Act)
☐	☐	If there are impacts not addressed by the permits or other determinations, compliance with 7050.0186 must be documented to the MPCA and approved

Notes

Appendix L: TMDL Plans

Appendix M: Documentation

Appendix N: 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

Wellhead Protection Plan
Part 2
City of Hopkins, Minnesota

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PUBLIC WATER SUPPLY PROFILE

PUBLIC WATER SUPPLY

City of Hopkins
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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 districts 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 (sorbent 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.

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.

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	KLODT 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	3095	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	Glenn 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	14375	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	CCI-B MINNETONKA LLC	15000 Minnetonka Industrial Blvd	Minnetonka	55345	Superfund Project	PCS	PLP	A	SR177	1	Moderate
25	1611722430011	CCI-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	1811721340011	BP	8900 Highway 7	St. Louis Park	55426	Tank Site	UST	F000	C	16033	1	Moderate
32	1811721430002	Bridgestone Firestone Inc	8530 W Highway 7	St. Louis Park	55426	Leak Site	LUST	F000	C	9466	1	Moderate
33	1811721430002	LINDSAY-KNOLLWOOD 2 LLC	8500 W 37th St	St. Louis Park	55426	Leak Site	LUST	F000	I	6174	1	Moderate
34	1811721430028	Kohl's Corp	8440 Highway 7	St. Louis Park	55426	Leak Site	LUST	F000	C	5726	1	Moderate
35	1811721430037	Mister Car Wash	8650 Highway 7	St. Louis Park	55426	Leak Site	LUST	F000	C	17776	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	VP8700	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	ISD 270	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	2111722430066	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 BENGTSON	2011 Main St	Hopkins	55343	Tank Site	UST	F000	A	3197	1	Moderate
66	2311722410102	RHONDA LEE BENGTSON	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	F000	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	2411722330004	Hennepin County Transportation Dept	Excelsior Blvd	Hopkins	55343	Petroleum Brownfield	PCS	BMS	I	2811	1	Moderate
102	2411722330005	CITY OF HOPKINS	11001 Excelsior Blvd	Hopkins	55343	Voluntary Investigation & Cleanup	PCS	VIC	I	VP2011	1	Moderate
103	2411722330005	CITY OF HOPKINS	11100 Excelsior Blvd	Hopkins	55343	Tank Site	UST	F000	R	2286	2	Moderate
104	2411722330012	ISD 270	1600 Main St	Hopkins	55343	Tank Site	UST	F000	A	3092	1	Moderate
105	2411722340003	Jiffy Lube	10410 Excelsior Blvd	Hopkins	55343	Tank Site	UST	F000	R	10185	3	Moderate

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	55434	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 & RDVLPT ATHY HOPKINS	See location description	Hopkins	55343	Voluntary Investigation & Cleanup	PCS	VIC	I	VP23060	1	Moderate
123	2411722420166	HSG & RDVLPT 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	55434	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	VP111740	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 CANTER 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	Etchit 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 Ivy 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	STONEYBROOK 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 PRESB 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	Sinclair 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	Morries 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 PTNRSHP	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	811722230001	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	LESLYE F H PHILLIPS TRUSTEE	2602 Crosby Rd	Minnetonka	55391	Leak Site	LUST	F000	I	17853	1	Moderate
206	911722230005	CARGILL INC	2301 Crosby Rd	Minnetonka	55391	Leak Site	LUST	F000	I	5910	1	Moderate
207	911722240021	D E & K A KULICH	2460 Sheridan Hills Curve	Minnetonka	55391	Leak Site	LUST	F000	I	9724	1	Moderate
208	911722310006	GREENDALE ASSOCIATES LLC	15615 McGinty Road West	Wayzata	55391	Leak Site	LUST	F000	I	4250	1	Moderate
209	911722310006	GREENDALE ASSOCIATES LLC	15607 Mcginty Road	Minnetonka	55391	Leak Site	LUST	F000	I	5253	1	Moderate
210	911722320004	G C & N T JACKSON	15611 Mcginty Rd W	Minnetonka	55391	Leak Site	LUST	F000	I	5263	1	Moderate

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 Mcginty 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	Ceder 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	KLODT DEVELOPMENT LLC	815 1st Ave S	Hopkins	55343	Voluntary Investigation & Cleanup	PCS	VIC	A	VP28110	1	Moderate
237	211722230053	MORRIE'S PROPERTIES LLC	12550 Wayzata Blvd	Minnetonka	55305	Tank Site	UST	F000	A	2434	3	Moderate
238	1511722240031	Bollig & 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	1997	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	2111722430066	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	CROIX 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	CCI-B MINNETONKA LLC	15000 Minnetonka Industrial Blvd	Minnetonka	55345	Voluntary Investigation & Cleanup	PCS	VIC	I	VP1362	1	Moderate
278	1611722430011	CCI-B MINNETONKA LLC	15000 Minnetonka Industrial Blvd	Minnetonka	55345	Voluntary Investigation & Cleanup	PCS	VIC	I	VP1361	1	Moderate
279	1611722430011	CCI-B MINNETONKA LLC	15000 Minnetonka Industrial Blvd	Minnetonka	55345	Voluntary Investigation & Cleanup	PCS	VIC	I	VP0070	1	Moderate
280	1611722430011	CCI-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	R	18459	2	Moderate
311	2411722220007	Troy Mathwig Development Co	1501 Highway 7	Hopkins	55305	Tank Site	UST	F000	C	18459	2	Moderate
312	2411722220025	CITY CENTER VENTURES LLC	415 17th Ave N	Hopkins	55343	Voluntary Investigation & Cleanup	PCS	VIC	I	VP24042	1	Moderate
313	2411722220025	Ray Johnson	415 17th Ave N	Hopkins	55343	Voluntary Investigation & Cleanup	PCS	VIC	I	VP24040	1	Moderate
314	2411722220073	Crossroads Union 76	1675 Highway 7	Hopkins	55305	Tank Site	UST	F000	R	3162	4	Moderate
315	2411722310059	J & L Tire And Auto	1201 Main St	Hopkins	55343	Leak Site	LUST	F000	I	7794	1	Moderate

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	55434	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 & RDVLPT ATHY HOPKINS	525 W Main St	Hopkins	55343	Leak Site	LUST	F000	A	19626	1	Moderate
329	2411722420166	HSG & RDVLPT ATHY HOPKINS	525 W Main St	Hopkins	55343	Leak Site	LUST	F000	C	5196	1	Moderate
330	2411722420166	HSG & RDVLPT 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	55434	Tank Site	UST	F000	R	11386	1	Moderate
337	2411722440050	The Luther Co Ltd Partnership	250 5th Ave S	Hopkins	55434	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	Etchit 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	STONEYBROOK INVESTMENTS LLC	11421 W 47th St	Minnetonka	55343	Leak Site	LUST	F000	I	3833	1	Moderate
362	211722310004	Carson Pirie Scott - Ridgedale	12441 Wayzata Blvd	Minnetonka	55305	Tank Site	UST	F000	R	1663	1	Moderate
363	211722320002	Sinclair Ridgedale Station	12415 Wayzata Blvd	Minnetonka	55305	Leak Site	LUST	F000	C	8884	1	Moderate
364	211722320002	Sinclair Ridgedale Station	12415 Wayzata Blvd	Minnetonka	55305	Petroleum Brownfield	PCS	BMS	C	4289	1	Moderate
365	211722320002	Sinclair 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	Morries Minnetonka Ford	13400 Wayzata Blvd	Minnetonka	55305	Leak Site	LUST	F000	C	4657	1	Moderate
379	311722130053	Morries Minnetonka Ford	13400 Wayzata Blvd	Minnetonka	55305	Tank Site	UST	F000	R	11142	6	Moderate
380	311722130053	Morries Minnetonka Ford	13400 Wayzata Blvd	Minnetonka	55305	Tank Site	UST	F000	A	11142	2	Moderate
381	311722240004	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 PTNRSHP	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	1111722210061	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	F000	A	17267	1	Moderate
417	1211722420224	Cedar Ridge Of Minnetonka Apts	10111 Cedar Lake Rd	Minnetonka	55305	Tank Site	UST	F000	R	15160	1	Moderate
418	1311722140005	CITY OF MINNETONKA	10000 Minnetonka Blvd	Minnetonka	0	Tank Site	UST	F000	R	2943	5	Moderate
419	1311722140011	Boulevard Sinclair	9800 Minnetonka Blvd	Minnetonka	55305	Leak Site	LUST	F000	I	8943	1	Moderate
420	1311722140011	Boulevard Sinclair	9800 Minnetonka Blvd	Minnetonka	55305	Leak Site	LUST	F000	I	15657	1	Moderate

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

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	THERMOTECH 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	LOSCHEIDER, 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	GCW-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

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 FILM 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		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 REALITY CO.	A	DO	2111722310032	COURT RD	MINNETONKA	55345	Moderate	WEL
587	00223772		A	DO	2111722410005	RICHARDS DR	MINNETONKA	55345	Moderate	WEL
588	00204516	SEIGEL, BILL	A	DO	2111722410025	WILLISTON RD	MINNETONKA	55345	Moderate	WEL
589	00204518	HAMEL	A	DO	2111722410038	WILDCREST RD	MINNETONKA	55345	Moderate	WEL
590	00204521	OTTESON, DENNIS	A	DO	2111722420003	EVELYN LA	MINNETONKA	55345	Moderate	WEL
591	00204520	BLAINES CONSTRUCTION	A	DO	2111722420004	EVELYN LA	MINNETONKA	55345	Moderate	WEL
592	00204522	DEARSTYNE	A	DO	2111722420027	EVELYN LA	MINNETONKA	55345	Moderate	WEL
593	00204523	JERGENS	A	DO	2111722430053	HIGHLAND RD	MINNETONKA	55345	Moderate	WEL
594	00272598	SMITH, HOWARD	A	DO	2111722440017	KARYL DR	MINNETONKA	55345	Moderate	WEL
595	00204517	OSTERBERG	A	DO	2111722440018	KARYL DR	MINNETONKA	55345	Moderate	WEL
596	00204519	STILLMAN	A	DO	2111722440024	KARYL DR	MINNETONKA	55345	Moderate	WEL
597	00204526	KRUSTOON, OSCAR	A	DO	2211722110005	DO LITTLE DR	MINNETONKA	55305	Moderate	WEL
598	00204527	PYHONEN, R. J.	A	DO	2211722110006	DO LITTLE DR	MINNETONKA	55305	Moderate	WEL
599	00204525	LARSONS	A	DO	2211722110075	DO LITTLE DR	MINNETONKA	55305	Moderate	WEL
600	00204528	JOHNSON, AXEL	A	DO	2211722140011	CASTLE VIEW CT	MINNETONKA	55305	Moderate	WEL
601	00204529	ANDERSON	A	DO	2211722140047	BAKER RD	MINNETONKA	55305	Moderate	WEL
602	00204530	VANEK, MEL	A	DO	2211722220018	WOODHAVEN RD	MINNETONKA	55345	Moderate	WEL
603	00204531	JOHNSON, AXEL	A	DO	2211722220033	WOODHAVEN RD	MINNETONKA	55345	Moderate	WEL
604	00204532	REEVES, G. B.	A	DO	2211722220054	HAVEN RD	MINNETONKA	55345	Moderate	WEL
605	00204533	JOHNSON, HAROLD	A	DO	2211722230039	LENNELL DR	MINNETONKA	55345	Moderate	WEL
606	00204536	BLOOM, JEROME	A	DO	2211722240013	SPRING LAKE RD	MINNETONKA	55345	Moderate	WEL
607	00204535	KENNEN, BERNARD A.	A	DO	2211722240030	SPRING LAKE RD	MINNETONKA	55345	Moderate	WEL

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, ARTHER	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	REINSTRA, WALTER	A	DO	2411722430235	7TH AVE S	HOPKINS	55343	Moderate	WEL
640	00204573	HOPKINS 1	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	SORENSON, 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

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	LOKENSGARD	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	COYOTE 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

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	JANESEL, 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		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

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
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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
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932	00621593	KELLESTAD, LEIGH	A	DO	411722330008	CROSBY RD	WAYZATA	55391	Low	WEL
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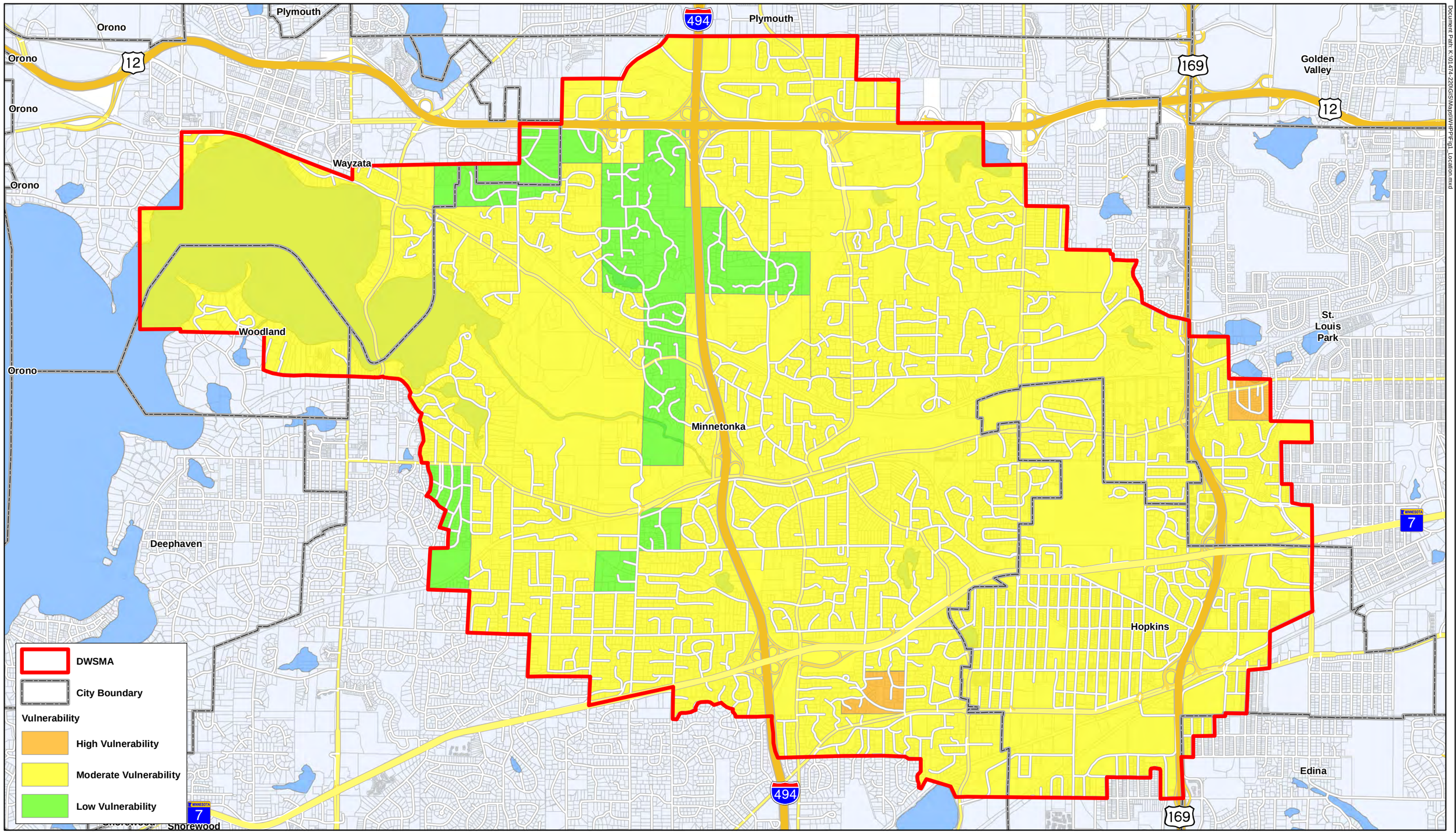
934	00203732	JOHNSON, RAY	A	DO	411722330015	HOLDRIDGE RD E	WAYZATA	55391	Low	WEL
935	00203734	HAIL, DOUGLAS	A	DO	411722330045	HOLDRIDGE RD E	WAYZATA	55391	Low	WEL
936	00203746	VON BUSCH, ART	A	DO	411722410011	BRIGHTWOOD DR	MINNETONKA	55391	Low	WEL
937	00203747	BANAZAK	A	DO	411722410012	BRIGHTWOOD DR	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

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



Hopkins
minnesota

Figure 1: DWSMA Vulnerability
Wellhead Protection Plan
City of Hopkins

WSB

DWSMA

City Boundary

Soil Texture

Unknown

Coarse-loamy

Fine

Fine-loamy

Fine-loamy over sandy or sandy-skeletal

Fine-silty

Loamy

Other

Sandy over loamy

494

12

169

7

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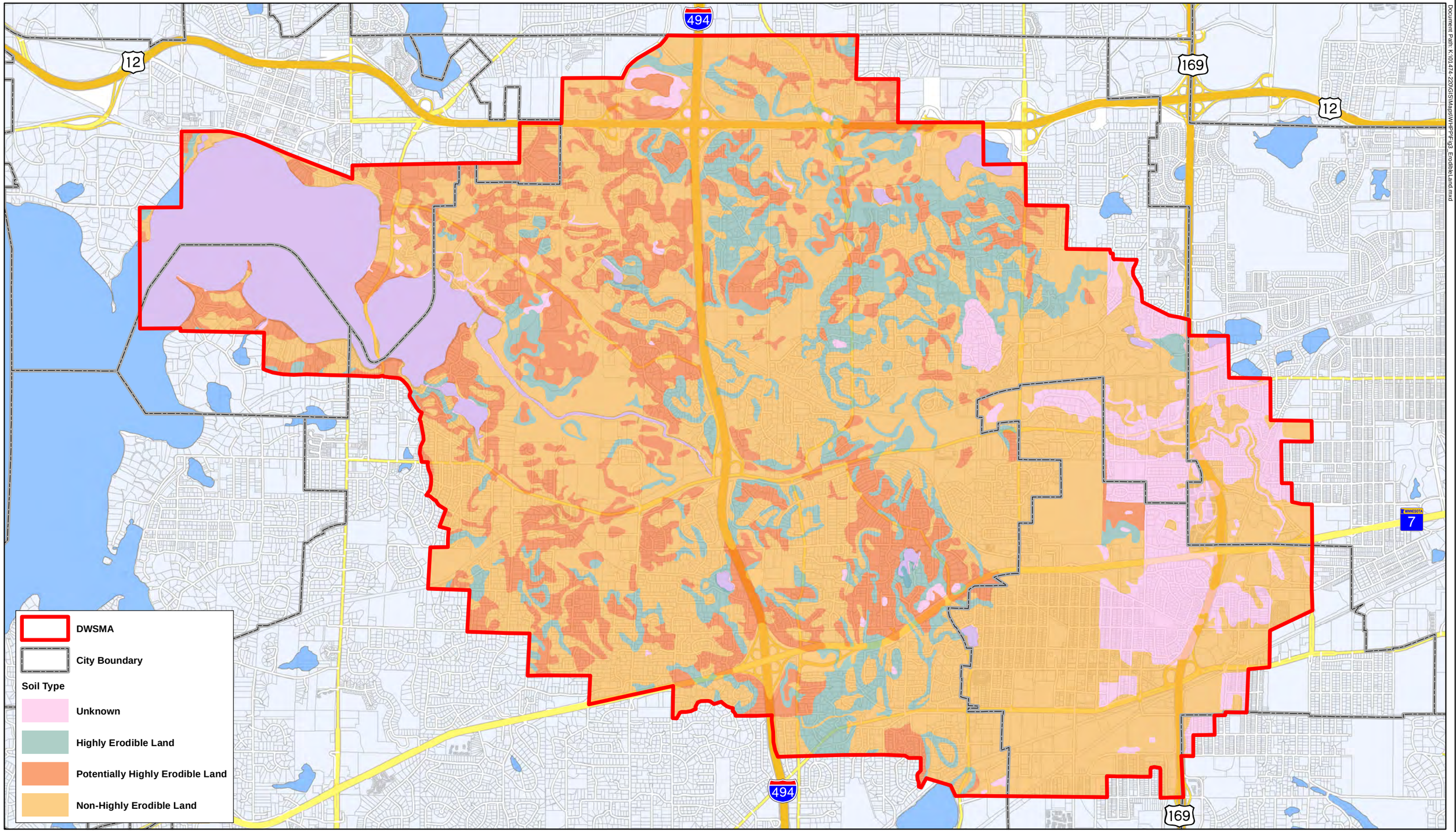
Figure 2: Soil Type
Wellhead Protection Plan
City of Hopkins

N

0 2,750 Feet

Hopkins minnesota

WSB



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Hopkins minnesota

Figure 3: Erodible Land
Wellhead Protection Plan
City of Hopkins

WSB

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

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

N
0 2,750 Feet

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DWSMA
City Boundary
Storm Sewer System
Ditches

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

N

0 2,750 Feet

Hopkins minnesota

WSB

DWSMA
City Boundary
Sanitary Sewer System

Figure 6: Sanitary Sewer
Wellhead Protection Plan
City of Hopkins

N

0 2,750 Feet

Hopkins minnesota

WSB

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Hopkins minnesota

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

N
0 2,750 Feet

WSB

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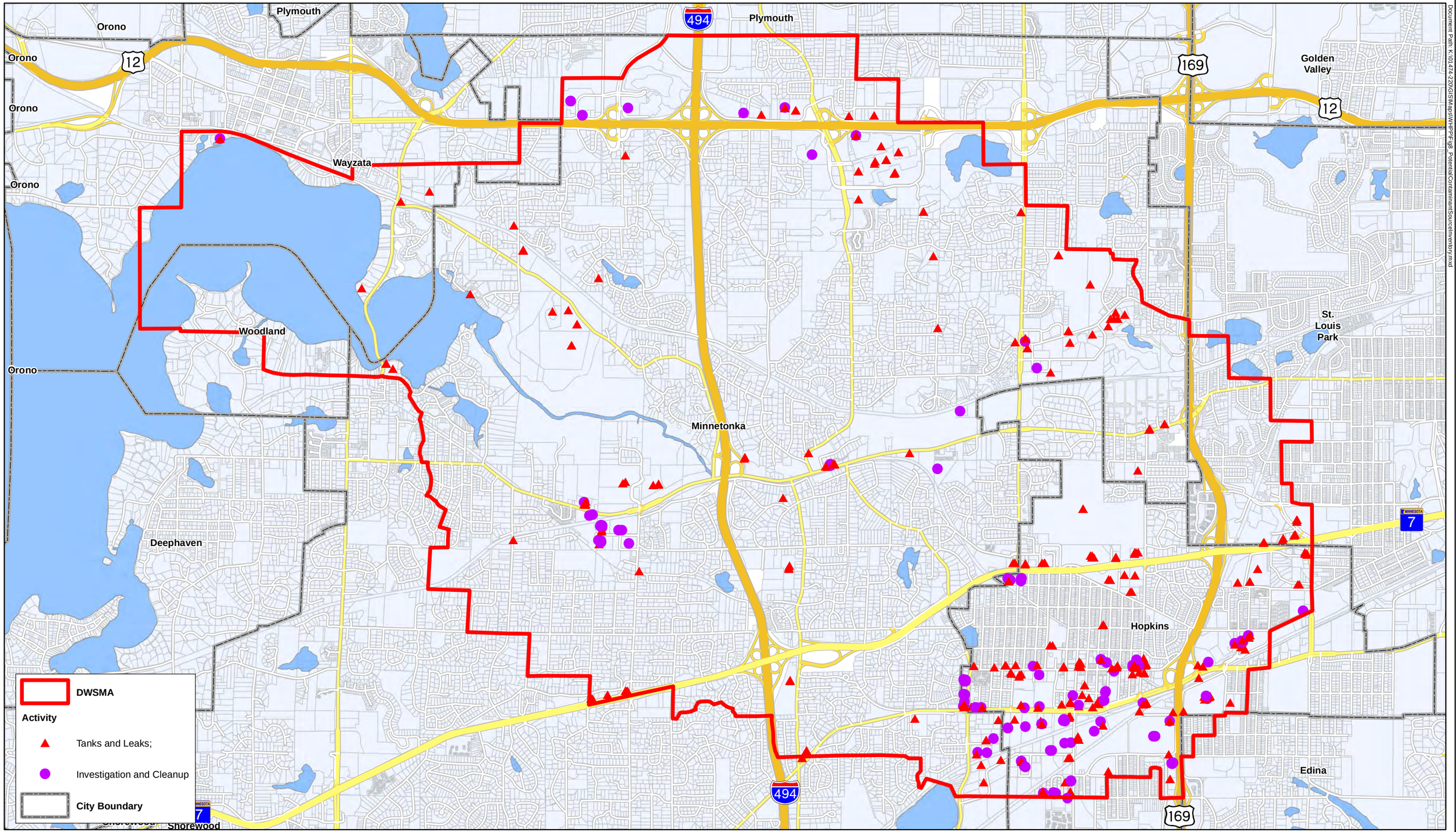

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Figure 8: Potential Contaminant Source Inventory
Wellhead Protection Plan
City of Hopkins

N

0 2,750 Feet

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Figure 9: Wells
Wellhead Protection Plan
City of Hopkins

Hopkins minnesota

WSB

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494
12
169
12
494
169
7

DWSMA
City Boundary

Zoning

R-1- Single Family Residential
R-2- Multi Family Residential
B-1- Business
I-1- Industrial
BP- Business Park
INS- Institutional
MU- Mixed Use
Park and Open Space
PUD- Planned Unit Development

Figure 10: Zoning
Wellhead Protection Plan
City of Hopkins

Hopkins minnesota

N
0 2,750 Feet

WSB

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-feet 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	0.0
Well No. 4	204068	476.9	**561.2**	460	489.6	440.2	561.2	5,814.0
Well No. 5	204570	0	78.1	191.8	198.2	**216**	216	2,237.8
Well No. 6	112228	**317.1**	180.7	119.8	129.8	156.4	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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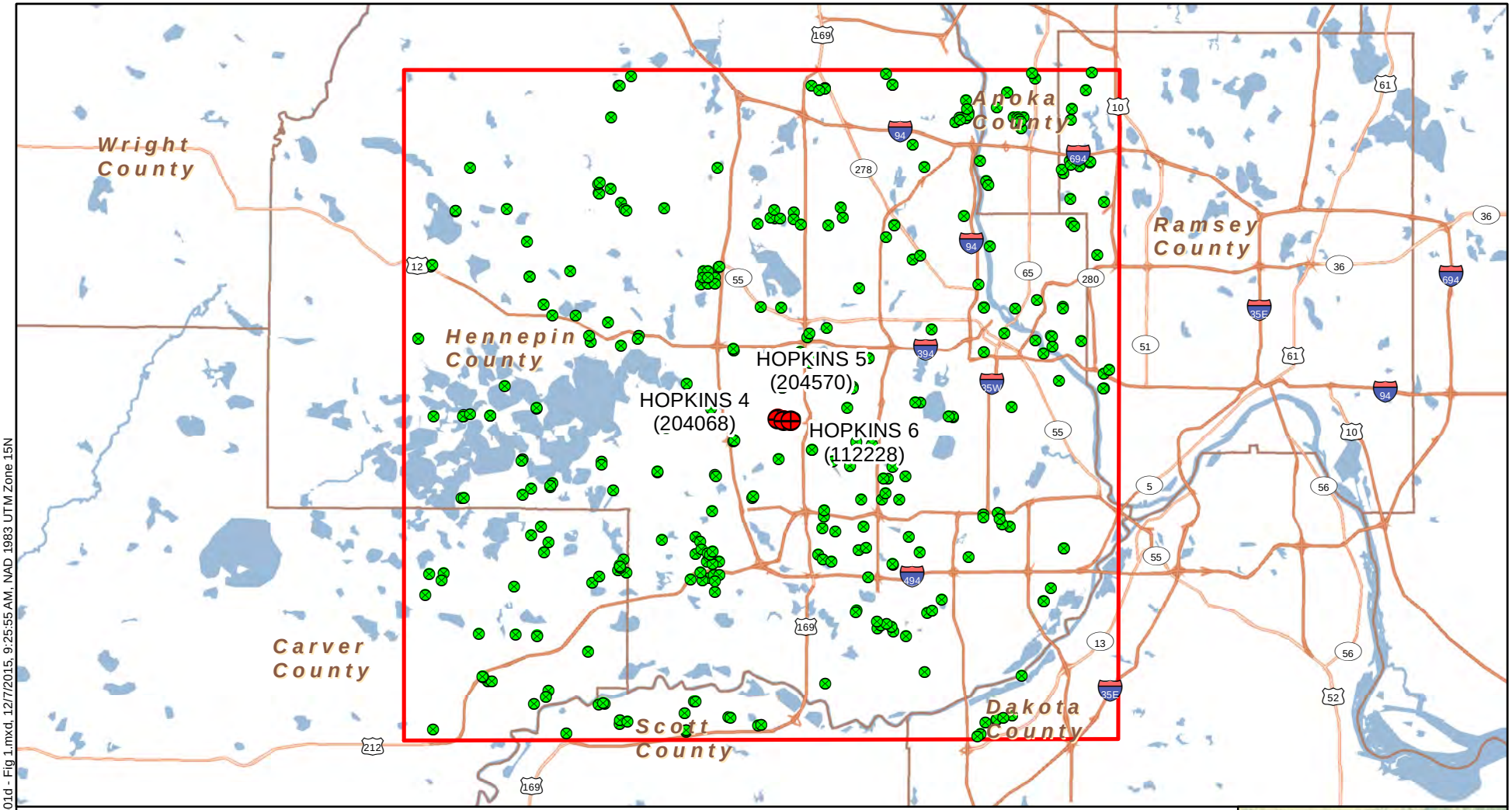
Figures



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CITY OF HOPKINS

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SITE LOCATION, HIGH CAPACITY WELLS, AND
LOCAL MODEL BOUNDARY

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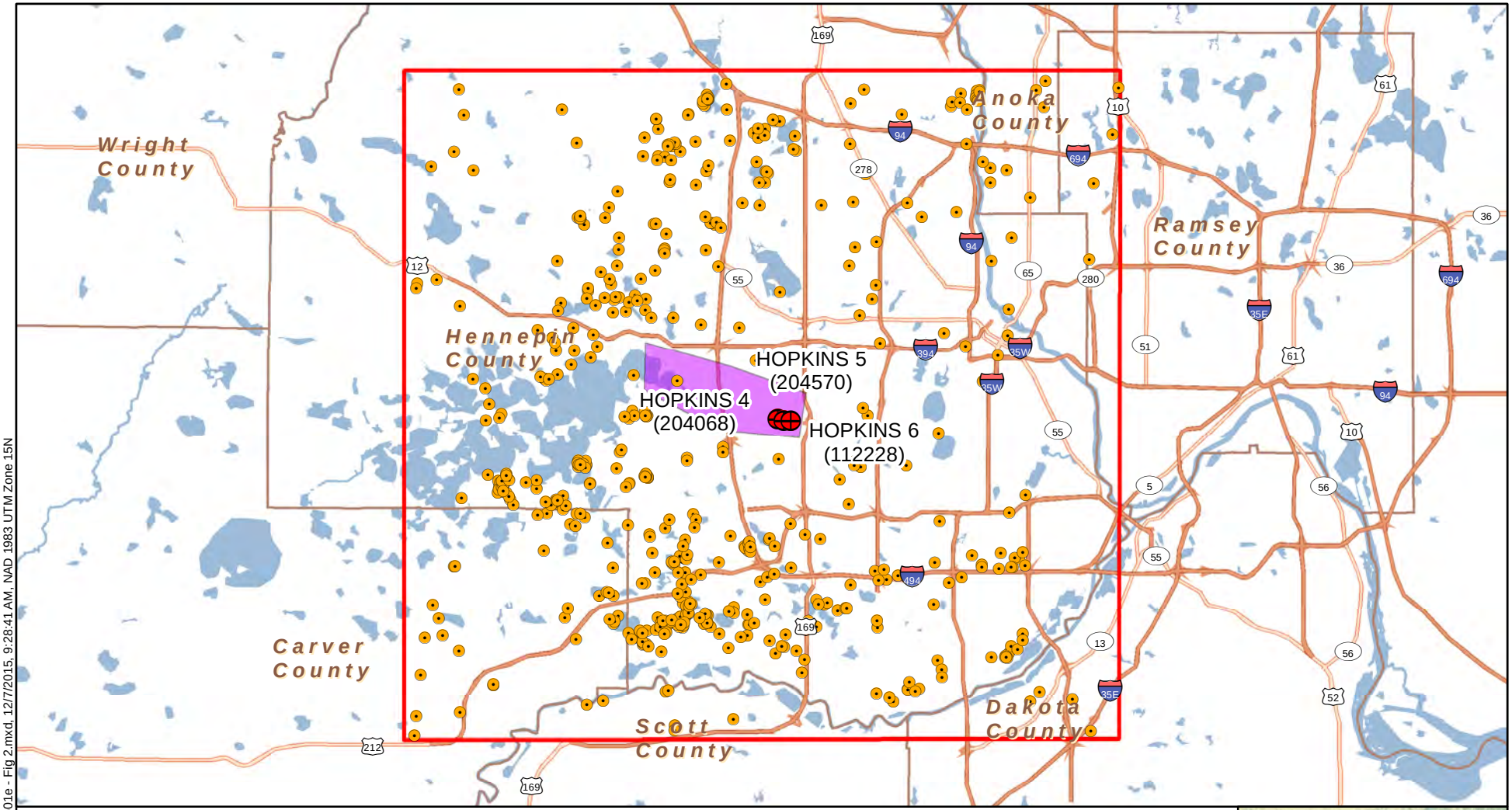

City Well Location
Calibration Point Location
Local Model Boundary
Modification Area

0 5 Miles

7-County Metro Area
Site

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LOCAL MODEL BOUNDARY, CALIBRATION POINTS, AND MODIFICATION AREA

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

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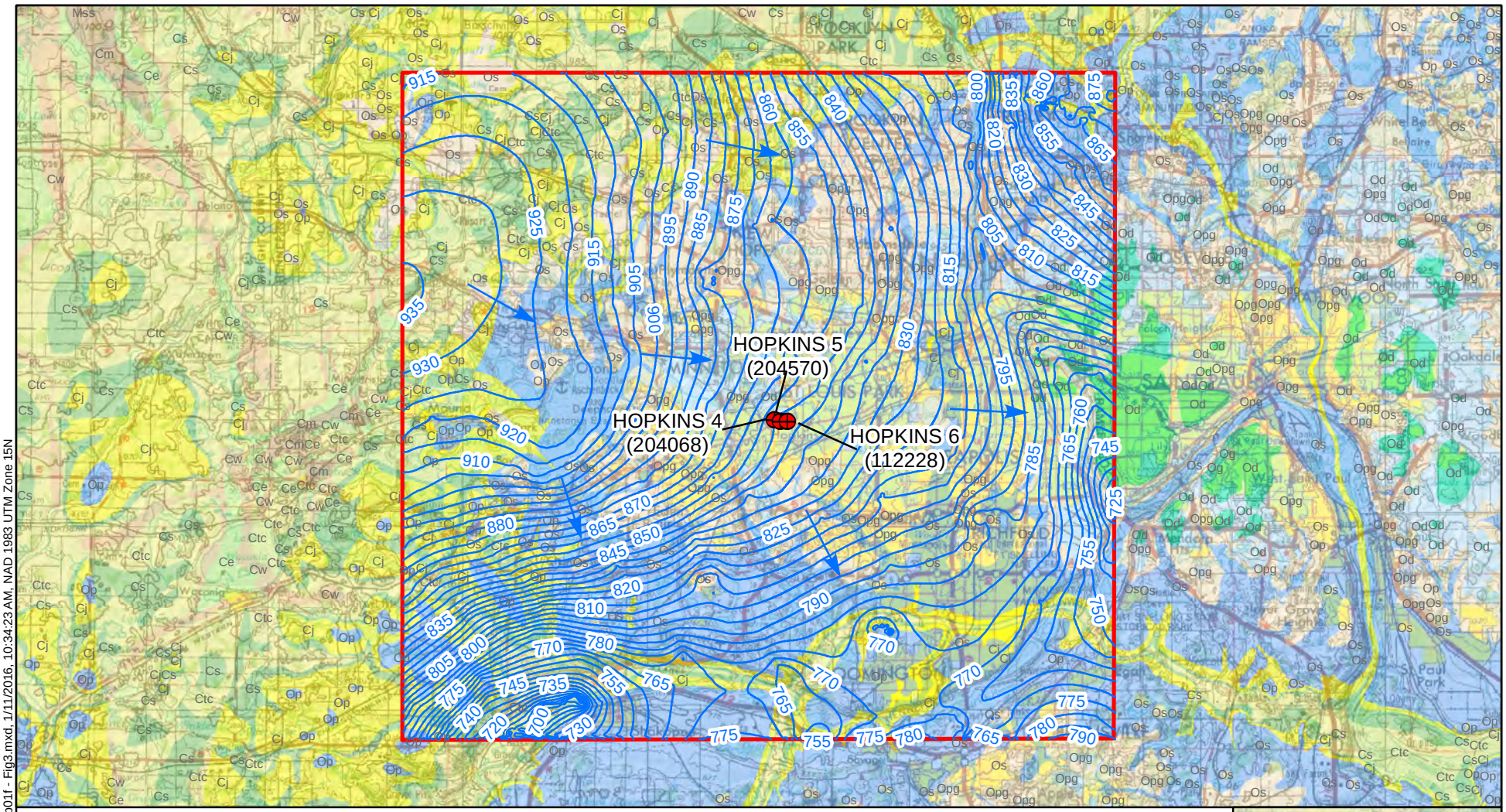

City Well Location
Potentiometric Surface Contour Prairie du Chien Aquifer (feet)
Groundwater Flow Direction
Local Model Boundary

Bedrock in Model Boundary

- Opg — Platteville and Glenwood Formations
- Os — St. Peter Sandstone
- Op — Prairie du Chien Group
- Cj — Jordan Sandstone
- Cs — St. Lawrence Formation
- Ctc — Tunnel City Group
- Cw — Wonewoc Sandstone
- Cm — Mt. Simon Sandstone

0 6 Miles

7-County Metro Area

Site

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SIMULATED GROUNDWATER EQUIPOTENTIAL CONTOURS OF
PRAIRIE DU CHIEN AQUIFER AND BEDROCK GEOLOGY

FILE: g3hopkinswhp01f - Fig3.MXD | DATE: 1/11/2016 | FIGURE: 3

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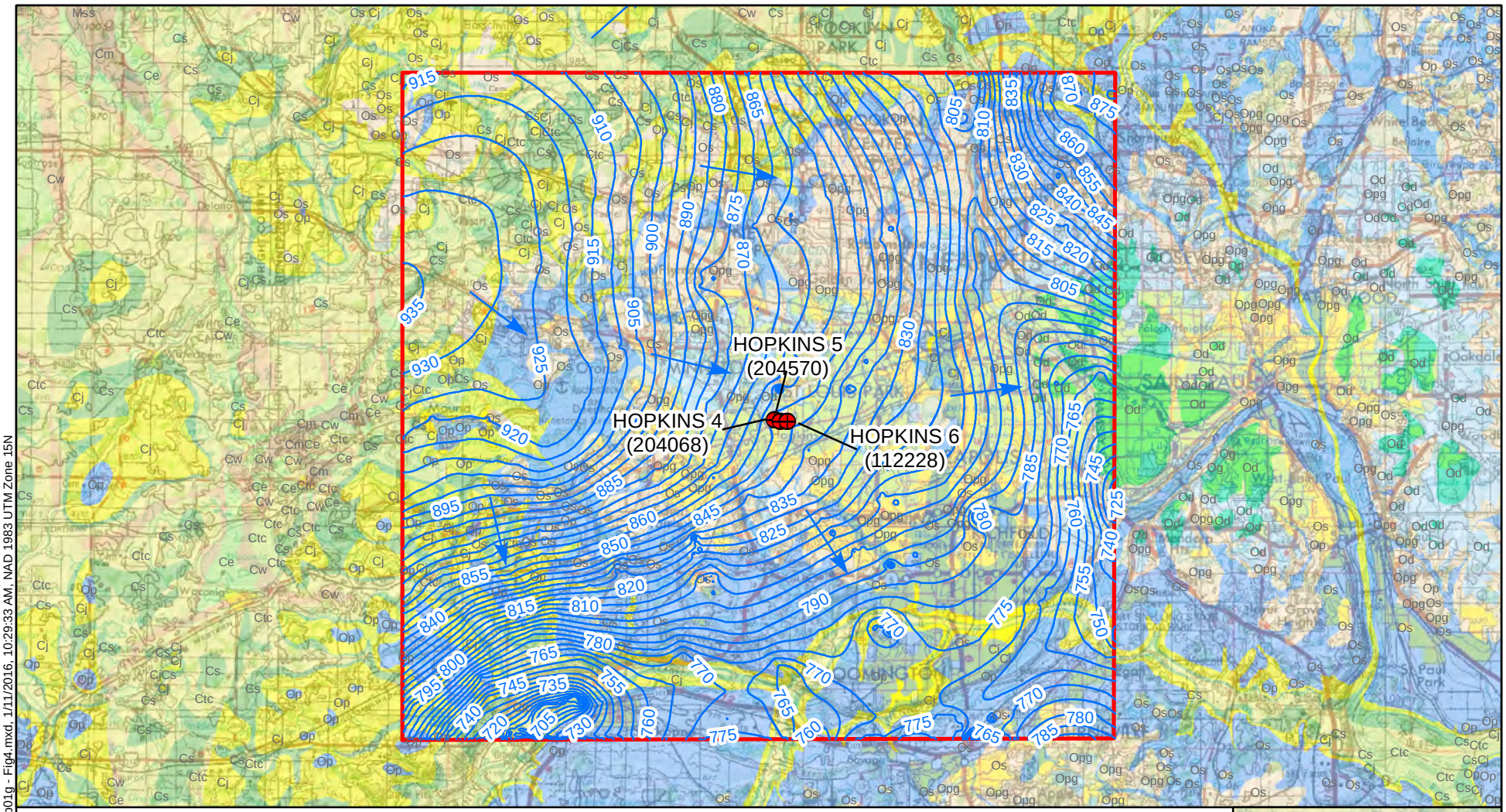
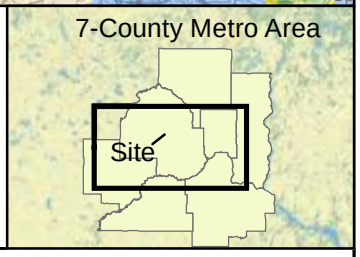


City Well Location
Potentiometric Surface Contour Jordan Aquifer (feet)
Groundwater Flow Direction
Local Model Boundary

Bedrock in Model Boundary

Opg	Platteville and Glenwood Formations
Os	St. Peter Sandstone
Op	Prairie du Chien Group
Cj	Jordan Sandstone
Cs	St. Lawrence Formation
Ctc	Tunnel City Group
Cw	Wonewoc Sandstone
Cm	Mt. Simon Sandstone

0 6 Miles



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SIMULATED GROUNDWATER EQUIPOTENTIAL CONTOURS OF
JORDAN AQUIFER AND BEDROCK GEOLOGY

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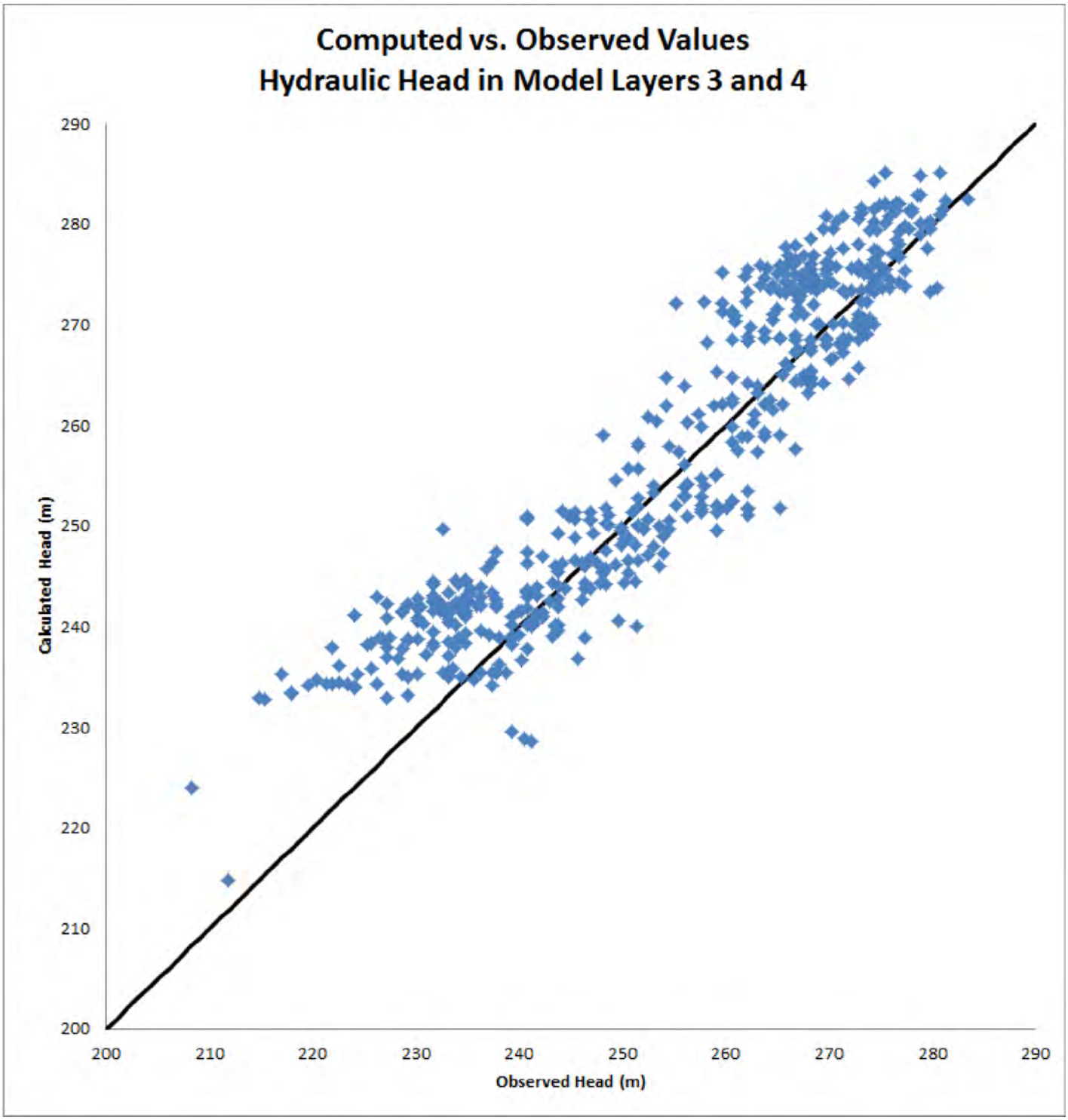

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MODEL CALIBRATION

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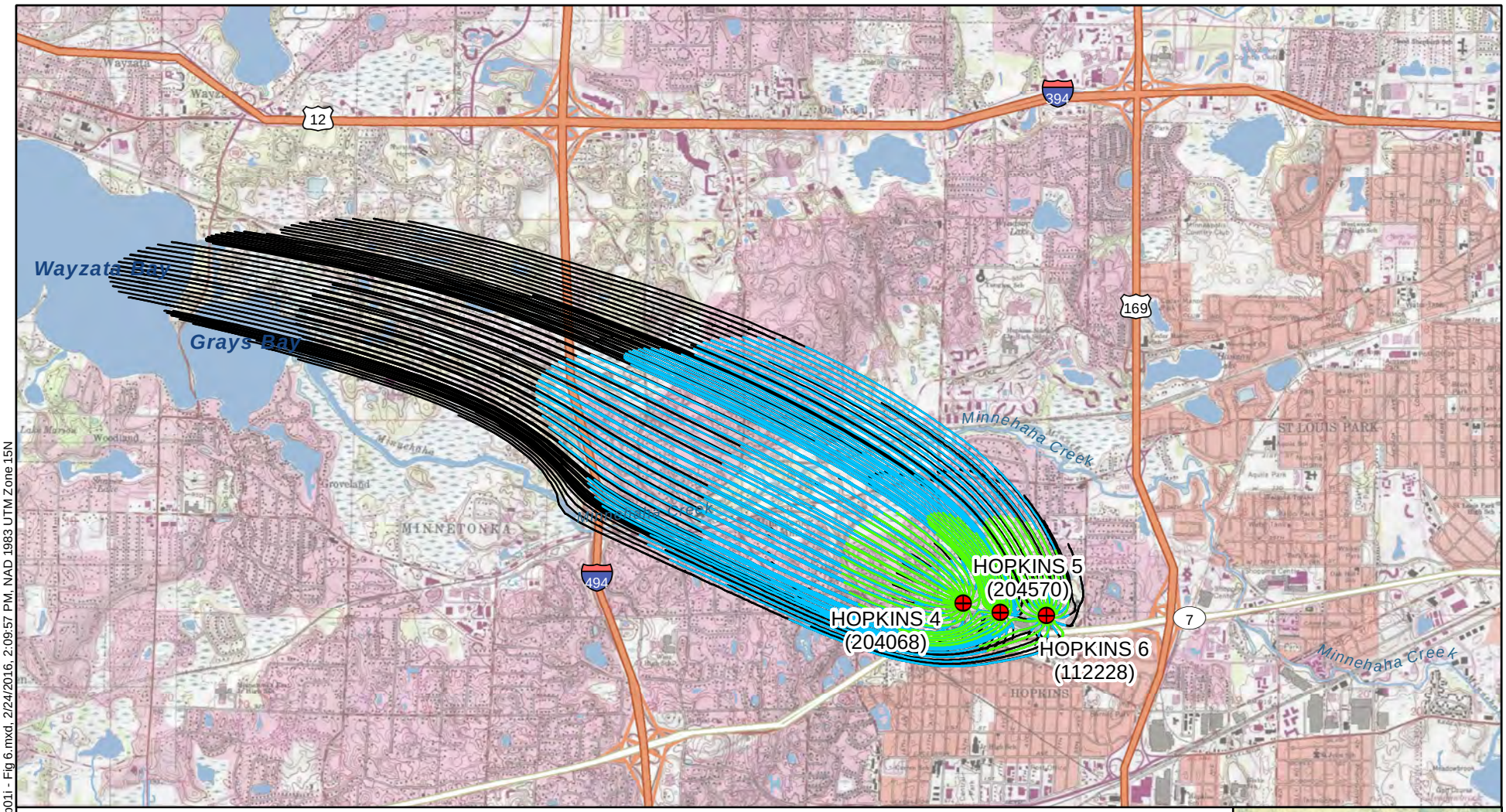

City Well Location

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

0 4,000 Feet

7-County Metro Area

Site

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CITY OF HOPKINS

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1, 5, AND 10 YEAR FLOWPATHS FOR CALIBRATED MODEL

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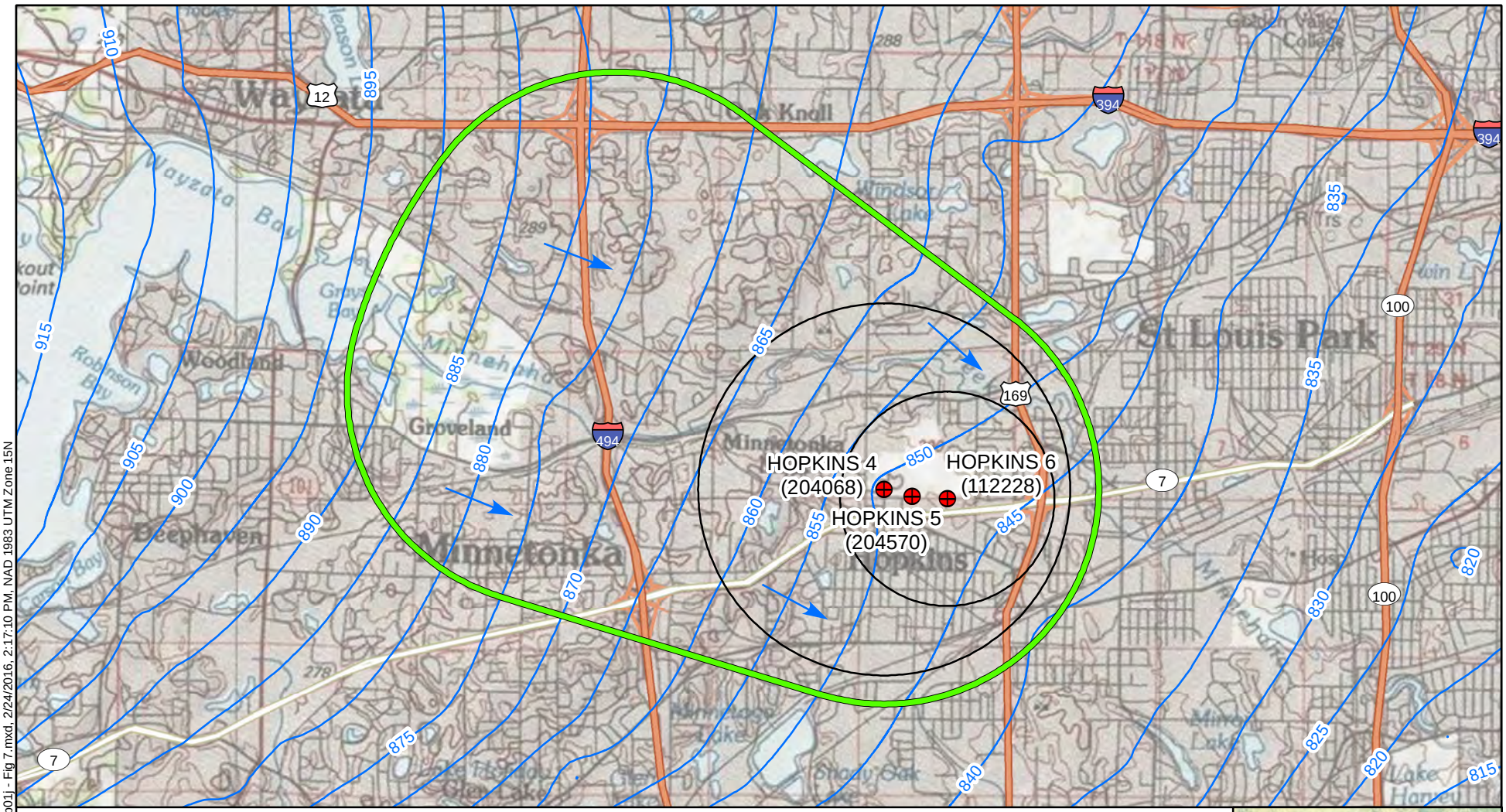

City Well Location

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

0 1 Miles

7-County Metro Area

Site

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FRACTURE FLOW DELINEATION BOUNDARIES

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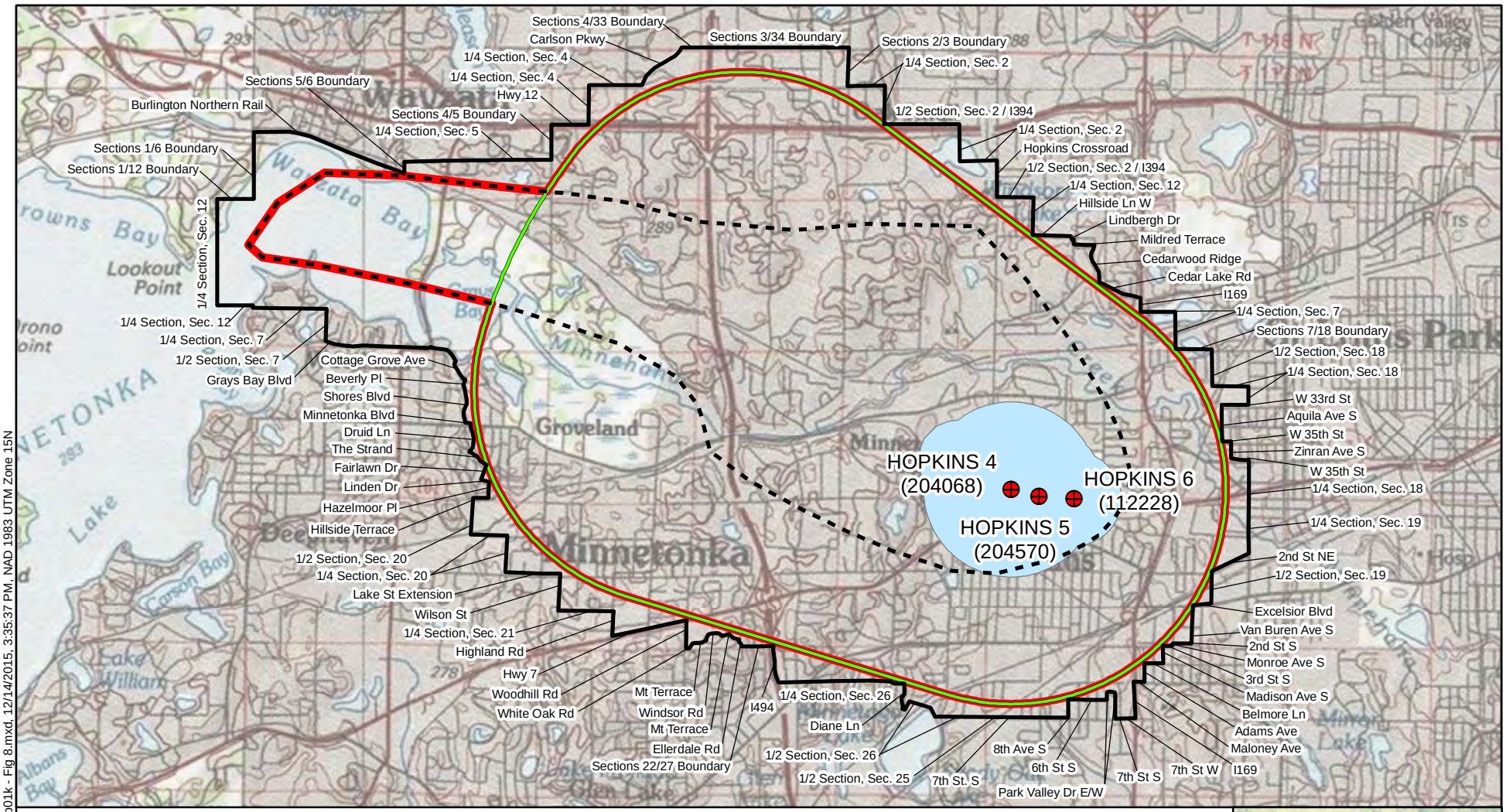


City Well Location

10-Year Composite Capture Zone (porous flow)

Fracture Flow Capture Area

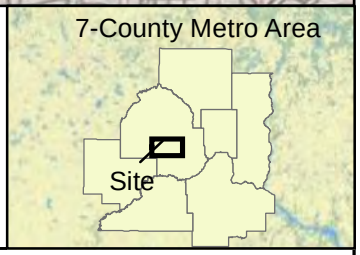
Combined Wellhead Protection Area

Drinking Water Supply Management Area

Emergency Response Area (1-yr time of travel))

IWMZ (Inner Wellhead Management Zone Note: Hidden Behind Well Symbol)

0 1 Miles



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CITY OF HOPKINS

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COMBINED WELLHEAD PROTECTION AREA BOUNDARY AND DRINKING WATER SUPPLY MANAGEMENT AREA

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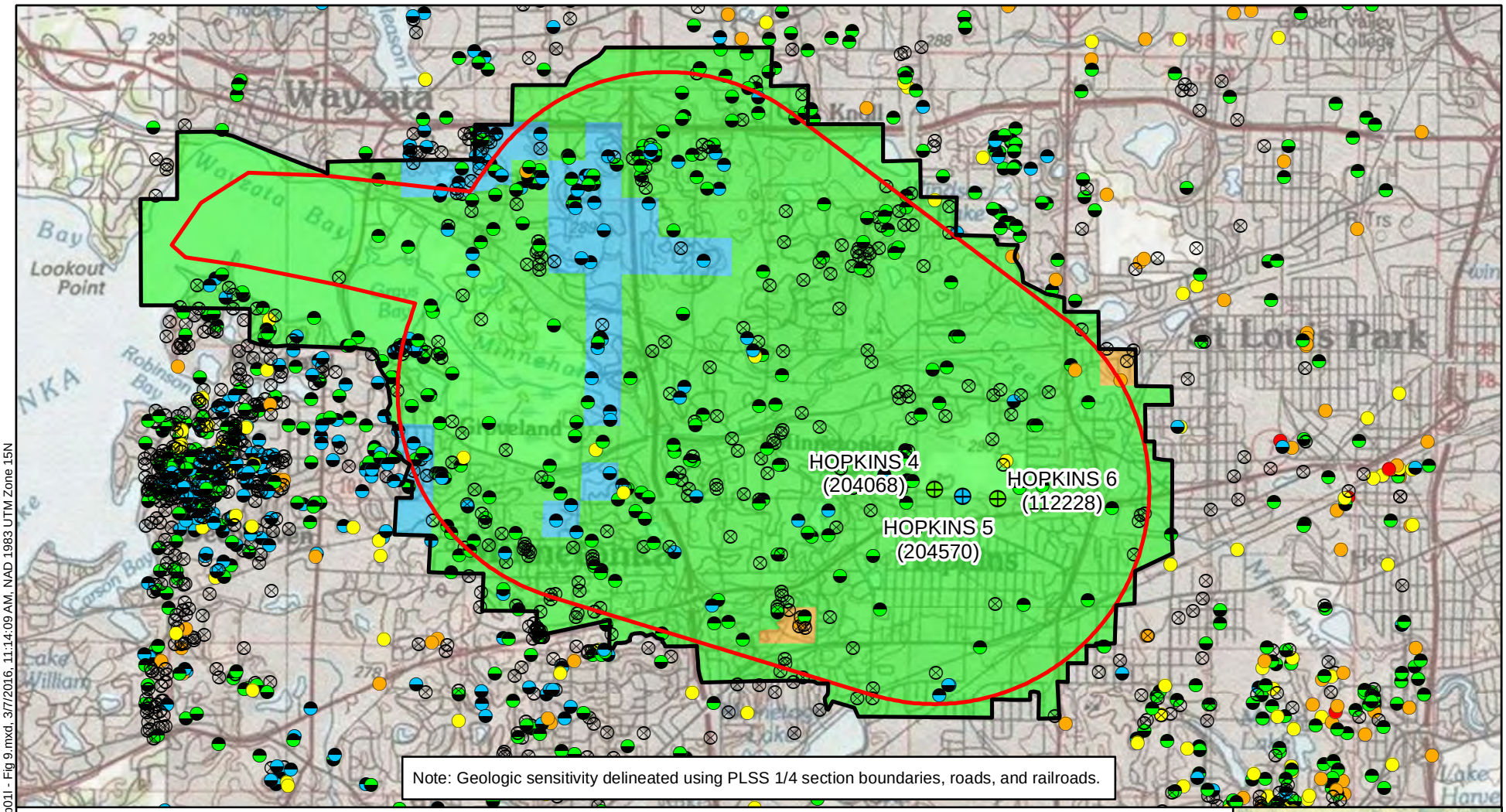

City Well Location
Insufficient Data
Domestic Well
Combined Wellhead Protection Area
Drinking Water Supply Management Area

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)

0 1 Miles

7-County Metro Area
Site

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DRINKING WATER SUPPLY MANAGEMENT AREA
GEOLOGIC SENSITIVITY ASSESSMENT

FILE: g3hopkinswhp01l - Fig 9.MXD | DATE: 3/7/2016 | FIGURE: 9

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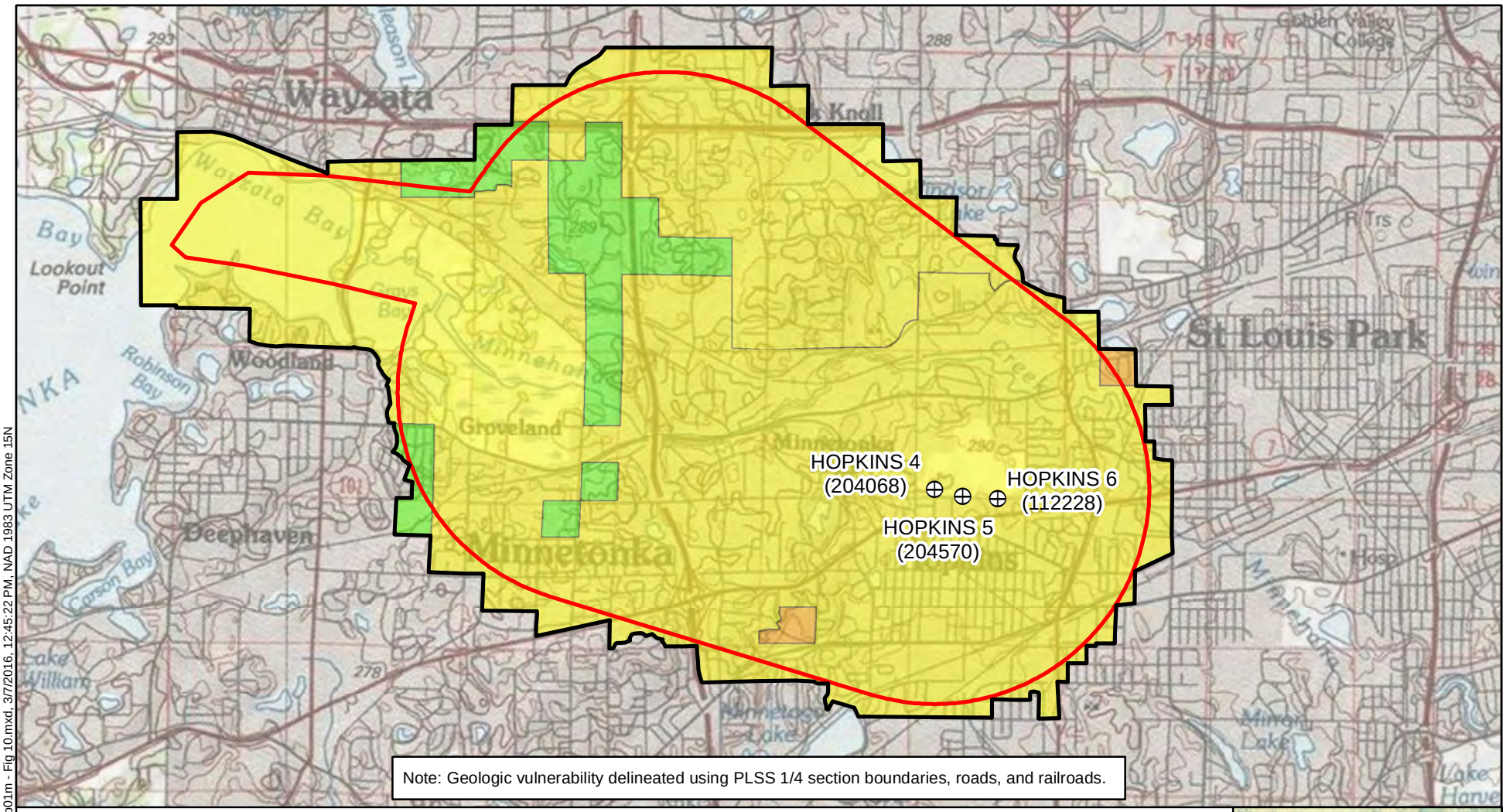

City Well Location
Combined Wellhead Protection Area
Drinking Water Supply Management Area

DWSMA Vulnerability
Very High
High
Moderate
Low

0 1 Miles

7-County Metro Area
Site

Source: ESRI, DigitalGlobe, GeoEye i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community
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DRINKING WATER SUPPLY MANAGEMENT AREA
VULNERABILITY ASSESSMENT

FILE: g3hopkinswhp01m - Fig 10.MXD | DATE: 3/7/2016 | FIGURE: 10

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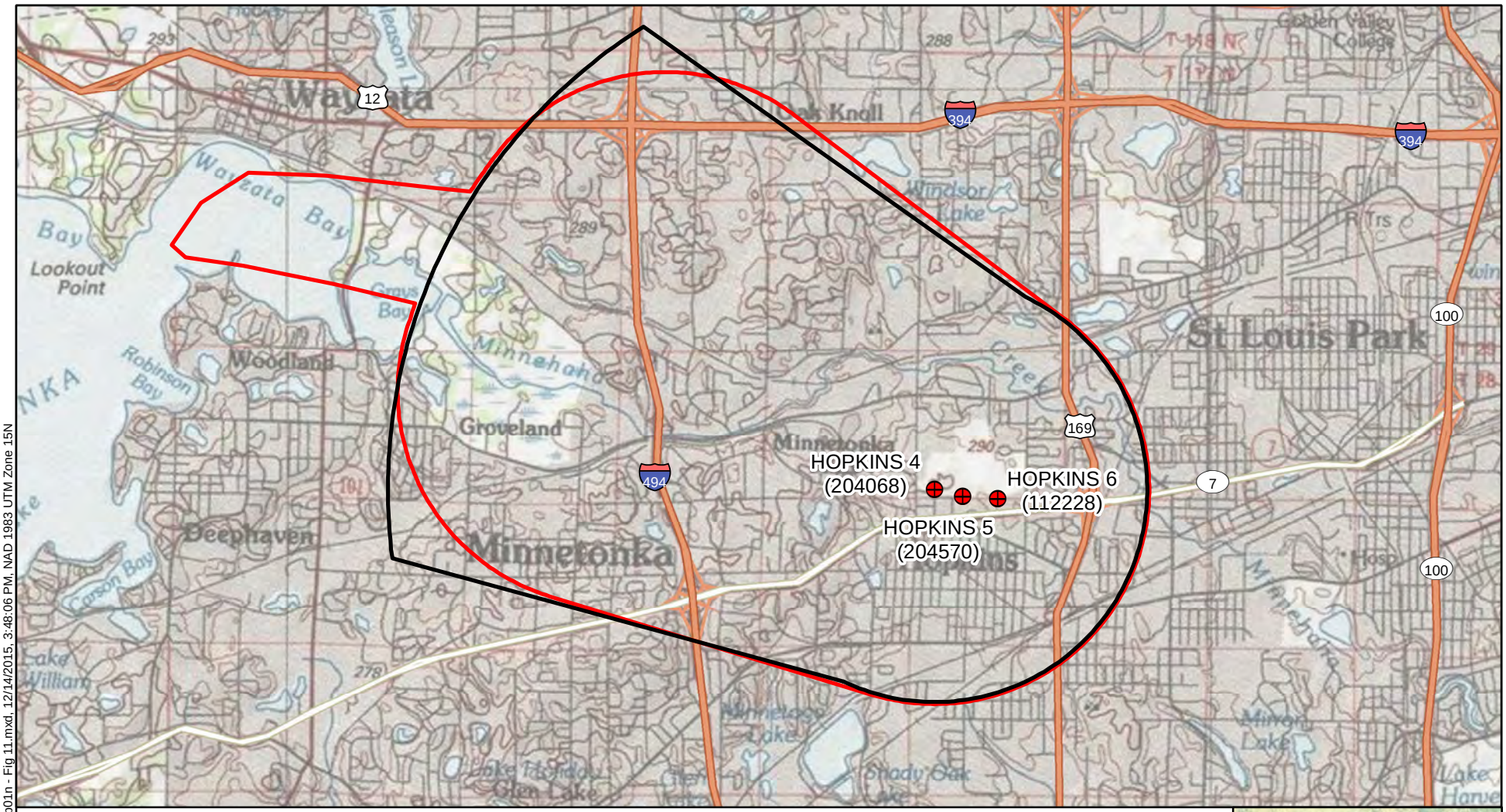
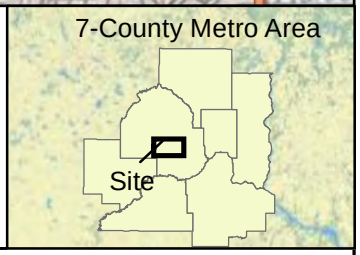


City Well Location
Amended 2015 Wellhead Protection Area
Original 2005 Wellhead Protection Area

0 1 Miles



Source: ESRI, DigitalGlobe, GeoEye i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community
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St. Paul, Minnesota 55112
(651) 490-1405

CITY OF HOPKINS
HOPKINS, MINNESOTA

ORIGINAL AND AMENDED WELLHEAD PROTECTION AREAS

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

G:\GIS\Hopkins_WHP_Amendment\maps\g3hopkinswhp01n - Fig 11.mxd, 12/14/2015, 3:48:06 PM, NAD 1983 UTM Zone 15N

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

Environmental Health Division
Drinking Water Protection Section
P.O. Box 64975
St. Paul, Minnesota 55164-0975

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
FACILITY ID	S01
UNIQUE WELL NO.	204573
COUNTY	Hennepin

IS THERE A WELL LOG OR ADDITIONAL CONSTRUCTION INFORMATION AVAILABLE?

☐ **YES** (Please attach a copy)
☐ **NO** ☐ **UNDETERMINED**

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		

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				
PT1	Petroleum tank or container, 1100 gal. or more, without safeguards	150	150		N		
PT2	Petroleum tank or container, 1100 gal. or more, with safeguards	100	100		N		
PT3	Petroleum tank or container, buried, between 56 and 1100 gal.	50	50		N		
PT4	Petroleum tank or container, not buried, between 56 and 1100 gal.	50[5]	20		N		
PU1	Pit or unfilled space more than four feet in depth	20	20		N		
PC1	Pollutant or contaminant that may drain into the soil	50	50	100	N		
SP1	Swimming pool, in-ground	20	20		N		
*VH1	Vertical heat exchanger, horizontal piping conforming to rule	50	10		N		
*VH2	Vertical heat exchanger (vertical) piping, conforming to rule	50	35		N		
*WR1	Wastewater rapid infiltration basin, municipal or industrial	300	300	600	N		
*WA1	Wastewater spray irrigation area, municipal or industrial	150	150	300	N		
*WS1	Wastewater stabilization pond, industrial	150	150	300	N		
*WS2	Wastewater stabilization pond, municipal, 500 or more gal./acre/day of leakage	300	300	600	N		
*WS3	Wastewater stabilization pond, municipal, less than 500 gal./acre/day of leakage	150	150	300	N		
*WT1	Wastewater treatment unit tanks, vessels and components (Package plant)	100	100		N		
*WT2	Water treatment backwash disposal area	50	50	100	N		
Additional Sources (If there is more than one source listed above, please indicate here).							
Potential Contamination Sources and Codes Based on Previous Versions of this Form							
	none found within 200' of this well.						

* New potential contaminant source.

[1] A sensitive well has less than 50 feet of watertight casing, and which is not cased below a confining layer or confining materials of at least 10' in thickness.

[2] These sources, known as Class V underground injection wells, are regulated by the federal U.S. Environmental Protection Agency.

[3] These sources are classified as illegal by Minnesota Rules, Chapter 4725.

[4] Isolation distance is determined by average flow per day or if a facility handles infectious or pathological wastes.

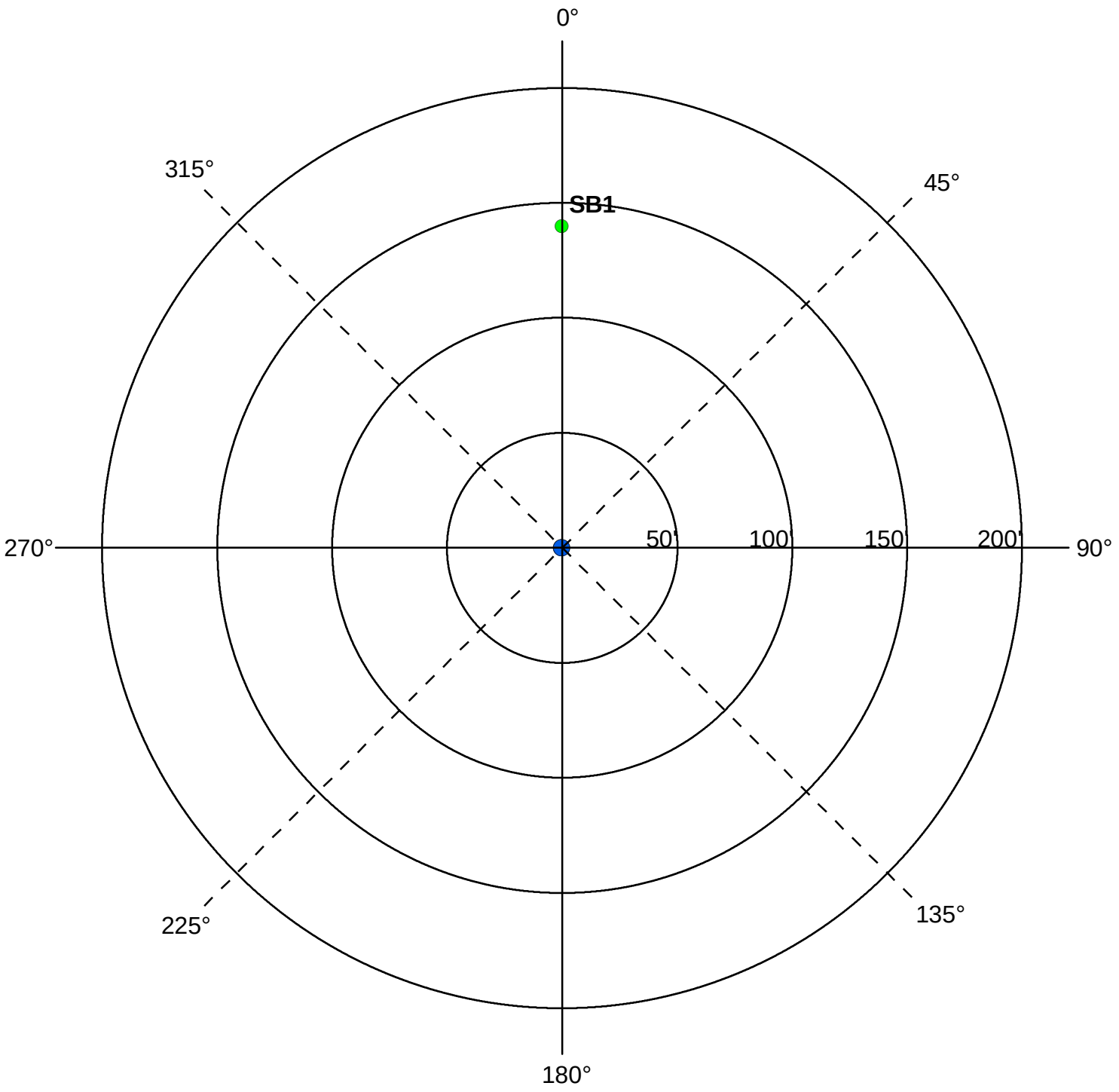
[5] A community public water-supply well must be a minimum of 50 feet from a petroleum tank or container, unless the tank or container is used for emergency pumping and is located in a room or building separate from the community well; and is of double-wall construction with leak detection between walls; or is protected with secondary containment.

This form is based on the new isolation distances in Minnesota Rules, Chapter 4725, related to wells and borings adopted August 4, 2008, and Minnesota Rules, Chapter 4720, related to wellhead protection.

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

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

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

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

COMMENTS

There is a gravel pocket at an unkown 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

Environmental Health Division
Drinking Water Protection Section
P.O. Box 64975
St. Paul, Minnesota 55164-0975

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
FACILITY ID	S03
UNIQUE WELL NO.	204068
COUNTY	Hennepin

IS THERE A WELL LOG OR ADDITIONAL CONSTRUCTION INFORMATION AVAILABLE?

☐ **YES** (Please attach a copy)
☐ **NO** ☐ **UNDETERMINED**

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

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				
PT1	Petroleum tank or container, 1100 gal. or more, without safeguards	150	150		N		
PT2	Petroleum tank or container, 1100 gal. or more, with safeguards	100	100		N		
PT3	Petroleum tank or container, buried, between 56 and 1100 gal.	50	50		N		
PT4	Petroleum tank or container, not buried, between 56 and 1100 gal.	50[5]	20		N		
PU1	Pit or unfilled space more than four feet in depth	20	20		N		
PC1	Pollutant or contaminant that may drain into the soil	50	50	100	N		
SP1	Swimming pool, in-ground	20	20		N		
*VH1	Vertical heat exchanger, horizontal piping conforming to rule	50	10		N		
*VH2	Vertical heat exchanger (vertical) piping, conforming to rule	50	35		N		
*WR1	Wastewater rapid infiltration basin, municipal or industrial	300	300	600	N		
*WA1	Wastewater spray irrigation area, municipal or industrial	150	150	300	N		
*WS1	Wastewater stabilization pond, industrial	150	150	300	N		
*WS2	Wastewater stabilization pond, municipal, 500 or more gal./acre/day of leakage	300	300	600	N		
*WS3	Wastewater stabilization pond, municipal, less than 500 gal./acre/day of leakage	150	150	300	N		
*WT1	Wastewater treatment unit tanks, vessels and components (Package plant)	100	100		N		
*WT2	Water treatment backwash disposal area	50	50	100	Y	90	N
Additional Sources (If there is more than one source listed above, please indicate here).							
Potential Contamination Sources and Codes Based on Previous Versions of this Form							
	none found within 200' of this well.						

* New potential contaminant source.

[1] A sensitive well has less than 50 feet of watertight casing, and which is not cased below a confining layer or confining materials of at least 10' in thickness.

[2] These sources, known as Class V underground injection wells, are regulated by the federal U.S. Environmental Protection Agency.

[3] These sources are classified as illegal by Minnesota Rules, Chapter 4725.

[4] Isolation distance is determined by average flow per day or if a facility handles infectious or pathological wastes.

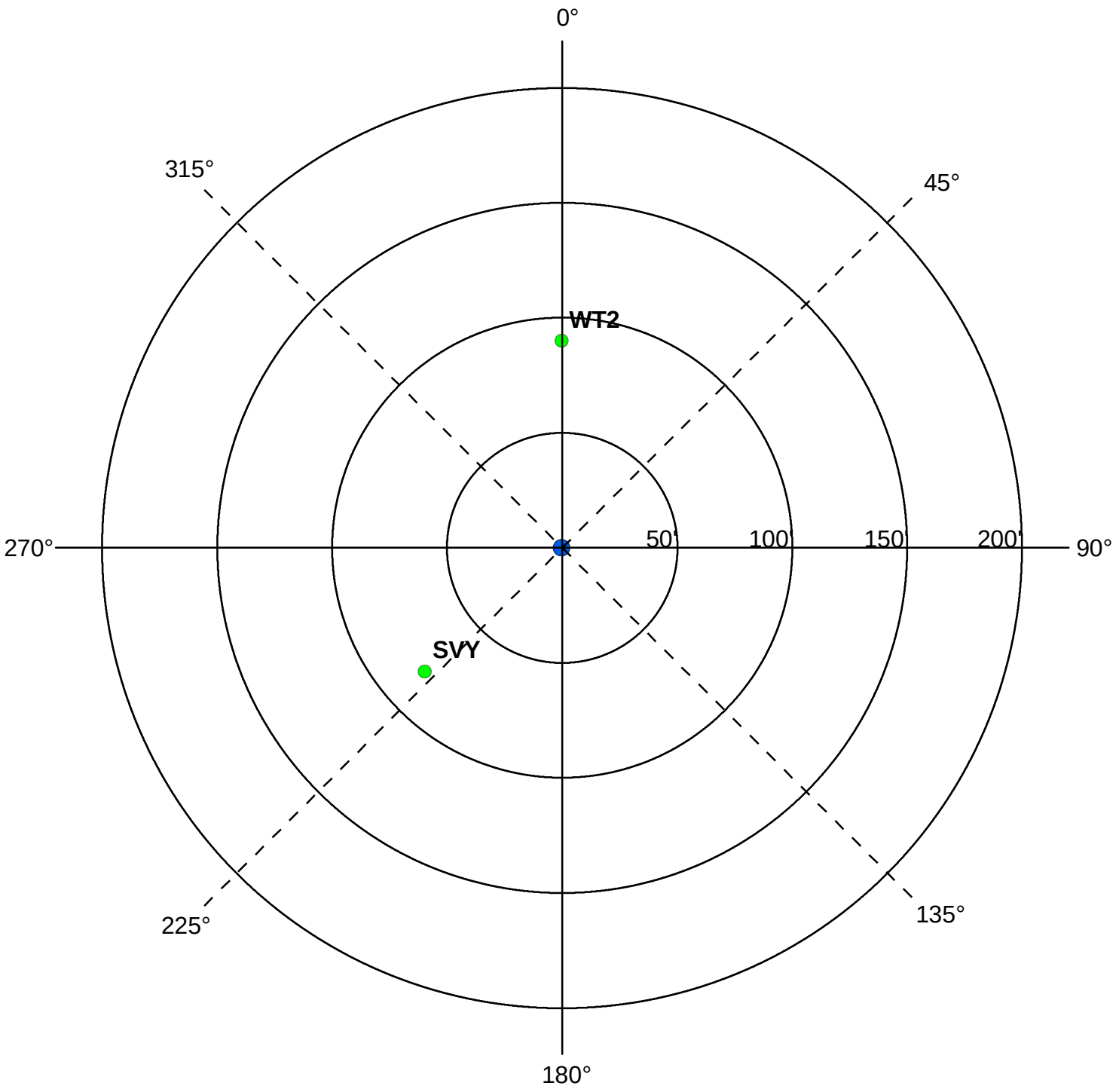
[5] A community public water-supply well must be a minimum of 50 feet from a petroleum tank or container, unless the tank or container is used for emergency pumping and is located in a room or building separate from the community well; and is of double-wall construction with leak detection between walls; or is protected with secondary containment.

This form is based on the new isolation distances in Minnesota Rules, Chapter 4725, related to wells and borings adopted August 4, 2008, and Minnesota Rules, Chapter 4720, related to wellhead protection.

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

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

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

Environmental Health Division
Drinking Water Protection Section
P.O. Box 64975
St. Paul, Minnesota 55164-0975

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
FACILITY ID	S04
UNIQUE WELL NO.	204570
COUNTY	Hennepin

IS THERE A WELL LOG OR ADDITIONAL CONSTRUCTION INFORMATION AVAILABLE?

☐ **YES** (Please attach a copy)
☐ **NO** ☐ **UNDETERMINED**

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

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				
PT1	Petroleum tank or container, 1100 gal. or more, without safeguards	150	150		N		
PT2	Petroleum tank or container, 1100 gal. or more, with safeguards	100	100		N		
PT3	Petroleum tank or container, buried, between 56 and 1100 gal.	50	50		N		
PT4	Petroleum tank or container, not buried, between 56 and 1100 gal.	50[5]	20		N		
PU1	Pit or unfilled space more than four feet in depth	20	20		N		
PC1	Pollutant or contaminant that may drain into the soil	50	50	100	N		
SP1	Swimming pool, in-ground	20	20		N		
*VH1	Vertical heat exchanger, horizontal piping conforming to rule	50	10		N		
*VH2	Vertical heat exchanger (vertical) piping, conforming to rule	50	35		N		
*WR1	Wastewater rapid infiltration basin, municipal or industrial	300	300	600	N		
*WA1	Wastewater spray irrigation area, municipal or industrial	150	150	300	N		
*WS1	Wastewater stabilization pond, industrial	150	150	300	N		
*WS2	Wastewater stabilization pond, municipal, 500 or more gal./acre/day of leakage	300	300	600	N		
*WS3	Wastewater stabilization pond, municipal, less than 500 gal./acre/day of leakage	150	150	300	N		
*WT1	Wastewater treatment unit tanks, vessels and components (Package plant)	100	100		N		
*WT2	Water treatment backwash disposal area	50	50	100	N		
Additional Sources (If there is more than one source listed above, please indicate here).							
Potential Contamination Sources and Codes Based on Previous Versions of this Form							
	none found within 200' of this well.						

* New potential contaminant source.

[1] A sensitive well has less than 50 feet of watertight casing, and which is not cased below a confining layer or confining materials of at least 10' in thickness.

[2] These sources, known as Class V underground injection wells, are regulated by the federal U.S. Environmental Protection Agency.

[3] These sources are classified as illegal by Minnesota Rules, Chapter 4725.

[4] Isolation distance is determined by average flow per day or if a facility handles infectious or pathological wastes.

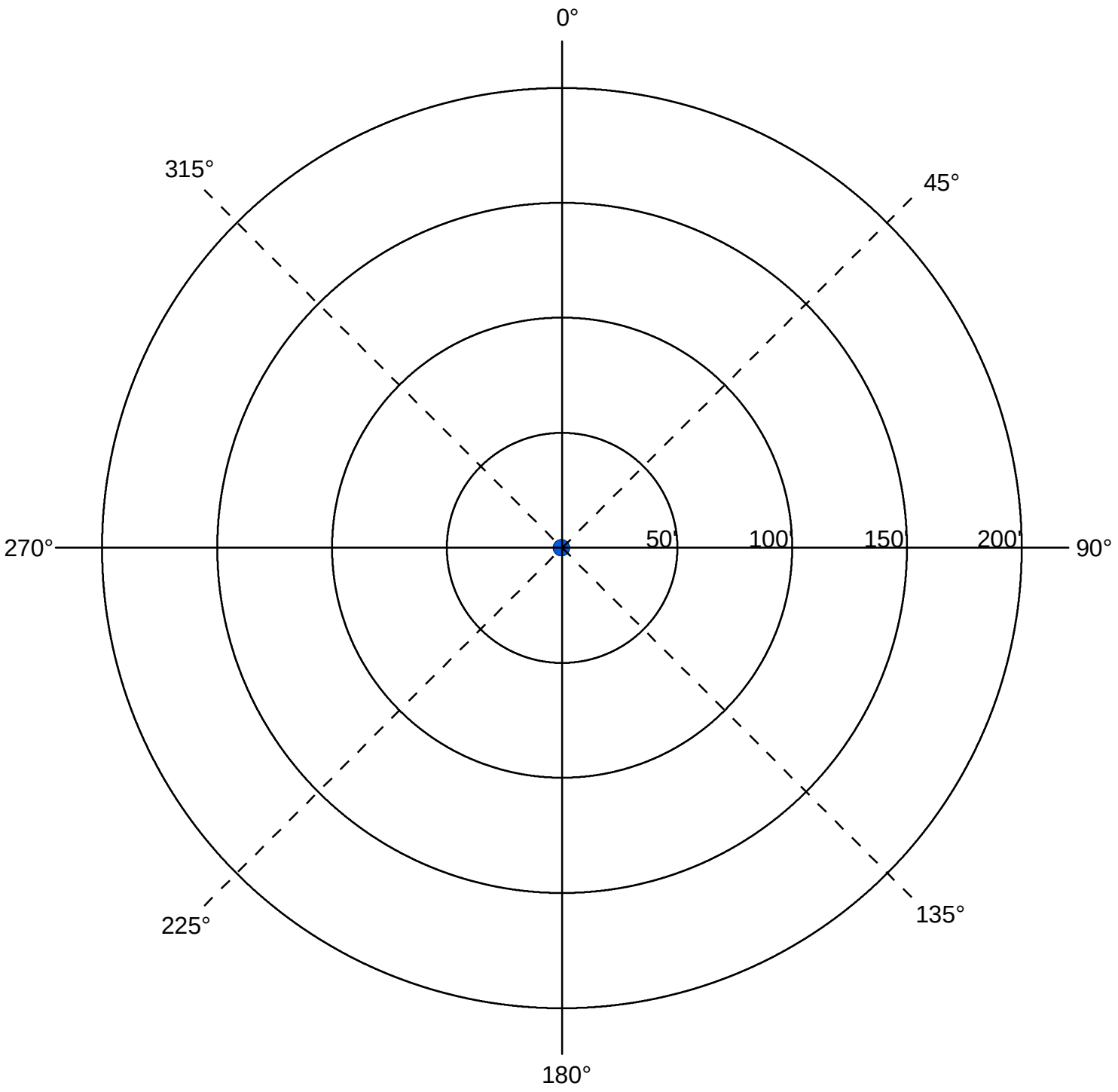
[5] A community public water-supply well must be a minimum of 50 feet from a petroleum tank or container, unless the tank or container is used for emergency pumping and is located in a room or building separate from the community well; and is of double-wall construction with leak detection between walls; or is protected with secondary containment.

This form is based on the new isolation distances in Minnesota Rules, Chapter 4725, related to wells and borings adopted August 4, 2008, and Minnesota Rules, Chapter 4720, related to wellhead protection.

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

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

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

Environmental Health Division
Drinking Water Protection Section
P.O. Box 64975
St. Paul, Minnesota 55164-0975

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
FACILITY ID	S05
UNIQUE WELL NO.	112228
COUNTY	Hennepin

IS THERE A WELL LOG OR ADDITIONAL CONSTRUCTION INFORMATION AVAILABLE?

☐ **YES** (Please attach a copy)
☐ **NO** ☐ **UNDETERMINED**

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

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				
PT1	Petroleum tank or container, 1100 gal. or more, without safeguards	150	150		N		
PT2	Petroleum tank or container, 1100 gal. or more, with safeguards	100	100		N		
PT3	Petroleum tank or container, buried, between 56 and 1100 gal.	50	50		N		
PT4	Petroleum tank or container, not buried, between 56 and 1100 gal.	50[5]	20		N		
PU1	Pit or unfilled space more than four feet in depth	20	20		N		
PC1	Pollutant or contaminant that may drain into the soil	50	50	100	N		
SP1	Swimming pool, in-ground	20	20		N		
*VH1	Vertical heat exchanger, horizontal piping conforming to rule	50	10		N		
*VH2	Vertical heat exchanger (vertical) piping, conforming to rule	50	35		N		
*WR1	Wastewater rapid infiltration basin, municipal or industrial	300	300	600	N		
*WA1	Wastewater spray irrigation area, municipal or industrial	150	150	300	N		
*WS1	Wastewater stabilization pond, industrial	150	150	300	N		
*WS2	Wastewater stabilization pond, municipal, 500 or more gal./acre/day of leakage	300	300	600	N		
*WS3	Wastewater stabilization pond, municipal, less than 500 gal./acre/day of leakage	150	150	300	N		
*WT1	Wastewater treatment unit tanks, vessels and components (Package plant)	100	100		N		
*WT2	Water treatment backwash disposal area	50	50	100	N		
Additional Sources (If there is more than one source listed above, please indicate here).							
Potential Contamination Sources and Codes Based on Previous Versions of this Form							
	none found within 200' of this well.						

* New potential contaminant source.

[1] A sensitive well has less than 50 feet of watertight casing, and which is not cased below a confining layer or confining materials of at least 10' in thickness.

[2] These sources, known as Class V underground injection wells, are regulated by the federal U.S. Environmental Protection Agency.

[3] These sources are classified as illegal by Minnesota Rules, Chapter 4725.

[4] Isolation distance is determined by average flow per day or if a facility handles infectious or pathological wastes.

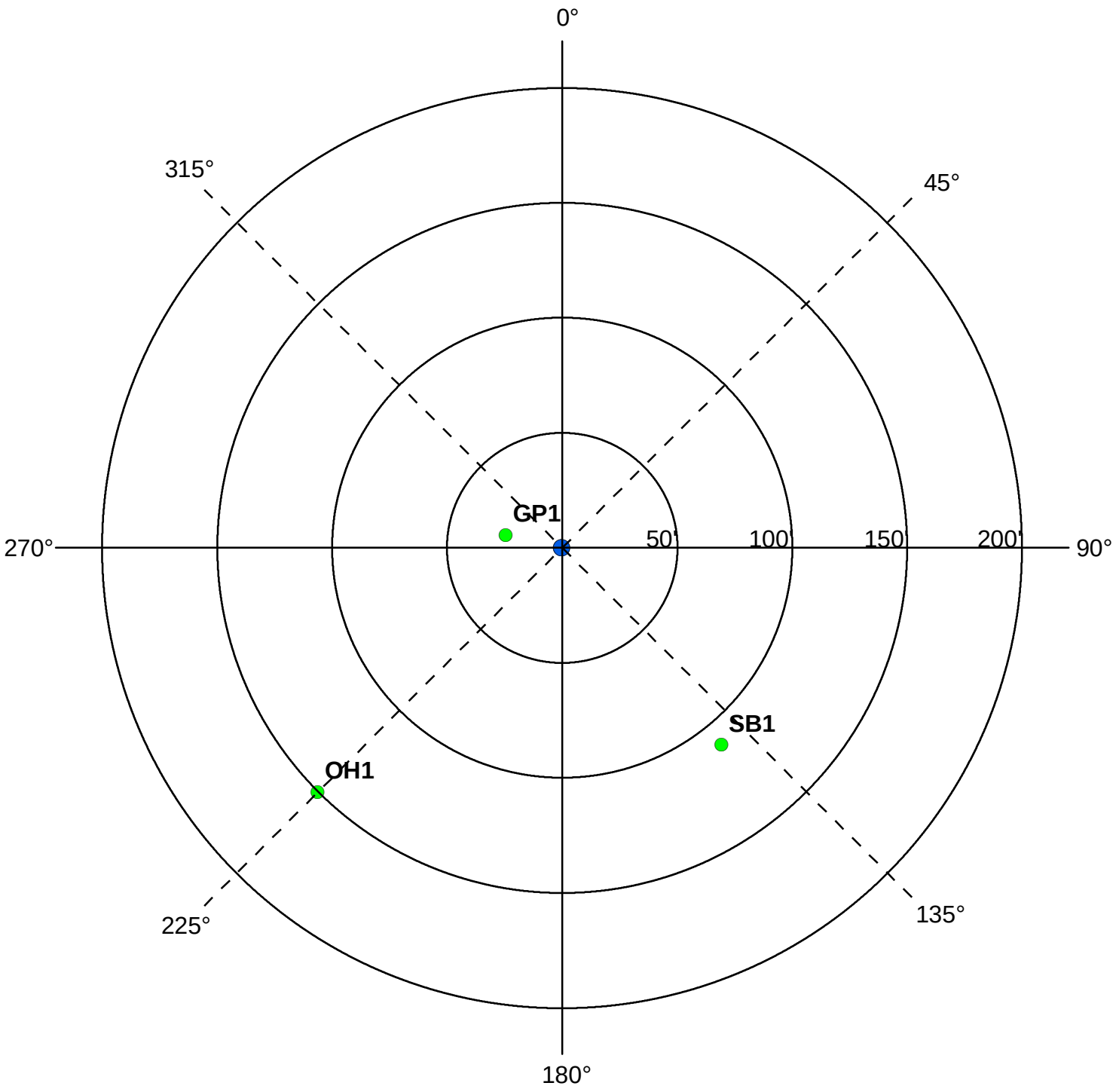
[5] A community public water-supply well must be a minimum of 50 feet from a petroleum tank or container, unless the tank or container is used for emergency pumping and is located in a room or building separate from the community well; and is of double-wall construction with leak detection between walls; or is protected with secondary containment.

This form is based on the new isolation distances in Minnesota Rules, Chapter 4725, related to wells and borings adopted August 4, 2008, and Minnesota Rules, Chapter 4720, related to wellhead protection.

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

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

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

Partnering with the Community, Enhancing the Quality of Life

Inspire - Educate - Involve - Communicate

June 2014

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.)

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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.

	Level Found				
Contaminants (units)	MCLG	MCL	Range 2012	Average/ Result*	Typical Source of Contaminant
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

Partnering with the Community, Enhancing the Quality of Life

Inspire - Educate - Involve - Communicate

June 2014

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.)

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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.

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- ***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

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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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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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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.
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Wellhead Protection Plan Part 2

2017

Prepared for

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

WSB project no.1474-220

Wellhead Protection Plan
Part 2
City of Hopkins, Minnesota

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PUBLIC WATER SUPPLY PROFILE

PUBLIC WATER SUPPLY

City of Hopkins
1010 1st Street S
Hopkins, MN 55343

Phone: (952) 548-6364

Fax: (952) 935-1834

WELLHEAD PROTECTION MANAGER

Nate Stanley
City Engineer
1010 1st Street S
Hopkins, MN 55343

Phone: (952) 548-6356

Fax: (952) 935-1834

E-Mail: nstanley@hopkinsmn.com

CONSULTANT/TECHNICAL ASSISTANCE

Ray Theiler
WSB & Associates, Inc.
477 Temperance St.
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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 districts 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 (sorbent 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.

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.

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	KLODT 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	3095	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	Glenn 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	14375	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	CCI-B MINNETONKA LLC	15000 Minnetonka Industrial Blvd	Minnetonka	55345	Superfund Project	PCS	PLP	A	SR177	1	Moderate
25	1611722430011	CCI-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	1811721340011	BP	8900 Highway 7	St. Louis Park	55426	Tank Site	UST	F000	C	16033	1	Moderate
32	1811721430002	Bridgestone Firestone Inc	8530 W Highway 7	St. Louis Park	55426	Leak Site	LUST	F000	C	9466	1	Moderate
33	1811721430002	LINDSAY-KNOLLWOOD 2 LLC	8500 W 37th St	St. Louis Park	55426	Leak Site	LUST	F000	I	6174	1	Moderate
34	1811721430028	Kohl's Corp	8440 Highway 7	St. Louis Park	55426	Leak Site	LUST	F000	C	5726	1	Moderate
35	1811721430037	Mister Car Wash	8650 Highway 7	St. Louis Park	55426	Leak Site	LUST	F000	C	17776	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	VP8700	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	ISD 270	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	2111722430066	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 BENGTSON	2011 Main St	Hopkins	55343	Tank Site	UST	F000	A	3197	1	Moderate
66	2311722410102	RHONDA LEE BENGTSON	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	F000	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	2411722330004	Hennepin County Transportation Dept	Excelsior Blvd	Hopkins	55343	Petroleum Brownfield	PCS	BMS	I	2811	1	Moderate
102	2411722330005	CITY OF HOPKINS	11001 Excelsior Blvd	Hopkins	55343	Voluntary Investigation & Cleanup	PCS	VIC	I	VP2011	1	Moderate
103	2411722330005	CITY OF HOPKINS	11100 Excelsior Blvd	Hopkins	55343	Tank Site	UST	F000	R	2286	2	Moderate
104	2411722330012	ISD 270	1600 Main St	Hopkins	55343	Tank Site	UST	F000	A	3092	1	Moderate
105	2411722340003	Jiffy Lube	10410 Excelsior Blvd	Hopkins	55343	Tank Site	UST	F000	R	10185	3	Moderate

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	55434	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 & RDVLPT ATHY HOPKINS	See location description	Hopkins	55343	Voluntary Investigation & Cleanup	PCS	VIC	I	VP23060	1	Moderate
123	2411722420166	HSG & RDVLPT 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	55434	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	VP111740	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 CANTER 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	Etchit 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 Ivy 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	STONEYBROOK 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 PRESB 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	Sinclair 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	Morries 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 PTNRSHP	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	811722230001	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	LESLYE F H PHILLIPS TRUSTEE	2602 Crosby Rd	Minnetonka	55391	Leak Site	LUST	F000	I	17853	1	Moderate
206	911722230005	CARGILL INC	2301 Crosby Rd	Minnetonka	55391	Leak Site	LUST	F000	I	5910	1	Moderate
207	911722240021	D E & K A KULICH	2460 Sheridan Hills Curve	Minnetonka	55391	Leak Site	LUST	F000	I	9724	1	Moderate
208	911722310006	GREENDALE ASSOCIATES LLC	15615 McGinty Road West	Wayzata	55391	Leak Site	LUST	F000	I	4250	1	Moderate
209	911722310006	GREENDALE ASSOCIATES LLC	15607 Mcginty Road	Minnetonka	55391	Leak Site	LUST	F000	I	5253	1	Moderate
210	911722320004	G C & N T JACKSON	15611 Mcginty Rd W	Minnetonka	55391	Leak Site	LUST	F000	I	5263	1	Moderate

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 Mcginty 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	Ceder 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	KLODT DEVELOPMENT LLC	815 1st Ave S	Hopkins	55343	Voluntary Investigation & Cleanup	PCS	VIC	A	VP28110	1	Moderate
237	211722230053	MORRIE'S PROPERTIES LLC	12550 Wayzata Blvd	Minnetonka	55305	Tank Site	UST	F000	A	2434	3	Moderate
238	1511722240031	Bollig & 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	1997	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	2111722430066	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	CROIX 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	CCI-B MINNETONKA LLC	15000 Minnetonka Industrial Blvd	Minnetonka	55345	Voluntary Investigation & Cleanup	PCS	VIC	I	VP1362	1	Moderate
278	1611722430011	CCI-B MINNETONKA LLC	15000 Minnetonka Industrial Blvd	Minnetonka	55345	Voluntary Investigation & Cleanup	PCS	VIC	I	VP1361	1	Moderate
279	1611722430011	CCI-B MINNETONKA LLC	15000 Minnetonka Industrial Blvd	Minnetonka	55345	Voluntary Investigation & Cleanup	PCS	VIC	I	VP0070	1	Moderate
280	1611722430011	CCI-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	R	18459	2	Moderate
311	2411722220007	Troy Mathwig Development Co	1501 Highway 7	Hopkins	55305	Tank Site	UST	F000	C	18459	2	Moderate
312	2411722220025	CITY CENTER VENTURES LLC	415 17th Ave N	Hopkins	55343	Voluntary Investigation & Cleanup	PCS	VIC	I	VP24042	1	Moderate
313	2411722220025	Ray Johnson	415 17th Ave N	Hopkins	55343	Voluntary Investigation & Cleanup	PCS	VIC	I	VP24040	1	Moderate
314	2411722220073	Crossroads Union 76	1675 Highway 7	Hopkins	55305	Tank Site	UST	F000	R	3162	4	Moderate
315	2411722310059	J & L Tire And Auto	1201 Main St	Hopkins	55343	Leak Site	LUST	F000	I	7794	1	Moderate

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	55434	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 & RDVLPT ATHY HOPKINS	525 W Main St	Hopkins	55343	Leak Site	LUST	F000	A	19626	1	Moderate
329	2411722420166	HSG & RDVLPT ATHY HOPKINS	525 W Main St	Hopkins	55343	Leak Site	LUST	F000	C	5196	1	Moderate
330	2411722420166	HSG & RDVLPT 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	55434	Tank Site	UST	F000	R	11386	1	Moderate
337	2411722440050	The Luther Co Ltd Partnership	250 5th Ave S	Hopkins	55434	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	Etchit 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	STONEYBROOK INVESTMENTS LLC	11421 W 47th St	Minnetonka	55343	Leak Site	LUST	F000	I	3833	1	Moderate
362	211722310004	Carson Pirie Scott - Ridgedale	12441 Wayzata Blvd	Minnetonka	55305	Tank Site	UST	F000	R	1663	1	Moderate
363	211722320002	Sinclair Ridgedale Station	12415 Wayzata Blvd	Minnetonka	55305	Leak Site	LUST	F000	C	8884	1	Moderate
364	211722320002	Sinclair Ridgedale Station	12415 Wayzata Blvd	Minnetonka	55305	Petroleum Brownfield	PCS	BMS	C	4289	1	Moderate
365	211722320002	Sinclair 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	Morries Minnetonka Ford	13400 Wayzata Blvd	Minnetonka	55305	Leak Site	LUST	F000	C	4657	1	Moderate
379	311722130053	Morries Minnetonka Ford	13400 Wayzata Blvd	Minnetonka	55305	Tank Site	UST	F000	R	11142	6	Moderate
380	311722130053	Morries Minnetonka Ford	13400 Wayzata Blvd	Minnetonka	55305	Tank Site	UST	F000	A	11142	2	Moderate
381	311722240004	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 PTNRSHP	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	1111722210061	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	F000	A	17267	1	Moderate
417	1211722420224	Cedar Ridge Of Minnetonka Apts	10111 Cedar Lake Rd	Minnetonka	55305	Tank Site	UST	F000	R	15160	1	Moderate
418	1311722140005	CITY OF MINNETONKA	10000 Minnetonka Blvd	Minnetonka	0	Tank Site	UST	F000	R	2943	5	Moderate
419	1311722140011	Boulevard Sinclair	9800 Minnetonka Blvd	Minnetonka	55305	Leak Site	LUST	F000	I	8943	1	Moderate
420	1311722140011	Boulevard Sinclair	9800 Minnetonka Blvd	Minnetonka	55305	Leak Site	LUST	F000	I	15657	1	Moderate

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

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	THERMOTECH 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	LOSCHEIDER, 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	GCW-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

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 FILM 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		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 REALITY CO.	A	DO	2111722310032	COURT RD	MINNETONKA	55345	Moderate	WEL
587	00223772		A	DO	2111722410005	RICHARDS DR	MINNETONKA	55345	Moderate	WEL
588	00204516	SEIGEL, BILL	A	DO	2111722410025	WILLISTON RD	MINNETONKA	55345	Moderate	WEL
589	00204518	HAMEL	A	DO	2111722410038	WILDCREST RD	MINNETONKA	55345	Moderate	WEL
590	00204521	OTTESON, DENNIS	A	DO	2111722420003	EVELYN LA	MINNETONKA	55345	Moderate	WEL
591	00204520	BLAINES CONSTRUCTION	A	DO	2111722420004	EVELYN LA	MINNETONKA	55345	Moderate	WEL
592	00204522	DEARSTYNE	A	DO	2111722420027	EVELYN LA	MINNETONKA	55345	Moderate	WEL
593	00204523	JERGENS	A	DO	2111722430053	HIGHLAND RD	MINNETONKA	55345	Moderate	WEL
594	00272598	SMITH, HOWARD	A	DO	2111722440017	KARYL DR	MINNETONKA	55345	Moderate	WEL
595	00204517	OSTERBERG	A	DO	2111722440018	KARYL DR	MINNETONKA	55345	Moderate	WEL
596	00204519	STILLMAN	A	DO	2111722440024	KARYL DR	MINNETONKA	55345	Moderate	WEL
597	00204526	KRUSTOON, OSCAR	A	DO	2211722110005	DO LITTLE DR	MINNETONKA	55305	Moderate	WEL
598	00204527	PYHONEN, R. J.	A	DO	2211722110006	DO LITTLE DR	MINNETONKA	55305	Moderate	WEL
599	00204525	LARSONS	A	DO	2211722110075	DO LITTLE DR	MINNETONKA	55305	Moderate	WEL
600	00204528	JOHNSON, AXEL	A	DO	2211722140011	CASTLE VIEW CT	MINNETONKA	55305	Moderate	WEL
601	00204529	ANDERSON	A	DO	2211722140047	BAKER RD	MINNETONKA	55305	Moderate	WEL
602	00204530	VANEK, MEL	A	DO	2211722220018	WOODHAVEN RD	MINNETONKA	55345	Moderate	WEL
603	00204531	JOHNSON, AXEL	A	DO	2211722220033	WOODHAVEN RD	MINNETONKA	55345	Moderate	WEL
604	00204532	REEVES, G. B.	A	DO	2211722220054	HAVEN RD	MINNETONKA	55345	Moderate	WEL
605	00204533	JOHNSON, HAROLD	A	DO	2211722230039	LENNELL DR	MINNETONKA	55345	Moderate	WEL
606	00204536	BLOOM, JEROME	A	DO	2211722240013	SPRING LAKE RD	MINNETONKA	55345	Moderate	WEL
607	00204535	KENNEN, BERNARD A.	A	DO	2211722240030	SPRING LAKE RD	MINNETONKA	55345	Moderate	WEL

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, ARTHER	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	REINSTRA, WALTER	A	DO	2411722430235	7TH AVE S	HOPKINS	55343	Moderate	WEL
640	00204573	HOPKINS 1	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	SORENSON, 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

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	LOKENSGARD	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	COYOTE 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

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	JANESEL, 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		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

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
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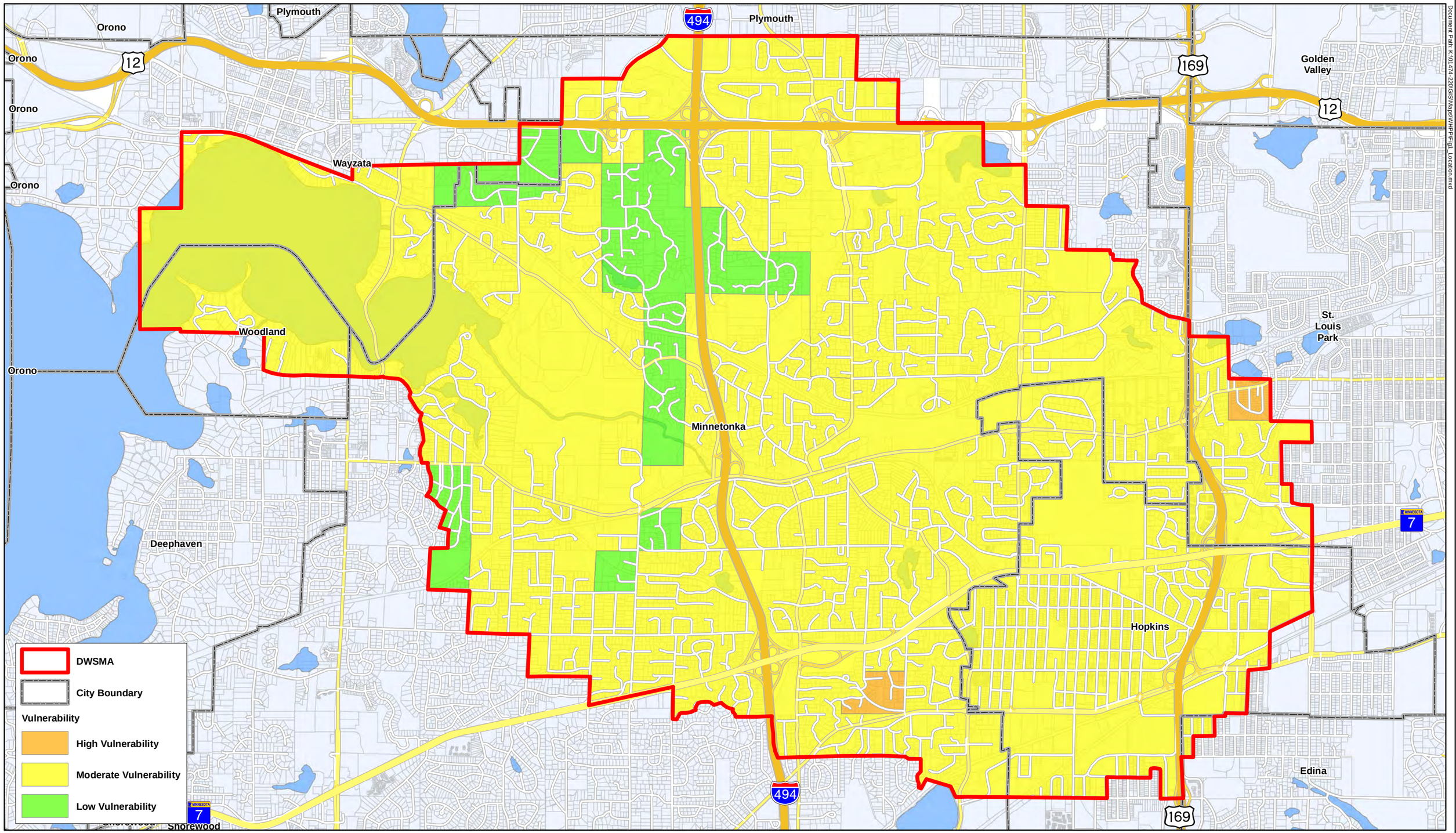
930	00112226	LUDWIG, L. J.	A	DO	411722330001	HOLDRIDGE RD E	WAYZATA	55391	Low	WEL
931	00655014	MALMBERG, JOEL & JEAN	A	DO	411722330007	CROSBY RD	WAYZATA	55391	Low	WEL
932	00621593	KELLESTAD, LEIGH	A	DO	411722330008	CROSBY RD	WAYZATA	55391	Low	WEL
933	00203733		A	DO	411722330014	HOLDRIDGE RD E	WAYZATA	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

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



Hopkins
minnesota

Figure 1: DWSMA Vulnerability
Wellhead Protection Plan
City of Hopkins

WSB

DWSMA

City Boundary

Soil Texture

Unknown

Coarse-loamy

Fine

Fine-loamy

Fine-loamy over sandy or sandy-skeletal

Fine-silty

Loamy

Other

Sandy over loamy

494

12

169

7

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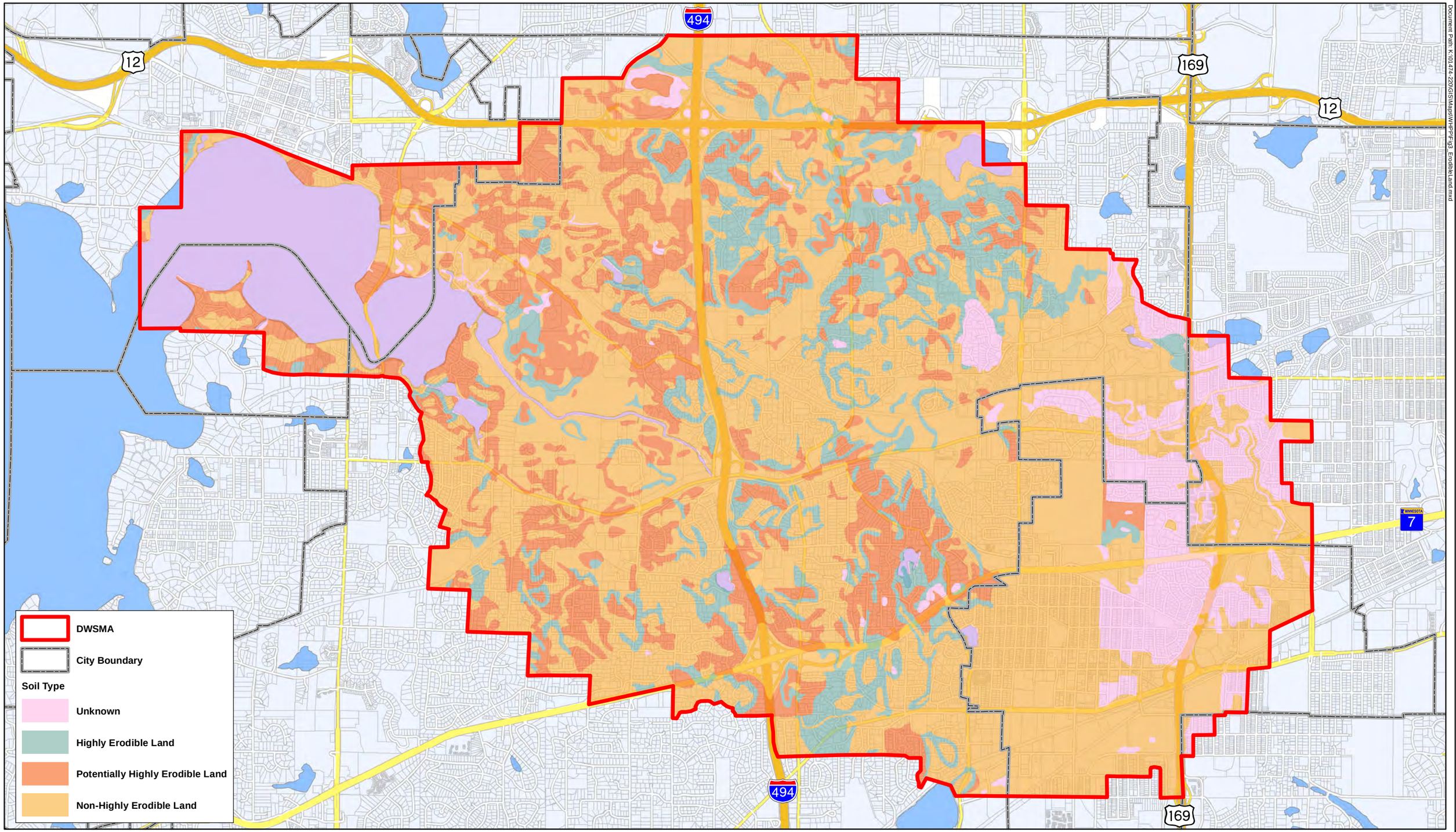
Figure 2: Soil Type
Wellhead Protection Plan
City of Hopkins

N

0 2,750 Feet

Hopkins minnesota

WSB



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Hopkins minnesota

Figure 3: Erodible Land
Wellhead Protection Plan
City of Hopkins

WSB

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

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

N
0 2,750 Feet

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DWSMA
City Boundary
Storm Sewer System
Ditches

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

N

0 2,750 Feet

Hopkins minnesota

WSB

DWSMA
City Boundary
Sanitary Sewer System

Figure 6: Sanitary Sewer
Wellhead Protection Plan
City of Hopkins

N

0 2,750 Feet

Hopkins minnesota

WSB

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Hopkins minnesota

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

N
0 2,750 Feet

WSB

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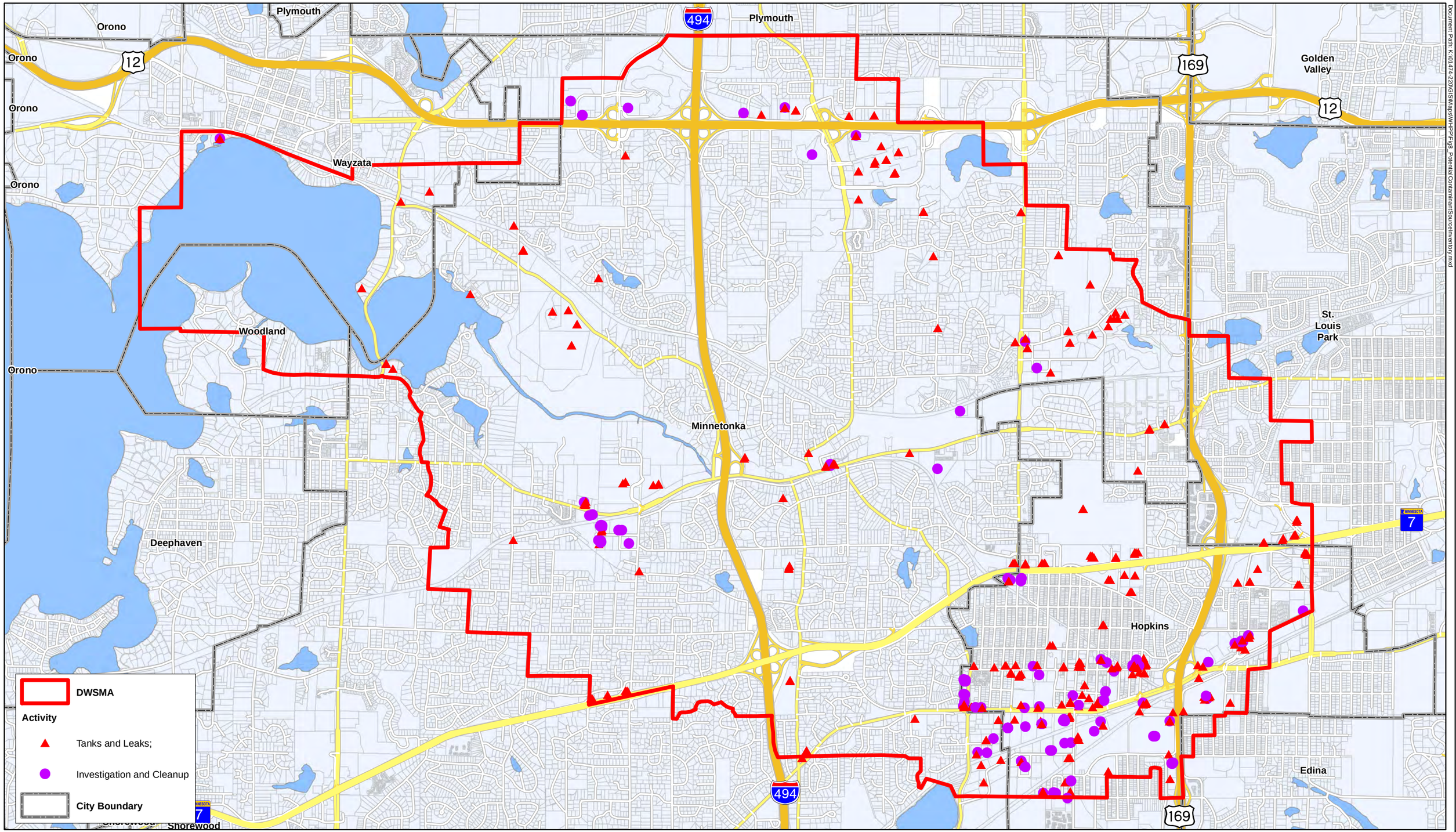

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Figure 8: Potential Contaminant Source Inventory
Wellhead Protection Plan
City of Hopkins

N

0 2,750 Feet

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Figure 9: Wells
Wellhead Protection Plan
City of Hopkins

Hopkins minnesota

WSB

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494
12
169
12
494
169
7

DWSMA
City Boundary

Zoning

R-1- Single Family Residential
R-2- Multi Family Residential
B-1- Business
I-1- Industrial
BP- Business Park
INS- Institutional
MU- Mixed Use
Park and Open Space
PUD- Planned Unit Development

Figure 10: Zoning
Wellhead Protection Plan
City of Hopkins

Hopkins minnesota

N
0 2,750 Feet

WSB

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-feet 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	0.0
Well No. 4	204068	476.9	**561.2**	460	489.6	440.2	561.2	5,814.0
Well No. 5	204570	0	78.1	191.8	198.2	**216**	216	2,237.8
Well No. 6	112228	**317.1**	180.7	119.8	129.8	156.4	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.

9. References

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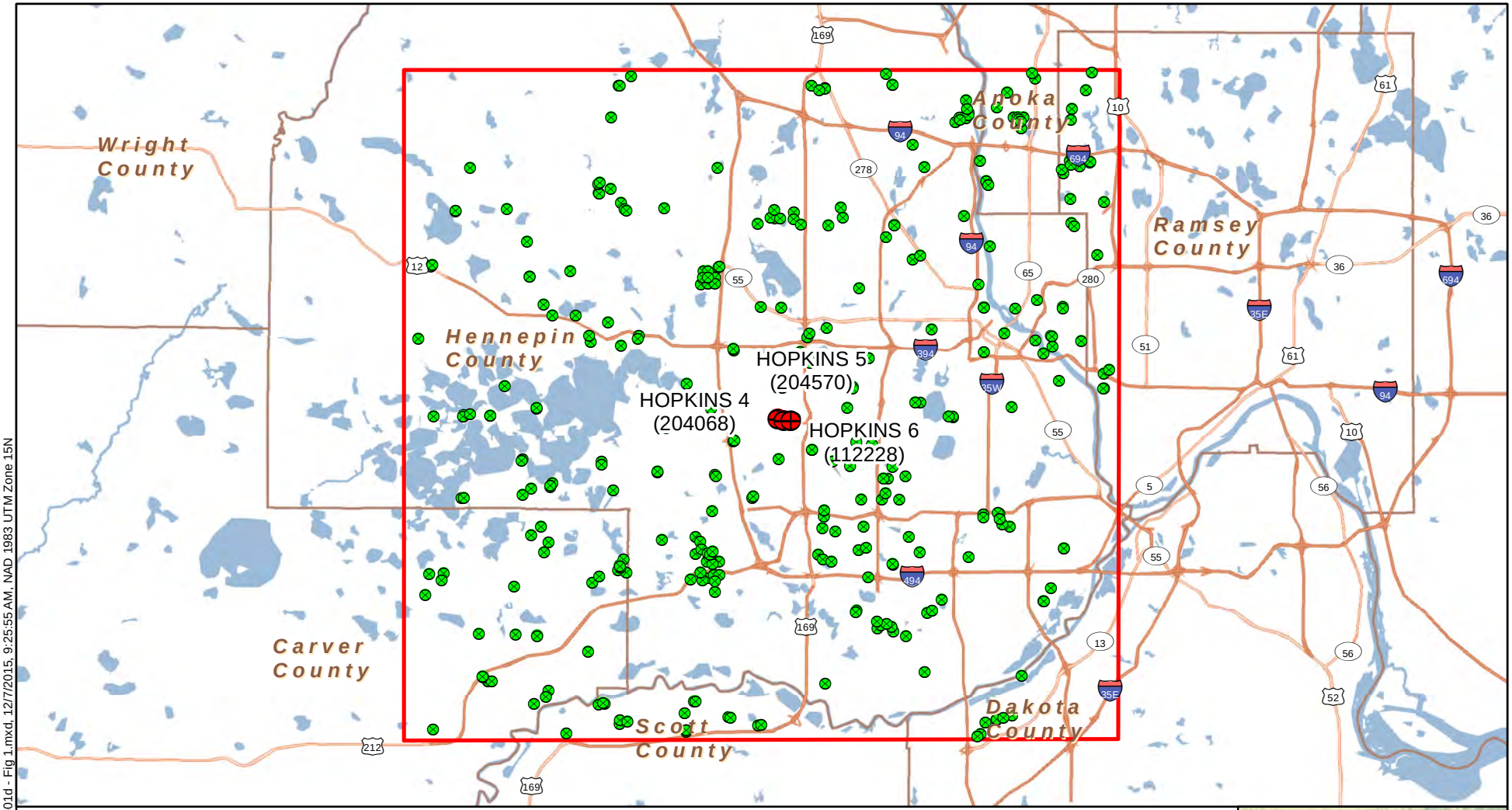
Figures



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CITY OF HOPKINS

HOPKINS, MINNESOTA

SITE LOCATION, HIGH CAPACITY WELLS, AND
LOCAL MODEL BOUNDARY

FILE:	DATE:	FIGURE:
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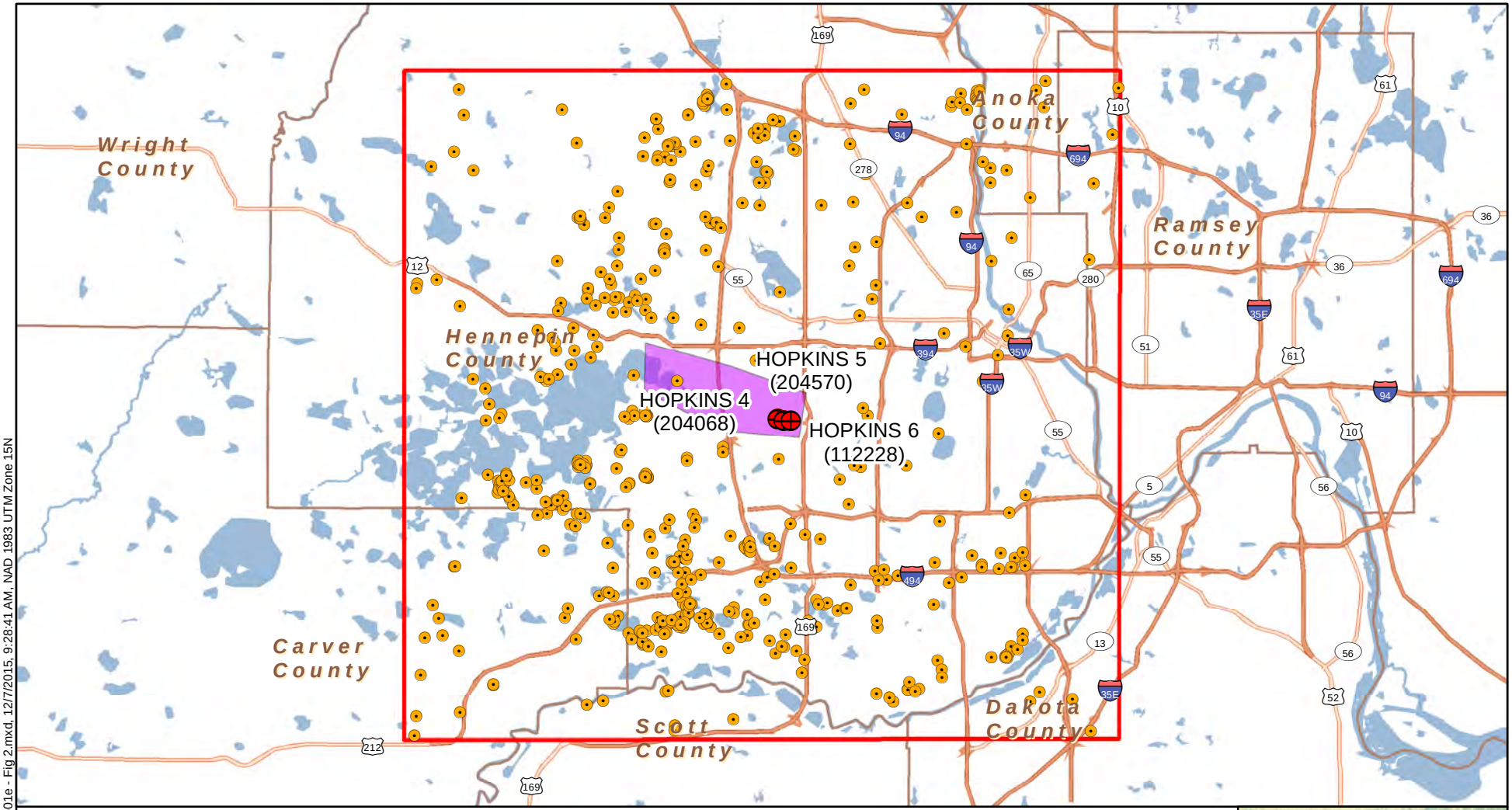

City Well Location
Calibration Point Location
Local Model Boundary
Modification Area

0 5 Miles

7-County Metro Area
Site

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CITY OF HOPKINS
HOPKINS, MINNESOTA

LOCAL MODEL BOUNDARY, CALIBRATION POINTS, AND MODIFICATION AREA

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

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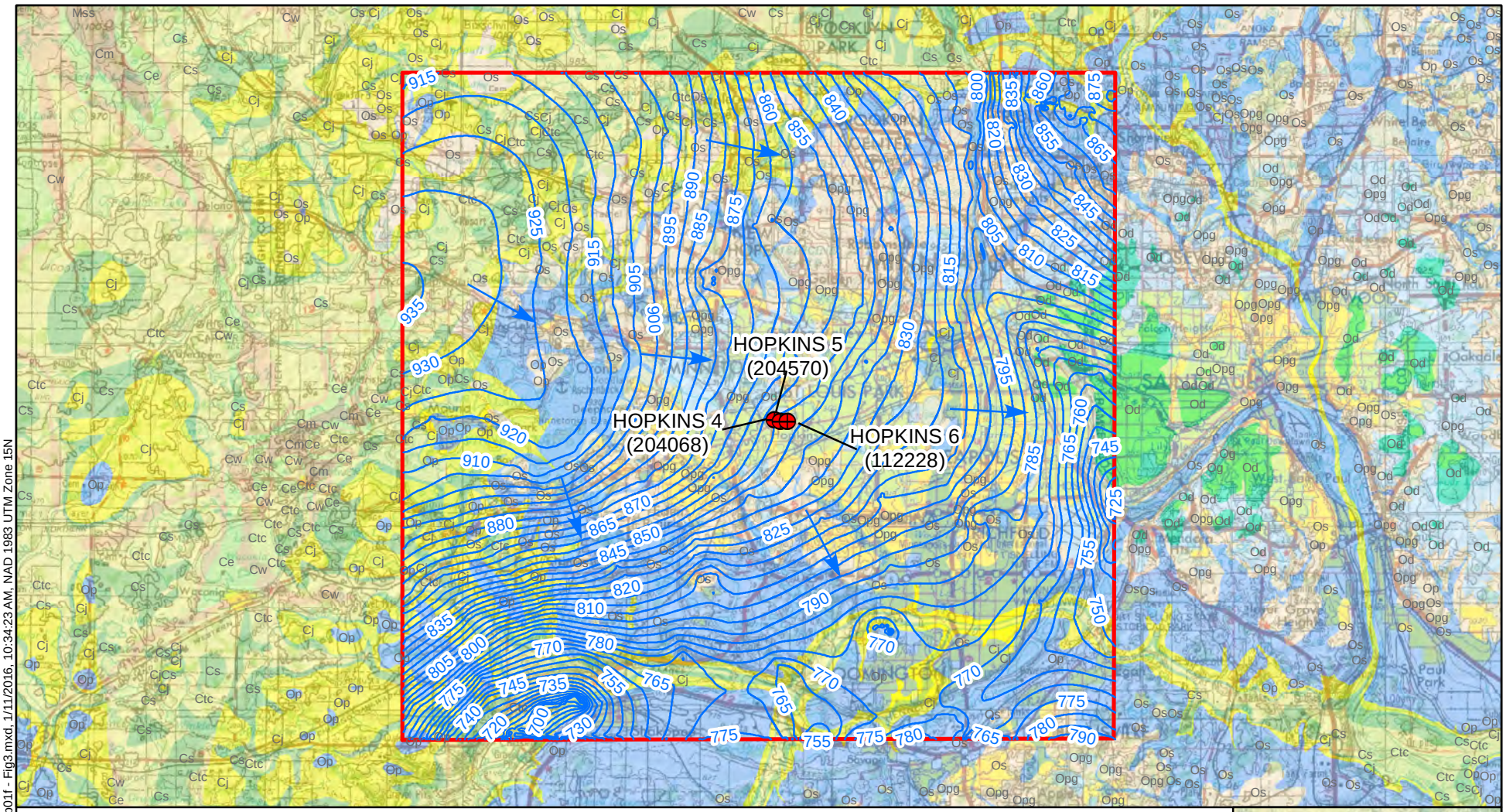

City Well Location
Potentiometric Surface Contour Prairie du Chien Aquifer (feet)
Groundwater Flow Direction
Local Model Boundary

Bedrock in Model Boundary

- Opg — Platteville and Glenwood Formations
- Os — St. Peter Sandstone
- Op — Prairie du Chien Group
- Cj — Jordan Sandstone
- Cs — St. Lawrence Formation
- Ctc — Tunnel City Group
- Cw — Wonewoc Sandstone
- Cm — Mt. Simon Sandstone

0 6 Miles

7-County Metro Area

Site

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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

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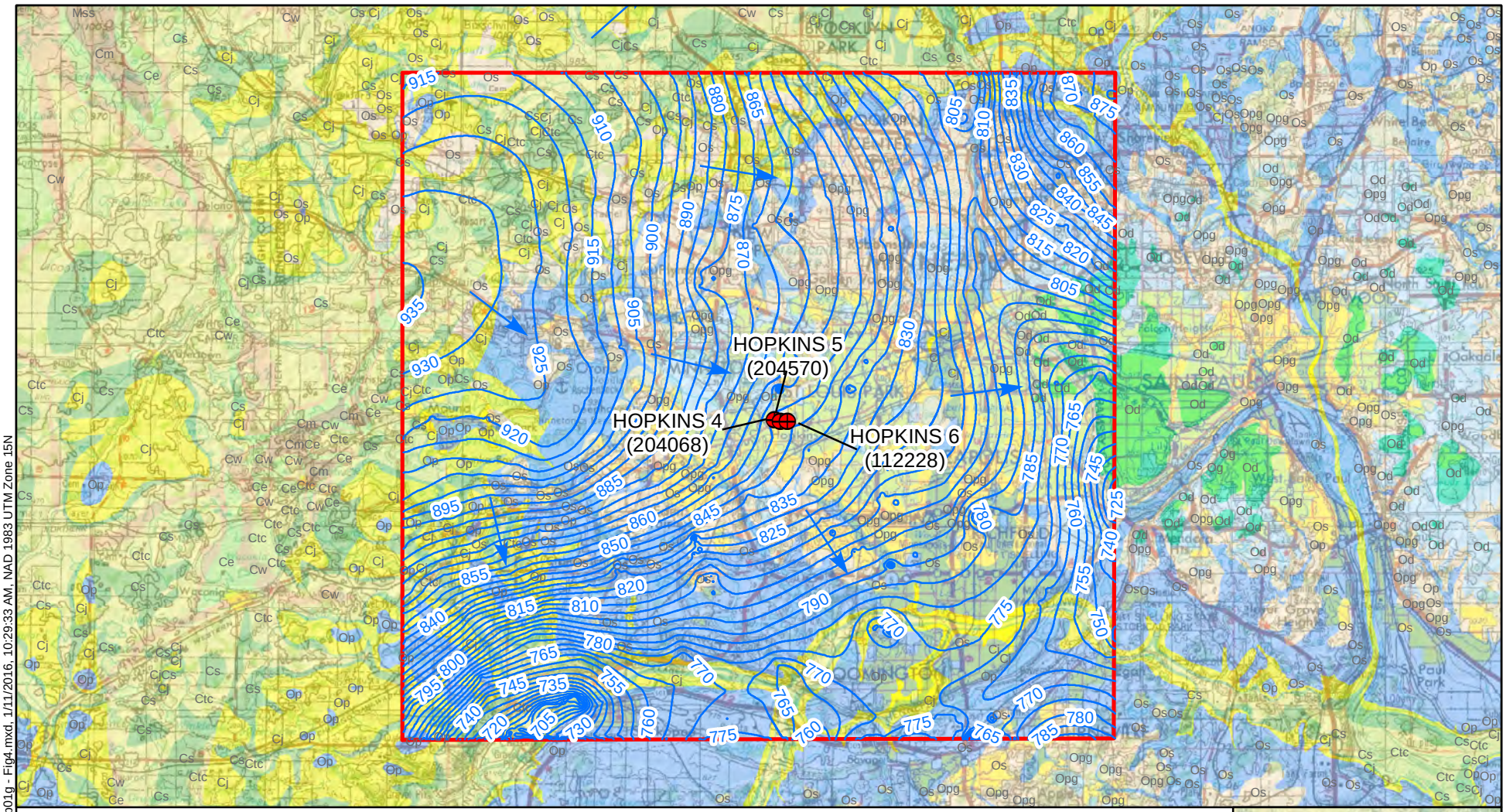
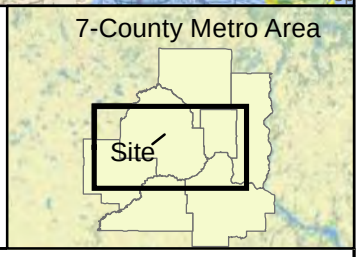


City Well Location
Potentiometric Surface Contour Jordan Aquifer (feet)
Groundwater Flow Direction
Local Model Boundary

Bedrock in Model Boundary

Opg	Platteville and Glenwood Formations
Os	St. Peter Sandstone
Op	Prairie du Chien Group
Cj	Jordan Sandstone
Cs	St. Lawrence Formation
Ctc	Tunnel City Group
Cw	Wonewoc Sandstone
Cm	Mt. Simon Sandstone

0 6 Miles



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CITY OF HOPKINS
HOPKINS, MINNESOTA

SIMULATED GROUNDWATER EQUIPOTENTIAL CONTOURS OF
JORDAN AQUIFER AND BEDROCK GEOLOGY

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

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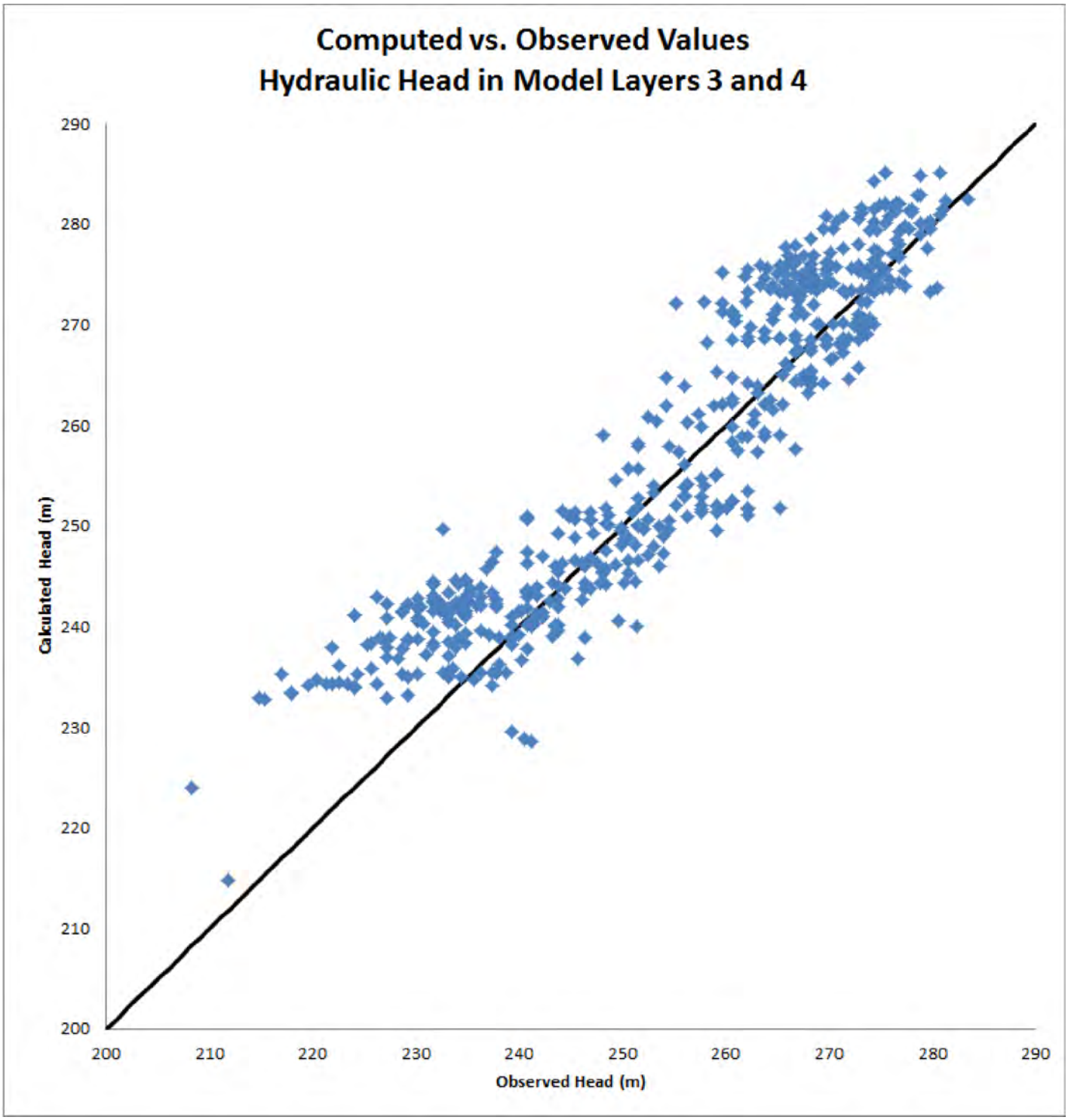

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CITY OF HOPKINS
HOPKINS, MINNESOTA

MODEL CALIBRATION

FILE: g3hopkinswhp01h - Fig 5.MXD	DATE: 11/25/2015	FIGURE: 5

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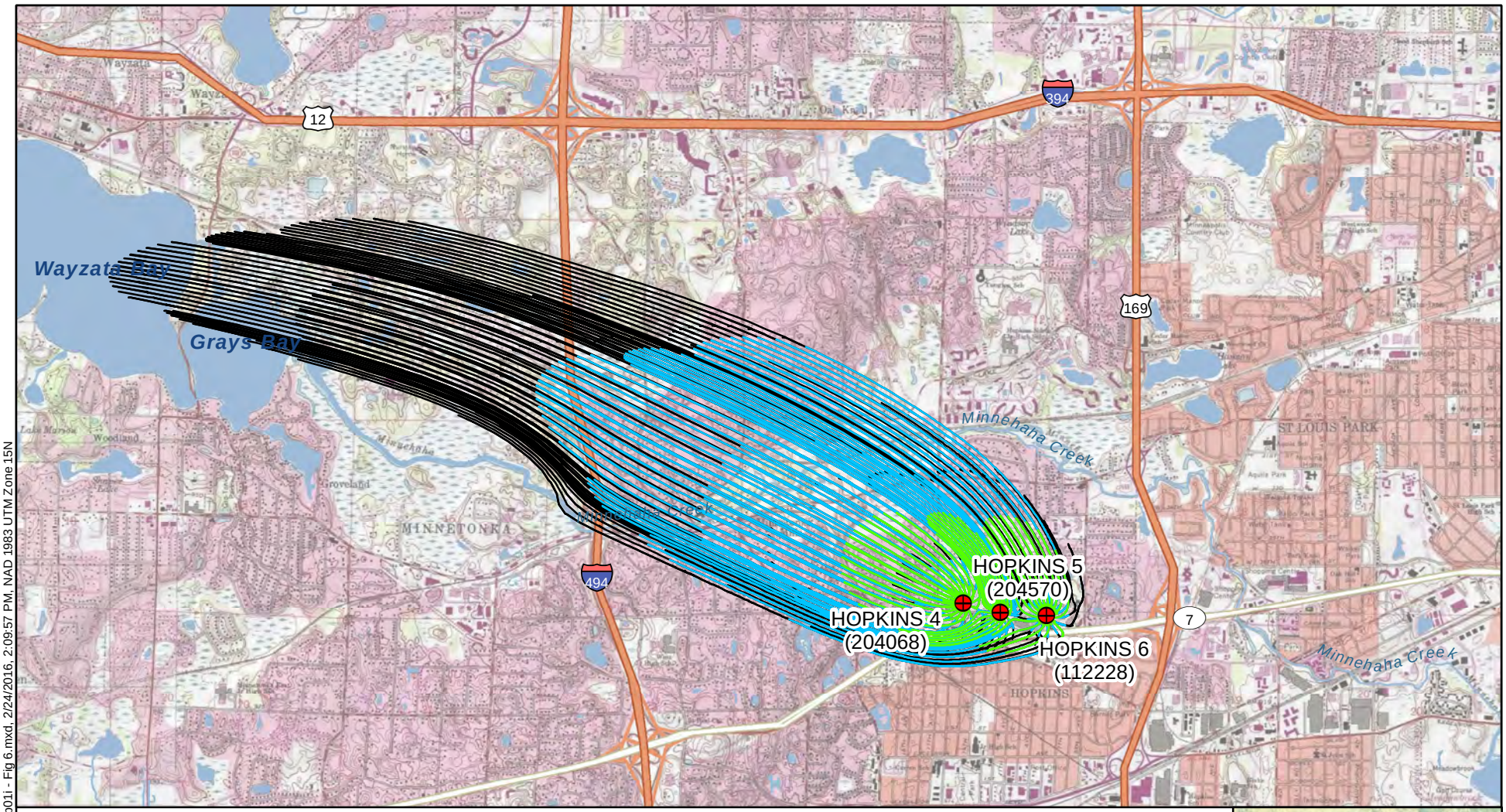

City Well Location

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

0 4,000 Feet

7-County Metro Area

Site

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CITY OF HOPKINS

HOPKINS, MINNESOTA

1, 5, AND 10 YEAR FLOWPATHS FOR CALIBRATED MODEL

FILE:	DATE:	FIGURE:
g3hopkinswhp01i - Fig 6.MXD	2/24/2016	6

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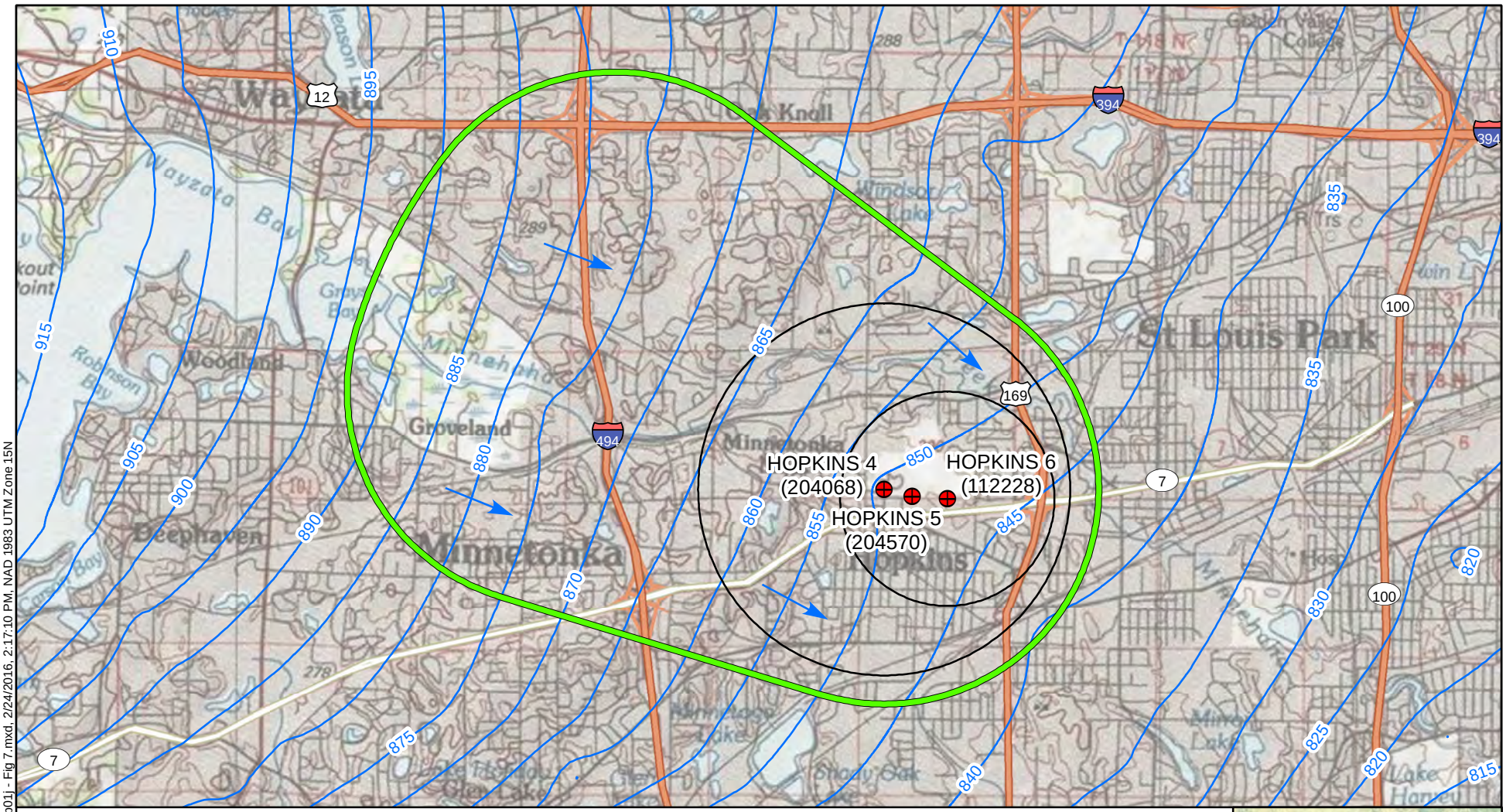

City Well Location

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

0 1 Miles

7-County Metro Area

Site

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CITY OF HOPKINS
HOPKINS, MINNESOTA

FRACTURE FLOW DELINEATION BOUNDARIES

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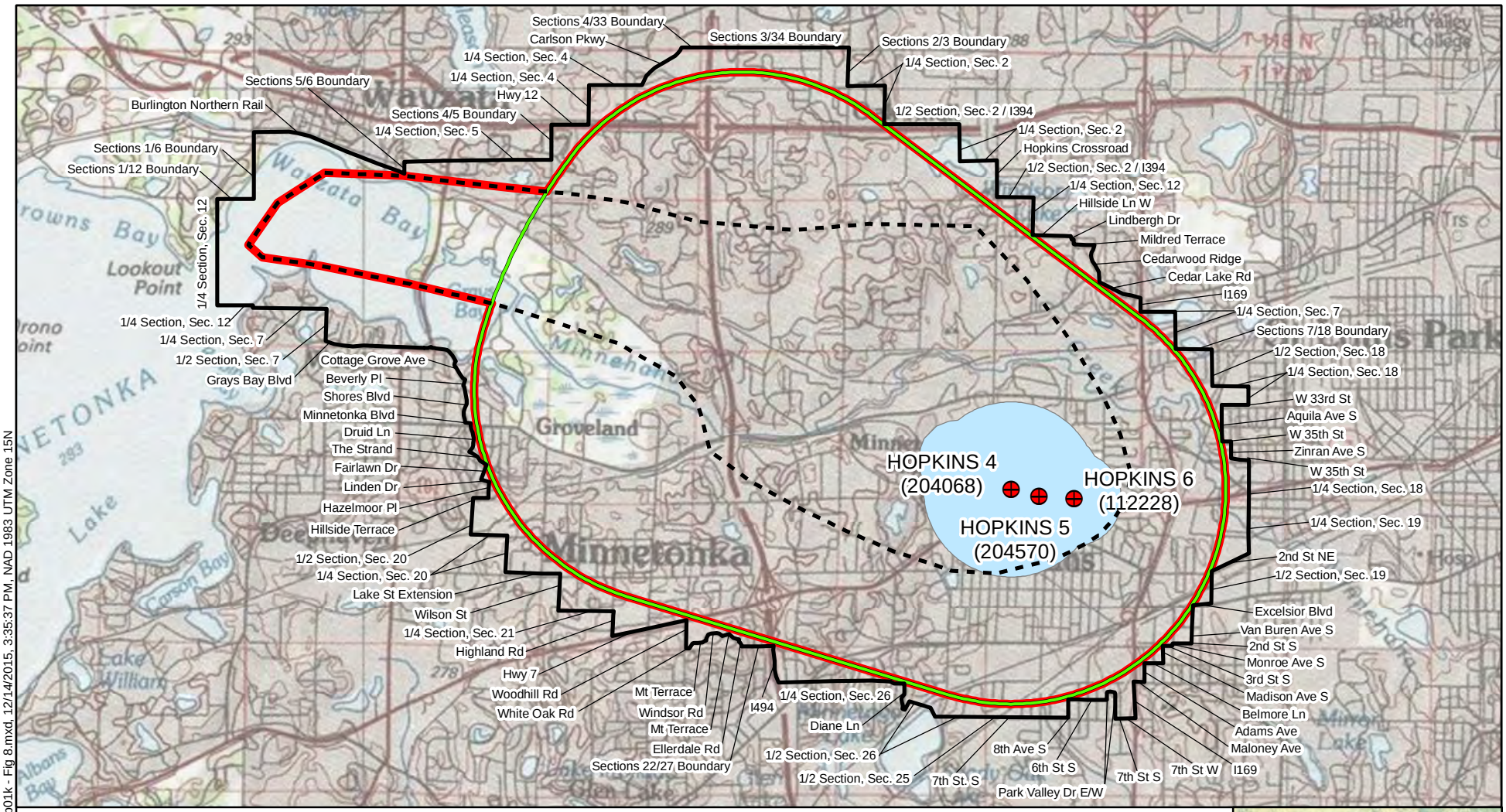


City Well Location

10-Year Composite Capture Zone (porous flow)

Fracture Flow Capture Area

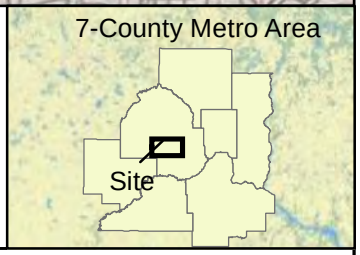
Combined Wellhead Protection Area

Drinking Water Supply Management Area

Emergency Response Area (1-yr time of travel))

IWMZ (Inner Wellhead Management Zone Note: Hidden Behind Well Symbol)

0 1 Miles



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CITY OF HOPKINS

HOPKINS, MINNESOTA

COMBINED WELLHEAD PROTECTION AREA BOUNDARY AND DRINKING WATER SUPPLY MANAGEMENT AREA

FILE: g3hopkinswhp01k - Fig 8.MXD | DATE: 12/14/2015 | FIGURE: 8

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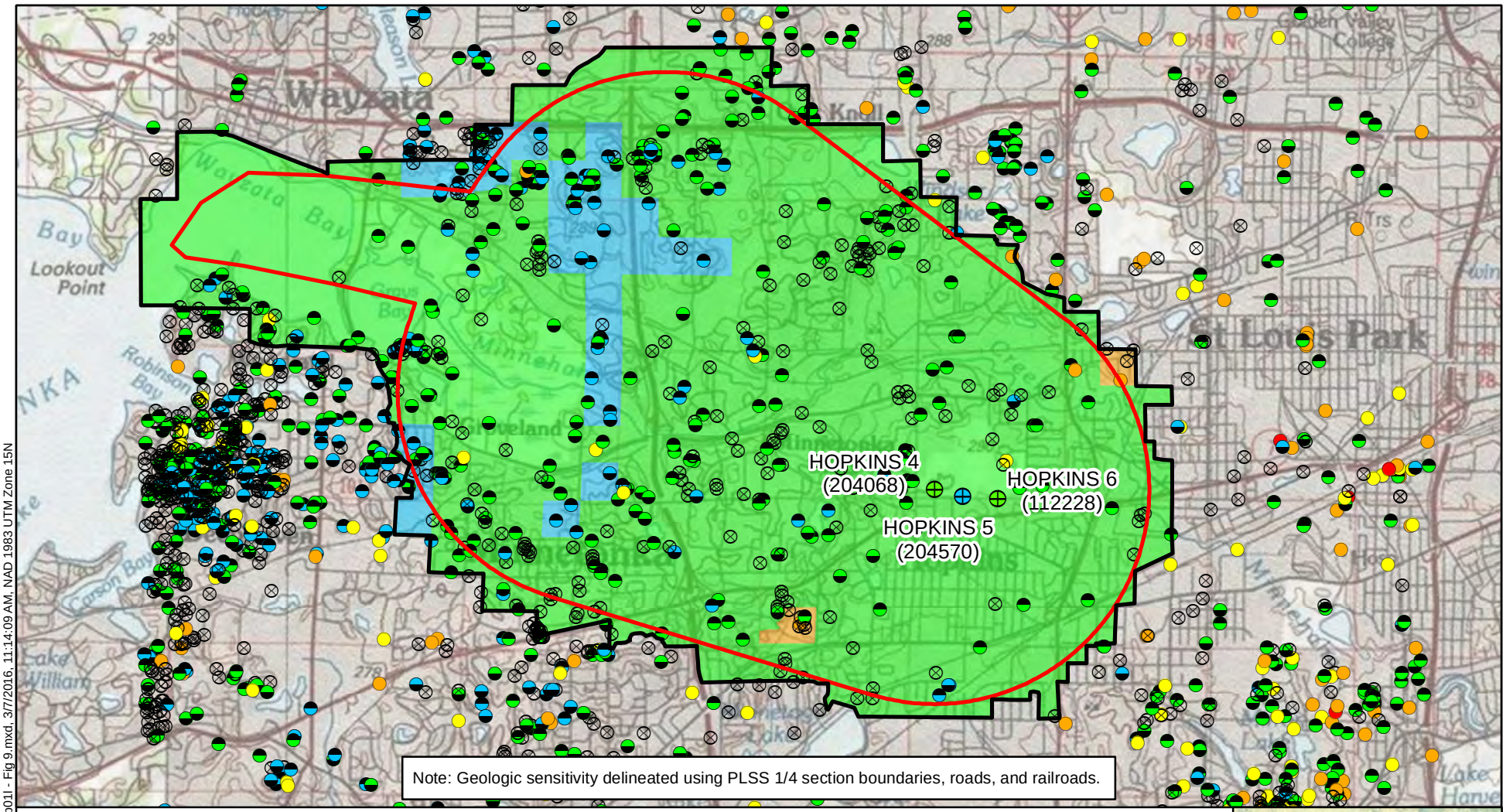

City Well Location
Insufficient Data
Domestic Well
Combined Wellhead Protection Area
Drinking Water Supply Management Area

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)

0 1 Miles

7-County Metro Area
Site

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CITY OF HOPKINS
HOPKINS, MINNESOTA

DRINKING WATER SUPPLY MANAGEMENT AREA
GEOLOGIC SENSITIVITY ASSESSMENT

FILE: g3hopkinswhp01l - Fig 9.MXD | DATE: 3/7/2016 | FIGURE: 9

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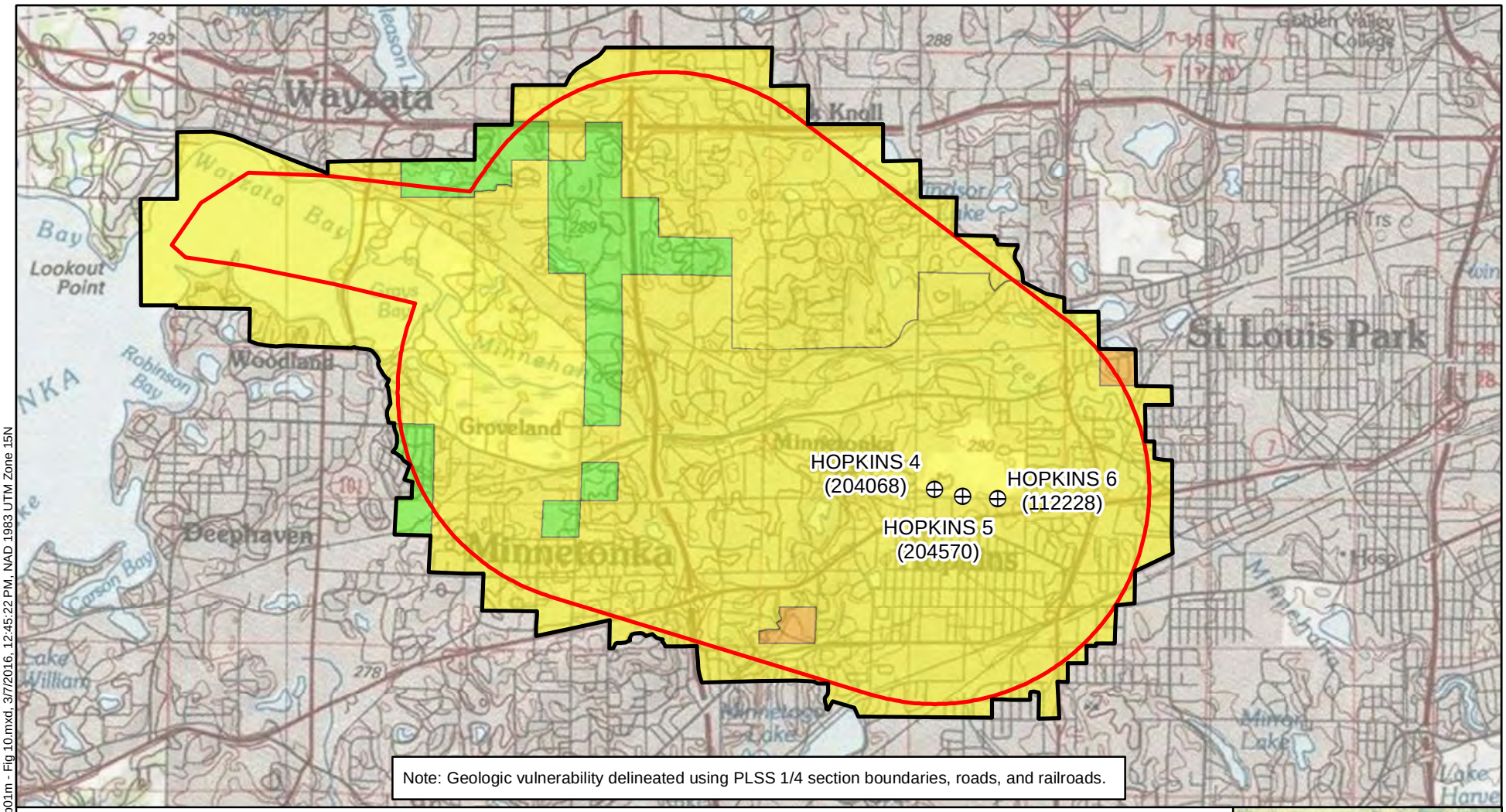

City Well Location
Combined Wellhead Protection Area
Drinking Water Supply Management Area

DWSMA Vulnerability
Very High
High
Moderate
Low

0 1 Miles

7-County Metro Area
Site

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HOPKINS, MINNESOTA

DRINKING WATER SUPPLY MANAGEMENT AREA
VULNERABILITY ASSESSMENT

FILE: g3hopkinswhp01m - Fig 10.MXD | DATE: 3/7/2016 | FIGURE: 10

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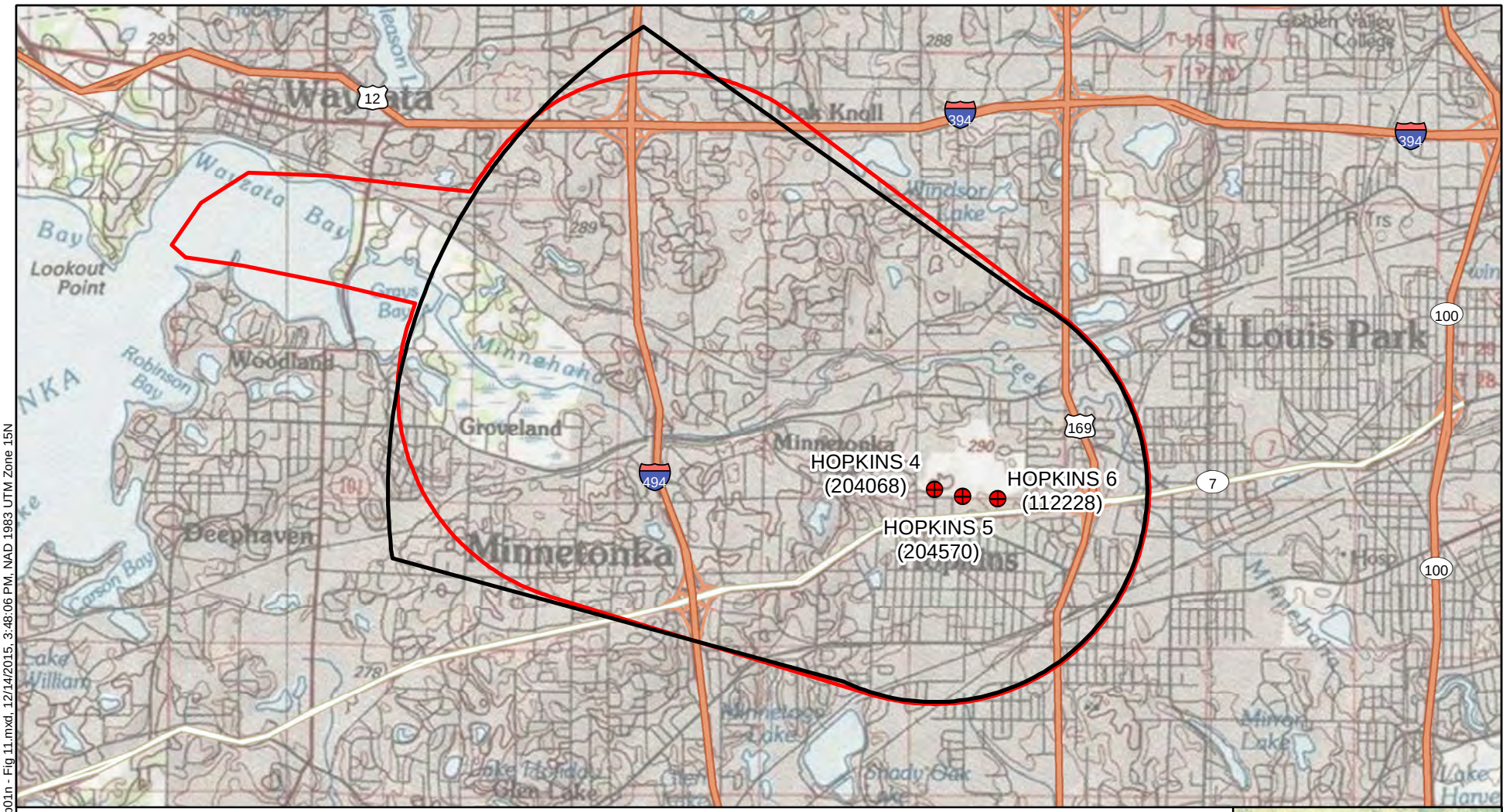
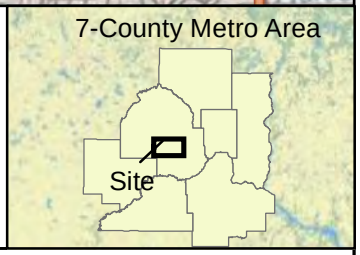


City Well Location
Amended 2015 Wellhead Protection Area
Original 2005 Wellhead Protection Area

0 1 Miles



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CITY OF HOPKINS
HOPKINS, MINNESOTA

ORIGINAL AND AMENDED WELLHEAD PROTECTION AREAS

FILE:	DATE:	FIGURE:
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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

Environmental Health Division
Drinking Water Protection Section
P.O. Box 64975
St. Paul, Minnesota 55164-0975

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
FACILITY ID	S01
UNIQUE WELL NO.	204573
COUNTY	Hennepin

IS THERE A WELL LOG OR ADDITIONAL CONSTRUCTION INFORMATION AVAILABLE?

☐ **YES** (Please attach a copy)
☐ **NO** ☐ **UNDETERMINED**

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		

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				
PT1	Petroleum tank or container, 1100 gal. or more, without safeguards	150	150		N		
PT2	Petroleum tank or container, 1100 gal. or more, with safeguards	100	100		N		
PT3	Petroleum tank or container, buried, between 56 and 1100 gal.	50	50		N		
PT4	Petroleum tank or container, not buried, between 56 and 1100 gal.	50[5]	20		N		
PU1	Pit or unfilled space more than four feet in depth	20	20		N		
PC1	Pollutant or contaminant that may drain into the soil	50	50	100	N		
SP1	Swimming pool, in-ground	20	20		N		
*VH1	Vertical heat exchanger, horizontal piping conforming to rule	50	10		N		
*VH2	Vertical heat exchanger (vertical) piping, conforming to rule	50	35		N		
*WR1	Wastewater rapid infiltration basin, municipal or industrial	300	300	600	N		
*WA1	Wastewater spray irrigation area, municipal or industrial	150	150	300	N		
*WS1	Wastewater stabilization pond, industrial	150	150	300	N		
*WS2	Wastewater stabilization pond, municipal, 500 or more gal./acre/day of leakage	300	300	600	N		
*WS3	Wastewater stabilization pond, municipal, less than 500 gal./acre/day of leakage	150	150	300	N		
*WT1	Wastewater treatment unit tanks, vessels and components (Package plant)	100	100		N		
*WT2	Water treatment backwash disposal area	50	50	100	N		
Additional Sources (If there is more than one source listed above, please indicate here).							
Potential Contamination Sources and Codes Based on Previous Versions of this Form							
	none found within 200' of this well.						

* New potential contaminant source.

[1] A sensitive well has less than 50 feet of watertight casing, and which is not cased below a confining layer or confining materials of at least 10' in thickness.

[2] These sources, known as Class V underground injection wells, are regulated by the federal U.S. Environmental Protection Agency.

[3] These sources are classified as illegal by Minnesota Rules, Chapter 4725.

[4] Isolation distance is determined by average flow per day or if a facility handles infectious or pathological wastes.

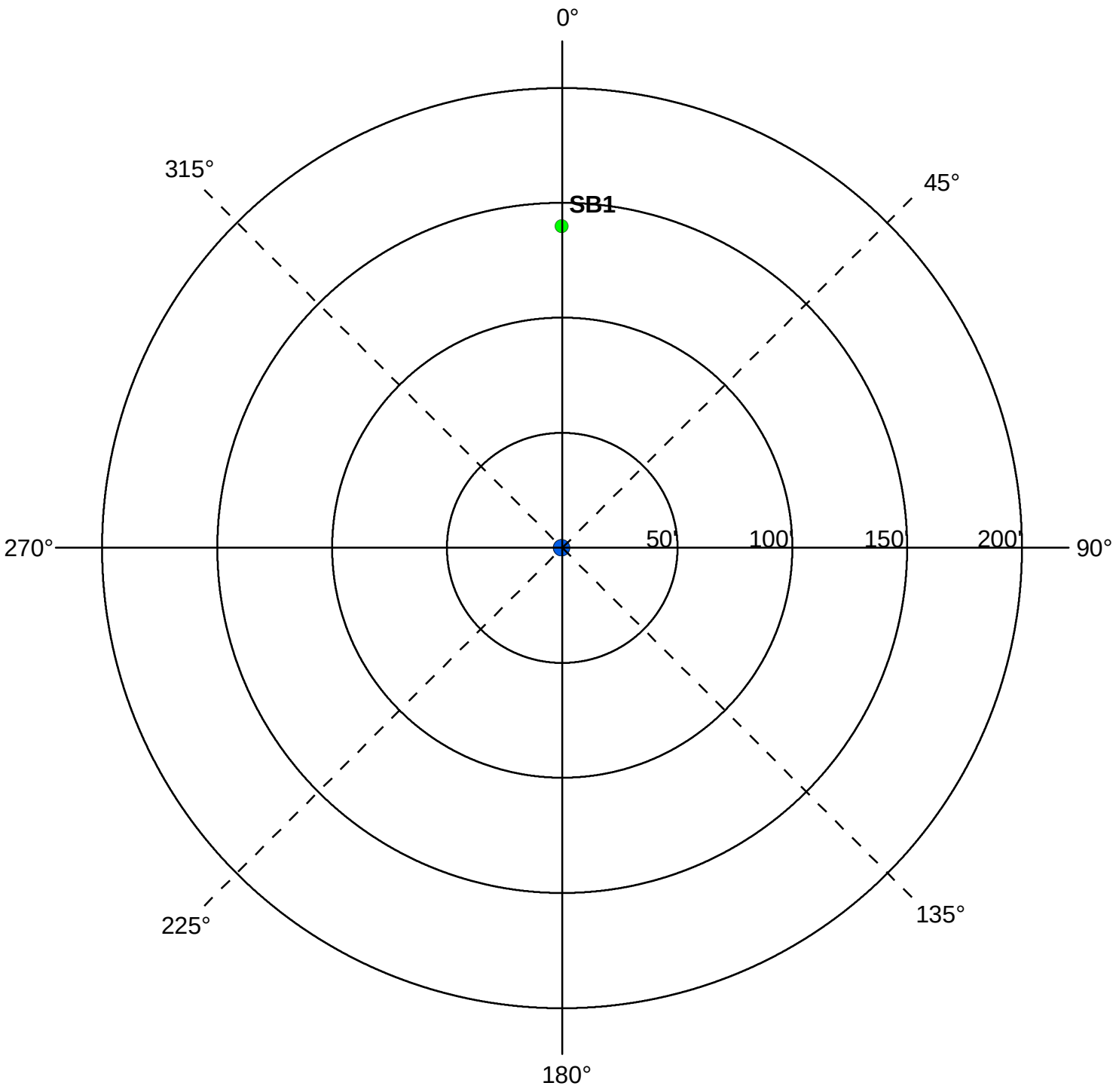
[5] A community public water-supply well must be a minimum of 50 feet from a petroleum tank or container, unless the tank or container is used for emergency pumping and is located in a room or building separate from the community well; and is of double-wall construction with leak detection between walls; or is protected with secondary containment.

This form is based on the new isolation distances in Minnesota Rules, Chapter 4725, related to wells and borings adopted August 4, 2008, and Minnesota Rules, Chapter 4720, related to wellhead protection.

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

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

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

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

COMMENTS

There is a gravel pocket at an unkown 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

Environmental Health Division
Drinking Water Protection Section
P.O. Box 64975
St. Paul, Minnesota 55164-0975

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
FACILITY ID	S03
UNIQUE WELL NO.	204068
COUNTY	Hennepin

IS THERE A WELL LOG OR ADDITIONAL CONSTRUCTION INFORMATION AVAILABLE?

☐ **YES** (Please attach a copy)
☐ **NO** ☐ **UNDETERMINED**

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

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				
PT1	Petroleum tank or container, 1100 gal. or more, without safeguards	150	150		N		
PT2	Petroleum tank or container, 1100 gal. or more, with safeguards	100	100		N		
PT3	Petroleum tank or container, buried, between 56 and 1100 gal.	50	50		N		
PT4	Petroleum tank or container, not buried, between 56 and 1100 gal.	50[5]	20		N		
PU1	Pit or unfilled space more than four feet in depth	20	20		N		
PC1	Pollutant or contaminant that may drain into the soil	50	50	100	N		
SP1	Swimming pool, in-ground	20	20		N		
*VH1	Vertical heat exchanger, horizontal piping conforming to rule	50	10		N		
*VH2	Vertical heat exchanger (vertical) piping, conforming to rule	50	35		N		
*WR1	Wastewater rapid infiltration basin, municipal or industrial	300	300	600	N		
*WA1	Wastewater spray irrigation area, municipal or industrial	150	150	300	N		
*WS1	Wastewater stabilization pond, industrial	150	150	300	N		
*WS2	Wastewater stabilization pond, municipal, 500 or more gal./acre/day of leakage	300	300	600	N		
*WS3	Wastewater stabilization pond, municipal, less than 500 gal./acre/day of leakage	150	150	300	N		
*WT1	Wastewater treatment unit tanks, vessels and components (Package plant)	100	100		N		
*WT2	Water treatment backwash disposal area	50	50	100	Y	90	N
Additional Sources (If there is more than one source listed above, please indicate here).							
Potential Contamination Sources and Codes Based on Previous Versions of this Form							
	none found within 200' of this well.						

* New potential contaminant source.

[1] A sensitive well has less than 50 feet of watertight casing, and which is not cased below a confining layer or confining materials of at least 10' in thickness.

[2] These sources, known as Class V underground injection wells, are regulated by the federal U.S. Environmental Protection Agency.

[3] These sources are classified as illegal by Minnesota Rules, Chapter 4725.

[4] Isolation distance is determined by average flow per day or if a facility handles infectious or pathological wastes.

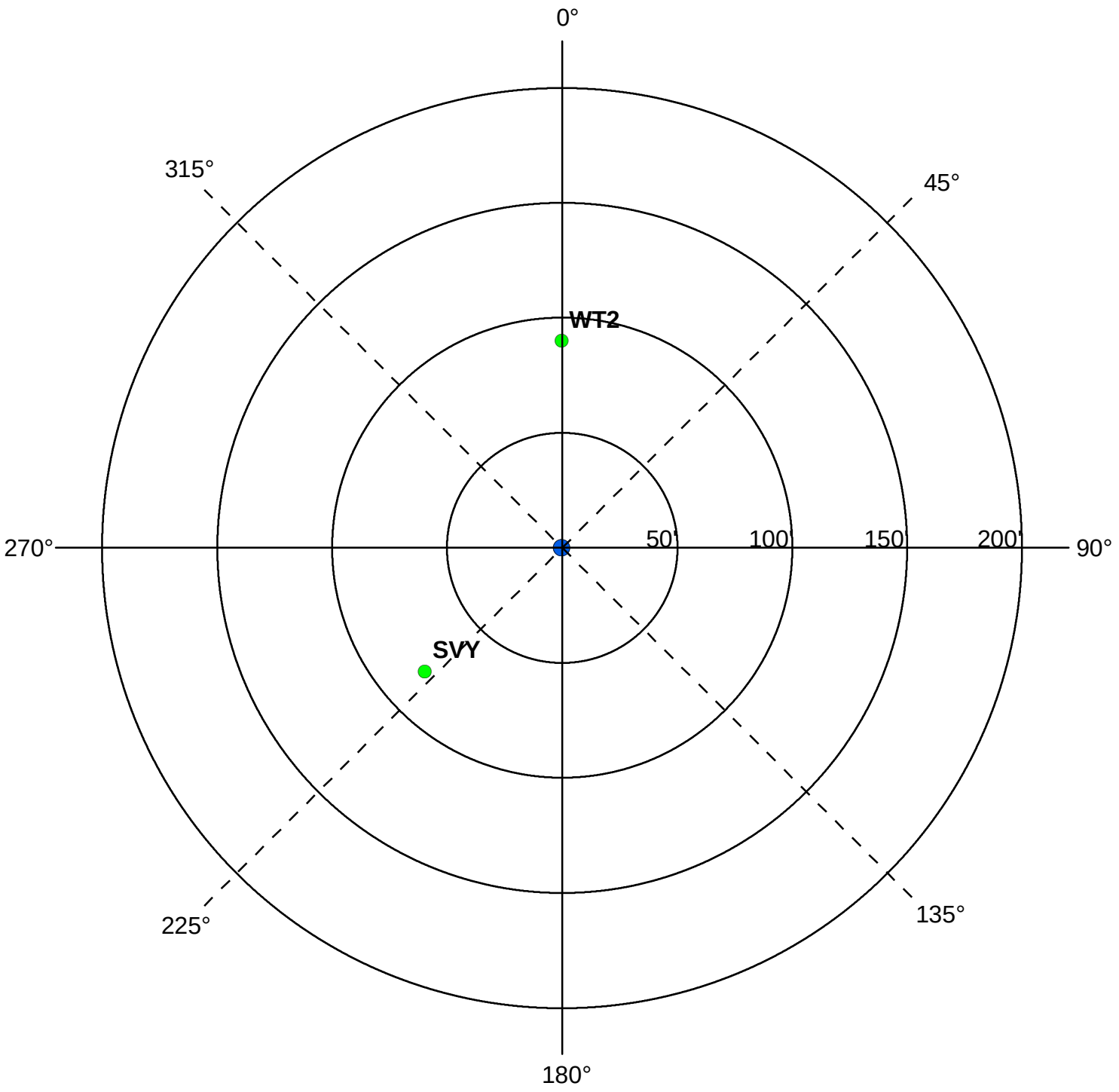
[5] A community public water-supply well must be a minimum of 50 feet from a petroleum tank or container, unless the tank or container is used for emergency pumping and is located in a room or building separate from the community well; and is of double-wall construction with leak detection between walls; or is protected with secondary containment.

This form is based on the new isolation distances in Minnesota Rules, Chapter 4725, related to wells and borings adopted August 4, 2008, and Minnesota Rules, Chapter 4720, related to wellhead protection.

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

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

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

Environmental Health Division
Drinking Water Protection Section
P.O. Box 64975
St. Paul, Minnesota 55164-0975

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
FACILITY ID	S04
UNIQUE WELL NO.	204570
COUNTY	Hennepin

IS THERE A WELL LOG OR ADDITIONAL CONSTRUCTION INFORMATION AVAILABLE?

☐ **YES** (Please attach a copy)
☐ **NO** ☐ **UNDETERMINED**

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

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				
PT1	Petroleum tank or container, 1100 gal. or more, without safeguards	150	150		N		
PT2	Petroleum tank or container, 1100 gal. or more, with safeguards	100	100		N		
PT3	Petroleum tank or container, buried, between 56 and 1100 gal.	50	50		N		
PT4	Petroleum tank or container, not buried, between 56 and 1100 gal.	50[5]	20		N		
PU1	Pit or unfilled space more than four feet in depth	20	20		N		
PC1	Pollutant or contaminant that may drain into the soil	50	50	100	N		
SP1	Swimming pool, in-ground	20	20		N		
*VH1	Vertical heat exchanger, horizontal piping conforming to rule	50	10		N		
*VH2	Vertical heat exchanger (vertical) piping, conforming to rule	50	35		N		
*WR1	Wastewater rapid infiltration basin, municipal or industrial	300	300	600	N		
*WA1	Wastewater spray irrigation area, municipal or industrial	150	150	300	N		
*WS1	Wastewater stabilization pond, industrial	150	150	300	N		
*WS2	Wastewater stabilization pond, municipal, 500 or more gal./acre/day of leakage	300	300	600	N		
*WS3	Wastewater stabilization pond, municipal, less than 500 gal./acre/day of leakage	150	150	300	N		
*WT1	Wastewater treatment unit tanks, vessels and components (Package plant)	100	100		N		
*WT2	Water treatment backwash disposal area	50	50	100	N		
Additional Sources (If there is more than one source listed above, please indicate here).							
Potential Contamination Sources and Codes Based on Previous Versions of this Form							
	none found within 200' of this well.						

* New potential contaminant source.

[1] A sensitive well has less than 50 feet of watertight casing, and which is not cased below a confining layer or confining materials of at least 10' in thickness.

[2] These sources, known as Class V underground injection wells, are regulated by the federal U.S. Environmental Protection Agency.

[3] These sources are classified as illegal by Minnesota Rules, Chapter 4725.

[4] Isolation distance is determined by average flow per day or if a facility handles infectious or pathological wastes.

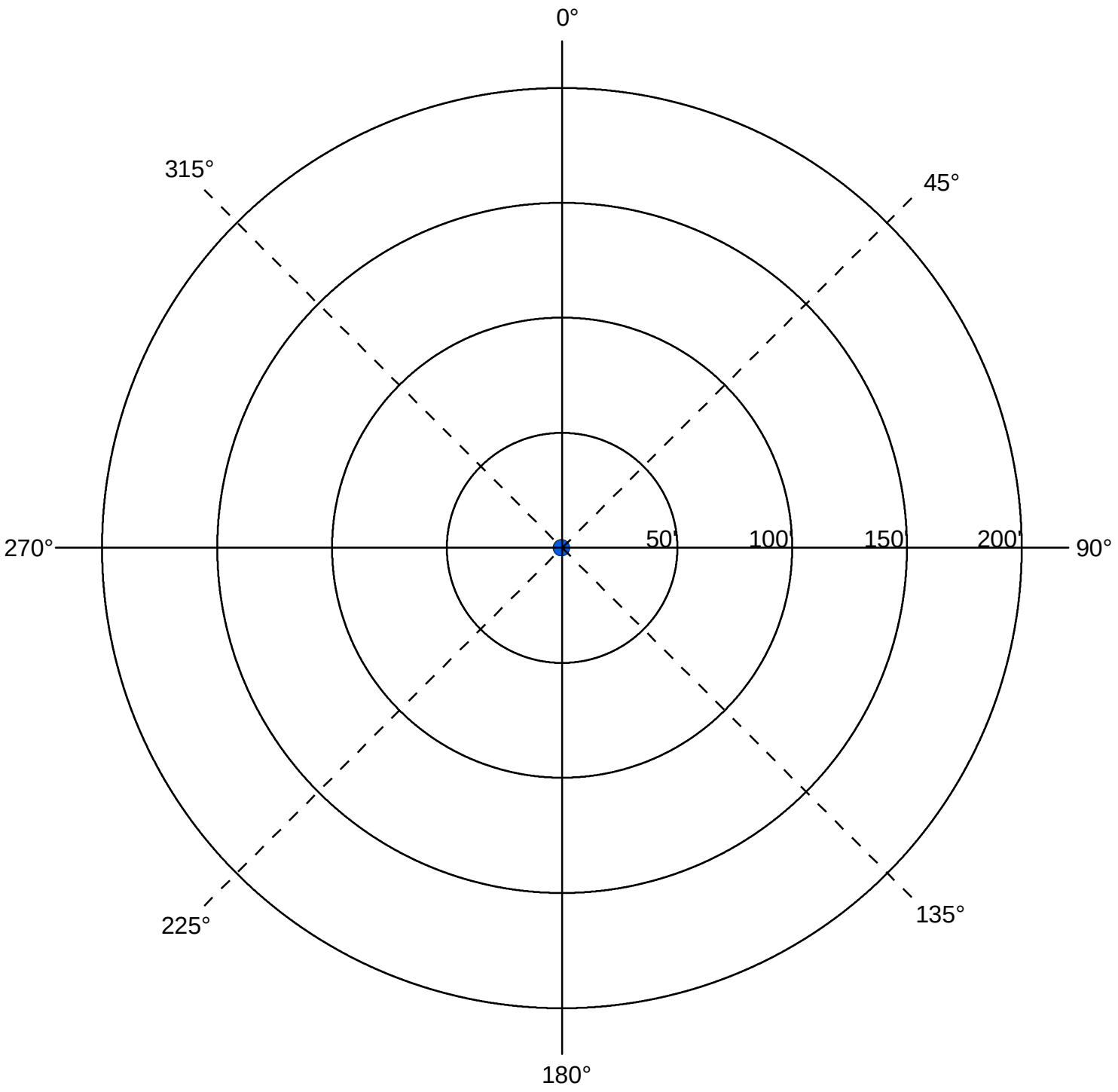
[5] A community public water-supply well must be a minimum of 50 feet from a petroleum tank or container, unless the tank or container is used for emergency pumping and is located in a room or building separate from the community well; and is of double-wall construction with leak detection between walls; or is protected with secondary containment.

This form is based on the new isolation distances in Minnesota Rules, Chapter 4725, related to wells and borings adopted August 4, 2008, and Minnesota Rules, Chapter 4720, related to wellhead protection.

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

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

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

Environmental Health Division
Drinking Water Protection Section
P.O. Box 64975
St. Paul, Minnesota 55164-0975

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
FACILITY ID	S05
UNIQUE WELL NO.	112228
COUNTY	Hennepin

IS THERE A WELL LOG OR ADDITIONAL CONSTRUCTION INFORMATION AVAILABLE?

☐ **YES** (Please attach a copy)
☐ **NO** ☐ **UNDETERMINED**

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

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				
PT1	Petroleum tank or container, 1100 gal. or more, without safeguards	150	150		N		
PT2	Petroleum tank or container, 1100 gal. or more, with safeguards	100	100		N		
PT3	Petroleum tank or container, buried, between 56 and 1100 gal.	50	50		N		
PT4	Petroleum tank or container, not buried, between 56 and 1100 gal.	50[5]	20		N		
PU1	Pit or unfilled space more than four feet in depth	20	20		N		
PC1	Pollutant or contaminant that may drain into the soil	50	50	100	N		
SP1	Swimming pool, in-ground	20	20		N		
*VH1	Vertical heat exchanger, horizontal piping conforming to rule	50	10		N		
*VH2	Vertical heat exchanger (vertical) piping, conforming to rule	50	35		N		
*WR1	Wastewater rapid infiltration basin, municipal or industrial	300	300	600	N		
*WA1	Wastewater spray irrigation area, municipal or industrial	150	150	300	N		
*WS1	Wastewater stabilization pond, industrial	150	150	300	N		
*WS2	Wastewater stabilization pond, municipal, 500 or more gal./acre/day of leakage	300	300	600	N		
*WS3	Wastewater stabilization pond, municipal, less than 500 gal./acre/day of leakage	150	150	300	N		
*WT1	Wastewater treatment unit tanks, vessels and components (Package plant)	100	100		N		
*WT2	Water treatment backwash disposal area	50	50	100	N		
Additional Sources (If there is more than one source listed above, please indicate here).							
Potential Contamination Sources and Codes Based on Previous Versions of this Form							
	none found within 200' of this well.						

* New potential contaminant source.

[1] A sensitive well has less than 50 feet of watertight casing, and which is not cased below a confining layer or confining materials of at least 10' in thickness.

[2] These sources, known as Class V underground injection wells, are regulated by the federal U.S. Environmental Protection Agency.

[3] These sources are classified as illegal by Minnesota Rules, Chapter 4725.

[4] Isolation distance is determined by average flow per day or if a facility handles infectious or pathological wastes.

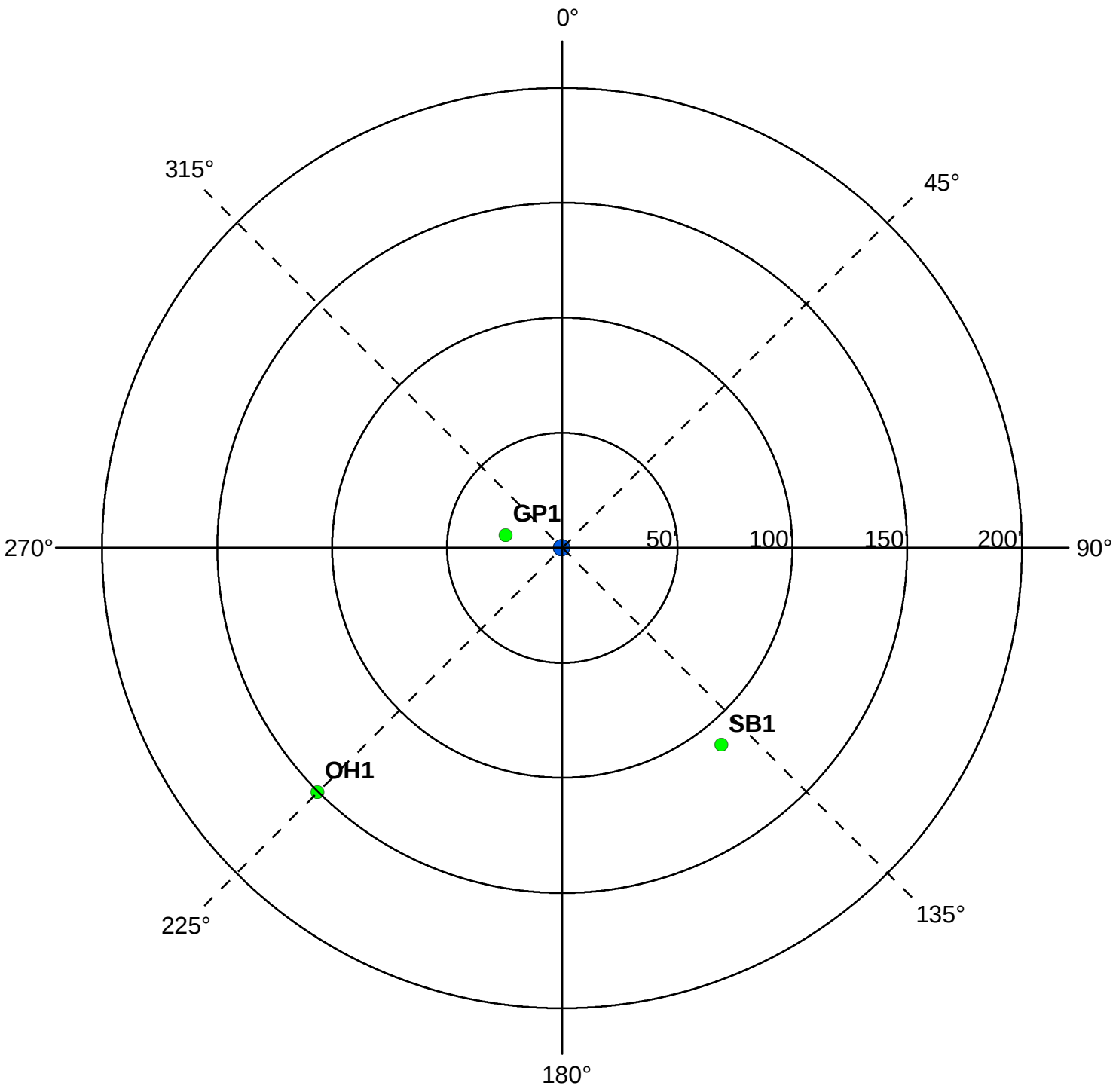
[5] A community public water-supply well must be a minimum of 50 feet from a petroleum tank or container, unless the tank or container is used for emergency pumping and is located in a room or building separate from the community well; and is of double-wall construction with leak detection between walls; or is protected with secondary containment.

This form is based on the new isolation distances in Minnesota Rules, Chapter 4725, related to wells and borings adopted August 4, 2008, and Minnesota Rules, Chapter 4720, related to wellhead protection.

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

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

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

Partnering with the Community, Enhancing the Quality of Life

Inspire - Educate - Involve - Communicate

June 2014

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.

	Level Found				
Contaminants (units)	MCLG	MCL	Range 2012	Average/ Result*	Typical Source of Contaminant
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

Partnering with the Community, Enhancing the Quality of Life

Inspire - Educate - Involve - Communicate

June 2014

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.

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

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/.

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 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.)

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.

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nd—No detection.

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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

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Additional Contaminants

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Compliance with National Primary Drinking Water Regulations

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