

**Canton City Council
August 12, 2026 – 6 pm
Public Hearing Agenda**

1. Call to order
2. Statement of purpose: To conduct Public Hearing on the City of Canton Wellhead Protection Plan, Part II to discuss issues and address all comments received during the 60 day review period.
3. Public comment
4. Adjourn

Canton

Amended Wellhead Protection Plan

Part 2

Moderate Vulnerability



This document is a ten-year plan for the city of Canton that fulfills the requirements of MN Rules 4720.5100-4720.5590

Effective dates: 2026-2035



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List of Acronyms

DWSMA – Drinking Water Supply Management Area	MWI – Minnesota Well Index
EPA – US Environmental Protection Agency	PCS - Potential Contaminant Source
ERA – Emergency Response Area	PCSI – Potential Contaminant Source Inventory
IWMZ – Inner Wellhead Management Zone	SWCD – Soil and Water Conservation District
MCL – Maximum Contaminant Level	SWP – Source Water Protection
MDH – Minnesota Department of Health	USGS – United States Geological Survey
MNDNR – MN Department of Natural Resources	WHP – Wellhead Protection
MPCA – Minnesota Pollution Control Agency	WHPA – Wellhead Protection Area
MRWA – Minnesota Rural Water Association	

City of Canton- Public Water Supply Source Profile

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Public Water Source – History and Present Condition

The city of Canton is in the SE corner of Fillmore County near the Iowa border. The Drinking Water Supply Management Area (DWSMA) is in part of sections 21,22,27& 28 Canton Township (T101N-R21W). The population served by the public water system is 316 residents with 173 service connections.

Presently, the public water system consists of two primary wells. Well #1 (225999) is cased to 319 feet and is completed in the Prairie du Chein group at a depth of 404 feet. Well #2 (258162) is cased to 610 feet and is completed in the Jordan Sandstone at a depth of 665 feet. Both wells are considered vulnerable to surface contamination. Canton's wells are located off Main Street. Well 1 is in a pump house that also serves as a small garage. Well 2 is 150 feet south of Well 1 in a small city park. There is one water storage tower that is located adjacent to the wells.

Based on historical documents, the first public water supply report was completed in January of 1933. At that time the city was served by existing well #1 which was completed in 1918. Well #1 served as the sole source of water until well #2 was drilled in 1983. There is no information indicating where the city residents received their water prior to 1918. The old municipal well reports mention an old stockyard well and a creamery well. Since the community was founded based on the railroad the potential for an old RR well also exists. The Amended Wellhead Protection Plan is for both, primary wells.

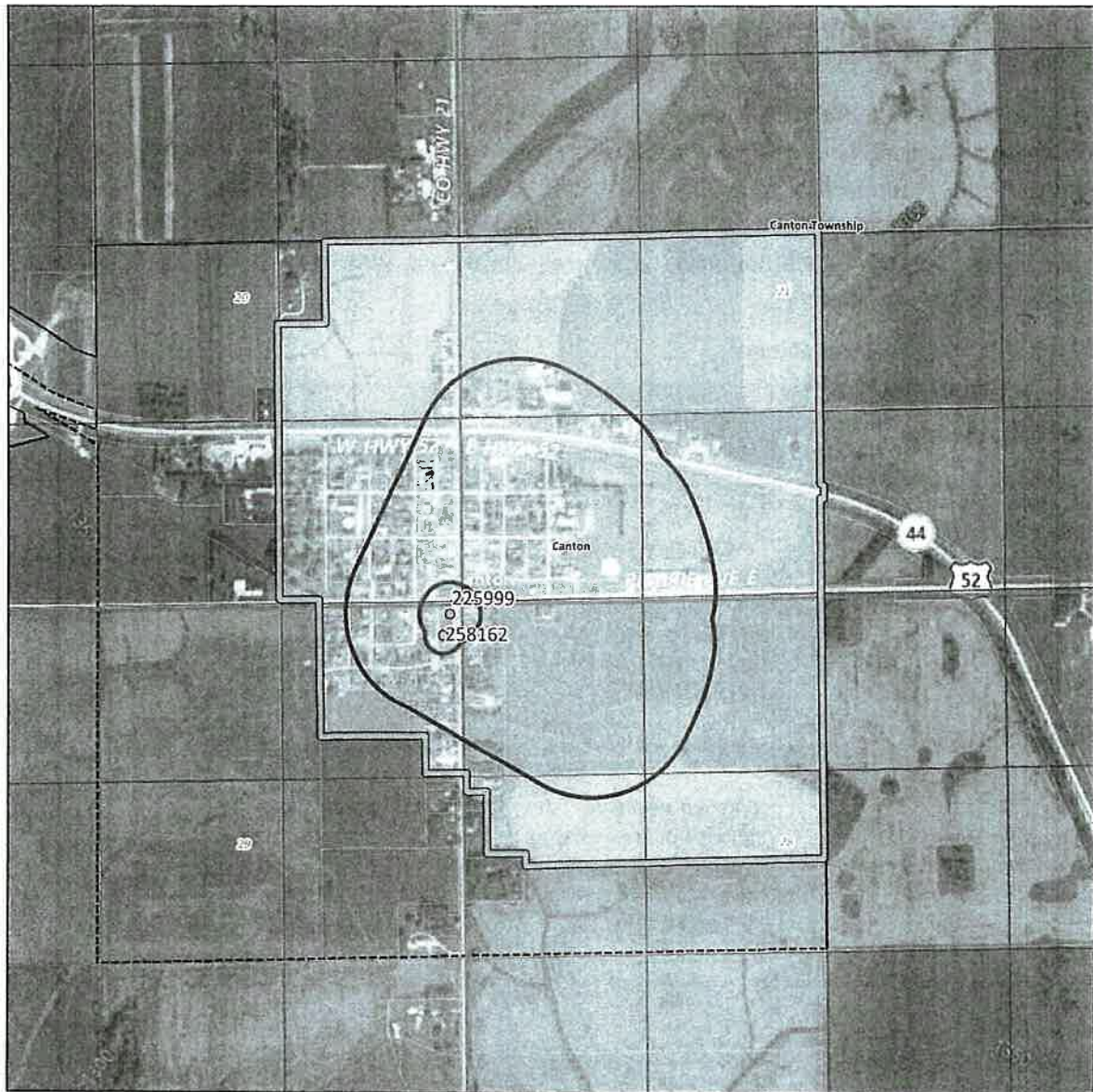
Introduction to Part 2

Part 1 of the Wellhead Protection Plan summarizes the process of delineating a Wellhead Protection Area (WHPA), an Emergency Response Area (ERA), and a Drinking Water Supply Management Area (DWSMA) for the well(s). The Part 1 also includes an assessment of the vulnerability of the primary well(s) and the DWSMA to contamination from activities at the land surface. MDH rules require a Wellhead Protection Plan amendment every 10 years. An amendment involves updating the previous plan and focusing on information that is relevant and implementation that is effective. A plan amendment should: *Identify any changes to your drinking water source and your water supply system. * Evaluate progress on protecting your water source. * Identify changes in land use. * Develop or improve strategies to reduce risks or threats. Part 1 of the Amended Wellhead Plan summarizes changes made to delineation and vulnerability assessment since the previous plan. It describes the updated process of delineating a Wellhead Protection Area (WHPA), an Emergency Response area (ERA), and a Drinking Water Supply Management Area (DWSMA) for the well(s). It also uses new data to revise the assessment of vulnerability of the primary well(s) and the DWSMA to contamination from activities at the land surface. The accompanying maps show the WHPA, DWSMA and the vulnerability of the DWSMA. The DWSMA is considered to have moderate vulnerability to contamination from the surface. The DWSMA is also slightly smaller due to the reduction in pumping volume based upon identifying and fixing leaks in the system.

Part 2 of the Wellhead Protection Plan identifies issues, problems, and opportunities for the management of the well(s) and the DWSMA. It inventories potential contaminant sources and creates a Plan of Action for the next ten years.

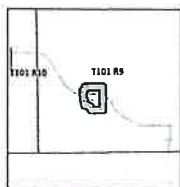
Part 2 is comprised of two sections and an appendix.

- Section 1: contains the most frequently used parts of the plan: issues, goals, objectives, and the Plan of Action. The Plan of Action details what specifically should be done, the timeframe, resources available and notes for each action.
- Section 2: summarizes and assesses the data elements used for developing Part 2, describes any expected future changes to the physical environment, land use, and groundwater within the DWSMA, has a strategy to evaluate the progress in implementing the Wellhead Protection Plan, and contains a contingency strategy for a water supply disruption.
- The Appendix: contains the necessary data elements that are required to be used in Part 2 as indicated in the Scoping 2 Decision Notice (Exhibit A). This includes an inventory of potential contaminant sources (Exhibit I) and the Inner Wellhead Management Zone report (Exhibit J).



- BASEMAP TILE FROM U.S. GEOLOGICAL SURVEY
 - NORTH AMERICAN DATUM OF 1983, ZONE 18N
 - MDH CANNOT GUARANTEE THE COMPLETENESS OR ACCURACY OF
 THIRD PARTY INFORMATION PRESENTED IN THIS FIGURE
 - FIGURE CREATED 05/10/2025

0 1,000 2,000 FEET
 0 225 450 675 900 METERS



EXPLANATION

- | | |
|---------------------------------------|---------------------------|
| ○ Primary Well | PLSS 1/4-1/4 Sections |
| Emergency Response Area | PLSS Section Line |
| Wellhead Protection Area | Parcels |
| Drinking Water Supply Management Area | Local Government Boundary |
| Moderate Vulnerability | |

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 OF HEALTH

Figure 1. Map Showing the Protection Areas and Aquifer Vulnerability for the city of Canton

Section 1: Goals, Objectives, and Plan of Action

A: Issues, Problems and Opportunities (4720.5230)

Identifying water and land use issues helps define management strategies needed in the Plan of Action. Table 1 summarizes issues, the problems associated with these issues, opportunities for management and the adequacy of existing controls in relation to 1) the aquifer used for the public water supply well, 2) the quality of the well water, and 3) the Drinking Water Supply Management Area (DWSMA).

Table 1: Issues, Problems and Opportunities

Issue Identified	Feature Impacted	Problem with the Identified Issue	Opportunity for management	Adequacy of Existing Controls to Address the Issue
<i>1. Well construction and the condition of well casing in well #1 may lead to surface contaminates reaching the Prairie du Chen aquifer in which the well is completed.</i>	<i>Aquifer DWSMA Well water quality</i>	<i>Pathways for surface water to reach the aquifer may exist, increasing the risk of future drinking water contamination.</i>	<i>The city can televise and inspect the well to determine the wells condition and what steps that may need to be taken to protect groundwater.</i>	<i>The city can hire a local well driller to perform this work and coordinate with MDH to further evaluate well #1.</i>
<i>2. The city wells have elevated levels of nitrates</i>	<i>Aquifer Well water quality</i>	<i>If the nitrate levels continue to increase the city may need to treat or utilize another source of drinking water.</i>	<i>The city can address potential sources of nitrates through management efforts within the wellhead plan.</i>	<i>The city does not have land use controls within the entire DWSMA. The city will need to reach out to other local partners for assistance.</i>
<i>3. There may be unused/unsealed wells on private properties, such as creamery and old stockyard and railroad wells, private commercial and residential wells.</i>	<i>Aquifer DWSMA Well water quality</i>	<i>Unused/unsealed wells could present a contamination risk if wells are deep enough, or faulty in construction.</i>	<i>The city can work with MDH to determine the risk to the city water supply and identify grant opportunities to assist property owners with well sealing.</i>	<i>The city does not have authority to require that unused wells be sealed, however, MDH Well Code requires that unused wells are properly sealed if located.</i>
<i>4. The city has initiated the process of constructing a new well to replace well #1 as a primary well.</i>	<i>Well water quality Aquifer Public Health</i>	<i>The age of the existing well and infrastructure increases the potential for interruption in the water supply for residents.</i>	<i>The city can include strategies within the plan to identify locations for new well.</i>	<i>The city can utilize MDH staff along with private consultants to develop an overall infrastructure plan in conjunction with the construction of a new well.</i>

In addition, the plan also needs to address comments received in writing and at public meetings, as well as other water and land use plans from local, state, or federal sources.

At the beginning of the planning process, local units of government (LGUs) were notified and given opportunity to identify issues and provide comment. This was also an opportunity for LGUs to see how this plan can coincide with other local plans. The following is a summary of meetings and input opportunities provided, and the comments received.

- Notification consistent with MN Rules 4720.5300 was sent to government units and public in consideration of plan initiation, completion of Parts 1 and 2 and the final approval of the completed Wellhead Protection Plan.
 - Comments received from notifications: None
- A public information meeting was held on 6-24-25, to review results of the delineation of the WHP area, DWSMA and vulnerability assessments.
 - Comments received during plan development: None
- A public hearing was held on date to hear comments from the public on the plan.
 - Comments received at public hearing: None

B. Wellhead Protection Goals (4720.5240)

After identifying issues and opportunities, overall goals were developed for the wells, aquifers, and the drinking water supply management areas over the next ten years.

The city of Canton identified the following wellhead protection goals:

Goal 1: Maintain the current level of water quality, which meets all state and federal standards.

Goal 2: Protect the aquifer from which the city draws its drinking water.

Goal 3: Promote public health, economic development, and community infrastructure by ensuring a potable drinking water supply at reasonable costs for all residents of the community.

C. Objectives and Plan of Action (4720.5250)

Objectives are measurable ways to achieve goals. They provide specific results that can be completed within a time frame and with available resources. The wellhead protection team chose objectives with action items that are realistic, achievable, and meet requirements of the Wellhead Protection Program.

The City of Canton has identified the following objectives:

1. Create public awareness and general knowledge about the importance of WHP for ensuring an adequate and safe drinking water supply.
2. Collect new information on potential contaminants.
3. Manage potential contaminants.
4. Develop capabilities with other governmental units to manage potential contaminate sources and create awareness on the importance of protection of the community's drinking water supply.
5. Maintain and/or approve the city's public water supply system security and resiliency.

WHP Measures and Action Plan

The WHP team has identified WHP measures that will be implemented by the city over the 10- year period that its WHP plan is in effect. The Plan of Action is described in Table 2. Each objective has specific actions called management strategies associated with it. Additional details may include: potential partners, resources, notes, cost, and funding sources. Each strategy identifies a responsible party. Responsible parties include PWS (Public Water Supplier) and LGU (Local Government Units). LGU's could be Soil and Water Conservation District (SWCD), County Departments, Watershed District or other local entities that are relevant to the strategy identified. MN Rule requires the PWS to implement 75% of strategies identified for the PWS. LGU measures are voluntary measures that do not meet the implementation rule requirement but support the protection of the City's drinking water source.

Establishing Priorities

The plan must establish priorities, knowing that not all objectives and actions can be worked on at the same time. Priorities are specific actions that:

- Address any current or future drinking water Maximum Contaminant Level (MCL) exceedances (Federal Reg. Code 40, part 141: 1995 amended)
- Address any quantifiable level of contaminants in well water resulting from human activity
- Manage Potential Contaminant Sources (PCS) identified relative to vulnerability of the well and DWSMA, and
- Address critical factors that affect the ability to maintain safe drinking water, such as geology, existing controls, and capacity of staff/resources.

Action items of priority in this ten-year plan are indicated in the Plan of Action tables.

Plan of Action

The Plan of Action is described in the tables below. Each objective has specific actions called management strategies associated with it.

* Note: ID # is the number to use when applying for MDH Source Water Protection grants.

Table 2: Plan of Action

ID #	Obj.	Management Strategy	Recommended Year(s)	Responsible Party	Resources	Funding/cost	Partners
1	3	(200) Notify MDH source water protection planner if a Class V well is identified in the DWSMA.	As Needed	PWS	For more information about Class V wells: https://www.epa.gov/uic/basic-information-about-class-v-injection-wells	Staff time	Class V wells are regulated by the EPA.
2	2,5	(400) Sample primary wells for the standard assessment monitoring package in preparation for a plan amendment.	2032	PWS		MDH will pay for samples.	MDH District Engineer
3	2	(403) Update the inventory of potential contaminant sources.	2028,2032,2035	PWS	MDH Scoping 2 Notice	This is a priority activity. This information can be useful to refine the vulnerability assessments for the next amendment.	MDH& MRWA
4	1,5	(408) Televise and/or conduct down-hole logging on well #1	2027	PWS		SWP implementation grant.	MDH, Well contractor
5	4	(501) Work with Fillmore SWCD to include wellhead protection information in local plans.	As Needed	PWS	MDH GRAPS Report	Staff time	MDH Planner Fillmore SWCD

ID #	Obj.	Management Strategy	Recommended Year(s)	Responsible Party	Resources	Funding/cost	Partners
6	1	(503) Display a map of the Drinking Water Supply Management Area(s) in a public place.	Display through life of plan	PWS	MDH Planner	MDH provides map	
7	2,5	(414) Video log well casing to determine its construction and state of repair, or complete geophysical logging to collect geologic information to substantiate well vulnerability issues.	2032	PWS	MDH Planner & MDH hydrologist	SWP Implementation Grant	Well contractor
8	1	(507) Provide educational materials to residents about wellhead protection.	2027,2029, 2031,2033 2035	PWS	MDH & MRWA	\$500	
9	1,4	(513) Participate in local groundwater technical groups to discuss and coordinate groundwater and drinking water protection activities identified in WHP plans, 1W1P, GRAPS and other local water resource plans.	2027 2030	PWS	MDH & MRWA	Staff Time	Fillmore County Fillmore SWCD
10	3	(802) Implement measures listed in the Inner Wellhead Management Zone report and Sanitary Survey reports.	As Needed	PWS	MDH Planner and MDH Engineer	Varied Budget for specific project.	

ID #	Obj.	Management Strategy	Recommended Year(s)	Responsible Party	Resources	Funding/cost	Partners
11	3	(803) Make sure setback distances are met for new potential contaminant sources in the IWMZ.	As Needed	PWS	MDH	Staff time	Well contractor
12	1,4	(904) Request local authorities consider impacts to drinking water during zoning and permit reviews.	2026	PWS	MDH & MRWA	Staff time	County and Township Planning staff
13	5	(1803) Construct a public well to ensure water quality and/or quantity needs are met	Annually	PWS	MDA	Staff Time	
14	2,3	(1601) Report unused or abandoned storage tanks to the Minnesota Pollution Control Agency.	As Needed	PWS	MPCA	Staff Time	MDH & MRWA
15	1,3	(1600) Provide information to storage tank owners about proper management	2026,2029, 2032	PWS	MPCA	Staff Time \$500 handouts/materials	
16	3	(1818) Seal unused well(s).	As Needed	PWS	MDH	SWP grants	Well Contractor
17	2,3	(1810) Identify unused wells and prioritize for sealing.	2027,2029 2031	PWS	MDH& Fillmore County	Staff time	Residents

ID #	Obj.	Management Strategy	Recommended Year(s)	Responsible Party	Resources	Funding/cost	Partners
18	2,3	(1800) Apply for grants to seal unused wells.	As Needed	PWS	MDH, MRWA	Staff Time	MDH & Fillmore SWCD
19	2	(1820) Work with MDH to review historical well information to help locate unused public wells.	2027	PWS	MDH	Staff Time	MDH
20	1,3	(1812) Provide information to property owners on well management and well sealing.	2026, 2028 2030	PWS	MDH & MRWA	Staff Time \$500 materials	
21	5	(1804) Contact MDH Hydrologist and District Engineer for initial discussion prior to planning for a new public well.	2026	PWS	MDH		MDH Hydrologist MDH Engineer
22	5	(1806) Determine need and cost of reconstructing or replacing a public well.	2026	PWS	MDH	\$15,000	Consultant Engineer
23	5	(1313) Purchase and install a generator and necessary wiring with switch box, for emergency service to the well (requires MDH water system plan review and approval before construction).	2027	PWS	MDH Source Water Protection Grants	\$15,000	MDH MRWA

ID #	Obj.	Management Strategy	Recommended Year(s)	Responsible Party	Resources	Funding/cost	Partners
24	3,4	(110) Seek funding for financial incentives to farmers to adopt agricultural best management practices.	2027	LGU PWS	Root River 1W1P MDA grants BWSR Grants	\$15,000	Fillmore SWCD MDA, MDH BWSR
25	3,4	(114) Prioritize the use of nitrogen best management practices on land in the Drinking Water Supply Management Area.	2027	LGU	Nutrient Reduction Strategy	\$15,000	Fillmore SWCD MDA

Section 2: Information for Plan Development

A: Data Elements and Assessment (4720.5200)

The Minnesota Department of Health requires that certain data elements be included in the Amended Part II Wellhead Protection Plan (Exhibit A). The data elements selected are based on the vulnerability determination of the primary well(s) and the Drinking Water Supply Management Area (DWSMA). The city of Canton's well(s) and DWSMA have a moderate vulnerability to contamination from the land surface.

1. Physical Environment Data Elements

Geology: Geologic considerations focus on hydrogeology, the properties of the subsurface material and aquifer. The following is a summary from Part I of Canton's Wellhead Plan.

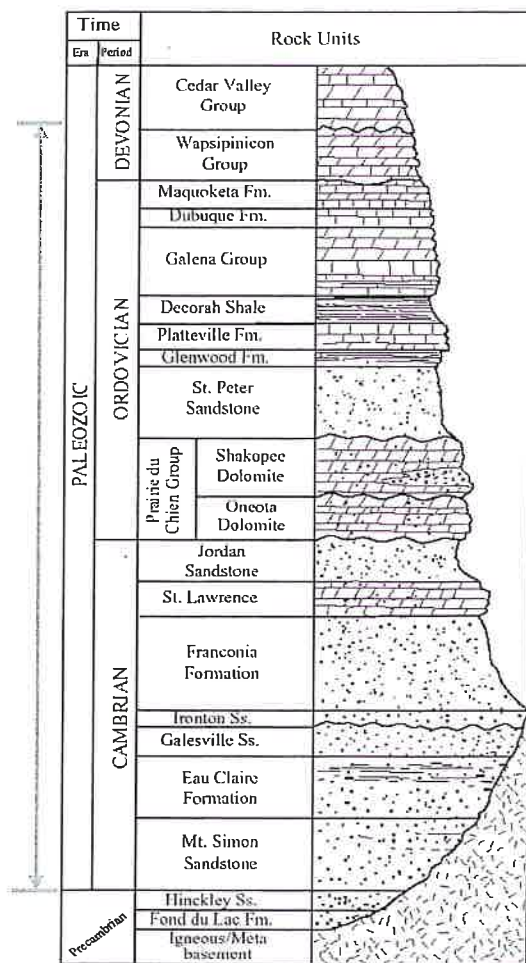


Figure 2. Generalized Paleozoic rock column for

The city of Canton has two primary wells, Well # 1 (225999) is open to the Prairie du Chen Group and Well #2 (258162) is screened in the Jordan Sandstone. Overlaying the Prairie du Chen Group, the water table in the Galena Aquifer appears perched and the St Peter Sandstone is substantially dewatered. This feature is an important part of the hydrogeologic setting and has a direct bearing on the delineation and vulnerability assessments. A strong downward gradient between the Galena Group and the Prairie du Chen Group exists, with static water level differences on the order of approximately 200 feet.

Ordinarily a surface water contribution area must be considered in situations where sensitive geologic conditions exist within the capture areas. Both Canton wells contain measurable levels of tritium, which indicates rapid recharge to the groundwater system and high geologic sensitivity. Any clay-rich materials present between the ground surface and Galena Group bedrock are insufficient to slow the movement of groundwater (Green, 2007 and 2010). However, the geologic protection of the aquifer system by the Decorah-Platteville-Glenwood Aquitard is intact within the wellhead protection area. Therefore, a surface water contribution area is not required.

Exhibit K shows locations of sinkholes within the DWSMA. This information was taken from the karst features of Minnesota database (University of Minnesota, Department of Geology and Geophysics; Minnesota DNR- Division of Waters). Pertinent well records with information about geologic materials are in Exhibit C. MDH Reports of Investigations on the Water Supply of the City of Canton and other historical reference summaries are in Exhibit L

Water Resources: This data element discusses watershed boundaries and delineated floodplain locations relative to public wells.

The city of Canton's DWSMA is in the Root River major watershed (HUC 0706001) and the Wisel Creek and Pine Creek HUC 12 watersheds. A map of the Root River watershed can be found in Exhibit H. Since surface water is not considered a significant factor in drinking water quality for the city of Canton, no additional assessment is needed.

A FEMA delineated 100-year floodplain map can be found in Exhibit D. All parts of the DWSMA are outside of the floodplain. The public water supply well is not included in the floodplain, no recorded historic flood waters have occurred near the well. No additional measures are needed for flood protection.

2. Land Use Data Elements

Land Use: These data elements include information and maps of political boundaries, parcels, public land surveys, land use, zoning, and an inventory of potential sources of contamination.

Political boundaries within the DWSMA are shown in Exhibit B. A map of parcels located in the DWSMAs can be found in Exhibit E. Most parcels are privately owned by individuals, a few are owned by businesses or units of government. More detailed information on parcels can be found online Beacon – Fillmore County Public GIS Access on the Fillmore County website. A land cover map supplied by MDH is shown in Exhibit F. The DWSMA is 550 acres and is predominantly cropped and developed land. Certain types of potential contaminate sources are typically associated with specific land covers. This will be explored in more detail with the Potential Contaminant Source Inventory below. A portion of the DWSMA extends into Canton Township.

The city of Canton has a planning and zoning ordinance with authority over building permits, conditional use permits, and Variances. Fillmore County planning and zoning programs apply where the city does not have jurisdiction, such as feedlots, SSTs, floodplain, and shoreland areas. Most of the land in the DWSMA is zoned as agricultural followed by residential, commercial and industrial respectively. The city of Canton's zoning map is shown as Exhibit G in the appendix. Fillmore County has adopted a comprehensive plan. The zoning map from Fillmore County's comprehensive plan has been added to the appendix as part of Exhibit G. The comprehensive plan is located on the Fillmore County website.

Potential Contaminant Source Inventory (PCSI) – The vulnerability of the DWSMA determine which types of potential contaminant sources need to be inventoried. In moderately vulnerability settings, many types of land uses, and items need to be inventoried, including wells and Class V injection wells and both above ground tanks greater than 1100 gallons and below ground tanks. All wells, including those of unknown depth will be inventoried. Table 3 provides a summary of the potential contaminant sources identified in the DWSMA.

Table 3: Potential Contamination Sources and Assigned Risk for the DWSMA

Potential Contaminant Source Type (DWSMA)	Total	# In WHPA	# In ERA	Level of Risk
Municipal Wells (WEL)	2	2	2	low
Other Wells (WEL) - active status	2	2	0	Moderate
Leaking Underground Storage Tank (LUST) – inactive status	2	2	0	high
Total	6	6	2	

The PCSI was completed by the Wellhead Protection Manager, city staff, and MDH staff. Information for the PCSI was obtained from MDH Well Management Data System, Minnesota Well Index, historic MDH Reports of Investigations for the City of Canton Municipal System, MPCA and MDA What's in My Neighborhood, other historical references, and from the knowledge of staff. Limitations encountered in developing the inventory relate to a lack of historical records for individual private wells. The PCSI map and table are in Exhibit I.

IWMZ – The Inner Wellhead Management Zone (IWMZ) is the area within 200 feet of a public water system well. Within the IWMZ, **all** contaminant sources need to be inventoried and their

Special Note about Wells and Class V Injection Wells

- Wells are inventoried because they may penetrate through the confining layers protecting the aquifer and could provide a pathway for contaminants to enter the drinking water supply.
- Class V Injection Wells are used to inject fluids underground and can pose a threat to groundwater quality if not managed properly. Therefore, they are inventoried as requested by US Environmental Protection Agency under the Safe Drinking Water Act.

distances from the public well recorded. This inventory compares the location of contaminant sources to the isolation distances in Minnesota Rules 4725, the "Minnesota Well Code". The purpose of these inventories is to determine if there is the potential for acute public health risks from pathogen sources or from releases of high levels of chemical contaminants. These inventories were updated on 9-17-25 with report pages in Exhibit J. The last page of each report has measures to complete. Staff can consult with MDH or MRWA for more information. A summary of what was inventoried can be found in Table 4.

Table 4: Potential Contaminants Identified in the IWMZ

Potential Contaminant Source Type (IWMZ)	Total Well #1	Total Well #2	Level of Risk
FD1: Floor Drain	2	1	high
SB2: Buried municipal sanitary line	1	1	Low
SD1: Storm Drain >8" in diameter	1	1	low

Public Utility Services: In a moderate vulnerability setting, the data elements needed include maps of transportation routes, public water system utility services, pipelines, and records of construction, maintenance, and use of the public water supply well and other wells within the drinking water supply management area.

The main transportation routes through the city of Canton's DWSMA are State Hwy 52 and Fillmore County Road 21 which is Main St within the City of Canton. The most likely hazardous materials to be transported on these routes would be petroleum and ag chemicals. A transportation map is shown in the appendix as exhibit M. Maps of the sanitary sewer and storm sewer show the distribution of these services and are available at city hall. There are no liquid pipelines located within the DWSMA and there are no public drainage systems in the DWSMA. The public water supply wells construction records can be found in Exhibit C of the appendix.

3. Water Quantity Data Elements

Groundwater Quantity: these data elements focus on wells with groundwater appropriation permits (pumping limits, type of use, aquifer source), known well interferences/water use conflicts, and information about any existing state environmental bore holes.

Wells with water appropriation permits in Canton's DWMSA are shown in Table 5. The city of Canton, with MNDNR permit number 1981-5121, has a water appropriation limit of 20 million gallons per year. The MNDNR water use information indicates that the system has been using less than half this amount over the last five years. There are no other water appropriators in

the DWSMA. Staff are unaware of any well interference problems or water use conflicts. No known state boreholes exist in the DWSMA.

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

Local Well ID Unique No.	2019	2020	2021	2022	2023	Previous Plan	Projected Five- Year Volumes	Pump Volume Used in Delineation
Well #1 225999	4.228*	3.568	3.106	3.028	3.051	6.335	4.228	4.228
Well #2 258162	3.717*	3.320	3.621	3.621	3.407	5.706	3.717	3.717

(Expressed as million gallons. Asterisk (*) indicates greatest annual pumping volume.)

4. Water Quality Data Elements

Groundwater Quality: This last data element group includes summaries and lists of existing water quality data, chemistry or studies done for the well or other groundwater features relevant to the DWMSA and aquifer, property audits, and MPCA/MDA reports.

Water chemistry data from Canton's primary wells have been generated as part of fulfilling monitoring requirements under the Safe Drinking Water Act. In addition, the well has been sampled for tritium, nitrate, chloride, and bromide specifically for Wellhead Protection delineation and vulnerability assessments. A summary of water chemistry results of sampling for the development of Part 1 is provided in Table 6.

Table 6 - Isotope and Water Quality Results

Unique number (Well Name)	Tritium	Nitrate (mg/L)	Chloride (mg/L)	Bromide (mg/L)	Chloride/ Bromide Ratio
225999 (Well #1)	1.4 8-22-24	3.5 8-22-24	9.36 8-22-24	0.17 8-22-24	55
258162 (Well #2)	4.2 8-22-24	1.8 8-22-24	8.54 8-22-24	0.149 8-22-24	57

The table above shows that the isotopic and water chemistry data collected from the city wells contain detectable levels of tritium and nitrates above the background level of 1.0 mg/l. This information means that relatively rapid recharge is occurring to the aquifer either through natural processes or unsealed or poorly constructed wells. Therefore, a moderate vulnerability ranking has been assigned to the DWSMA. At present, none of the contaminants for which the

Safe Drinking Water Act has established health-based standards is found above maximum allowable levels in the city's water supply, nor are any present at one-half of those levels.

There were two reports of contaminant releases within the DWSMA.

MPCA Leak Site 12557 was a gasoline release at the Coffee Shop and Mini Mart, 101 E Hwy 52, discovered in 1999. There was a limited site investigation including a karst impact survey and the site was closed in 2001. The survey found no impact of the release on neighboring wells or springs. The 2nd release occurred at the Old Canton School in 2004 (Leak Site 15636). The fuel oil that was released was partially contained in a containment area and a portion was discharged to the sanitary sewer. The site was remediated but the file is considered inactive. There were no groundwater or soil samples taken. Also, no chemicals that could be attributed to the petroleum leak sites have been detected in the city wells. A dye tracing study conducted in 2010 indicated that there is not a direct connection between the surface and the source aquifer. Dye introduced to sinkholes in the DWSMA did not show up in water samples taken at city hall.

Assessment of Data Elements

The Physical Environment (Geology and Water Resources): This assessment includes what is known about the geology, aquifers, well and geologic logs, major and minor watersheds, and floodplains.

The city of Canton has two primary wells, Well #1 (225999) is open to the Prairie du Chien Group and Well #2 (258162) is screened in the Jordan Sandstone. Overlaying the Prairie du Chien Group, the water table in the Galena Aquifer appears perched and the St. Peter Sandstone is substantially dewatered. This feature is an important part of the hydrogeologic setting and has a direct bearing on the delineation and vulnerability assessments. A strong downward gradient between the Galena Group and the Prairie du Chien Group exists, with static water level differences on the order of approximately 200 feet. Regionally, groundwater flows toward the southwest.

A review of the geologic logs contained in the CWI database and the geological maps and reports such as the Fillmore County Geologic Atlas indicate that the aquifer exhibits a low geologic sensitivity throughout the DWSMA and is isolated from direct vertical recharge of surface water. However, isotopic and water chemistry data collected from the city wells indicate that the aquifer contains detections of tritium. This information combined with the geologic sensitivity ratings above leads to the moderate vulnerability rating of the DWSMA. Recent recharge is occurring within the aquifer either through natural processes or unsealed or poorly constructed wells.

Land Use (Land use and Public Utilities): This assessment includes what is known about land use, land cover, local land use controls and management, PCSI, IWMZ, transportation, public utilities, and construction/maintenance of public wells.

The property surrounding the wells is owned by the city, existing land uses in the DWSMA and more specifically around the primary public wells is not expected to

change. Land use and land cover contain both urban-residential and rural-agriculture within the DWSMA. Primary focus of this plan in the DWSMA will be the management of wells and other strategies to address potential contaminants list in the PCSI Inventory. Besides contaminants within the inner well management zone the primary concern is unsealed wells within the same aquifer.

Water Quantity (groundwater): The assessment includes what is known about wells with state appropriation permits, type of use and aquifer source, water-use conflicts/interference, environmental wells.

Water quantity is sufficient for the city's current and future water needs. There are no other high-capacity wells in the DWSMA. No known water-use conflicts or interference exist. The city has consistently used less than half of their DNR permitted level. The city is starting the process of identifying a site for a new well based upon the age and condition of well #1.

Water Quality (groundwater): The assessment includes what is known about existing water quality studies/monitoring, site studies or reports, property audits, and MPCA/MDA reports.

At Present, none of the contaminants for which the Safe Drinking Water Act has established health-based standards is found above the maximum allowable levels in the city's water supply, nor are any present at one-half of those values. Nitrate levels are present above the regional background level of 1mg/l. Nitrate levels above background are consistent with the presence of tritium which indicates decades old recharge water has reached the aquifer.

Overall: Use of the well(s)

As mentioned above, the two primary wells provide the city of Canton with the quantity and quality of drinking water that meets the city's needs. Well #1 is over 100 years old and the city is making plans to replace this well with a new well in the future. Sampling results indicate the construction and condition issues may be leading to degrading water quality results from this well and may impact the aquifer in the future.

B: Impact of Changes on Public Water Supply Well (4720.5220)
Ten Year Expected Changes

- **The physical environment**

There are no changes expected to the physical environment for the public water system or the surrounding areas in the next ten years.

- **Land use**

The public water system expects minimal growth to occur both residentially or commercially. Soil health practices and continuous living cover will be promoted on row crop agriculture within the Root River Watershed.

- **Groundwater**

Regionally, nitrate levels are continuing to trend up within the Prairie du Chien and Jordan aquifers.

Assessment of Potential Aquifer Impact

- **Changes identified above**

If nitrate levels continue to increase within the aquifer the city may have to sample more frequently and engage with the Minnesota Department of Agriculture as part of MDA's Groundwater Rule requirements.

- **Influence of existing water and land government programs and regulations**

Many programs exist to assist with protecting wells and aquifers.

(See Table 7 - Existing Land Government Programs and Regulations)

Table 7 - Existing Land Government Programs and Regulations

Entity	Level	Program/Regulation
City of Canton	Local	The city follows its own ordinance with a zoning and permitting program. This ordinance controls conditional land use for multiple types of entities.
Fillmore County	Local	The County implements a land use planning and zoning ordinance in the county outside the jurisdiction of the city. Besides zoning the county regulates feedlots, on-site sewage treatment systems and shoreland. Land use activities proposed in the future that may impact the aquifer could be addressed through these processes including feedlots and mining.
Fillmore County Soil & Water Conservation District	Local	The SWCD provides technical assistance for water and soil quality programs. The SWCD also administers funds for private well sealing and the implements the Root River One Watershed, One Plan, which may provide partnership opportunities for land use BMPs or other research and monitoring activities related to groundwater.
MN Dept of Health	State	Well Management Section enforces the "Minnesota Well Code", Minnesota Rules Chapter 4725. The Minnesota Well Code requires the sealing of wells that are unused. The program also sets well construction standards and isolation distances between wells and contaminant sources. The Drinking Water Protection Program protects public health by ensuring a safe and adequate supply of drinking water at all public water systems. This program includes Source Water Protection that assists in developing and implementing WHP plans. SWP staff are available to provide technical assistance to evaluate any changes that might occur in source water for the city.

MN Dept of Natural Resources	State	Minnesota Rules Chapter 6115 requires water users to obtain an appropriation permit for withdrawal of more than 10,000 gallons of water per day or 1 million gallons per year. If an entity applied for an appropriation permit within the DWSMA or near the DWSMA, the township could review with the MDH Hydrologist the proposal and submit comments and concerns to the appropriate MNDNR staff.
US Environmental Protection Agency	Federal	US EPA regulates Underground Injection Wells. Class V wells that receive motor vehicle waste (fluids from repair or maintenance of motor vehicle) are now banned. Other non-motor vehicle Class V injection wells need to be registered with the US EPA. No potential Class V injection wells have been identified in the DWSMA. If a potential Class V Well is discovered in the future, US EPA can be notified, and the Class V owner informed of the regulations.

In addition to the programs and regulations listed in the previous section, the Minnesota Rural Water Association can assist with implementing the WHP plan by providing 1) reference education and outreach materials for landowners, and 2) technical support for implementing individual WHP action items listed in the plan.

- **The administrative, technical, and financial considerations of the public water supplier**

The administration and implementation of the WHP plan will be the responsibility of the Canton City Council. The City Clerk and the Public Works Director have been identified as Co-Wellhead Protection Managers. The Wellhead Protection Managers will periodically report to the city council about the progress of implementation activities. The public water system will maintain documentation of implementation activities.

Educational efforts included within the plan will be carried out by utilizing information provided by the Minnesota Department of Health and the Minnesota Rural Water Association.

Staff time for implementing the plan and distribution of any educational materials or announcements will be paid for out of the general fund. More costly activities such as the sealing of old wells could likely be financed through grants. The most appropriate grants would be Clean Water Fund grants administered through the Minnesota Department of Health.

D: Evaluation Program (4720.5270)

Evaluation Approach

A wellhead protection plan must identify a strategy for evaluating the progress of the Plan of Action and the impact of a contaminant released into the source aquifer if a release has occurred. The city of Canton's evaluation approach is to:

1. Document inventory control of Potential Contaminant Sources (PCSs).

Staff will maintain a table or spreadsheet with the potential contaminant sources inventoried. Periodically, this information will be reviewed and updated based on available records from Minnesota Department of Health, MN Pollution Control Agency, and through observation and investigation by staff.

2. Document the implementation of wellhead protection management strategies.

The city of Canton will maintain a file related to implementing wellhead protection activities.

3. Use monitoring data required by existing laws and rule.

The city of Canton will continue to sample their water supply wells with the Minnesota Department of Health as required and review water chemistry data from MDH for any changes in water quality.

Evaluation Frequency & Submittal

Every 2.5 years, the WHP managers and team will review the progress in implementing the plan of action. Changes that need to be made to the plan's timeline or measures will be discussed and adjustments made accordingly. The WHP managers will provide this evaluation to the city council. A summary evaluation will be presented to Minnesota Department of Health staff at the Scoping 1 meeting held to amend the existing plan.

Alternate Water Supply; Contingency Strategy (4720.5280)

Public Water Supply Characteristics

1. Wells and Storage Tanks

The city is served by two primary wells, and one elevated storage tank. The tank has a storage capacity of 40,000 gallons.

	Well #1 (225999), Primary	Well #2 (258162) Primary
Supply Source	Prairie du Chien Group	Jordan Sandstone
Year Constructed	1918	1983
Well Depth (ft.)	404	665
Casing Diameter (in.)	6	8
Casing Depth (ft.)	319	610
Pump Capacity (gpm)	125	175
Pump Rate (gpm)	120	150

2. Water Treatment

Fluoride: fluoridation/Hydrofluosilicic acid

3. Distribution Lines and Water Values

The city's distribution lines location and size along with location of valves and hydrants can be found on the City of Canton's as built water system map. This map is available at city hall.

Priority Water Users during Water Supply Emergency

The following table identifies the priority that water users will receive in the event of a major system disruption.

Type of Use	Priority	Maximum Daily Use (gpd)
Residential	High	40,000
Commercial	NA	-
Industrial	NA	-

Alternative Water Supply

Wells/Emergency Wells

Currently, the city utilizes two primary wells. There is no alternative source of water should the municipal wells be out of service.

Bottled Water

The city would call on the following sources for bottled water:

- Harmony Foods
 - 55 Center Street West MN West, Harmony, MN 55969
 - (507) 886-2225
- Red Cross-American Red Cross
 - 310 14th St. SE, Rochester, MN 55904
 - (507)-287-2200

Emergency Treatment

The city can contact the following people for technical assistance in the event of a contamination issue:

MDH District Engineer: Seth Ledet, 507-344-2703

Well Contractor: Thein Well (507) 288-5554

Source Management

There is an option for blending water as needed.

Other Water Supply

Non-potable water will be obtained for fire protection and other non-potable uses through mutual aid with Fire Departments located in Canton, Harmony, Mabel, & Decorah Iowa.

New Well

As a last resort, the city would work with the MDH to locate a new well site and construct a new municipal water supply well.

Inventory of Services, Equipment and Supplies

The following table contains a list of services, equipment, and supplies that would possibly be needed in the event of a disruption in the water system. Some of these resources are not immediately available but can be obtained. The approximate time it would take to acquire is indicated.

Description	Owner	Telephone	Location	Acquisition Time
Well repair	Thein Well	507-288-5554	7025 US Highway 63, Rochester, MN 55906	4 hours
Pump repair	Thein Well	507-288-5554	7025 US Highway 63, Rochester, MN 55906	4 hours
Electrician	Johnson Electric	507-259-6582	16876 County 23 Canton, MN	1 hour
Plumber	Kingsley Mercantile Plumbing	507-886-2323	20 Center St. East Harmony, MN	1 hour
Backhoe/Excavator	TLC Excavating	(563) 883-3478	3742 288 th Ave. Decorah, IA 52101	2 hours
Chemical feed	Hawkins Inc.	952-992-9527 612-331-9100	1425 Red Rock Road St. Paul MN 55119	2 hr
Meter repair	Dakota Supply Group	507-285-2500	1524 3 rd Ave SE, Rochester MN 55904	3 hours
Generator	NA			
Valves	Dakota Supply Group	507-285-5389	1524 3 rd Ave SE, Rochester MN 55904	3 hours
Pipe & fittings	Dakota Supply Group	507-285-5389	1524 3 rd Ave SE, Rochester MN 55904	3 hours

Emergency Response Guidance for Community Public Water Systems

You must call the State Duty Officer when the following events occur, and before issuing an emergency Drinking Water Advisory. The State Duty Officer is a message relay service and will notify the appropriate organizations for response (MN Dept. of Health, MN Dept. of Agriculture, local Chemical Assessment Team, etc.). *If you are planning to issue a pre-planned, non-emergency Drinking Water Advisory: call MDH before issuing the advisory at 651-201-4700 during business hours.*

Intentional event

- **Attempted or actual break-in at a water facility**
- **Possible or actual contamination incident**

As soon as possible:

- Call local law enforcement (911)
- Call the State Duty Officer (1-800-422-0798) and say, "My drinking water system has had a [describe incident]."

Unintentional event

- **Possible or actual contamination incident**
- **Significant treatment chemical spill, release, or overfeed**
- **Contaminant or contaminated water release that may threaten source water**
- **Natural disaster**
- **Loss of power**
- **Large-sector or system-wide low pressure, or no pressure, in the distribution system**

As soon as possible:

- Call the State Duty Officer (1-800-422-0798) and say, "My drinking water system has had a [describe incident]."
 - If you also need MNWARN, say, "My drinking water system is requesting assistance from MNWARN."

Gas chlorine leak

As soon as possible:

- Leave the area and evacuate the nearby population
- Make all of the following calls within 15 minutes of detecting the event:
 - Call local law enforcement (911) if you need help evacuating the area
 - Call the State Duty Officer (1-800-422-0798) and say, "My drinking water system has had a gas chlorine leak."
 - Call the National Response Center (1-800-424-8802)

Information about the State Duty Officer

Do not hesitate to use this service to request assistance! Calls to the State Duty Officer are routed to the appropriate organizations for response.

Examples of situations that may require a State Duty Officer call:

- Large-sector or system-wide low pressure, or no pressure, in the distribution system
- Significant treatment chemical spill, release, or overfeed
- Contaminant or contaminated water release that may threaten source water
- Break-in
- Natural disaster
- Power loss
- Suspected or actual contamination of drinking water

Public Information Plan

Primary and alternate spokesperson for Lansing Township would be chair Duane Mortenson and township supervisors.

The responsibilities of the primary spokesperson:

1. Coordinate and compile information regarding water supply emergency.
2. Give public statements regarding the water supply emergency.
3. Schedule official meetings between the city and members of the media, if needed; and
4. Coordinate efforts to keep the public informed about the water supply emergency.

Public Information Center Location during a Water Disruption:

Canton Town Hall - located at 107 North Ash Street Canton

Canton Town Hall would open as needed to respond and coordinate response to emergency.

Information to be conveyed to the public and media:

1. Name of water system.
2. Nature of the water supply disruption.
3. Steps being taken to restore or replace the water supply.
4. Source of contamination or disruption
5. Associated public health hazard,
6. Steps public can take to minimize risk from hazard
7. Steps the water system is taking to minimize risk from hazard
8. Other information

Media contacts and other ways of disseminating information to residents

Media	Name	Telephone	Location
Newspaper	Fillmore County Journal	(507)765-2151	Preston
Television	KTTC	507-288-4444	Rochester
Radio	KFIL	507-765-3856	Preston

Critical Response Personnel

Title	Name	Telephone	Response Assignment
Response Coordinator	Anne Koliha- City Clerk	(507) 743-5000 clerk@cantonmn.com	Coordinates actions to address emergency
Alt. Response Coordinator	Mayor Kristy Ziegler	(507) 743-5000	Coordinates actions to address emergency
Water Operator	Jon Nordsving	(507) 743-5000 publicworks@cantonmn.com	Direct or contact individuals and businesses to resolve issue(s)
Alt. Water Operator	Jim Davis	(507) 743-5000 publicworks@cantonmn.com	Direct or contact individuals and businesses to resolve issue(s)
Public Relations	Anne Koliha- City Clerk	(507) 743-5000 clerk@cantonmn.com	Contact media to inform citizens/businesses of emergency
Alt. Public Relations	Mayor Kristy Ziegler	(507) 743-5000	Contact media to inform citizens/businesses of emergency
Public Health/Medical	Harmony Ambulance	(507) 886-5211	Assist city as needed to address emergency

Emergency Contact List

Personnel	Name	Email/Telephone	Alt. phone
Mayor/Board Chair	Kristy Ziegler	greenjaynovel@gmail.com	
Council Members	Jason Magnuson	Jmagnuson71@gmail.com	
Council Members	Jen Dowling	Dowling8440@gmail.com	
Council Members	George Hafner	hafner@acegroup.cc	
Council Members	Jeremy Hanson	Jeremyhanson784@gmail.com	
Township Clerk	Anne Koliha	clerk@cantonmn.com (507) 743- 5000	
Public Works Director	Jon Nordsving	publicworks@cantonmn.com	
At. Public Works	Jim Davis	publicworks@cantonmn.com	
State Incident Duty Officer – contact also for MN Warn		1-800-422-0798	
Fillmore County Emergency Manager	Jason Harmening	(507) 765-2830	
Fillmore County Sheriff	John DeGeorge	(507) 765-3874	
Power Company	MiEnergy	(800) 432-2285	
Highway Department	Ronald Gregg	(507) 765-3854	
MPCA Groundwater Division	MPCA Emergency Line	1-800-422-0798	

MDH	MDH Emergency Line	651-201-5386	
Internet			

Mitigation and Conservation

The following are ways the city of Canton will reduce the risk of disruption to the water supply system and improve response capabilities.

Infrastructure maintenance/upgrades: The system is flushed twice a year in the spring and the fall. The water tower is cleaned annually. A map of the distribution system is available at city hall. The distribution system has some sections that are quite old and prone to waterline breaks. These breaks are fixed as they occur, and upgrades are done as necessary.

Regular inspection of storage tank, well, and pump house: These facilities are inspected daily. The pump house has a keyed entry and is always locked.

Water system emergency training: Water operators receive continued education and training through the Minnesota Rural Water Association and the Minnesota Chapter of the American Water Works Association in conjunction with MDH.

System valving to isolate problems: The city can partition off sections of the water system to isolate for needed repairs.

Sanitation procedures for construction/repairs: All disinfection procedures are performed per MDH specifications.

Water Meters: The city has water meters. Besides providing accurate information for billing the meters help to identify the locations of possible leaks in the system.

