

How to Fill Out TABLE 10 in Your 2016 Water Supply Plan Potential Water Supply Issues & Natural Resource Impacts

Complete Table 10 by listing the types of natural resources that are or could potentially be impacted by permitted water withdrawals in the future. You do not need to identify every single water resource in your entire community. Do the best you can to fill out the table using available data. Some of this baseline data should have been in your earlier water supply plans or county comprehensive water plans. When filling out this table, think of what are the water supply risks, identify the resources, determine the threshold and then determine what your community will do to mitigate the impacts.

The goal is to identify the most important water resources (surface water and groundwater) that may be impacted by your water supply system. For example, include water resources that may be impacted by a drought from increased water use or when your population has grown significantly in the last ten years. Add additional rows to the table as needed.

For each identified resource, fill out each column in the table template:

- **Resource Type:** Identify whether resource is a river or stream, calcareous fen, lake, wetland, trout stream, or aquifer.
- **Resource Name:** Provide the name of specific resource that may be impacted.
- **Risk:** List the greatest risk(s) to the resource. This should include potential risks, in addition to known risks.
- **Risk Assessed Through:** Identify how the risks are being assessed.
- **Describe Resource Protection Threshold:** Identify any resource protection thresholds – formal or informal – that have been established to identify when actions should be taken to mitigate impacts.
- **Mitigation Measure or Management Plan:** Identify specific actions, mitigation measures, or management plan that you will implement if resource protection thresholds are met, or refer to a partner’s plan that includes actions to be taken.
- **Describe How Changes to Thresholds are Monitored:** Provide information on how resource protection thresholds will be monitored.

Follow These Steps to Complete Table 10:

1. Identify the potential for natural resource impacts/issues within the community

Review available information to identify resources that may be impacted by the operation of your water supply system (such as pumping).

Potential Sources of Information:

- County Geologic Atlas
- Local studies
- Metropolitan Council System Statement (for metro communities)

- Metropolitan Council Master Water Supply Plan – Water System Profiles (for metro communities)

For communities in the seven-county Twin Cities metropolitan area, the [Master Water Supply Plan Appendix 1 \(Water Supply Profiles\)](#) provides information about potential water supply issues and natural resource impacts for your community (<https://metro council.org/Wastewater-Water/Planning/Water-Supply-Planning/Master-Water-Supply-Plan.aspx>). Use the information summarized in your water supply profile as a guide to what water resources may potentially be impacted and that should be included in Table 10.

In addition, the [MetCouncil’s 2015 System Statements](#) for cities and townships in the Twin Cities provide maps of key water supply considerations (<https://metro council.org/Communities/Planning/Local-Planning-Assistance/System-Statements.aspx>). Use the following maps to identify potential impacts to water resources:

- Figure 3 shows surface water features and their interaction with the regional groundwater system. List in Table 10 those surface water resources that show a potential interaction with the regional groundwater system.
- Figure 4 shows locations and trends of MNDNR observation wells and locations of aquifer tests mapped by MDH. Look to see if there is a MNDNR observation well showing a downward trend near your water supply source that would indicate a potential impact.
- Figure 5 shows regulatory management areas. Look at potential impacts to water resources in the moderate to highly vulnerable drinking water supply management area (DWSMA).

ACTION: Check the resource type(s) that may be impacted in the **Resource Type** column. List both water resources that are known to be impacted and water resources that may potentially be impacted by your water supply system.

2. Identify where your water supply system is most likely to impact those resources (and vice versa)

Potential Sources of Information:

- Drinking Water Supply Management Areas (see Figure 5 in your communities 2015 System Statement)
- Geologic Atlas - Sensitivity
- If no wellhead protection area (WHPA) or other information exists, consider rivers, lakes, wetlands and significant within 1.5 miles of wells; and calcareous fens and trout streams within 5 miles of wells

ACTION: Focus the rest of your work in these areas.

3. Within focus areas, identify specific features of value to the community

You know your community best. What resources are important to pay attention to? It may be useful to check in with your community’s planning and zoning staff and others.

Potential Sources of Information:

- Metropolitan Council System Statement (for metro communities)
- Metropolitan Council Master Water Supply Plan – Water System Profiles (for metro communities)
- Park plans
- Local studies
- Natural resource inventories
- Tourist attractions/recreational areas/valued community resource

ACTION: Identify specific features that the community prioritizes in the **Resource Name** column (for example: North Lake, Long River, Brook Trout Stream, or Green Fen).

4. Identify what impact(s) the resource is at risk for

Potential Sources of Information:

- Wellhead Protection Plan
- Water Appropriation Permit
- County Geologic Atlas
- MDH or PCA reports of the area
- Metropolitan Council System Statement (for metro communities)
- Metropolitan Council Master Water Supply Plan (for metro communities)

ACTION: Check the risk type in the **Risk** column. If, based on a review of available information, no risk is identified, note “None anticipated.”

5. Describe how the risk was assessed

Potential Sources of Information:

- Local studies
- Monitoring data (community, WMO, MNDNR, etc.)
- Aquifer testing
- County Geologic Atlas or other hydrogeologic studies
- Regional or state studies, such as MNDNR’s report ‘Definitions and Thresholds for Negative Impacts to Surface Waters’
- Well boring logs

If a determination has been made that there is no impact anticipated to a key water resource, still list that resource in Table 10 and then explain how that determination was made (for example, an aquifer test was completed that showed there was no impact).

ACTION: Identify the method(s) used to identify the risk to the resource in the **Risk Assessed Through** column.

6. Describe protection threshold/goals

What is the goal, if any, for protecting these resources? For example, is there a lower limit on acceptable flow in a river or stream? Water quality outside of an accepted range? A lower limit on acceptable

aquifer level decline at one or more monitoring wells? Withdrawals that exceed some percent of the total amount available from a source? Or a lower limit on acceptable changes to a protected habitat?

Potential Sources of Information:

- County Comprehensive Water Plans
- Watershed Plans or One Watershed/One Plan
- Groundwater or Aquifer Plans
- Metropolitan Master Plans
- MNDNR Thresholds study
- Community parks, open space, and natural resource plans

ACTION: Describe resource protection goals in the **Describe Resource Protection Threshold** column or reference an existing plan/document/webpage.

7. *If a goal/threshold should trigger action, describe the plan that will be implemented*

Identify the specific action, mitigation measures or management plan that you as the water supplier will implement, or refer to a partner’s plan that includes actions to be taken.

Potential Sources of Information:

- County Comprehensive Water Plans
- Watershed Plans or One Watershed/One Plan
- Groundwater or Aquifer Plans
- Metropolitan Master Plans
- Studies such as MNDNR Thresholds study

ACTION: Describe the mitigation measure or management plan in the **Mitigation Measure or Management Plan** column.

8. *Describe work to evaluate these risks going forward*

For example, what is the plan to regularly check in to stay current on plans or new data?

Identify specific action that the water supplier will take to identify the creation of or change to goals/thresholds, or refer to a partner’s plan that includes actions to be taken.

Potential Sources of Information:

- County Comprehensive Water Plans
- Watershed Plans or One Watershed/One Plan
- Groundwater or Aquifer Plans
- Metropolitan Master Plans
- Studies such as MNDNR Thresholds study

ACTION: Describe what will be done to evaluate risks going forward, including any changes to goals or protection thresholds in the **Describe How Changes to Goals are Monitored** column.

Table 10. Natural resource impacts (*List specific resources in Appendix 12)

Resource Type	Resource Name	Risk	Risk Assessed Through *	Describe Resource Protection Threshold or Goal *	Mitigation Measures or Management Plan	Describe How Thresholds or Goals are Monitored
<input type="checkbox"/> River or stream		<input type="checkbox"/> None anticipated <input type="checkbox"/> Flow/water level decline <input type="checkbox"/> Degrading water quality trends <input type="checkbox"/> Impacts on endangered, threatened, or special concern species habitat <input type="checkbox"/> Other: _____	<input type="checkbox"/> Geologic atlas or other mapping <input type="checkbox"/> Modeling <input type="checkbox"/> Modeling <input type="checkbox"/> Monitoring <input type="checkbox"/> Aquifer testing <input type="checkbox"/> WRAPS or other watershed report <input type="checkbox"/> Proximity (<1.5 miles) <input type="checkbox"/> Other: _____	<input type="checkbox"/> Not applicable <input type="checkbox"/> Additional data is needed to establish <input type="checkbox"/> See report: _____ <input type="checkbox"/> No data available <input type="checkbox"/> Other: _____	<input type="checkbox"/> Not applicable <input type="checkbox"/> Change groundwater pumping <input type="checkbox"/> Increase conservation <input type="checkbox"/> Other: _____	<input type="checkbox"/> Not applicable <input type="checkbox"/> Newly collected data will be analyzed <input type="checkbox"/> Regular check-in with these partners: _____ - <input type="checkbox"/> Other: _____

Resource Type	Resource Name	Risk	Risk Assessed Through *	Describe Resource Protection Threshold or Goal *	Mitigation Measures or Management Plan	Describe How Thresholds or Goals are Monitored
<input type="checkbox"/> Calcareous fen		<input type="checkbox"/> None anticipated <input type="checkbox"/> Flow/water level decline <input type="checkbox"/> Degrading water quality trends <input type="checkbox"/> Impacts on endangered, threatened, or special concern species habitat <input type="checkbox"/> Other: _____	<input type="checkbox"/> Geologic atlas or other mapping <input type="checkbox"/> Modeling <input type="checkbox"/> Modeling <input type="checkbox"/> Monitoring <input type="checkbox"/> Aquifer testing <input type="checkbox"/> WRAPS or other watershed Report <input type="checkbox"/> Proximity (<5 miles) <input type="checkbox"/> Other: _____ <input type="checkbox"/> Other: ____	<input type="checkbox"/> Not applicable <input type="checkbox"/> Additional data is needed to establish <input type="checkbox"/> See report: _____ <input type="checkbox"/> Other: _____	<input type="checkbox"/> Not applicable <input type="checkbox"/> Change groundwater pumping <input type="checkbox"/> Increase conservation <input type="checkbox"/> Other: _____	<input type="checkbox"/> Not applicable <input type="checkbox"/> Newly collected data will be analyzed <input type="checkbox"/> Regular check-in with these partners: _____ <input type="checkbox"/> Other: _____

Resource Type	Resource Name	Risk	Risk Assessed Through *	Describe Resource Protection Threshold or Goal *	Mitigation Measures or Management Plan	Describe How Thresholds or Goals are Monitored
<input type="checkbox"/> Lake		<input type="checkbox"/> None anticipated <input type="checkbox"/> Flow/water level decline <input type="checkbox"/> Degrading water quality trends <input type="checkbox"/> Impacts on endangered, threatened, or special concern species habitat <input type="checkbox"/> Other: _____	<input type="checkbox"/> Geologic atlas or other mapping <input type="checkbox"/> Modeling <input type="checkbox"/> Modeling <input type="checkbox"/> Monitoring <input type="checkbox"/> Aquifer testing <input type="checkbox"/> WRAPS or other watershed report <input type="checkbox"/> Proximity (<1.5 miles) <input type="checkbox"/> Other: _____ <input type="checkbox"/> Other: ____	<input type="checkbox"/> Not applicable <input type="checkbox"/> Additional data is needed to establish <input type="checkbox"/> See report: _____ <input type="checkbox"/> Other: _____	<input type="checkbox"/> Not applicable <input type="checkbox"/> Change groundwater pumping <input type="checkbox"/> Increase conservation <input type="checkbox"/> Other: _____	<input type="checkbox"/> Not applicable <input type="checkbox"/> Newly collected data will be analyzed <input type="checkbox"/> Regular check-in with these partners: _____ <input type="checkbox"/> Other: _____

Resource Type	Resource Name	Risk	Risk Assessed Through *	Describe Resource Protection Threshold or Goal *	Mitigation Measures or Management Plan	Describe How Thresholds or Goals are Monitored
<input type="checkbox"/> Wetland		<input type="checkbox"/> None anticipated <input type="checkbox"/> Flow/water level decline <input type="checkbox"/> Degrading water quality trends <input type="checkbox"/> Impacts on endangered, threatened, or special concern species habitat <input type="checkbox"/> Other: _____	<input type="checkbox"/> Geologic atlas or other mapping <input type="checkbox"/> Modeling <input type="checkbox"/> Modeling <input type="checkbox"/> Monitoring <input type="checkbox"/> Aquifer testing <input type="checkbox"/> WRAPS or other watershed report <input type="checkbox"/> Proximity (<1.5 miles) <input type="checkbox"/> Other: _____	<input type="checkbox"/> Not applicable <input type="checkbox"/> Additional data is needed to establish <input type="checkbox"/> See report: _____ <input type="checkbox"/> Other: _____	<input type="checkbox"/> Not applicable <input type="checkbox"/> Change groundwater pumping <input type="checkbox"/> Increase conservation <input type="checkbox"/> Other: _____	<input type="checkbox"/> Not applicable <input type="checkbox"/> Newly collected data will be analyzed <input type="checkbox"/> Regular check-in with these partners: _____ - <input type="checkbox"/> Other: _____

Resource Type	Resource Name	Risk	Risk Assessed Through *	Describe Resource Protection Threshold or Goal *	Mitigation Measures or Management Plan	Describe How Thresholds or Goals are Monitored
<input type="checkbox"/> Trout stream		<input type="checkbox"/> None anticipated <input type="checkbox"/> Flow/water level decline <input type="checkbox"/> Degrading water quality trends <input type="checkbox"/> Impacts on endangered, threatened, or special concern species habitat <input type="checkbox"/> Other: _____	<input type="checkbox"/> Geologic atlas or other mapping <input type="checkbox"/> Modeling <input type="checkbox"/> Monitoring <input type="checkbox"/> Aquifer testing <input type="checkbox"/> WRAPS or other watershed report <input type="checkbox"/> Proximity (< 5 miles) <input type="checkbox"/> Other: _____	<input type="checkbox"/> Not applicable <input type="checkbox"/> Additional data is needed to establish <input type="checkbox"/> See report: _____ <input type="checkbox"/> Other: _____	<input type="checkbox"/> Not applicable <input type="checkbox"/> Change groundwater pumping <input type="checkbox"/> Increase conservation <input type="checkbox"/> Other: _____	<input type="checkbox"/> Not applicable <input type="checkbox"/> Newly collected data will be analyzed <input type="checkbox"/> Regular check-in with these partners: _____ <input type="checkbox"/> Other: _____
<input type="checkbox"/> Aquifer		<input type="checkbox"/> None anticipated <input type="checkbox"/> Flow/water level decline <input type="checkbox"/> Degrading water quality trends <input type="checkbox"/> Impacts on endangered, threatened, or special concern species habitat <input type="checkbox"/> Other: _____	<input type="checkbox"/> Geologic atlas or other mapping <input type="checkbox"/> Modeling <input type="checkbox"/> Monitoring <input type="checkbox"/> Aquifer testing <input type="checkbox"/> Proximity (obwell < 5 miles) <input type="checkbox"/> Other: _____	<input type="checkbox"/> Not applicable <input type="checkbox"/> Additional data is needed to establish <input type="checkbox"/> See report: _____ <input type="checkbox"/> Other: _____	<input type="checkbox"/> Not applicable <input type="checkbox"/> Change groundwater pumping <input type="checkbox"/> Increase conservation <input type="checkbox"/> Other: _____	<input type="checkbox"/> Not applicable <input type="checkbox"/> Newly collected data will be analyzed <input type="checkbox"/> Regular check-in with these partners: _____ <input type="checkbox"/> Other: _____