

Lansing Township

Wellhead Protection Plan Part 2

Moderate Vulnerability



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

Effective dates: 2022-2031



Lansing Township Drinking Water Supply Management Area (DWSMA) MN-01196 - Moderate Vulnerability

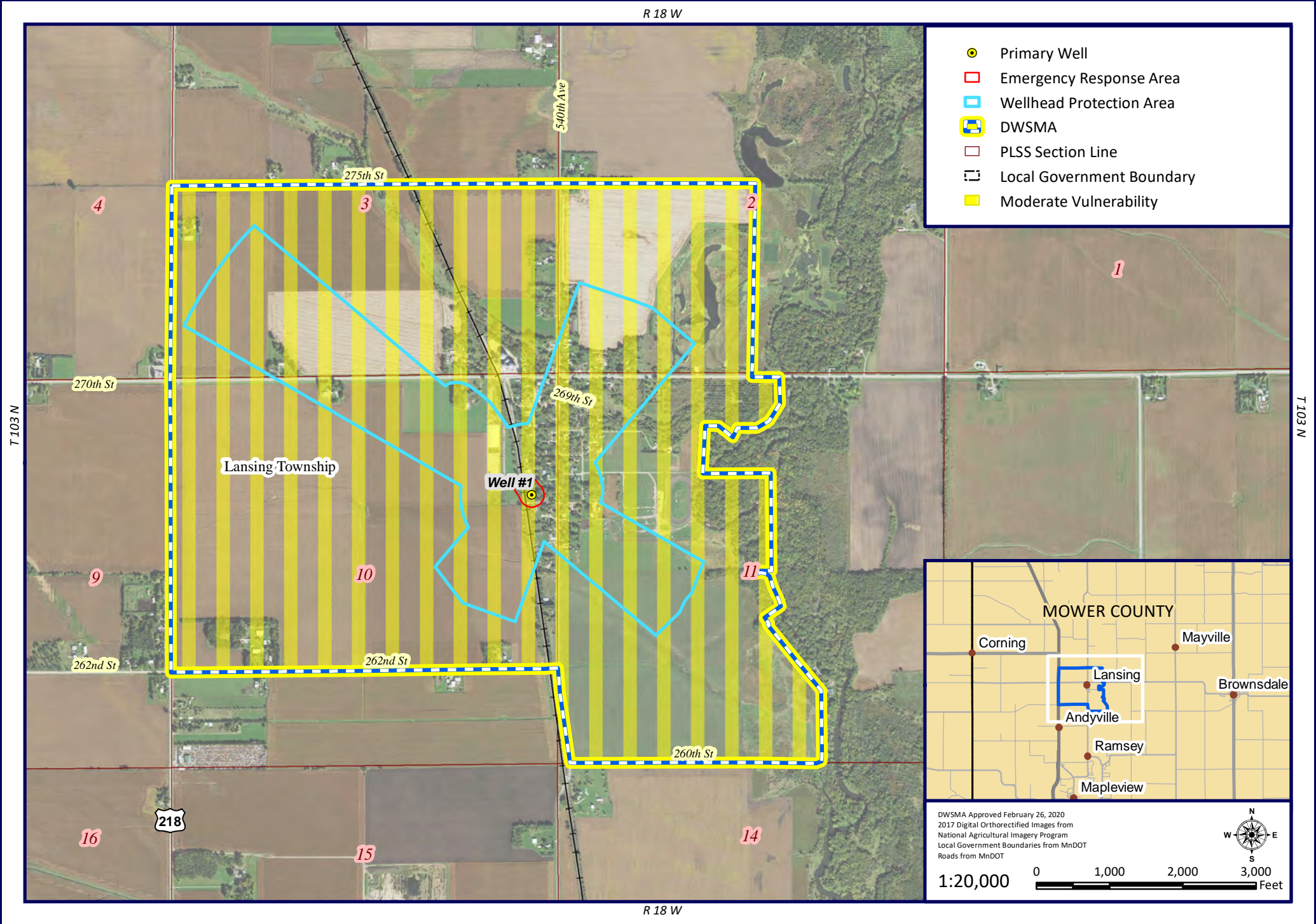


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List of Acronyms

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

Lansing Township- Public Water Supply Source Profile

Contact Information

Name: Lansing Township
Address: 26938 539th Ave,
PO Box 85
Lansing, MN 55950

Telephone #: na

Email: Inkallas@gmail.com

Wellhead Protection Manager: Kristine Allas, Township Clerk

Wellhead Protection Team: Kristine Allas (Township Clerk), Bernie Boverhuis (Water Superintendent), Lynn Allas (council member), Jennifer Ronnenberg (MDH)

Public Water Source – History and Present Condition

Lansing Township's Drinking Water Supply Management Area (DWSMA) is in north central Mower County, MN (T103N, R18W, Sections 2, 3, 11, & 11) in the township of Lansing. The population served by the public water system is 180 residents with 93 service connections.

Based on historical documents, the community of Lansing and Lansing Township did not have a public water system until 2004. All drinking water was supplied by private wells. Wells of significance include an old creamery well, a possible railroad well, and several other high-capacity wells.

Presently, Lansing Township has one primary well referred to as Lansing Well #1 (UN 698932). This is a community, municipal well owned and operated by the Lansing Township Board. Lansing Well 1 is a moderately vulnerable well drilled to 397 feet to the Spillville-Galena aquifer units. The well is located on separate, township-controlled property. Lansing Township's Drinking Water Supply Management Area (DWSMA) is 1,328 acres and is moderately vulnerable to human sourced contamination.

The Wellhead Protection Plan is for the one active, primary well.

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. The Part 1 also includes an assessment of the vulnerability of the primary well 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.

Part 2 of the Wellhead Protection Plan identifies issues, problems, and opportunities for the management of the wells 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 the Part 2 as indicated in the Scoping 2 Decision Notice (Exhibit A). This includes an inventory of potential contaminant sources and the Inner Wellhead Management Zone report.

Section 1: Goals, Objectives, and Plan of Action

A: Issues, Problems and Opportunities (4720.5230)

Identifying water and land use issues is where Lansing Township started to define what their Plan of Action would look like. 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
1. Geologic record shows potential vulnerabilities that are not fully understood.	Aquifer DWSMA Well water quality	Unknown pathways for surface water to reach the aquifer may exist, increasing the risk of future drinking water contamination.	The township can assist local and state partners during research and data collection to help improve future assessments.	No controls exist currently. The township has the authority to work with partners for data collection efforts.
2. Well #1 has detectable tritium, and a slightly elevated chloride/bromide ratio.	Aquifer Well water quality	Detectable levels of these indicators provide evidence that pathways for surface water to enter either the wells or the aquifer likely exist.	The township can assist local and state partners during research and data collection to help improve future assessments.	No controls exist currently. The township has the authority to work with partners for data collection efforts.
3. There may be unused/unsealed wells on private properties, such as creamery and railroad wells, private commercial and residential wells.	Aquifer DWSMA Well water quality	Unused/unsealed wells could present a contamination risk if wells are deep enough, or faulty in construction.	The township can work with MDH to determine the risk to the city water supply and identify grant opportunities to assist property owners with well sealing.	The township does not have authority to require that unused wells be sealed, however, MDH Well Code requires that unused wells are properly sealed if located.
4. The township operates with only one well.	Well water quality	If the well becomes disabled, the township will be unable to provide potable water.	The township can explore the option of constructing a new well to serve as a second public water system well. Activities moving towards the construction of a second well can be accomplished utilizing MDH staff assistance and MDH SWP grant funds.	The township has the necessary authorities to explore the construction of an additional public well and should work closely with MDH and other resource partners.

Issue Identified	Feature Impacted	Problem with the Identified Issue	Opportunity for management	Adequacy of Existing Controls to Address the Issue
5. The township does not have dedicated back-up power and has a need for improved security and protection devices for the wellhead.	Well water quality	In the event of a water supply disruption, the township has limited supply storage. There is also a contamination risk due to loss of pressure in the distribution system.	The purchase and installation of a back-up generator and wellhead protection devices are grant eligible activities using MDH SWP grants.	The township has authority to purchase and install a generator and protective devices. The township is not required to have a back-up source of power.
6. Historic leak and tank site exist in the DWSMA.	Aquifer DWSMA Well water quality	Legacy contaminants may still be in soils. No detections in well water to date. Potential exists for future detections	Continue SDWA monitoring and watch results for any changes.	SDWA requires regular water quality sampling and inspections. The township has the authority to test wells for water quality changes. MPCA has authority to oversee contamination sites.
7. Hwy 2 and railway routes cross through the moderately vulnerable DWSMA.	Aquifer DWSMA Well water quality	If leaks or spills occur on this road or rail line, there is a potential for contaminants to reach the wells and/or aquifer.	Training for emergency response to leaks or spills would improve the ability to manage hazards before impacts to drinking water occur.	Emergency response can coordinate training as needed. Duty Officers have the authority to assist with coordinating agencies/entities.

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 November 17th, 2020, 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 township council and public on the plan.
 - Comments received at public hearing: **None**

B. Wellhead Protection Goals (4720.5240)

After identifying issues and opportunities, the Lansing Township defined goals they want to achieve for the wells, aquifers, and the drinking water supply management areas over the next ten years.

Lansing Township 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 township 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.

Goal 4: Continue to monitor for possible contaminants to the public water supply to ensure water quality for the residents.

Goal 5: Support ongoing data collection efforts to enhance future WHP activities.

Goal 6: Increase awareness among public officials, landowners, and the public about the importance of WHP in protecting the drinking water supply.

C. Objectives and Plan of Action (4720.5250)

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

Lansing Township identified the following objectives:

Objective 1: Well Management - Preserve the safe use of the well operated by the township.

Objective 2: Security and Emergency Planning - Improve response to drinking water disruptions.

Objective 3: Land Use Controls - Ensure that land use controls protect the well and the aquifer.

Objective 4: Data Collection – Compile information useful for well and aquifer protection.

Objective 5: Education and Outreach – Improve public understanding of drinking water topics.

Establishing Priorities

The plan must establish priorities, knowing that not all objectives and actions can be worked on at the same time. Priorities for the Lansing Township 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: Strategy # is the number to use when applying for MDH Source Water Protection grants.

Table 2: Plan of Action

ID #	Category	Obj.	Management Strategy	Recommended Year(s)	Partners	Resources	Notes
1	Class V Injection Wells	1	Notify MDH source water protection planner if a Class V well is identified in the Drinking Water Supply Management Area.	As Needed	MDH, MRWA, EPA	For more information about Class V wells: https://www.epa.gov/uic/basic-information-about-class-v-injection-wells	Class V wells are regulated by the EPA.
2	Data Collection	4	Mark the correct locations of wells in the Drinking Water Supply Management Area using a provided map.	2023, 2024	MDH, MRWA, County, Mower SWCD	Locations of known wells can be reviewed at: https://mnwellindex.web.health.state.mn.us/ . Check with the county and SWCD staff for information about historic well inventories or updates to use and sealing status of private wells. MDH Source Water Protection grants are available for costs (if any) associated with well inventories.	This is a priority activity.
3	Data Collection	4	Contact well owners in the Drinking Water Supply Management Area, or well drillers to obtain missing well logs or numbers.	2025, 2026	MDH, County, Mower SWCD, Well drillers		This is a priority activity. This information can be useful to refine the vulnerability assessments for the next amendment.
4	Data Collection	4	Sample Well #1 (698932) for tritium, nitrate-nitrogen, ammonia, chloride, and bromide in preparation for a plan amendment.	2027	MDH Source Water Protection sampling staff or District Engineer	Sampling is contingent of funding assistance from MDH for sampling expenses and analysis. The community may need to collect the samples and ship to MDH.	This is a priority activity. Sampling includes the well and the Cedar River. This sampling is separate from routine Safe Drinking Water Act. Information from this sampling will be used to refine assessments for the next amendment.

ID #	Category	Obj.	Management Strategy	Recommended Year(s)	Partners	Resources	Notes
5	Data Collection	4	Update the inventory of potential contamination sources.	2024, 2027, 2030	MDH, MPCA, MDA	<p>You can monitor changes to potential contaminant sources regulated by MPCA and MDA at "What's in My Neighborhood?" websites: https://www.pca.state.mn.us/data/whats-my-neighborhood https://www.mda.state.mn.us/chemicals/s-pills/incidentresponse/disclaimer</p>	This is a priority activity. Keep the Potential Contaminant Source Inventory in a digital format for easy revisions. An Excel workbook and spreadsheet of the initial inventory will be provided by MDH.
6	Education and Outreach	5	Display a map of the Drinking Water Supply Management Area in a public place.	2023	MDH	MDH will provide a free, wall-sized, display quality map of the Drinking Water Supply Management Area.	
7	Education and Outreach	5	Work with partners to include wellhead protection information in local plans.	As Needed	County, Mower SWCD, Cedar River Watershed District		Types of plans include county land use and comprehensive land use, Cedar-Wapsipinicon Comprehensive Water Management Plan, emergency response, etc.
8	Education and Outreach	5	Provide drinking water specific informational materials at township events.	2023, 2026, 2029	MDH, MRWA, Mower County, Mower SWCD, Cedar River Watershed District	<p>You can find free education and outreach materials on the MN Rural Water Association website at: http://www.mrwa.com/swedu.html and http://www.mrwa.com/waterconservation.html. MDH will also supply electronic versions of brochures, factsheets and other materials.</p>	This can include any combination of methods the township currently uses. Examples include newsletters, public postings, social media, newspapers, television, etc.

ID #	Category	Obj.	Management Strategy	Recommended Year(s)	Partners	Resources	Notes
9	Education and Outreach	5	Post the wellhead protection plan on the public water system's webpage.	2023	MDH	MDH can provide materials in alternate formats as needed.	
10	Inner Wellhead Management Zone (IWMZ)	1	Implement measures listed in the Inner Wellhead Management Zone report and Sanitary Survey report.	As Needed	MDH Source Water Protection and District Engineer staff	MDH Source Water Protection grants are available if needed.	This is a priority activity.
11	Inner Wellhead Management Zone (IWMZ)	1	Help planning staff complete or update the Inner Wellhead Management Zone inventory.	2026, 2031	MDH staff		This is a priority activity.
12	Land Use Controls	3	Take part in Cedar River One Watershed, One Plan meetings related to water planning.	As Needed	Mower County Soil & Water Conservation District and Cedar River Watershed District		The Mower SWCD also administers the business of the Cedar Watershed District.
13	Land Use Controls	3	Ask Mower County and Mower SWCD to include drinking water protection in their comprehensive plans.	2023	Local government units such as Mower County, Mower SWCD, and Cedar River Watershed District		Several types of comprehensive plans exist with land use controls or programs/practices that impact drinking water resources.
14	Land Use Controls	3	Include drinking water protection in the township comprehensive plan	As Needed			

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ID #	Category	Obj.	Management Strategy	Recommended Year(s)	Partners	Resources	Notes
15	Private Wells	1	Seal unused wells.	As Needed	MDH, MRWA, Mower SWCD	MDH Source Water Protection grants are available for wells located in the DWSMA. Partners also have cost-share grants for well sealing.	This a priority activity because unused, unsealed wells have the potential to contaminate aquifers used by the city.
16	Private Wells	1	Identify unused wells and prioritize for sealing.	2025, 2026, 2027	MDH, Mower County, Mower SWCD	There are many resources and partners that can assist with well inventory and assessment. MDH Source Water Protection grants are available for any costs associated with well inventory and assessment within the DWSMA.	This is a priority activity. Many communities start this process with a landowner survey.
17	Private Wells	1	Conduct a magnetometer survey to locate unused wells.	As Needed	MDH staff: Source Water Protection Planner, Well Management Hydrologist	MDH staff are able to provide magnetometer surveys at no cost. If a private contractor is used, this is an eligible expense for the MDH Source Water Protection grants.	
18	Private Wells	1	Complete a review of historic well and land use information to identify lost wells.	2022, 2023, 2024	MDH, Mower County, Mower SWCD	MDH Source Water Protection unit has provided a review document of historic public well information.	This process has been started by MDH and used during the planning phase of the Wellhead Protection Plan. This measure is to continue and complete the review. In addition to the Source Water Protection planner, the MDH Well Management section can assist if requested.

ID #	Category	Obj.	Management Strategy	Recommended Year(s)	Partners	Resources	Notes
19	Private Wells	1	Provide information to property owners on well management and well sealing.	2023, 2026, 2029	MDH, MRWA, Mower County, Mower SWCD	You can find free education and outreach materials on the MN Rural Water Association website at: http://www.mrwa.com/swedu.html and http://www.mrwa.com/waterconservation.html	
20	Private Wells	1	Work with MN Association of Townships to develop an ordinance to control the construction of wells in the township's jurisdiction.	As Needed	MN Association of Townships	MDH can provide examples of ordinances used by other communities.	
21	Public Wells	1	Contact MDH Hydrologist for initial discussion prior to planning for a new public well.	As Needed	MDH Source Water Protection hydrologist and planner.		This is to involve the MDH Hydrologist early in the planning process to ensure that location considerations are assessed prior to cost-incurring site investigations.

ID #	Category	Obj.	Management Strategy	Recommended Year(s)	Partners	Resources	Notes
22	Security and Emergency Planning	2	Develop a spill response plan in collaboration with Northern Country Cooperative to address emergency response needs.	2026, 2027	Northern Country Cooperative, Mower County Emergency Management department, Austin Fire Department, MN Pollution Control Agency, MN Dept. of Agriculture, MN Dept of Public Safety	Work with local partners to create a plan to address critical concerns and maintain communication in the event of a spill or other emergency. MPCA ERP: https://www.pca.state.mn.us/waste/emergency-response	MPCA works with chemical spills, MDA works with fertilizer or pesticide spills, Dept. of Public Safety works with chemical assessment teams and the State Fire Marshall. The MPCA Emergency Response Program is also responsible for planning and preparing for spills and environmental emergencies. The program participates in training and exercises with partners, provides oil spill response training to fire and public works departments, reviews companies' spill prevention and response plans, and plays a role in enforcement.
23	Security and Emergency Planning	2	Provide emergency response offices with a Drinking Water Supply Management Area map and wellhead protection information.	2023	May include county emergency management, local law enforcement and fire departments, highway departments and railroad entities.	Refer to the Part 1 plan summary for valuable information to provide.	It is recommended to provide copies of the DWSMA map and the Part 1 Wellhead Protection Plan summary that explains the vulnerability of the DWSMA.

ID #	Category	Obj.	Management Strategy	Recommended Year(s)	Partners	Resources	Notes
24	Security and Emergency Planning	2	In the event of a spill of any hazardous materials on the land or roadway near the public well, contact the duty officer at 1-800-422-0798 to report it.	As Needed	Duty Officer	Report spills of any substance under your control immediately Call the Minnesota Duty Officer at 800-422-0798 or 651-649-5451 (available 24 hours) The Minnesota Duty Officer will alert the MPCA and other relevant state agencies. If there is an immediate threat to life or property, call 911 first!	The Minnesota Pollution Control Agency's Emergency Response Program (ERP) oversees the cleanup of all types of spills and environmental emergencies, such as train derailments, pipeline breaks, and tanker truck accidents that threaten the environment and public health. MPCA responders collaborate with local, county, state, and federal governments to contain and recover spills.
25	Security and Emergency Planning	2	Buy and install security lighting and wellhead barriers related to drinking water protection.	2023, 2024, 2025, 2026	MDH District Engineer and SWP staff.	MDH Source Water Protection grants are available for the cost to purchase and install necessary equipment and supplies.	Improved lighting will help deter unauthorized entry to well and/or pump house. Barriers provide physical protection from damage to the wellhead.
26	Security and Emergency Planning	2	Review and update the contingency strategy as changes occur.	As Needed		MDH will provide an electronic version of the contingency strategy for easy revisions and printing.	The purpose of this activity is to keep your contact information current for when you need it.
27	Security and Emergency Planning	2	Meet with road authorities and railroad coordinator to provide wellhead specific information and discuss their ability to respond to spills.	2023, 2024	County Highway Dept, Railroad coordinator	Refer to the Part 1 plan summary for valuable information to provide.	It is recommended to provide copies of the DWSMA map and the Part 1 Wellhead Protection Plan summary that explains the vulnerability of the DWSMA.

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ID #	Category	Obj.	Management Strategy	Recommended Year(s)	Partners	Resources	Notes
28	Security and Emergency Planning	2	Buy and install a back-up generator related to drinking water protection.	As Needed		MDH Source Water Protection grants are available for costs associated for purchase and installation of a dedicated power generator.	The purpose of this activity is to improve system resilience in the event of a loss of power.
29	Water Conservation	5	Install water meters for all water use connections.	2022, 2023	MDH staff: District Engineer, SWP Planner	New water conservation meters for communities under 1000 in population is an eligible activity for the MDH Source Water Protection grant.	
30	Water Conservation	5	Change the utility billing method from flat rate to usage-based rate.	As Needed			
31	Water Conservation	5	Provide information to residents about water conservation tips.	2024, 2027, 2030	MDH, MRWA	You can find free education and outreach materials on the MN Rural Water Association website at: http://www.mrwa.com/swedu.html and http://www.mrwa.com/waterconservation.html . MDH will also supply electronic versions of brochures, factsheets and other materials.	

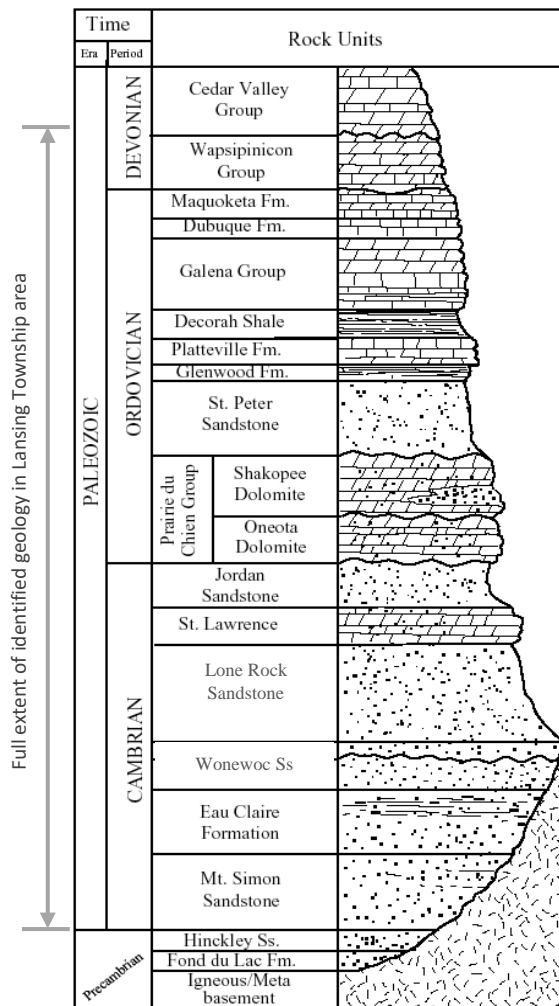
Section 2: Information for Plan Development

A: Data Elements and Assessment (4720.5200)

The Minnesota Department of Health requires that certain data elements be included in the Part II Wellhead Protection Plan. (Exhibit A). The data elements selected are based on the vulnerability determination of the primary well and the Drinking Water Supply Management Area (DWSMA). Lansing Township’s well 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 Lansing Township Wellhead Plan.



Lansing Township is located in north-central Mower County, in southeastern Minnesota. This is an area with low topographic relief in the Cedar River watershed. There is 50 to 100 feet of clay-rich till at the land surface except along surface water drainages where coarser alluvial sediments are present. Underlying these glacial – fluvial sediments are bedrock layers, composed of fractured dolostone, limestone, and some shale that are mapped as the lower parts of the Cedar Valley Group and the Wapsipinicon Group. These layers of bedrock are part of the regionally extensive Upper Carbonate Aquifer system. The community water supply well draws groundwater from these rocks from about 170 to 400 feet below the ground surface. Bedrock composed of dolostone and limestone is commonly found to be fractured and is soluble. Because of the solubility, it often contains solution enhanced features, both horizontal and vertical fractures and crevices, which potentially transmit water at a much greater rate than that of porous materials such as sandstone or sand and gravel. Groundwater flow directions in the Upper Carbonate Aquifer appear to converge upgradient (west) of Lansing Township and flow is more direct to the Cedar River to the east-southeast under Lansing Township.

Pertinent well records including those with information about geologic materials are in Exhibit C. MDH Reports of Investigations on the Water Supply of Lansing Township 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.

Lansing Township is in the Upper Cedar River major (HUC 0708021) and minor (HUC 070802010206) watersheds. A map of the Cedar River watershed can be found in Exhibit H. More locally, the minor watersheds include Lansing Creek and a seasonal stream that both flow easterly to the Cedar River. Since surface water is not considered a significant factor in drinking water quality for Lansing Township, no additional assessment is needed.

A FEMA delineated 100-year floodplain map can be found in Exhibit D. FEMA has delineated the eastern boundary of the DWSMA and a small portion of Lansing Creek, a tributary stream to the Cedar River as part of the 100-year floodplain. All other parts of the DWSMA are non-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. There are 161 individual parcels in the DWSMA. 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 at the Land Records Hub – Mower County Tax Parcel Viewer on the Mower County website. A land cover map and table supplied by MDH is shown in Exhibit F. The DWSMA is 1,328 acres and is predominately 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. The DWSMA is entirely within the limits of Lansing Township.

Lansing Township has a planning and zoning ordinance with authority over conditional use permits. They have an established cross connection ordinance prohibiting any other water supply from being connected to the Lansing Township water supply. This ordinance also prohibits the installation of a private water system when it is feasible to connect to the public system. Mower County planning and zoning programs apply where the township does not have jurisdiction, such as SSTs, floodplain, and shoreland areas. The township has adopted the Mower County official zoning map, land in the DWSMAs is zoned as residential and rural

management. Areas just outside and surrounding the DWSMA are zoned as agricultural. The Mower County zoning map is shown in Exhibit G. Lansing Township has an adopted comprehensive plan but does not have an available digital format corresponding map. In the comprehensive plan, projected land use in the DWSMAs is mostly low-density residential and the preservation of prime agricultural land.

Potential Contaminant Source Inventory (PCSI) – The vulnerability of the DWSMA determine which types of potential contaminant sources need to be inventoried. In moderate vulnerability settings, several types of land uses, and items need to be inventoried, including wells and Class V injection wells. 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 DMSMA

Potential Contaminant Source Type (DWSMA)	Total	# In WHPA	# In ERA	Level of Risk
Municipal Wells (WEL)	1	1	1	low
Other Wells (WEL) - active status	28	10	0	Moderate
Potential Contaminant Source: Superfund Site - inactive	1	0	0	Low
Spill (SPL) – closed	4	2	0	Moderate
Leaking Underground Storage Tank (LUST) – inactive status	1	1	0	Moderate
Total	35	14	1	

The PCSI was completed by the Wellhead Protection Manager, township 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 Lansing Township Municipal System, MPCA and MDA What's In My Neighborhood, other historical references, and from the knowledge of township 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.

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 city's 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.*
-

IWMZ – The Inner Wellhead Management Zone (IWMZ) is the area within 200 feet of a public water supply. Within the IWMZ, *all* contaminant sources need to be inventoried and their distances from the municipal wells 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 12/03/2020 with report pages in Exhibit J. The last page of each report has measures to complete. Consult with MDH staff 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	Level of Risk
<i>SB1: Buried sewer line-single building connections</i>	2	Low
<i>SB2: Buried municipal sanitary line</i>	1	Low
<i>PC1: Agricultural Storage Area</i>	1	Moderate
<i>PC1: train railway</i>	1	Moderate

Public Utility Services: In a moderate vulnerability setting, the data elements needed include maps of transportation routes, township 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.

There are two highways of consideration, US State Highway 218 and County Highway 2. Hwy 218 runs north-south and defines the west edge of the DWSMA, Hwy 2 runs east-west through the center of the DWSMA and is the most important road to consider. Primary types of potentially hazardous substances transported on these highways are agricultural chemicals, solid waste, and petroleum products. A railway for the Canadian-Pacific also runs north-south through the DWSMA and transports a variety of products daily. A map of transportation routes is part of the zoning map in Exhibit G and township utilities are in Exhibit K. No liquid pipelines exist in this area. Records of construction of the public water supply wells are in Exhibit B.

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 Lansing Township’s DWMSA are shown in Table 5. The Lansing Township, with MNDNR permit number 2016-0956, has a water appropriation limit of 12 million gallons per year. The MNDNR water use information indicates that the township has been using about half of this over the last five years. There are 6 other water appropriators

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

Table 5: Active Water Appropriation Permits in the Lansing Township DWSMA

Permit	Total Vol. (mg/y)	Effective Date	Well	Well depth	Use	2018	2017	2016	2015	2014
2016-0956	12	2016	698932	397	Municipal/Public Water Supply	7.7	6.6	5.9	6.7	6.6
1977-5064	34.5	2015	135605	178	Agriculture/Golf Course Irrigation	1.1	4.0	0.9	1.0	3.4
1980-5002	52	1999	179816	170	Agricultural Irrigation	22.1	11.9	0.0	7.5	30.6
1981-5130	33	2018	178705	120	Agricultural Irrigation	2.0	10.4	0.0	7.2	15.7
2014-2122	43	2014	798155	232	Agricultural Irrigation	6.3	16.9	1.8	10.0	16.0
2015-1435	46	2016	799941	360	Agricultural Irrigation	7.3	7.0	0.1	-	-
2016-1221	20	2017	799934	397	Agricultural Irrigation	7.3	3.6	0.0	0.0	-
Total Water Use						53.8	60.4	8.7	32.4	72.3

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 Lansing Township’s primary well has 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

Well 1 (698932)	Tritium	Nitrate (mg/L)	Chloride (mg/L)	Bromide (mg/L)	Chloride/ Bromide Ratio
7/18/2013			4.06	0.0167	243
8/13/2014		< 0.05			
6/28/2016	1	< 0.05	3.82	0.0178	215

Table 6 shows low detection of tritium in Well 1 and slightly elevated chloride/bromide ratios. Low detections of tritium, lack of human-caused contamination, and the presence of ammonia and arsenic indicates a relatively long residence time of groundwater in the aquifer. There is not believed to be a significant groundwater-surface water connection in the DWSMA. Water used by the PWS well is considered only minimally impacted by surface water, likely due to “leaky” geology and/or unused, unsealed wells.

Other groundwater data includes two wells used by MPCA for ambient groundwater monitoring in 1999. Both wells are privately owned, domestic wells. Sampling occurred on 8/9/1999.

MPCA Reports of Investigation from What’s In My Neighborhood Interactive Mapping:

1. State Superfund Project site (SR0000139): this site is listed with MPCA as “Lansing GW Contamination”. The site is listed as inactive. No additional data is available with this report.
2. Leak site (LS0003706): gasoline leak, some groundwater contamination, no drinking water contamination. Release discovered on 1/1/1991, site closed 9/1/1994.
3. Leak site (LS0017568): leak from underground storage tanks consisted of diesel, fuel oil, and unleaded gasoline leak, groundwater contamination occurred, but no drinking water contamination. Release discovered 4/27/2009, site closed 12/3/2010. Formerly Lansing Corners. This site is on the very outside edge of the DWMSA.

MDA Reports of Investigation from What’s In My Neighborhood Interactive Mapping:

1. Emergency site, case file #94-0546: closed
2. Emergency site, case file #94-0723, Huntting Elevator Co, closed
3. Voluntary Investigation site, case file #96-1254, Terra International, closed

To date, no chemical signature from these sites have been detected in the township well. Watching the chemistry results from ongoing Safe Drinking Water Act monitoring will be important for early detection should contaminants be present.

Assessment of Data Elements

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

As stated in the Part 1 assessment (pg. 14) “The geologic conditions at the well site include a cover of clay-rich geologic materials over the aquifer that is sufficient to retard or prevent the vertical movement of contaminants.” The type of bedrock in the Lansing area is fractured dolostone, limestone, and some shale. These types of bedrock can have “leaky” vertical groundwater movement, which may contribute a slow movement of younger water from the upper aquifers. Other surface water features, such as rivers, stormwater run-off, and floodplains are not thought to directly contribute to the groundwater used by the public water system. More information about the geology in the region and near the well is needed to better determine pathways for water infiltration and transport.

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 township, 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. There have been several contamination events in Lansing in the past, all have inactive or closed status. Some groundwater contamination has occurred, but no known drinking water contaminations. Due to the residence time of the water in the aquifer, and the lack of contaminants detected at levels of concern, human-sourced contaminants at the land surface are not the focus. Principal threats to the public water system are other wells of 100 feet or greater in depth that penetrate through the protective geologic clay layers. Primary protection activity is well management, especially finding and sealing unused wells, monitoring water quality for changes in chemistry, and maintenance of the Inner Wellhead Management Area.

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 township’s current and future water needs. There are several other high-capacity wells in the DWSMA, these wells have been considered in the delineations. No known water-use conflicts or interference exist. Water quantity is not considered a priority at this time.

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.

Water chemistry results are available for the public water supply well. The detectable amounts of tritium, chloride and bromide indicate some surface influence, but is not considered significant. No human caused primary contaminants regulated under the federal Safe Drinking Water Act have been detected in Lansing Township's primary wells at levels high enough to be a concern. Water quality is not a current concern; however, long-term monitoring is important to detect if any contaminants from prior events will reach the aquifer/well.

Overall: Use of the well

As stated in Part 1 of the plan, Lansing Township's primary well meets current State Well Code specifications (MN Rules, part 4725) and draws groundwater from an aquifer that has some geologically protective cover. This protected geologic setting and satisfactory water chemistry results provides for the continued use of the well.

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 in Lansing Township or the surrounding areas in the next ten years.

- **Land use**

The Lansing Township expects minimal growth to occur, expansion of residential areas.

- **Groundwater**

No changes are anticipated to the groundwater quantity and quality.

Assessment of Potential Aquifer Impact

- **Changes identified above**

No negative impacts to the aquifer or the wells are expected.

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

Many programs exist to assist the township in protecting their wells and aquifer. (See Table 7 - Existing Land Government Programs and Regulations)

Table 7 - Existing Land Government Programs and Regulations

Entity	Level	Program/Regulation
Lansing Township	Local	The township follows its own ordinance with a zoning and permitting program. This ordinance controls conditional land use for multiple types of entities.
Cedar River Watershed District	Local	The main purpose of the watershed district is to mitigate flood damage and improve water quality of the Cedar River Watershed. The district has a permitting program for stormwater, drainage, floodplain, waterbody alterations and erosion control. The district may influence land uses in the DWSMA areas outside of township jurisdiction.
Mower County	Local	The County implements a land use planning and zoning ordinance in the township outside the jurisdiction of the township. Land use activities proposed in the future that may impact the aquifer could be addressed through these processes.
Mower 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 Cedar -Wapsipinicon 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 township.
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 Lansing Township board. The township clerk was identified as the Wellhead Protection Manager. The Wellhead Protection Manager will periodically report to the township board about the progress of implementation activities. The township will maintain documentation of implementation activities.

Education on wellhead protection and best management practices for dealing with wells and Class V injection well will rely on existing educational materials.

Township staff time for implementing the plan and distribution of any educational materials or announcements will be paid for out of the Lansing Township subordinate service district 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. Lansing Township's evaluation approach is to:

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

Lansing Township 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 township staff.

2. Document the implementation of wellhead protection management strategies.

Lansing Township will maintain a file related to implementing wellhead protection activities.

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

The Lansing Township 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 manager 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 manager will provide this evaluation to the township board. 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 Township is served by one primary well, and one elevated storage tank. The tank has a storage capacity of 50,000 gallons.

	Well #1 (698932), Primary
Supply Source	Groundwater: Spillville-Galena aquifers
Year Constructed	2004
Well Depth (ft.)	397
Casing Diameter (in.)	12x8
Casing Depth (ft.)	166
Pump Capacity (gpm)	100
Pump Rate (gpm)	100

2. Water Treatment

Corrosion Control (Lead/Copper): stabilization/inhibitors/polyphosphates

Disinfection: chlorine/gas

Fluoride: fluoridation/Hydrofluosilicic acid

3. Distribution Lines and Water Values

The Lansing Township water distribution lines range 4 inch in diameter to 8 inch in diameter. Water main maps are located at the Lansing Township pumphouse at 26521 265th Street.

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	35,000
Commercial	NA	-
Industrial	NA	-

Alternative Water Supply

Wells/Emergency Wells

Currently, the city uses one primary well for all water services. There is no alternate source of water should the municipal well be out of service.

Bottled Water

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

- Kwik Trip
 - 1300 14th St. NE, Austin, MN 55912
- 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: Katie Callais, 507-206-2724

Well Contractor: Thein Well

Source Management

There is an option for blending water as needed.

Other Water Supply

Lansing Township would obtain water for non-potable uses, such as fire protection through a mutual aid agreement available as a member of MnWARN.

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	1 hr
Pump repair	MN Pump Works	507-645-2533	1 Cannon St. West, Dundas, MN 55019	1hr
Electrician	Fox Electric	507-433-7184	500 10 th St. NE, Austin, MN	2 min
Plumber	Harty Mechanical	507-437-8201	1600 1 st Ave NE, Austin, MN	?
Backhoe/Excavator	Bastyr & Lickteig Excavation	507-438-1586	2611 31 st St. SW, Austin, MN	?
Chemical feed	Hawkins Inc.	952-992-9527 612-331-9100	1425 Red Rock Road St. Paul MN 55119	2 hr
Meter repair	Core and Main	507-285-5389	3755 25 th St SE Rochester MN 55904	?
Generator	NA			
Valves	Core and Main	507-285-5389	3755 25 th St SE Rochester MN 55904	?
Pipe & fittings	Core and main	507-285-5389	3755 25 th St SE Rochester MN 55904	?

Contingency Strategy Procedures

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:

Lansing Town Hall located at 26938 539th Ave

Lansing 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	Email
Newspaper	Austin Daily Herald	507-434-8851	newsroom@austindailyherald.com
Television	KTTC	507-288-4444	news@kttc.com
Other	Lansing Township website- www.lansingtowshipMN.org		

Critical Response Personnel

Title	Name	Telephone	Response Assignment
Response Coordinator	Kristine Allas	507-438-4317	Coordinates actions to address emergency
Alt. Response Coordinator			Coordinates actions to address emergency
Water Operator	Bernie Boverhuis		Direct or contact individuals and businesses to resolve issue(s)
Alt. Water Operator			Direct or contact individuals and businesses to resolve issue(s)
Public Relations			Contact media to inform citizens/businesses of emergency
Alt. Public Relations			Contact media to inform citizens/businesses of emergency
Public Health/Medical	Mower County Public Health	507-437-9701	Assist city as needed to address emergency

Emergency Contact List

Personnel	Name	Home/Work Telephone	Alt. Telephone
Mayor/Board Chair	Duane Mortenson	507-438-1278	
Council Members	Gary Braaten	507-438-5494	
Council Members	Lynn Allas	507-438-8992	
Council Members	Mark Ratigan	507-438-6593	
Council Members	Steve Torgerson	507-219-9555	
Township Clerk	Kristine Allas	507-438-4317	
Public Works Operator	Bernie Boverhuis	507-438-5014	
At. Public Works	-	-	
State Incident Duty Officer – contact also for MN Warn	On call staff	1-800-422-0798	
Mower County Emergency Manager	Amy Lammey	507-437-9549	
Mower County Sheriff	Steve Sandvik	507-437-9400	
Austin Fire Dept. Chief	Jim McCoy	507-433-3405	
Power Company	Austin Public Utilities	507-433-8886	
Highway Department	Michal Hanson	507-437-7718	
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 Lansing Township will reduce the risk of disruption to the water supply system and improve response capabilities.

Infrastructure maintenance/upgrades: The water system is flushed twice per year and periodically as needed. Water lines are also replaced as needed.

Regular inspection of storage tank, well, and pump house: The well house and chemical room have keyed entries and are inspected daily. The well is located near the pump house on township owned property.

Water system emergency training: Water operators receive continued education and training through the Minnesota Rural Water Association and the Minnesota Department of Health.

System valving to isolate problems: The city has the ability to 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: Lansing Township has a meter at the well but does not have water meters for end users.

Rate structure: Water is billed at a flat rate fee that is reviewed periodically.

Appendix: Exhibits for Lansing Township Wellhead Protection Plan Part II

Exhibit A: Scoping 2 Decision Notice and Meeting Summary

Exhibit B: Political Boundary, DWSMA and Vulnerability Map

Exhibit C: Public Well Records and Logs

Exhibit D: FEMA Floodplain Map

Exhibit E: Parcel Map

Exhibit F: Land Cover Map and Table

Exhibit G: Zoning Map

Exhibit H: Watershed District Map

Exhibit I: PCSI Map and Table

Exhibit J: Inner Wellhead Management Zone Reports

Exhibit K: Public Utility Maps

Exhibit L: Historic Well Reports and Summary

Exhibit A:
Scoping 2 Decision Notice and Meeting Summary



Protecting, Maintaining and Improving the Health of All Minnesotans

October 20, 2020

Ms. Kristine Allas, Clerk
Lansing Township
P.O. Box 85
Lansing Township, Minnesota 55950-0085

Subject: Scoping 2 Decision Notice and Meeting Summary – Lansing Township – PWSID 1500022

Dear Ms. Allas,

This letter provides notice of the results of a scoping meeting held with you on October 8, 2020, at Lansing Town Hall regarding wellhead protection (WHP) planning. During the meeting, we discussed the data elements that must be compiled and assessed to prepare the part of the WHP plan related to the management of potential contaminants in the approved drinking water supply management area. The enclosed Scoping 2 Decision Notice lists the data elements discussed at the meeting. We also discussed a summary of planning issues and recommendations that were identified during the Part 1 WHP Plan development process which should be considered for inclusion in your Part 2 WHP Plan.

Lansing Township has met the requirement to distribute copies of the first part of the WHP plan to local units of government. Lansing Township has not met the requirement to hold an informational meeting for the public. Lansing Township will have until May 31, 2021, to complete its WHP plan.

MDH will be working with Lansing Township staff to develop a draft of the remainder of the WHP plan. I will be contacting you to review the progress of the development of Part 2 of your plan. Upon request, the Technical Assistance Planner can provide a glossary of terminology, identification of information sources for the required Data Elements, and other technical assistance documents. If you have any questions regarding the enclosed notice, contact me by email at jennifer.ronnenberg@state.mn.us or by phone at 507-206-2734.

Sincerely,

A handwritten signature in black ink that reads 'Jennifer Ronnenberg'.

Jennifer Ronnenberg, Principal Planner
Source Water Protection
Environmental Health Division
18 Wood Lake Drive Southeast
Rochester, Minnesota 55904-5506

JR:ds-b

Enclosures

cc: Katie Callais, MDH Engineer, Rochester District Office
Luke Stuewe, Minnesota Department of Agriculture

SCOPING 2 DECISION NOTICE – MODERATE VULNERABILITY DWSMA

Date: October 20, 2020

Name of Public Water Supply: Lansing Township

PWSID: 1500022

Name of the Wellhead Protection Manager: Ms. Kristine Allas, Clerk

Address: P.O. Box 85

City: Lansing Township

Zip: 55950

Phone:

Primary Unique Well Numbers: 698932 (Well #1)

DWSMA Vulnerability: Low Moderate

The purpose for the second scoping meeting, as required by Minnesota Rules, part 4720.5340, is to discuss the information necessary for preparing Part 2 of a Wellhead Protection Plan. The Part 1 Plan identifies the area that provides the source of drinking water for the public water supply (PWS) and assesses how vulnerable that area is to contamination. The PWS can utilize that information to develop land use and management practices that protects their groundwater resource from contamination.

The wellhead rule (Minnesota Rules, part 4720.5340) refers to the information required for wellhead planning as data elements. This notice lists the data elements that are stated in Minnesota Rules, part 4750.5400 and are selected for the PWS because of the vulnerability of the drinking water supply management area (DWSMA) as determined in Part 1.

Scoping 2 Data Elements Needed for the Part 2

Data Elements are pieces of information in the form of a map, a list, records, tables and inventories. Where appropriate, they should be reviewed and assessed in terms of their present and/or future implications on the 1) use of the well(s), 2) quality and quantity of water supplying the public water supply wells(s), and 3) land and groundwater uses in the DWSMA. It is important to discuss the relevance of the data elements to management of the DWSMA. Check the technical assistance comments for guidance on reviewing the data elements and conducting these assessments. Clearly identify in the plan which data elements are associated with which tables/figures. If a data element does not exist, state that in the narrative.

Submit –

The following information **MUST** be submitted in the Part 2 by including it in the plan narrative and/or appendix. **An asterisk* with red text** indicates information that **MUST** be contained in the Part 2.

- *A map that indicates the vulnerability and includes the DWSMA, WHP Area, and Emergency Response Area must be included in the Part 2.** This map with vulnerability is a product of the Part 1 and provides a basis for planning activities in Part 2. SWP Planner can provide the DWSMA figure.

DATA ELEMENTS ABOUT THE LAND USE –

Land Use

- *An existing map of political boundaries.**
- *An existing map of public land surveys including township, range, and section.**

Technical Assistance Comments: A map or maps showing updated political boundaries and township, range, section with labels is required for determining land use authorities for the land within the DWSMA. DWSMA figure map provided by SWP Planner will also contain political boundaries with township, range, and section. Determine and discuss how the various land use authorities may affect the management of the DWSMA.

- A map and an inventory of the current and historical agricultural, residential, commercial, industrial, recreational, and institutional land uses and potential contaminant sources.
 - *The Potential Contaminant Source Inventory (PCSI) data in both a table and map format must be created and included in the Part 2. Include potential contaminant sources as listed on the PCSI attachment provided for each existing vulnerability within the DWSMA.**
 - If DWSMA contains moderate vulnerability, inventory all wells.
 - The inventory should include your community wells but not include any wells that are known to have been sealed according to the Minnesota Well Code (MN Rules 4725).
 - *A land use/land cover map and table.** SWP Planner can provide a land cover map and data/table from federal sources. This data set should be used unless an alternative electronic data set that is more current and detailed is available. Assess and discuss changes in land use that could impact management of the DWSMA.

- ***An inventory of the Inner Wellhead Management Zone (IWMZ).** A recent IWMZ inventory (within six years) for each primary well with management recommendations on the MDH form, or a table that summarizes the number and type of contaminant sources with the management recommendations must be included. Incorporate or reference the recommendation(s) from the IWMZ into the Part 2. IWMZ will be completed by the SWP Planner with assistance from the PWS staff. A copy will be provided to the PWS.

Technical Assistance Comments: This section encompasses the Potential Contaminant Source Inventory known as the PCSI. See the Scoping 2 Decision Notice Potential Contaminant Source Inventory Requirement Attachment(s) and endorsement procedures/fact sheets for further information. Utilize the PCSI geodatabase attribute template provided by SWP Planner. Management strategies must be developed for potential sources of contamination that pose a risk to the drinking water supply.

- ***An existing comprehensive land-use map.**
- ***An existing zoning map.**

Technical Assistance Comments: This information can indicate areas in the DWSMA where growth or the addition of potential contaminant sources is likely to occur. Furthermore, the review of local zoning and comprehensive land-use maps facilitates the evaluation of the degree of compatibility current and future land uses have with the PWS goals of protecting the drinking water wells and aquifer.

Public Utility Services

- ***An existing map of transportation routes or corridors.**

Technical Assistance Comments: Highway and railroad corridors can be used to move hazardous materials. These corridors should be evaluated to determine the level of risk they pose for spills in the DWSMA, considering their proximity to the wells, the local topography, and geologic conditions.

- ***An existing map of storm sewers, sanitary sewers, and public water supply systems.**

Technical Assistance Comments: Storm sewer systems and sanitary systems can be sources of contamination. Storm sewers are generally considered a public utility element designed to convey storm water runoff and use constructed features such as pipes and ponds. Evaluate the integrity and condition (age, type of material, any investigative work, etc.) of these systems in the DWSMA, noting the location of the water supply system and public water supply wells in relation to these potential contaminant sources. It is not necessary to include a map of your public water supply system in the Part 2 if you believe it would pose a threat to the security of your system.

- *An existing map of the gas and oil pipelines used by gas and oil suppliers.

Technical Assistance Comments: Petroleum pipelines can be sources of contamination (excluding liquefied natural gas pipelines). If possible, describe what is generally known about the condition of these pipelines in the DWSMA, and the readiness of the PWS to respond to an emergency. It is not necessary to include a map in the Part 2 if you believe it would pose a security threat.

Required to be discussed in plan-

The following information (if existing) MUST be reviewed and discussed in the development of the Part 2. The Part 2 narrative must contain a description identifying whether/how the information may influence the management of the DWSMA. The data element may be located in the public domain. While the map or document reviewed is not required to be included in the Part 2, the source of the data element must be provided in the plan narrative by indicating a web address or reference to its location.

DATA ELEMENTS ABOUT THE PHYSICAL ENVIRONMENT –

Water Resources

- An existing map of the boundaries and flow directions of major watershed units and minor watershed units.

Technical Assistance Comments: Identify/list the major and minor watershed(s) in the Part 2 in order to become aware of local water planning efforts such as One Watershed One Plan (1W1P), Watershed Restoration and Protection Strategies (WRAPS), and/or Groundwater Restoration and Protection Strategies (GRAPS).

- An existing map showing those areas delineated as floodplain by existing local ordinances.

Technical Assistance Comments: Assess and describe any issues and management needed in the DWSMA based on the Federal Emergency Management Agency (FEMA) Floodplain 100-year FIRM (Flood Insurance Rate Map) and (or) other State and local floodplain or flooding information. Consult with the WHP Manager to evaluate any potential or historical flooding impacts on the public water supply wells or aquifer. The Inner Well Management Zone report and Sanitary Survey may be used to identify flooding issues and impacts.

DATA ELEMENTS ABOUT THE LAND USE –

Land Use

- An existing map of parcel boundaries.

Technical Assistance Comments: Parcel boundaries may have been used for delineation of the DWSMA in Part 1. In Part 2, parcel identification information must be included or linked and must be used for education or targeting activities or practices in addressing potential contaminants. In the narrative indicate if parcel data is available from the public domain (i.e. county GIS or associated website such as Beacon).

Part 1 -

The following information was reviewed and assessed in Part 1. The Part 1 should be used as a data source for the Part 2. The technical assistance comments provide the requirements for how this information must be discussed and/or included in the Part 2. Include relevant excerpts or summaries from the Part 1 where indicated. Or, if the Part 1 is included in the appendix that can be referenced.

DATA ELEMENTS ABOUT THE PHYSICAL ENVIRONMENT –

- An existing geologic map and a description of the geology, including aquifers, confining layers, recharge areas, discharge areas, sensitive areas as defined in Minnesota Statutes, section 103H.005, subdivision 13, and groundwater flow characteristics.
- Existing records of the geologic materials penetrated by wells, borings, exploration test holes, or excavations, including those submitted to the department.
- Existing borehole geophysical records from wells, borings, and exploration test holes.
- Existing surface geophysical studies.

Technical Assistance Comments: Provide a summary in the plan narrative (few sentences/paragraph) of the Description of the Hydrologic Setting from Part 1. Provide the conclusions regarding the Well and DWSMA Vulnerabilities related to the geologic conditions and how these conditions influence the management of the DWSMA.

DATA ELEMENTS ABOUT THE LAND USE –

Public Utility Services

- An existing record of construction, maintenance, and use of the public water supply well and other wells within the DWSMA.

Technical Assistance Comments: Well construction records indicate what is known about the well(s) and can indicate if the well(s) have structural integrity or groundwater protection issues. Briefly summarize in the plan narrative what is discussed about each well from the Assessment of Well Vulnerability in Part 1.

DATA ELEMENTS ABOUT WATER QUANTITY –

Groundwater Quantity

- An existing list of wells covered by state appropriation permits, including amounts of water appropriated, type of use, and aquifer source.
- An existing description of known well interference problems and water use conflicts.
- An existing list of state environmental bore holes, including unique well number, aquifer measured, years of record, and average monthly levels.

Technical Assistance Comments: This information, if known, was incorporated into the Part 1 and was used to assist in determining hydrologic boundary conditions and area static water levels. In Part 2, information about Department of Natural Resources appropriation permit holders and any known well interference problems or water use conflicts must be discussed, including how this information could affect the management of the DWSMA.

DATA ELEMENTS ABOUT WATER QUALITY –

Groundwater Quality

- An existing summary of water quality data, including: 1. bacteriological contamination indicators; 2. inorganic chemicals; and 3. organic chemicals.
- An existing list of water chemistry and isotopic data from wells, springs, or other groundwater sampling points.
- An existing report of groundwater tracer studies.

Technical Assistance Comments: This information, if known, was incorporated into the Part 1. Provide a summary of the assessment of well vulnerability and/or any relevant chemistry and isotopic composition data available from PWS wells and other wells/sources.

- An existing site study and well water analysis of known areas of groundwater contamination.
- An existing property audit identifying contamination.
- An existing report to the Minnesota Department of Agriculture and the Minnesota Pollution Control Agency of contaminant spills and releases.

Technical Assistance Comments: This information, if known, was incorporated into the Part 1. Discuss whether there are groundwater contamination areas that could pose a risk to the public water supply well(s) now or in the future. Include any relevant data and how this information may affect the management of the DWSMA.

Lansing Township Scoping 2 Meeting Wellhead Protection (WHP) Planning Issues Summary

NOTE: This document is intended to be a summary of issues identified to date and is **not intended to replace the required data elements identified in the Scoping 2 Decision Notice** nor is it intended to be an exhaustive list of all potential drinking water issues.

Drinking Water Protection Issues Identified to Date:

- The DWSMA contains both urban and rural land with unique development history.
- The public water system has only been in place since 2004 and operates with a single well.
- There are numerous private wells to inventory, including several unused wells. Education and outreach for private well management will be important.
- There has been at least one historic contamination event in the DWSMA.

Water Quality Detections and Implications:

- Low detections of tritium, the lack of human-caused contamination, and the presence of ammonia and arsenic indicates a relatively long residence time of groundwater in the aquifer.
- Water used by the PWS is considered only minimally impacted by surface water, likely due to “leaky” geology and/or unused, unsealed wells.
- There are currently no Safe Drinking Water Act concerns.

Old Municipal Well Information:

The Minnesota Department of Health has compiled historical information for use in the planning process. No old municipal wells exist due to recent nature of the public water supply system.

Sanborn Maps:

Sanborn Maps are not available for this area.

Recommended WHP Measures from Part 1:

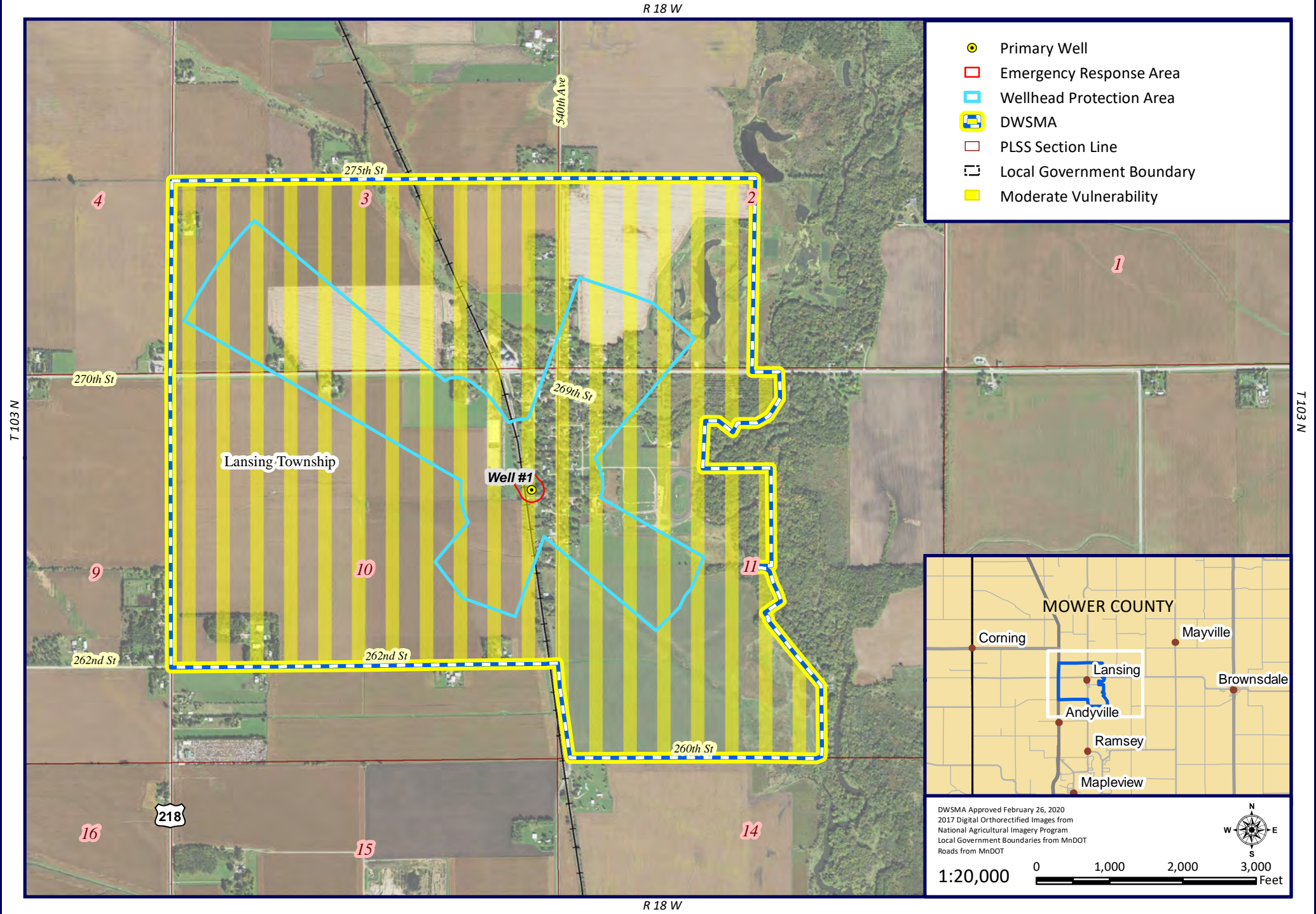
The following recommendations have been generated to inform the next amendment of the community of Lansing Township’s Wellhead Protection Plan.








1. **Well Locating:** This delineation is based on very little well data. If wells are constructed within two-miles of the community or one-mile of the DWSMA, their locations should be verified. This information may allow a better understanding of the extent and thickness of the community’s aquifers and the overlying clay confining units and result in a more refined WHPA in the future.
2. **Water Quality Monitoring:** The standard assessment monitoring package (tritium, nitrate-nitrogen, ammonia, chloride and bromide) should be analyzed during year six, including the primary well and the Cedar River, contingent on funding assistance from MDH for sampling and analysis. The community may need to collect the samples and ship them to MDH. Information generated by this sampling will be used to refine vulnerability assessments for the next amendment.

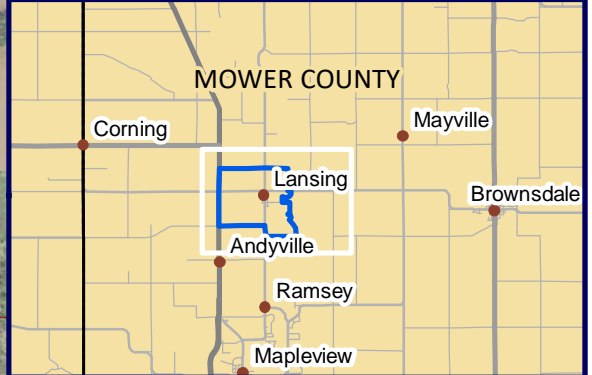
Other: Well inventories, old well investigations, status of historic contamination events, and promotion of private well management and well sealing are priorities for this community.

Exhibit B:
Political Boundary, DWSMA and Vulnerability Map

Lansing Township Drinking Water Supply Management Area (DWSMA) MN-01196 - Moderate Vulnerability



-  Primary Well
-  Emergency Response Area
-  Wellhead Protection Area
-  DWSMA
-  PLSS Section Line
-  Local Government Boundary
-  Moderate Vulnerability



DWSMA Approved February 26, 2020
 2017 Digital Orthorectified Images from
 National Agricultural Imagery Program
 Local Government Boundaries from MnDOT
 Roads from MnDOT

1:20,000

0 1,000 2,000 3,000 Feet

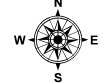


Exhibit C:
Public Well Records and Logs

Minnesota Unique Well No.

267285

County Mower
 Quad Austin East
 Quad ID 8B

MINNESOTA DEPARTMENT OF HEALTH

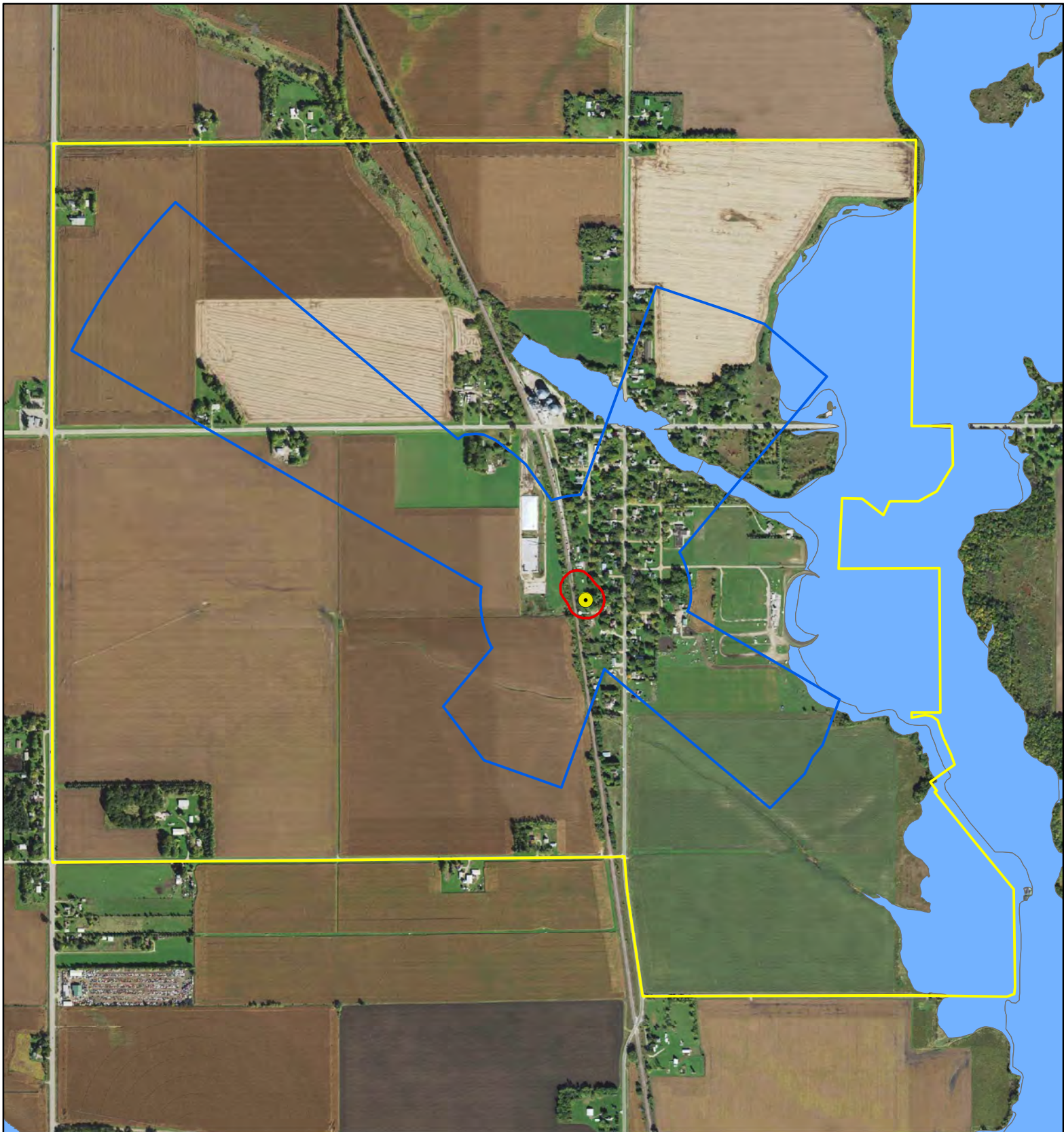
WELL AND BORING RECORD

Entry Date 09/26/2003
 Update Date 01/16/2013
 Received Date

Minnesota Statutes Chapter 103I

Well Name NORTH COUNTRY CO-OP 1		Well Depth	Depth Completed	Date Well Completed
Township Range Dir Section Subsections Elevation		0 ft.	0 ft.	0
103	18 W 3 DDCD	Elevation Method (USGS 7.5 min or equiv.)		
Geological Material		Drilling Fluid	Well Hydrofractured? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Color		From Ft. to Ft.		
Hardness		Use Public Supply/non-comm.-transient PWS ID 5500071 Source S01		
From		Casing Type Joint Drive Shoe? <input type="checkbox"/> Yes <input type="checkbox"/> No Above/Below ft.		
To		Casing Diameter Weight Hole Diameter		
Open Hole from ft. to ft.				
Screen				
Diameter		Slot/Gauze	Length	Set Between
Static Water Level				
ft. from Date Measured				
PUMPING LEVEL (below land surface)				
ft. after hrs. pumping g.p.m.				
Well Head Completion				
Pitless adapter manufacturer Model				
<input type="checkbox"/> Casing Protection <input type="checkbox"/> 12 in. above grade				
<input type="checkbox"/> At-grade (Environmental Wells and Borings ONLY)				
NO REMARKS				
Located by: Minnesota Department of Health		Method: Digitization (Screen) - Map (1:24,000)		
Unique Number Verification: Information from owner		Input Date: 09/26/2003		
System: UTM - Nad83, Zone15, Meters		X: 502154 Y: 4843805		
Grouting Information Well Grouted? <input type="checkbox"/> Yes <input type="checkbox"/> No				
Nearest Known Source of Contamination				
0 feet direction type				
Well disinfected upon completion? <input type="checkbox"/> Yes <input type="checkbox"/> No				
Pump <input type="checkbox"/> Not Installed Date Installed				
Manufacturer's name Model number HP Volts				
Length of drop Pipe ft. Capacity g.p.m. Type Material				
Abandoned Wells Does property have any not in use and not sealed well(s)? <input type="checkbox"/> Yes <input type="checkbox"/> No				
Variance Was a variance granted from the MDH for this well? <input type="checkbox"/> Yes <input type="checkbox"/> No				
Well Contractor Certification				
First Bedrock	Aquifer	License Business Name	Lic. Or Reg. No.	Name of Driller
Last Strat	Depth to Bedrock ft.			
County Well Index Online Report		267285		Printed 2/21/2013 HE-01205-07

Exhibit D:
FEMA Floodplain Map



Legend

- PWS Well
- Emergency Response Area
- Wellhead Protection Area
- DWSMA
- 100 Year Floodplain
- 100 Year Floodplain

Lansing Township Wellhead Protection
FEMA Floodplain in DWSMA
Moderately Vulnerable



1 inch = 1,204 feet
 January 12, 2021

Exhibit E:
Parcel Map



Legend

- PWS Well
- Emergency Response Area
- Wellhead Protection Area
- DWSMA
- Parcels

Lansing Township Wellhead Protection Parcels in DWSMA Moderately Vulnerable

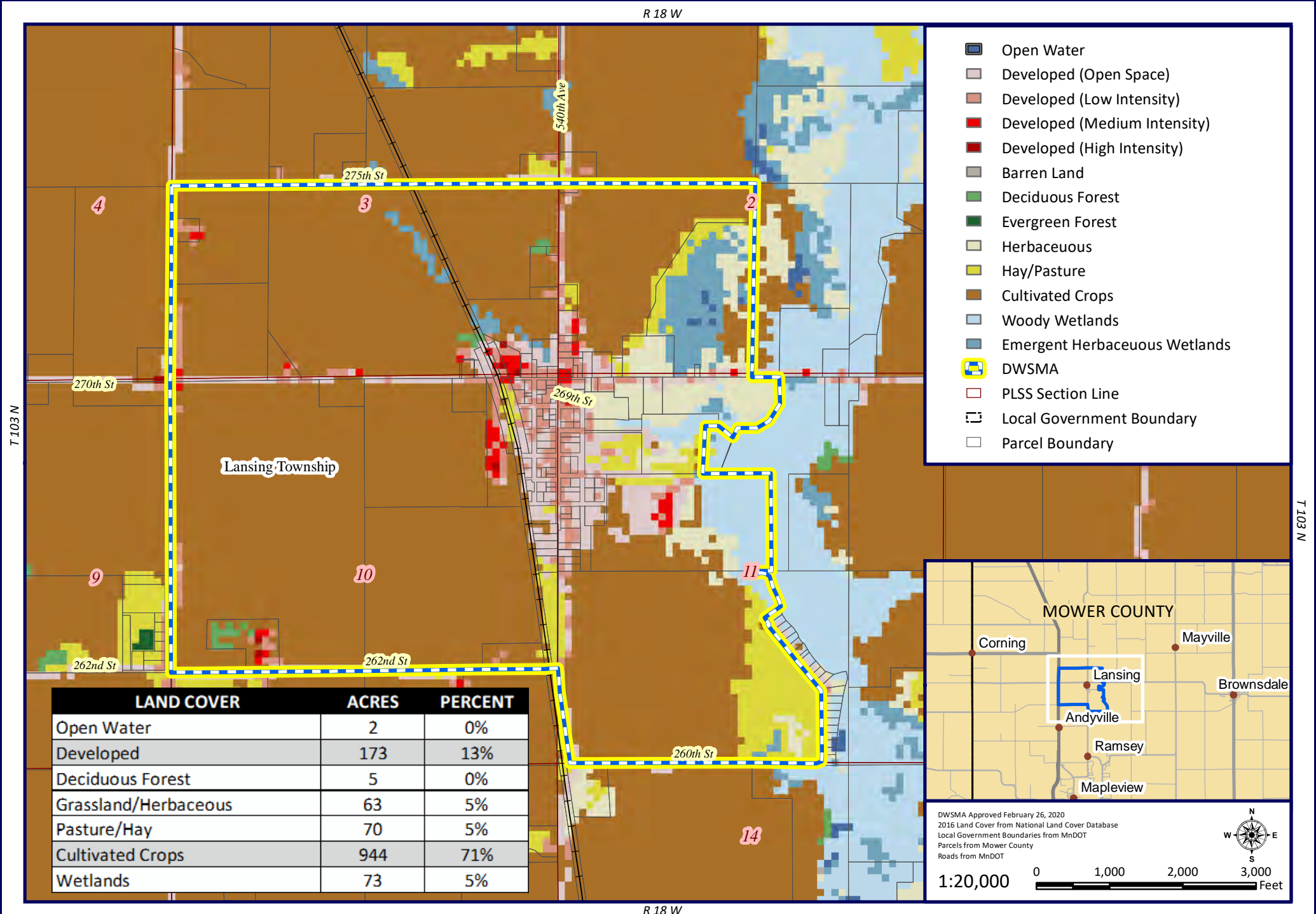


1 inch = 1,150 feet

January 12, 2021

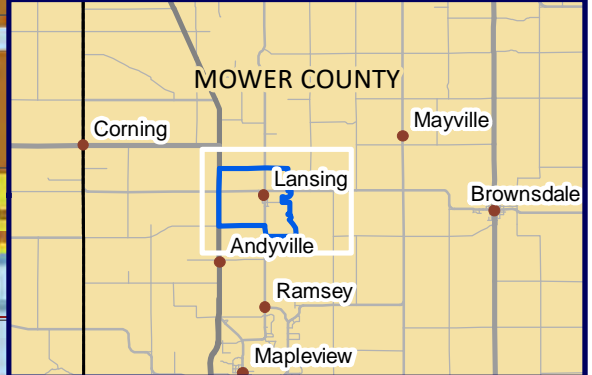
Exhibit F:
Land Cover Map and Table

Lansing Township Drinking Water Supply Management Area (DWSMA) MN-01196 - Land Cover 2016



- Open Water
- Developed (Open Space)
- Developed (Low Intensity)
- Developed (Medium Intensity)
- Developed (High Intensity)
- Barren Land
- Deciduous Forest
- Evergreen Forest
- Herbaceous
- Hay/Pasture
- Cultivated Crops
- Woody Wetlands
- Emergent Herbaceous Wetlands
- DWSMA
- PLSS Section Line
- Local Government Boundary
- Parcel Boundary

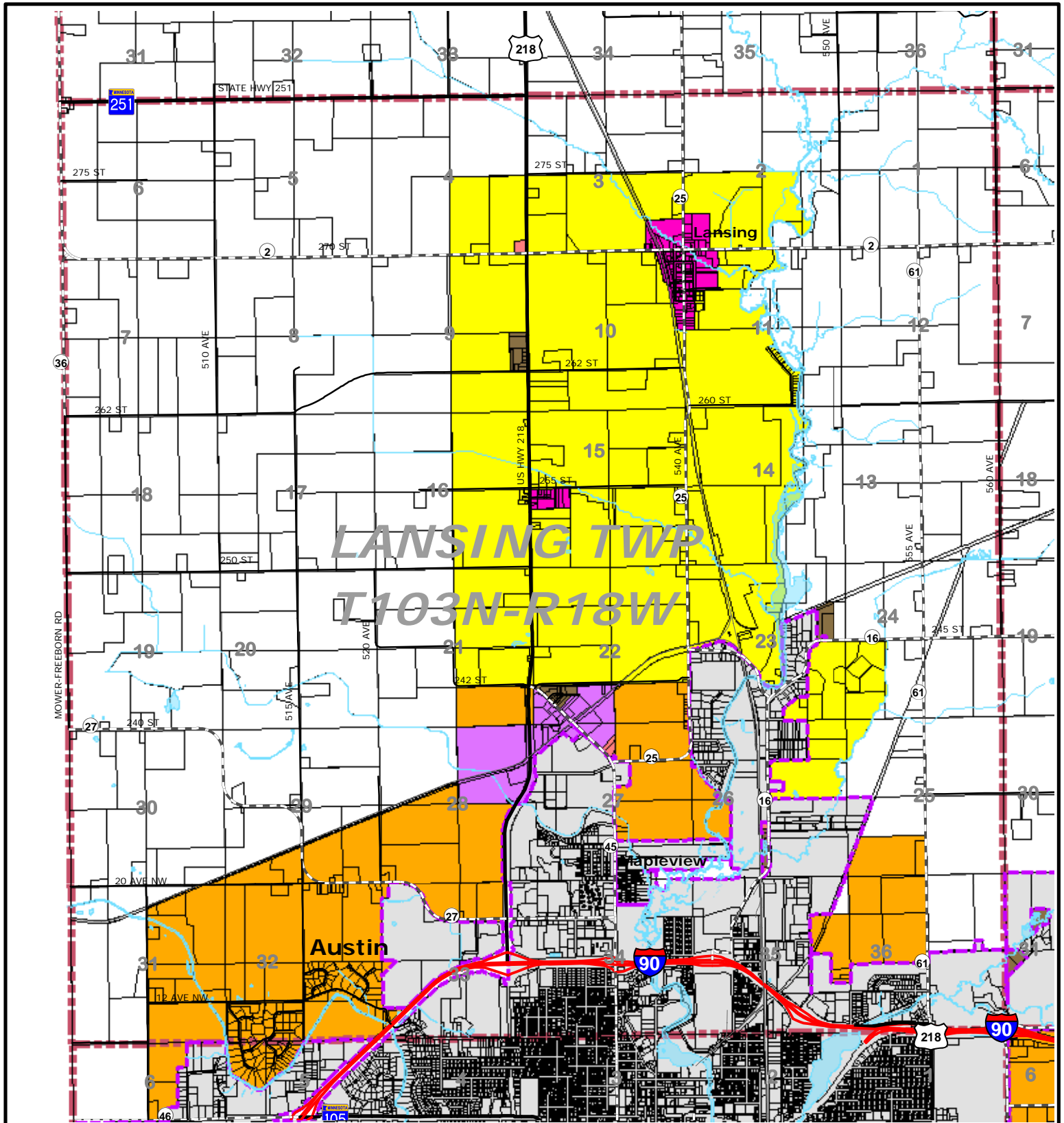
LAND COVER	ACRES	PERCENT
Open Water	2	0%
Developed	173	13%
Deciduous Forest	5	0%
Grassland/Herbaceous	63	5%
Pasture/Hay	70	5%
Cultivated Crops	944	71%
Wetlands	73	5%



DWSMA Approved February 26, 2020
 2016 Land Cover from National Land Cover Database
 Local Government Boundaries from MnDOT
 Parcels from Mower County
 Roads from MnDOT

1:20,000 0 1,000 2,000 3,000 Feet

Exhibit G:
Zoning Map



Existing Residential Plats - Whether or not they are so designated on the zoning map, residential plats where were approved prior to the effective date of this ordinance shall be considered as though zoned Residential regardless of the primary or underlying zoning district in which they are located.

Mower County makes no representations or warranties, express or implied, with respect to the use or reuse of data provided herewith, regardless of its format or the means of its transmission. THE DATA ARE PROVIDED "AS IS" WITH NO GUARANTEE OR REPRESENTATION ABOUT THE ACCURACY, MERCHANTABILITY, RELIABILITY, OR FITNESS OF THIS DATA FOR ANY PARTICULAR PURPOSE.



UDOLPHO 104-18 Page: 1	WALTHAM 104-17 Page: 2	SARGEANT 104-16 Page: 3	PLEASANT VALLEY 104-15 Page: 4	RACINE 104-14 Page: 5
LANSING 103-18 Page: 6	RED ROCK 103-17 Page: 7	DEXTER 103-16 Page: 8	GRAND MEADOW 103-15 Page: 9	FRANKFORD 103-14 Page: 10
AUSTIN 102-18 Page: 11	WINDOM 102-17 Page: 12	MARSHALL 102-16 Page: 13	CLAYTON 102-15 Page: 14	BENNINGTON 102-14 Page: 15
LYLE 101-18 Page: 16	NEVADA 101-17 Page: 17	ADAMS 101-16 Page: 18	LODI 101-15 Page: 19	LE ROY 101-14 Page: 20

Legend

Township Boundary

City Limits

Zoning Designations

Agricultural

R-1

Business

Rural Management

Freeway Interchange Management

Rural Service Center

Industrial

Urban Expansion

Planned Unit Development

Exhibit H:
Watershed District Map

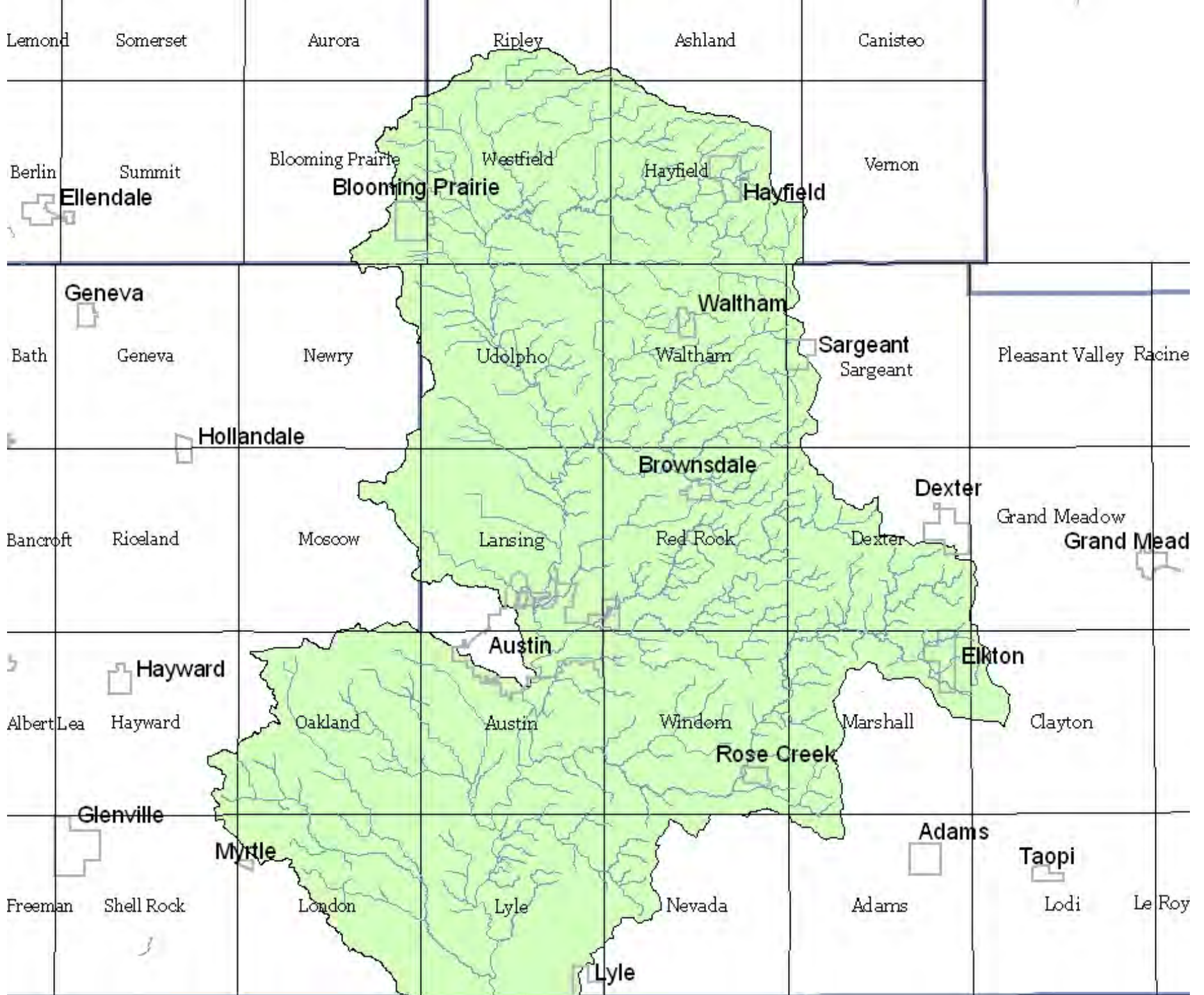
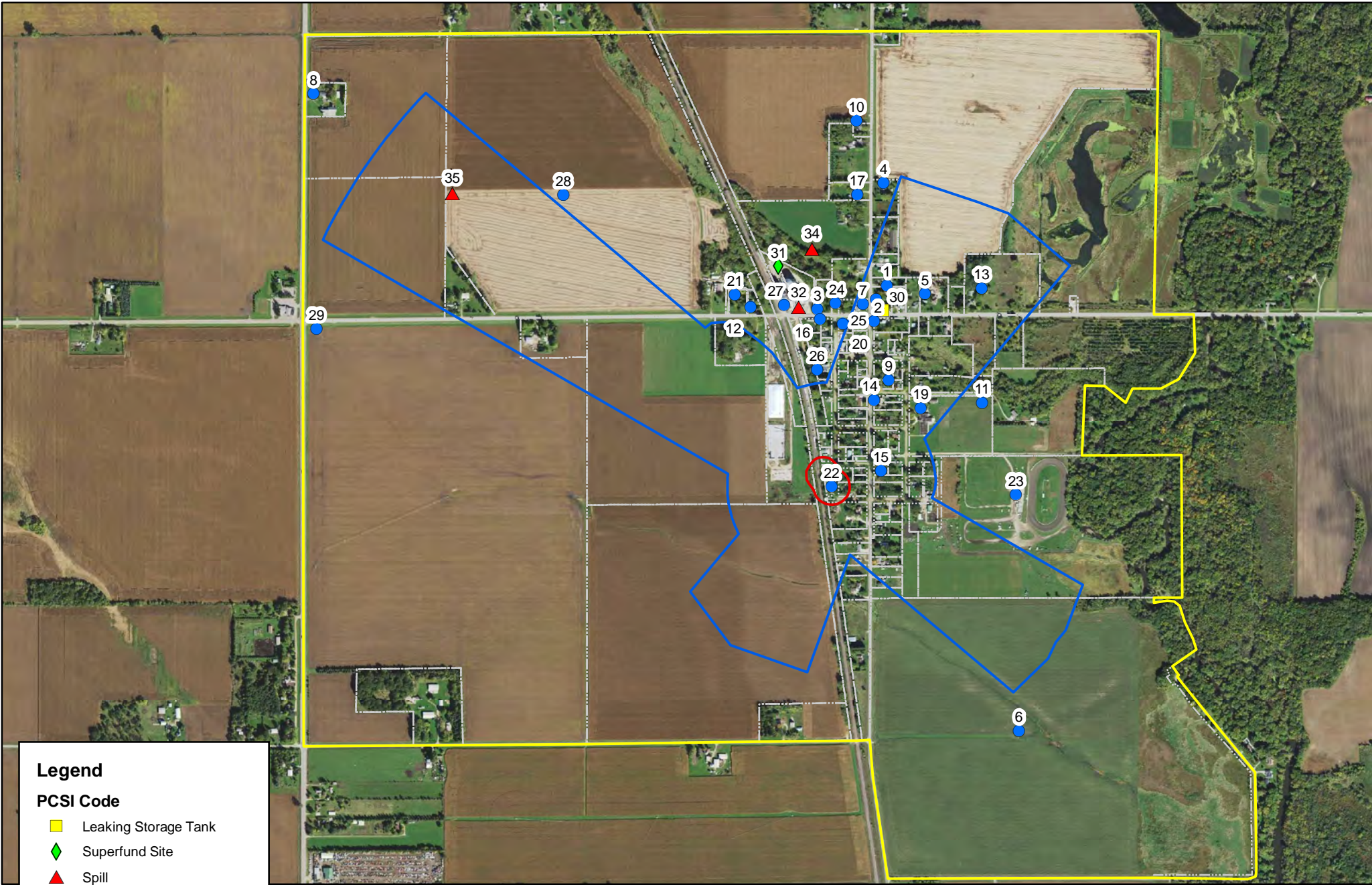


Exhibit I:
PCSI Map and Table



Legend

PCSI Code

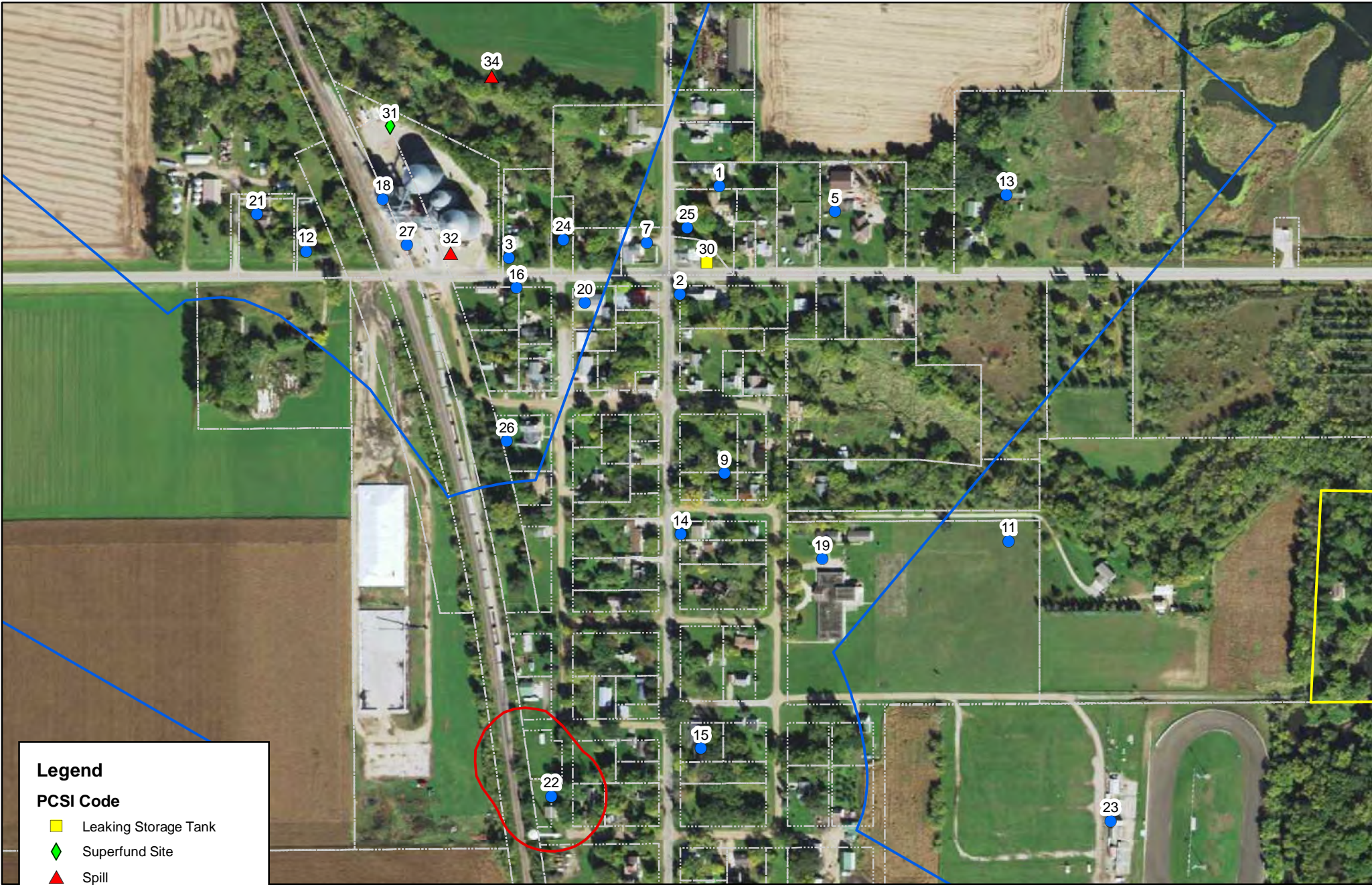
- Leaking Storage Tank
- Superfund Site
- Spill
- Well
- Emergency Response Area
- Wellhead Protection Area
- DWSMA
- Parcels

Lansing Township Wellhead Protection Potential Contaminant Source Inventory (PCSI) Moderately Vulnerable

The potential contaminant source inventory is based on DWSMA vulnerability and is an assessment of the likelihood for a potential contaminant source within the drinking water supply management area to contaminate a public water supply well.



1 inch = 1,200 feet
October 5, 2021



Legend

PCSI Code

- Leaking Storage Tank
- Superfund Site
- Spill
- Well
- Emergency Response Area
- Wellhead Protection Area
- DWSMA
- Parcels

Lansing Township Wellhead Protection Potential Contaminant Source Inventory (PCSI) Moderately Vulnerable

The potential contaminant source inventory is based on DWSMA vulnerability and is an assessment of the likelihood for a potential contaminant source within the drinking water supply management area to contaminate a public water supply well.



1 inch = 395 feet
October 5, 2021

Lansing Township Potential Contaminant Source Inventory (PCSI): completed 10-5-2021

PCSI #	PIN	NAME	ADDRESS	PCS TYPE	STATUS	PROGRAM ID	TOTAL	COMMENT
1	08.002.0080	Peterson, Nicole	27058 540 Ave	WEL	A	101393	1	Private, domestic well, drilled 1980 to 102' deep, Wapsi/Spillville Fm
2	08.041.0010	Gaul, Dustin/Stepanie	54017 270 St	WEL	A	472108	1	Private, domestic well, drilled 1991 to 160' deep, Wapsi/Spillville Fm
3	08.003.0010	Peterson, Rebecca	53886 270 St	WEL	A	472114	1	Private, domestic well, drilled 1990 to 142' deep, L.Cedar Valley-Spillville Fm
4	08.002.0200	Ofstedahl, David/Deanna	27232 540 Ave	WEL	A	489835	1	Private, domestic well, drilled 1991 to 170' deep, Wapsi/Spillville Fm
5	08.002.0250	Allas, Lynn/Kristine	54130 270th St	WEL	A	226601	1	Private well, former Lansing School public well, drilled 197' deep, unknown aquifer
6	08.011.0240	Muriel G Sayles Trust	53882 295 St	WEL	A	178739	1	Private, irrigation well, drilled 1979 to 130' deep, Cedar Valley Group
7	08.003.0210	Sorg, Bradley Allen	27009 540 Ave	WEL	A	472112	1	Private, domestic well, drilled 1991 to 126' deep, Wapsipinicon Group
8	08.003.0070	Nordland, Deborah	27392 US Hwy 21	WEL	A	521645	1	Private, domestic well, drilled 1995 to 204' deep, Maquoketa Fm
9	08.011.0190	Reyher, Patrick	26814 540 Ave	WEL	A	521643	1	Private, domestic well, drilled 1994 to 139' deep, Lower Cedar Valley Fm
10	08.003.0150	Krebsbach, Joseph/Judith	27333 540 Ave	WEL	A	521644	1	Private, domestic well, drilled 1994 to 185' deep, Spillville-Maquoketa
11	08.011.0091	Midwest Mennonite Fellowship	26780 541 Ave	WEL	A	152806	1	Private, domestic well, drilled 1979 to 122" deep, L. Cedar Valley-Spillville
12	08.003.0030	Barber, Nyla	53774 270 St	WEL	A	413901	1	Private, domestic well, drilled 1987 to 180' deep, Wapsi/Spillville Fm
13	08.002.0180	Hamilton, Marlys	54184 270 St	WEL	A	152412	1	Private, domestic well, drilled 1979 to 118' deep, L.Cedar Valley-Pinicon Ridge
14	08.011.0130	Perry, Darlene	26770 540 Ave	WEL	A	152812	1	Private, domestic well, drilled 1979 to 171' deep, L.Cedar Valley-Spillville
15	08.040.0030	Maricle, Arnold	26620 540 Ave	WEL	A	489836	1	Private, domestic well, drilled 1991 to 110' deep, Lower Cedar Valley
16	08.039.0110	Sjol, Kara	53861 270 St	WEL	A	472110	1	Private, domestic well, drilled 1991 to 146' deep, Wapsipinicon Group
17	08.003.0120	Goskesen, Logan	27223 540 Ave	WEL	A	213427	1	Private, domestic well, drilled 1971 to 219' deep, Spillville-Maquoketa
18	08.950.0180	Northern Country Cooperative	53872 270 St	WEL	A	267285	1	Public supply well/non-com-transient, unknown depth and construction, business: Northern Country Co-op
19	08.011.0091	Midwest Mennonite Fellowship	26780 541 Ave	WEL	A	262735	1	Public supply well/non-com-transient, unknown depth and construction, business: Maranatha Bible School
20	08.039.0070	Weckwerth, Timothy	26968 539 Ave	WEL	A	472109	1	Private, domestic well, drilled 1991 to 146' deep, Wapsi-Spillville Fm
21	08.003.0020	Slowinski, Alan/Roxann	53764 270 St	WEL	A	413901	1	Private, domestic well, drilled 1987 to 180' deep, Wapsi-Spillville Fm
22	08.039.0320	Lansing Township	265 St	WEL	A	698932	1	Public supply well/community, drilled 2004 to 397' deep, Spillville-Galena
23	08.011.0010	Klock, Charles	54219 266 St	WEL	A	264032	1	Public supply well/non-comm-transient, unknown depth or construction, business: Chateau Raceway
24	08.003.0170	Klock, Charles	53924 270 St	WEL	A	472113	1	Private, domestic well, drilled 1991 to 185' deep, Wapsipinicon Group
25	08.002.0110	Classon, Donna	27042 540 Ave	WEL	A	472111	1	Private, domestic well, drilled 1991 to 160' deep, Wapsi-Spillville Fm
26	08.039.0114	Allas, Lynn	26875 539 Ave	WEL	A	160839	1	Private, domestic well, drilled 1979 to 130' deep, L.Cedar Valley-Spillville
27	08.950.0180	Northern Country Cooperative	53872 270 St	WEL	A	415348	1	Public supply/non-comm-transient well, drilled 1986 to 165' deep, Spillville-Galena, business: Northern Country Co-op
28	08.003.0021	Slowinski, Alan/Roxann	53764 270 St	WEL	A	799941	1	Private, irrigation well, drilled 2015 to 360' deep, multi-aquifer
29	08.010.0075	Retterath, Steve	na	WEL	A	799934	1	Private, irrigation well, drilled 2016 to 397' deep, Cedar Valley-Galena, owner address: 300 SE 5th Ave, Ste 1030, Boca Raton, FL, 33432
30	08.002.0240	Lansing Post Office	54016 270 St	LUST	I	LS0003706	1	MPCA report, site closed 1994, no drinking water contamination
31	08.003.0180	Lansing GW Contamination	53872 270 St	PCS	I	SR0000139	1	MPCA report, State Superfund Project site, delisted in 1994
32	08.950.0180	Terra International	53872 270 St	SPL	C	96-1254	1	MDA report, pesticide and fertilizer clean-up, closed 2001, site of Northern Country Co-op
33	08.003.0021	Hunting Elevator Co	na	SPL	C	FY87R073	1	MDA report, pesticide and fertilizer clean-up, closed 1992, assumed location on Slowinski property
34	08.003.0170	Klock, Charles	na	SPL	C	94-0546	1	MDA report, emergency site, unknown contaminant, closed 1994
35	08.003.0021	Hunting Elevator Co	na	SPL	C	94-0723	1	MDA report, emergency site, unknown contaminant, closed 1997, assumed location on Slowinski property

Exhibit J:
Inner Wellhead Management Zone Reports

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

PUBLIC WATER SYSTEM INFORMATION

PWS ID	1500022	COMMUNITY
NAME	Lansing Township	
ADDRESS	Lansing Water Superintendent, c/o Mr. Bernie Booverhuis, 26483 - 540th Avenue, P.O. Box 24, Lansing Township, MN 55950	

FACILITY (WELL) INFORMATION

NAME	Well #1	IS THERE A WELL LOG OR ADDITIONAL CONSTRUCTION INFORMATION AVAILABLE? <input type="checkbox"/> YES (Please attach a copy) <input type="checkbox"/> NO <input type="checkbox"/> UNDETERMINED
FACILITY ID	S01	
UNIQUE WELL NO.	698932	
COUNTY	Mower	

PWS ID / FACILITY ID	1500022 S01	UNIQUE WELL NO.	698932
-----------------------------	----------------	------------------------	--------

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well'	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 ^P (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		

PWS ID / FACILITY ID	1500022 S01	UNIQUE WELL NO.	698932
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PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well'	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
*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		
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	50	Y
SB1	Sewer, buried, approved materials, tested, serving one building, or two or less single-family residences	50	20		Y	140	Y
SB2	Sewer, buried, collector, municipal, serving a facility handling infectious or pathological wastes, open-jointed or unapproved materials	50	50		Y	130	Y
*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		

PWS ID / FACILITY ID	1500022 S01	UNIQUE WELL NO.	698932
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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				
*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		
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	Y	180	Y
PC1	Pollutant or contaminant that may drain into the soil	50	50	100	Y	100	Y
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.						
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* 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

1500022 S01

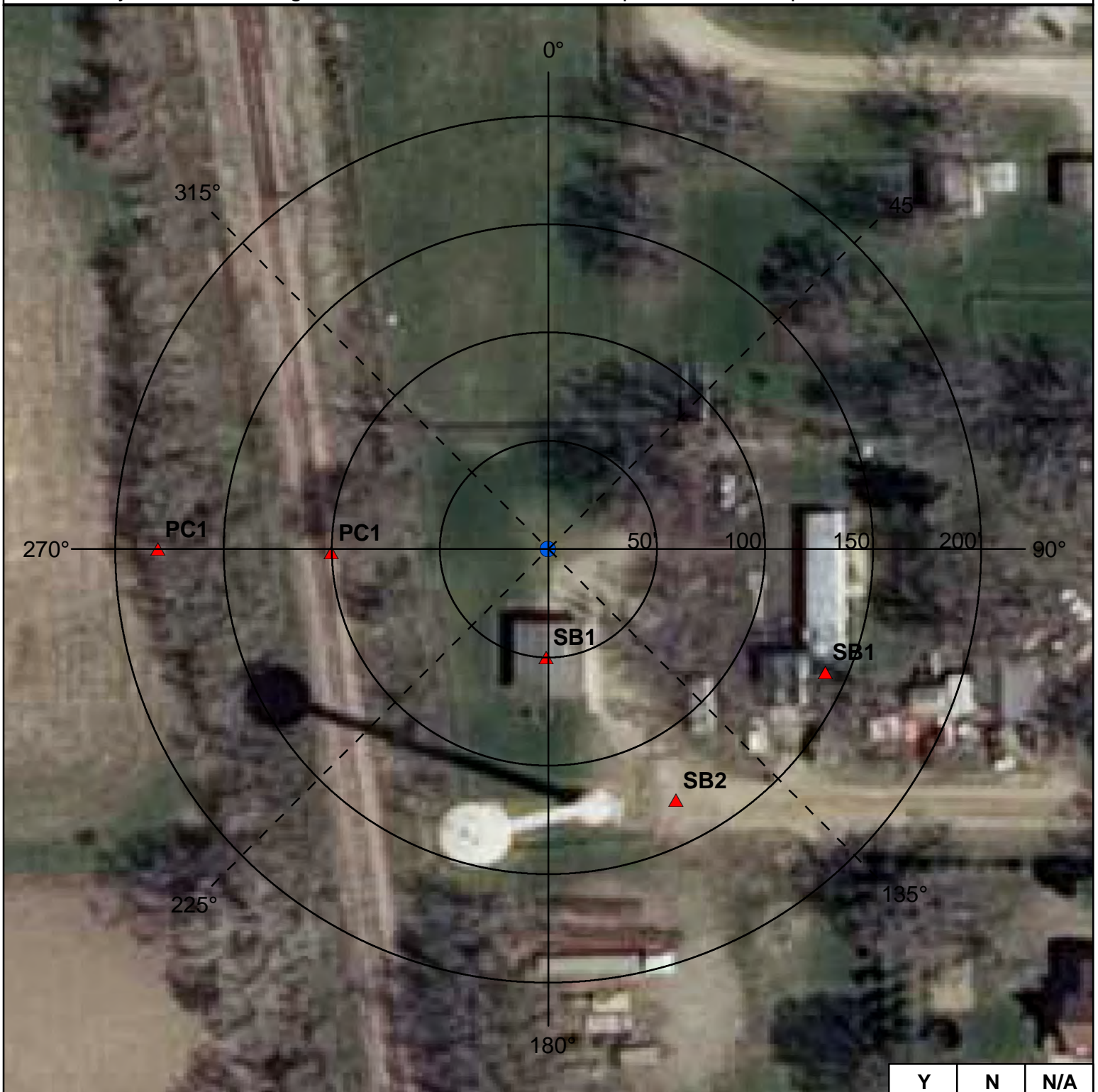
UNIQUE WELL NO.

698932

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	Ronnenberg, Jennifer	DATE	12 - 3 - 2020
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PWS ID / FACILITY ID	1500022 S01	UNIQUE WELL NO.	698932
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RECOMMENDED WELLHEAD PROTECTION (WHP) MEASURES	WHP MEASURE IMPLEMENTED? Y or N	DATE VERIFIED
The pumphouse floor drain outlet design and/or connections need to be verified. Contact the design consultant or investigate to determine if proper isolation distance and plumbing codes have been used.		
Any sewer lines that are observed to be leaking, cracked, or deteriorated, should be replaced.		
An emergency response plan should be adopted for hazardous material spills; it should include contacting the Minnesota Duty Officer at 1-800-422-0798 or 651-649-5451.		
Sorbent material should be maintained on-site for the immediate clean-up of hazardous waste spills.		
An agricultural cooperative storage area has been identified on a neighboring property within 200 feet of your public water supply well. The property owner could be contacted to request their cooperation in managing this potential contaminant source.		

COMMENTS
Well is located ~30 feet from outside wall of the pump house, ~100 feet from nearest residential home, ~100' from railroad track, and ~500' from Ag Coop storage site. SB1: closest locations of single unit sanitary connections SB2: closest location of buried municipal sanitary line. PC1: closest location of railroad track and temporary-use agricultural coop storage area.

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**

Exhibit K:
Public Utility Maps

CITY OF LANSING

NE1/4 SEC. 3-T103N-R18W

NW1/4 SEC. 2-T103N-R18W

NE1/4 SEC. 2-T103N-R18W

SE1/4 SEC. 3-T103N-R18W

SW1/4 SEC. 2-T103N-R18W

SE1/4 SEC. 2-T103N-R18W

NE1/4 SEC. 10-T103N-R18W

NW1/4 SEC. 11-T103N-R18W

NE1/4 SEC. 11-T103N-R18W

SE1/4 SEC. 10-T103N-R18W

SW1/4 SEC. 11-T103N-R18W

SE1/4 SEC. 11-T103N-R18W



SCALE: 1" = 200'

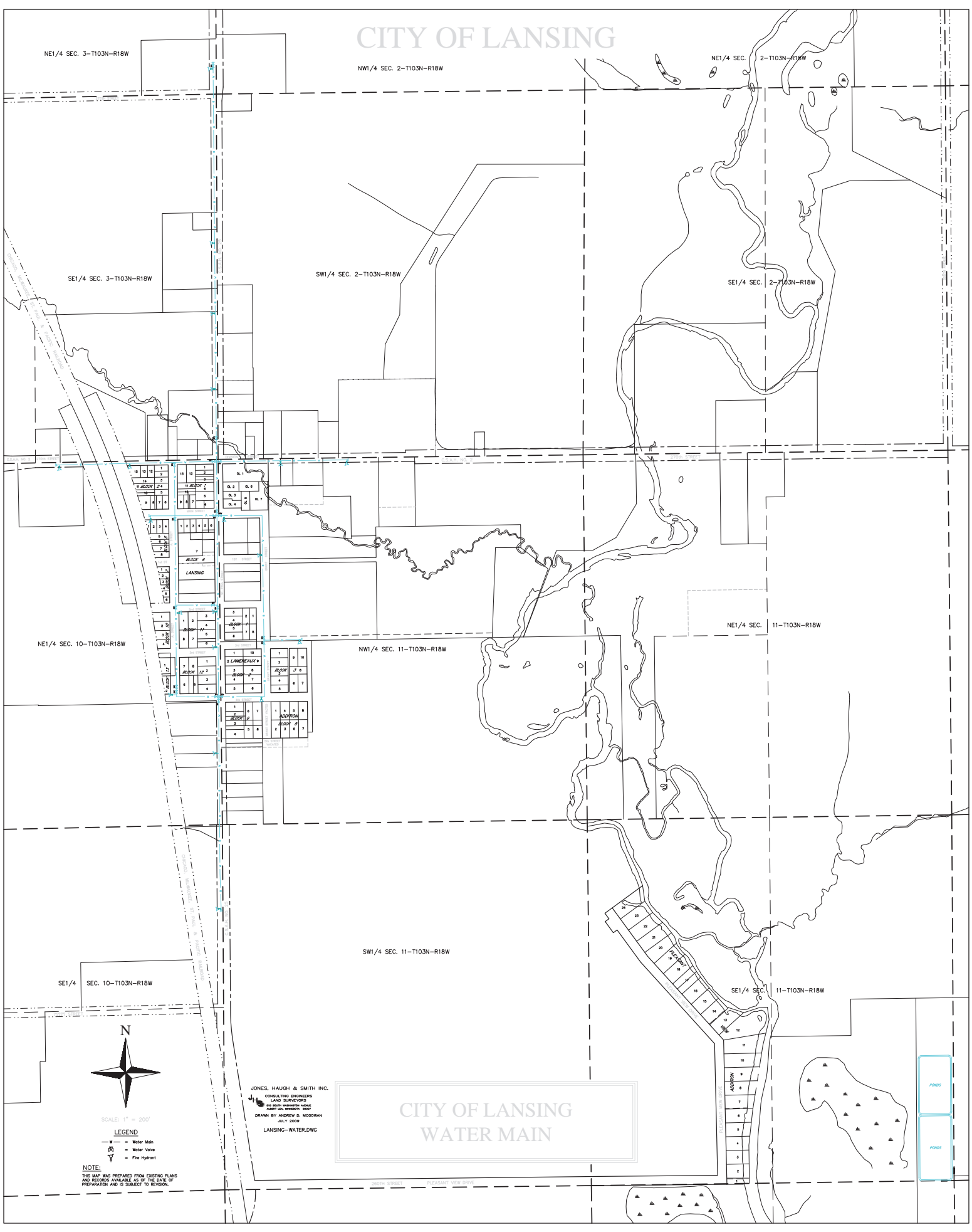
LEGEND

- Water Main
- Water Valve
- Fire Hydrant

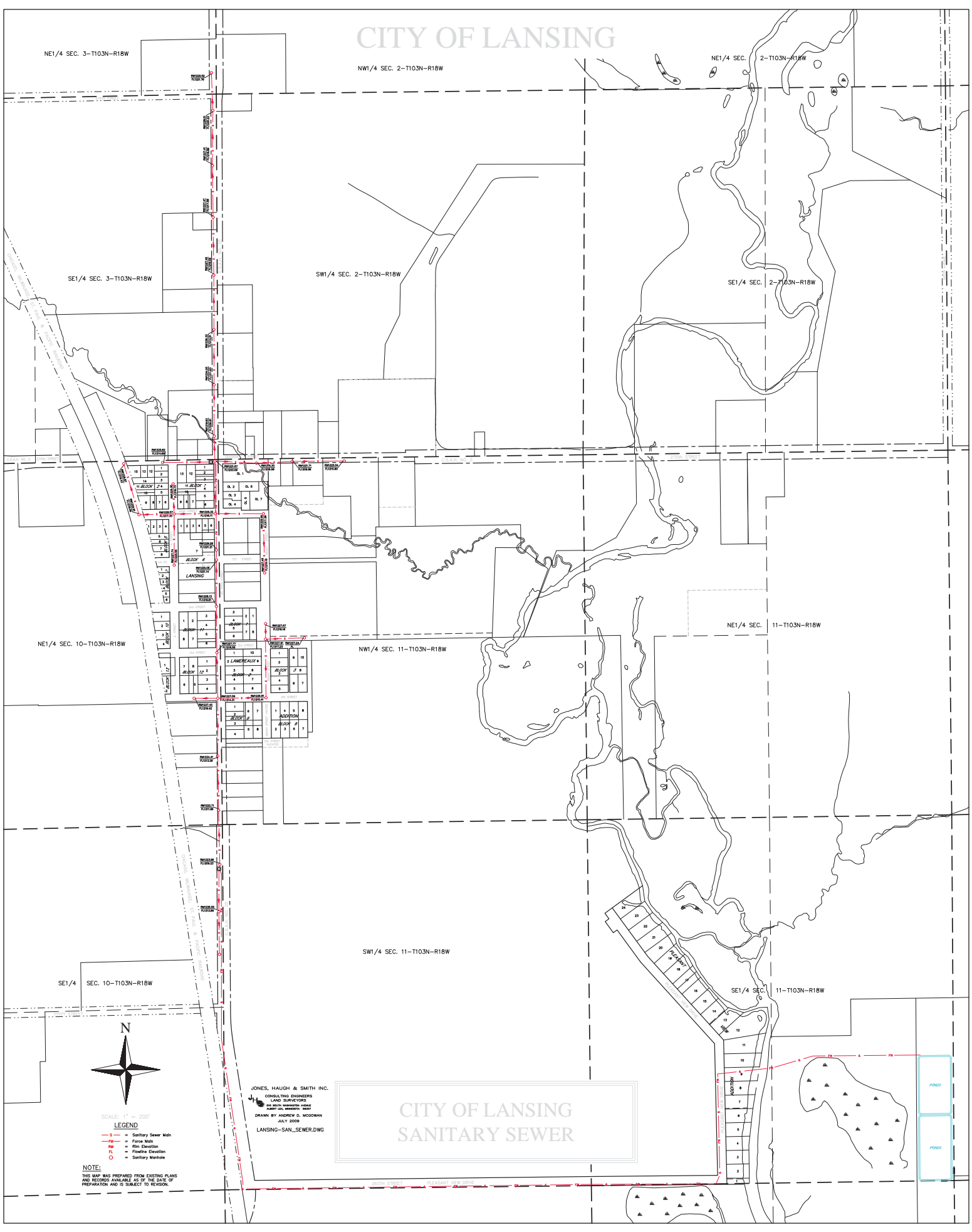
NOTE:
THIS MAP WAS PREPARED FROM EXISTING PLANS
AND RECORDS AVAILABLE AS OF THE DATE OF
PREPARATION AND IS SUBJECT TO REVISION.

JONES, HAUGH & SMITH INC.
CONSULTING ENGINEERS
LAND SURVEYORS
10000 WOODWARD AVE
SUITE 1000
LANSING, MI 48203
DRAWN BY ANDREW D. WOODMAN
JULY 2009
LANSING-WATER.DWG

CITY OF LANSING WATER MAIN



CITY OF LANSING



NE1/4 SEC. 3-T103N-R18W

NW1/4 SEC. 2-T103N-R18W

NE1/4 SEC. 2-T103N-R18W

SE1/4 SEC. 3-T103N-R18W

SW1/4 SEC. 2-T103N-R18W

SE1/4 SEC. 2-T103N-R18W

NE1/4 SEC. 10-T103N-R18W

NW1/4 SEC. 11-T103N-R18W

NE1/4 SEC. 11-T103N-R18W

SE1/4 SEC. 10-T103N-R18W

SW1/4 SEC. 11-T103N-R18W

SE1/4 SEC. 11-T103N-R18W



SCALE: 1" = 200'

- LEGEND**
- Sanitary Sewer Main
 - Force Main
 - SW Direction
 - Flowline Elevation
 - Sanitary Manhole

NOTE:
THIS MAP WAS PREPARED FROM EXISTING PLANS AND RECORDS AVAILABLE AS OF THE DATE OF PREPARATION AND IS SUBJECT TO REVISION.

JONES, HAUGH & SMITH INC.
CONSULTING ENGINEERS
LAND SURVEYORS
14000 WOODBINE DRIVE
ANN ARBOR, MI 48106
DRAWN BY ANDREW G. WOODMAN
JULY 2009
LANSING-SAN_SEWER.DWG

CITY OF LANSING
SANITARY SEWER

JONES

Exhibit L:
Historic Well Reports and Summary



Minnesota Department of Health Environmental Health in Minnesota

PWSID: **1500022**

PWS Name: **Lansing Township**

PWS Type: **Community**

PWS Status: **Active**

Public Water Supply Sources: Information from MNDWIS and CWI (sorted by Sample Point ID)

Source Type Codes: **GW** = Ground water; **SW** = Surface water; **GUI** = Ground water under influence

Location Source: **MGS** = digitized by the MN Geological Survey; * indicates incomplete records

MNDWIS PWS SOURCES IN FLOW														
Source Info					MNDWIS Data					CWI Data				
Sample Point ID	Name	Type	Availability	Status	Well No. (link to Well Log(s))	Location Info (link to Map)	Drill Year	Depth (in feet)	Case Depth (in feet)	Case Diam. (in inches)	Drill Date	Depth Completed (in feet)	Case Depth (in feet)	Case Diam. (in inches)
S01	Well #1	GW	Primary	Active	698932	01/28/2004 (C. DeMattos)	2004	397	166	8	05-26-2004	397.00	166.00	8.00

MNDWIS and CWI data value discrepancies in preceding tables are shown in **RED** (0 or null values excepted).

Unverified Wells

The following tables show information on wells whose existence (or previous existence) has not yet been confirmed.

UNVERIFIED Well Data													
Reference in Record	Name(s)	Unique Well Number	Drilled Depth (ft.)	Completed Depth (ft.)	Depth Cased (ft.)	Casing Diameter (in.)	Year Constructed	Construction Type	Year Out of Service	Sealing Record?	Year Sealed	Location Info	Comments
Databases Searched					Trivia								
County Well Index (1-mile radius); Biennial Report of the MN State Dairy and Food Commissioner-1907; MDH DWP MNDWIS; Past and Present MN Railroad Stations; MDH WELLS					No unverified city wells were identified. The village's wells are not mentioned in MGS Bulletin 31 (1944). No MDH 1988 OMW Inventory documents are available in 1Suite. No MDH Sanitary Rpts for this PWS are available on microfiche. No historical information for Lansing Twp. was listed on Lakesnwoods.com. The Lansing Co-op Creamery Assoc'n was in operation in 1907. It is possible that the North Country Coop is related to that older creamery. The North Country Coop has a well (267285). No breweries are reported to have operated in the village. A depot of the Chicago, Milwaukee, and St. Paul railway was located between Main and Division Streets. Besides Well No. 1 (698932), drilled in 2004, no other city wells were identified. It is unclear whether or not the city had a public water supply before Well No. 1 was installed. Did the creamery or railroad supply water to residents? The lack of available records leaves these questions open for the city to help resolve.								
Unverified Well Data Compiled By: Geoffery Nash Compiled Date: 2/21/2013													

Source: MN Dep't. of Health - 2/21/2013

Restart

Information Review & Summary of Old Municipal & Other Significant Wells

Community: Lansing Township

County: Mower

Checked Source	Did Not Check Source	Source of Information
<input type="checkbox"/>	<input checked="" type="checkbox"/>	MWI scanned records Notes:
<input type="checkbox"/>	<input checked="" type="checkbox"/>	MDH Rochester Public Well files (Rochester D.O.) [comment: MDH District Office Public Well paper files. Additional reports, letters, construction and sealing records, and other information may be in district office files that are not available anywhere else. This is true for paper files in the Rochester District Office, but may also be true for other districts. Counties include Rice, Olmsted, Winona, Houston, Fillmore, Mower, Freeborn, Dodge, Steele, Goodhue, Wabasha] Notes:
<input checked="" type="checkbox"/>	<input type="checkbox"/>	OMW files and review from SWP (Q:\archive\mdh\dwp\omw\omw.html or J:\Common\OMW & Sanborn Maps) Notes: No public water records exist – the system is new
<input type="checkbox"/>	<input checked="" type="checkbox"/>	District Engineer (Rochester D.O.) [comment: Check with the Rochester District Engineer with CPWS . They maintain files for each community in SE District in a personal filing cabinet. Additional reports, letters, construction and sealing records, and other information may be in these files that are not available anywhere else. Counties include Olmsted, Winona, Houston, Fillmore, Mower, Freeborn, Dodge, Steele] Notes:
<input type="checkbox"/>	<input checked="" type="checkbox"/>	MDH Non-Community PWS Well files (Rochester D.O.) [comment: files maintained by NCPWS District Staff] Notes:
<input type="checkbox"/>	<input checked="" type="checkbox"/>	MDH "Township" files (Rochester D.O.) [comment: files for well records and other well-related documentation for wells outside of municipalities. Filed by County by Township.] Notes:
<input checked="" type="checkbox"/>	<input type="checkbox"/>	MGS Winchell, <i>Geology of Minnesota Volume 1 (1884)</i> (http://conservancy.umn.edu/handle/56280 or J:\common\omw & Sanborn Maps\Historical Publications With Well Information) Notes: no description of wells for Mower County
<input checked="" type="checkbox"/>	<input type="checkbox"/>	MGS Winchell, <i>The Geological and Natural History Survey of Minnesota 14th Annual Report (1885)</i> (https://conservancy.umn.edu/handle/11299/56246) Notes: No wells mentioned in Lansing area
<input checked="" type="checkbox"/>	<input type="checkbox"/>	USGS Paper 193, <i>Quality of Surface Waters in Minnesota (1907)</i> (J:\common\omw & Sanborn Maps\Historical Publications With Well Information\1907 USGS Report) Notes: No mention of Lansing

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>USGS WS Paper 256, <i>Geology and Underground Waters of Southern Minnesota</i> (Meinzer et al. 1911) (J:\common\omw & Sanborn Maps\Historical Publications With Well Information\Meinzer_Hall_Fuller 1911)</p> <p>Notes: No mention of Lansing or railroad wells in the Lansing area</p>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<p>MGS Bulletin 27, <i>Geology of the Minneapolis-St. Paul Metro Area</i> (Schwartz 1936; J:\common\omw & Sanborn Maps\Historical Publications With Well Information\MGS_B_27 - Schwartz)</p> <p>[comment: metro area includes Scott County]</p>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>MGS Bulletin 31, <i>Geology and Underground Waters of Southern Minnesota</i> (Thiel 1944; http://conservancy.umn.edu/handle/56987 or J:\common\omw & Sanborn Maps\Historical Publications With Well Information\1944 Thiel, George_Bull_31)</p> <p>[comment: Bulletin 22 for NW Minnesota (1932); Bulletin 32 for NE Minnesota (1947)]</p> <p>Notes: No mention of wells in the Lansing area</p>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>Scanned PWS records in 1Suite</p> <p>[comment: the MDH Reports on Water Supply in 1Suite often will include all pages of the report instead of just the first page.]</p> <p>Notes: NA, the system is new</p>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>Sanborn Maps (Q:\archive\state\mn\mnhs\sanborn or J:\Common\OMW & Sanborn Maps; map index at Q:\archive\state\mn\mnhs\sanborn\docs\doc2630.pdf)</p> <p>[comment: Additional Sanborn maps might be available at the Minnesota Historical Society or other locations, such as the U of M library system, the local library, or elsewhere. SWP staff may be able to place the files on Q: drive upon request, but staff may need to view/obtain the maps independently. Contact Mike Baker at 651-201-4651 to determine availability.]</p> <p>Notes: No Sandborn maps indicated for Lansing</p>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Pre-1950 Sanborn Maps Not Available
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>Fisher Maps (Q:\archive\state\mn\mnhs\fisher; map index at Q:\archive\state\mn\mnhs\fisher\docs\doc2726.pdf)</p> <p>[comment: Not all communities that had Fisher maps produced are on Q:. To determine if Fisher maps are available for a specific community, check the map index. If the Fisher maps are available but not on Q:, SWP staff may be able to place the files on Q: drive upon request. Contact Mike Baker at 651-201-4651 to determine availability.]</p> <p>Notes: Noted on a list that a 1962 Fisher map exists at the MN Historical Society.</p>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>Other Fire Insurance Maps Other (J:\Common\OMW & Sanborn Maps\Minnesota Insurance Maps\Union List of Sanborn and Other Fire Insurance Maps - Minnesota_files)</p> <p>[comment: Additional fire insurance maps might be available at the Minnesota Historical Society or other locations, such as the U of M library system, the local library, or elsewhere. SWP staff may be able to place the files on Q: drive upon request, but staff may need to view/obtain the maps independently. Contact Mike Baker at 651-201-4651 to determine availability.]</p> <p>Notes: a 1962 Fire Underwriters Inspection Bureau map is listed as available from the MN Historical Society.</p>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<p>MGS Well Records [contact MGS for original records]</p> <p>Notes:</p>

<input type="checkbox"/>	<input checked="" type="checkbox"/>	MGS "City Files" [contact MGS] Notes:
<input type="checkbox"/>	<input checked="" type="checkbox"/>	MGS "McCarthy" Records [contact MGS] Notes:
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Past and Present Minnesota Railroad Stations web site (http://www.west2k.com/mn.htm) [comment: This web site shows information from over 1,500 rail stations that existed in Minnesota and includes maps with depot locations and historic photos of close to 900 stations. Photos will often show location of water tower, well house, windmill, or other clues to a well's location. Select a county in the station database to determine if there's information for a specific community.] Notes: Chicago-Milwaukee & St. Paul RR. The station was between Main and Division Streets (the names have changed to numbers). An old photo shows the station with a parked train. No obvious well or water but appears to be a hose on the ground. No clear location in photo.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Records from City Public Works, Water Superintendent, or other city department. Notes: No historical information about the community well. Limited information on private wells.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	City Council Minutes Notes:
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Local Historical Society, Library Notes:
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Creamery Lists: <ul style="list-style-type: none"> • 1907 Minnesota State Dairyman's Association Proceedings. List of MN Creameries by Counties on Page 311. • 1980 Minnesota Dairy Plants. A listing of dairy plants by county. Notes: 1907: lists a dairy called "Lansing Co-operative Dairy Association" shipping out of Lansing No listing in 1980.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Brewery search websites: <ul style="list-style-type: none"> • http://www.oldbreweries.com/breweries-by-state/minnesota/ • http://www.historyontheweb.org/minnbrew/brwlst7.html • https://yoergbeer.com/minnesota_breweries Notes: No breweries listed in Lansing on any of the three sites.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Other Websites: <ul style="list-style-type: none"> • http://www.lakesnwoods.com/. [comment: This website contains historic photographs from many communities that may show water towers, pumping stations, railroads, etc.] Notes: Lansing is an unincorporated village and is not on the list. The public water system well is owned and operated by Lansing Township. <ul style="list-style-type: none"> • https://www.lansingtownshipmn.org/history.html [comment: This website contains historic information about the community.] Notes: Lansing Township was organized in 1858, the first school in the village of Lansing was built in 1958. This school closed in 1977 and is currently used as a private Mennonite school called Marantha Bible School.

Summary

Municipal Wells: There was no previous municipal well or system prior to the current well, drilled in 2004. Current well #1 has UN 698932, 397' deep, 8" casing to 166'.

Other wells of interest

Railroads: railroad station located in Lansing

Breweries: no breweries listed

Creamery: one historic creamery in 1907

Other: were any wells associated with churches, schools, residential or commercial/industrial operations?

Search completed by MDH staff: Jennifer Ronnenberg

On date: 10/4/2021



LANSING