

## **POMME DE TERRE RIVER WATERSHED**

### **1W1P Planning Committee**

USDA ARS Soils Lab

November 8<sup>th</sup>, 2017

### **MEETING MINUTES**

Meeting began at 9:00AM

Andy Albertson as Note Taker

*Planning Committee Members Present: Bill Kalar; WOT, Ben U.; EOT SWCD, Brad M.; WOT SWCD, Greg L.; Grant, Joe M.; Grant SWCD, Tara O.; BWSR, Brad W.; BWSR, Matt S.; Stevens SWCD, Emily S; DNR, Paul W.; MPCA, Andy A.; Swift SWCD, Beau P.; Big Stone SWCD,*

#### **Intro**

- Open Houses
  - o Review
  - o Memo was handed out by EOR that summarized responses to three questions that were posed to participants at open house and CAC meetings. (See attachment)
  - o The priorities gathered in these meetings will be condensed down and guide future planning within 1W1P
- Citizen Advisory Committee Meetings
  - o North and south meetings last week
  - o 4 people in north, 2 people in south attended
  - o SWCD members can help illicit participation from CAC members

#### **Issues Identification**

- Public Awareness Survey
  - o Review of responses to date
  - o 24 responses total
  - o Memo attached detailing responses thus far
- EOR's Review of collected documents (Co. Water Plans, WRAPS, TMDL, State plans, etc.)
  - o Synthesized info into tabs and categories and sub-categories and sub-issues
    - Socio economic concerns
    - Resource concerns
    - Land use concerns
  - o Concerns and Issues
  - o Goals
  - o Specific Implementation activities
  - o Source
- Handout: Preliminary Watershed Concerns and Issues for the PdT River Watershed
- Handout: Identifying and Prioritizing Resources and Issues (BWSR)
- Eventually, we will need to prioritize our issues in order to get direction and focus.
- Group activity: get in groups of three to discuss table (socio, resource and land use)
  - o Tier 1: things to address within the first 10 years
  - o Tier 2: want to address eventually, but not right now
  - o Tier 3: topics we care about, but someone else will take the lead
  - o More specific issue statements will be needed to help whittle down and prioritize the list
  - o Table was refined into Tier categories based on group feedback

- Revised table will be sent out via email
- Resource Inventory
  - Chapter of 1W1P
  - Summary of PdT watershed
  - Discussion on value of breaking down summary beyond county-wide scale, perhaps township scale for some inventory options (population) and ecoregion for other items.
  - Make sure north and south theme continues throughout the plan.
  - Handout: Compiling a Land and Water Resources Inventory (BWSR)
  - The Inventory will be sent out to Planning Committee for review.
    - ~40 pages
    - Committee members are expected to provide feedback

### **Zonation**

- About half of responses submitted, reminder will be sent out, need asap.
  - Will be sent to Paul R. with MNDNR to process.
  - Results discussed at January meeting
- **January 3<sup>rd</sup>** is next Planning Committee meeting, location is ARS Lab in Morris at **9:00am**.
  - Next CAC meeting are TBD for next January / February

Adjourn (12:08pm)

**Project Name** | Pomme de Terre River One Watershed, One Plan  
**To / Contact info** | Planning Committee  
**Cc / Contact info** | BWSR Advisory Staff  
**From / Contact info** | Camilla Correll, PE, Meghan Funke PhD  
**Regarding** | Public Open House and CAC Meeting Issues World Café Summary

**Date** | 11/7/2017

## Introduction

The goal of the One Watershed, One Plan (1W1P) is to align local water planning on major watershed boundaries with state strategies towards prioritized, targeted and measureable implementation plans. One component of the 1W1P process is stakeholder engagement and participation. In late October and early November of 2017, the planning partners and consultants hosted a series of two public Open Houses and a series of two Citizen Advisory Committee meetings to consult with stakeholders. The goals of these meetings included:

- To educate the public about the 1W1P planning process.
- To share local knowledge of the Pomme de Terre Watershed.
- To share personal perspective about the lakes, streams, wetlands, rivers and other natural areas in the Pomme de Terre Watershed.
- To help identify concerns or vulnerabilities for the plan development process.
- To connect stakeholders with one another, and work together to become better stewards.

The meetings included an activity based on a "World Café" format. This large-group discussion method uses a special café-like setting, and small-groups of four to five people. The groups are tasked with answering a set of questions; each question session lasted approximately 15 minutes. In answering the questions, each small-group recorded their ideas and discussions in a visual way, and presented the results to the other groups. Three questions were posed to the participants:

1. How do you interact with or use water?
2. What activities or behaviors are impacting or have the potential to impact our water resources?
3. What do you think is most important to first address?

The first question is intended to warm participants up to the conversation, notetaking format, and opens the ways for deeper contemplation of the issue. The second question challenges participants to review their own and others' behaviors to identify both positive and negative impacts of those behaviors. The responses to the first two questions were organized around major themes by each group and presented at the conclusion of each question period. The third question allowed stakeholders to voice their personal interests and guide the Plan's priorities and structure.

Notes collected from the various conversations were transcribed, analyzed, and are summarized in the following narrative. The raw data from each group (interactions, impacts, priorities) were recorded in a spreadsheet and coded into broad themes. This summary does not review every comment made. Instead, it serves as an overview of the themes that emerged from the conversations.

## Meeting Participants

| Meeting   | Participants   |
|---|--|
| <b>Open House – Northern</b><br>4-7 PM, October 23, 2017<br>Community Center, Dalton, MN              | West Otter Tail SWCD – 5      Public – 9      State agencies – 3<br>Grant SWCD – 2      CAC – 2      PdTRA/EOR – 2<br>Douglas SWCD – 2                 |
| <b>Open House – Southern</b><br>4-7 PM, October 26, 2017<br>Old One, Morris, MN                       | Swift SWCD – 1      PdTRA Policy – 2      State agencies – 2<br>Big Stone SWCD – 2      Public – 4      PdTRA/EOR – 2<br>Stevens SWCD – 4      CAC – 1 |
| <b>CAC Meeting – Northern</b><br>9 AM - Noon, November 6, 2017<br>Community Center, Dalton, MN        | CAC – 4<br>PdTRA/EOR – 2   |
| <b>CAC Meeting – Southern</b><br>5-8 PM, November 6, 2017<br>AgCounty Farm Credit Service, Morris, MN | CAC – 2<br>PdTRA/EOR – 2   |

## Response Summary

This section presents the questions that were asked during the World Café exercise and summarizes the responses. The responses are grouped by the categories identified by the participants, with examples of common or unusual responses.

### **Question #1: How do you interact with or use water?**

The goal of this question is to help participants recognize the role and importance of water in their lives. Moreover, it helps the Planning Group understand what stakeholders know and think about the Pomme de Terre River Watershed resources. Responses included:

- Recreation – hunting, fishing, swimming, boating
- Household/Domestic Use – gardening, lawn watering, cooking, washing, baptism
- Drinking Water
- Agricultural Production – irrigation, livestock
- Industry – mixing concrete, ethanol production
- Natural Resource – scenic beauty, taxes/property values, economic developer

### **Question #2: What activities or behaviors are impacting, or have the potential to impact, water resources?**

The second question encourages participants to think about impacts to water resources, and what makes “healthy” water resources. Impacts can be positive or negative. The summary of responses is split between the Public Open Houses versus the CAC Meetings. Responses included:

#### **Public Open Houses:**

- **Agriculture** – tiling, pesticides, nitrates, erosion, ditching, altered hydrology, aquifer depletion, insecticides, fertilizer application timing, livestock
- **Development** – development of sensitive areas, road salt, septic, lawn irrigation, gravel pits, shoreline development, boat wake erosion, bank erosion, energy production, industry, water softening, more impervious surfaces, transportation choices, overuse
- **Socio-economic** – awareness of water, owners vs. renters issues, legislation, politics, religious beliefs, being lazy, being water quality stewards
- **Other** – AIS, greenhouse effect, torrential rains
- **Conservation Practices** – CRP, conservation tillage, buffers, rain gardens, shoreline restoration

#### CAC Meetings:

- **Agriculture** – fertilizers, tillage, livestock, hog operations and liquid manure, tiling, nitrates, wind erosion, more irrigation pivots, soil loss, bank erosion, irrigation groundwater withdrawals, wetland loss
- **Development** – growth of lake areas, development, impervious surfaces, lawns instead of buffers, waste water, garbage, old cabin septic, landfills, development in floodplains,
- **Recreational** – garbage/littering, boating, kayaking, swimming
- **Socio-economic** – disaster relief for corn and soybeans, Farm Bill
- **Other** – zebra mussels, milfoil, more precipitation/water delivered into system, climate change
- **Conservation Practices** – easements, buffers, filter strips, cover crops, grassed waterways, sediment basins

#### Question #3: What do you think is most important to first address?

Each meeting developed a list of priorities. Participants were asked to identify the single most important issue they thought should be addressed in the watershed management plan. These priorities are not meant to be solutions. Rather, participants were asked to identify what they think is the most important, most immediate need, considering the complete array of uses and impacts identified when answering the first two questions. The tables below include the list of priorities created at each meeting. Most reflect the exact language chosen by participants. A few have been paraphrased for the sake of space. Similar responses were combined into one response.

**Table 1. Priorities identified from the 2017 Issues World Café Discussions**

| <b>Open House – Northern</b>                 |   |
|--|---|
| Agricultural and urban runoff                | Filter strips on all land that borders water                        |
| Tiling and ditches                           | Landfill runoff   |
| Erosion control                              | Improve water quality   |
| Lake bank erosion                            | Ground source heat pumps  |
| Phosphorus: farms, septic, livestock         | Aquifer recharge and depletion                                      |
| Potable water sources                        | Development pressures (shorelines)                                  |
| Urban irrigation                             | “Saint Paul” landscaping  |
| <b>Open House – Southern</b>                 |   |
| Agricultural runoff/ farming practices       | Conservation and water quality education                            |
| Hold more water on the land                  | Irrigation water management to address depleting groundwater supply |
| Safe, clean, sustainable drinking water      | Surface water runoff to lakes, streams and rivers                   |
| Fall tillage                                 | Balance between quality of ag vs. urban water                       |
| <b>CAC Meeting – Northern &amp; Southern</b> |   |
| Surface and groundwater quality              | Drinking water quality  |
| Nitrates in groundwater                      | Phosphorus in WWTF effluent – high cost to remove                   |
| Sediment reduction                           | Erosion and runoff into ditches and streams                         |

**Project Name** | Pomme de Terre 1W1P**Date** | November 7,  
2017**To** | Pomme de Terre 1W1P Planning Committee**Cc** | Stephanie Adams, PdT River Association Watershed Projects Coordinator**From** | Camilla Correll, PE Spencer Peck, JD**Regarding** | Participation & Public Awareness Survey**Background**

The Pomme de Terre 1W1P Participation & Public Awareness Survey serves three purposes. First, it is designed to gather stakeholders' perspectives, values, and local knowledge. This information is crucial to developing a responsive and effective watershed plan. Second, the survey gathers demographic information that planning partners and decision makers will use to ensure public outreach and engagement activities reach a diverse audience. Third, the survey functions as a tool to raise awareness about the planning process generally, and to illustrate plan elements and underlying values of the plan.

The Survey has been distributed in multiple places and formats. It was first issued in hard copy format at the Public Kick-off Meeting on May 31, 2017. Soon after the Kick-off meeting it was posted to the project website; it is still available on that website. Members of the Policy Work Group have personally distributed copies to interested stakeholders and organizations. Finally, the survey was made available at both Water Conversations. These meetings were public outreach events held in late July, in Owatonna and Northfield.

The following sections provide a brief summary of the information collected to date. After the summary, each question from the survey is presented and the responses to-date are summarized.

**Survey Participant Summary:**

- A total of 24 submitted to date (as of 11/3/17)
- ~75% male and 25% female
- Majority appear to be affiliated with governmental units (city, county, state)
- County representation:
  - Big Stone: 1
  - Douglas: 3
  - Grant: 6
  - Otter Tail: 2
  - Stevens: 6
  - Swift: 2
  - Roberts: 1
  - Prefer not to say: 1
- Hard to draw reliable conclusions, at this point in time based on the limited number of responses.
- The responses do suggest, however, that the survey respondents are informed about the 1W1P process, have some understanding of the issues within the watershed, and place great value on the watershed's resources.

**Please provide your opinion on the following water resource-related questions:**

**1. Do you live near a stream, lake, river or wetland? If so, please identify which body of water.**

- 22/22 live near a stream, river or lake.
- Respondents live near the following bodies of water:
  - Rivers: Pomme de Terre, Chippewa
  - Lakes: Lake Oliver, Lake Crystal, Eagle Lake, Pelican Lake, Stowes Lake, several others
  - Streams: 10-mile Creek, Dry Wood Creek

**2. Have you noticed any changes to this body of water in the last five to ten years?**

- Changes noticed range widely. Many respondents mentioned water quality and clarity, excess plants and weeds, algae blooms, invasive species, decreased wildlife presence, and increased water level variability and more common flash floods.
- Other unique responses included erosion along steep banks, recognition that many landowners are more interested in conservation practices, dead fall trees, more buffer strips, winter freeze out, and increased development.

**3. How important is the quality of the water and the health of the ecosystems within this waterbody?**

- Almost every respondent (19/24) rated the health of the waterbody and related ecosystems as "Very Important."
- Two rated the health of the waterbody as only "slightly important."

**4. How important are the following water resources to the quality of life of your community?**

- Surface waters are ranked as "Very Important" by a large majority of respondents.
- Drinking water was also ranked as "Very Important" by all but one respondent.
- Flood control, drainage ditches, industrial use, and irrigation water appear to be less important, with roughly even distributions of responses across the value choices. All four resources received at least one vote of "Not at all important."

**5. How important are the functions provided by water courses that drain into the Pomme de Terre River, Pelican Creek, Muddy Creek, or Drywood Creek?**

- Agricultural drainage received the highest scores, with 19 "Very Important" responses, and three "Moderately Important." One respondent stated agricultural drainage was "Not at all Important."
- Responses indicate that Fish & Wildlife Habitat; Fishing, Hunting, and Trapping; and Flood Water Conveyance are, on average, "Moderately Important."
- Recreational uses of water resources are also valuable, but received a mix of all responses, including a few "Not at all Important" responses.



**6. Please rate the severity of the following issues in your community during the next 5 to 10 years?**

- All issues were ranked at least “Slightly Important.”
- Farming Practices and Construction of water quality improvement practices were the highest ranked water resource management practices. Farming practices received 17 responses for “Very Important” and construction practices received 16 such responses.
- On average, respondents ranked algae blooms, aquatic invasive species, eroding banks, soil loss, and groundwater quality and supply as the most severe issues.
- Land development, failing septic systems, and sedimentation averaged either “Moderately Important” or “Slightly Important.”
- Economic losses from flooding, and frequency of flooding appear to be less important. Both issues were deemed “Slightly Important,” on average.

**7. Please rate the following water resource management practices according to its importance to supporting healthy water resources in the Pomme de Terre Watershed.**

- Again, Farming Practices and Construction of water quality improvement practices are the most important water resource management practices. Farming received 17 “Very Important” responses, and Water quality improvement practices received 16 such votes.
- Existing regulations, regulated facilities, natural area preservation, and stormwater management practices also appear to be highly valued management practices all with average scores of “Moderately Important”.
- In-Lake and In-channel management practices received the lowest average scores.

**How can we make your involvement in this project more convenient and engaging?**

**8. How do you prefer to participate in community or natural resource planning activities? Please rank the following choices from 1 – 8; with 1 being your most preferred, and 8 being least preferred.**

- There is no clear preference among respondents regarding participation. However, direct mail, email, and public hearings are among the more preferred methods.
- The older the respondent the more traditional processes are preferred (public meetings, radio/tv/newspapers, local governments); the younger the respondent, the more technology (websites, social media) is preferred.

**9. How do you prefer to obtain information about your community and watershed?**

- Like the question regarding participation methods, there are no clear preferences regarding obtain information, and age appears to play an important role in which information sources are preferred.

**10. When would it be most convenient for you to attend future meetings about the Pomme de Terre One Watershed, One Plan?**

- Weekday evenings and weekday mornings are the most preferred time to attend future meetings.
- Weekends appears to be the least preferred option, followed by weekday midday and weekday mornings.

**Please tell us about yourself:**

**11. Please pick the option that best describes you. Please select all that apply.**

- Respondents included a good cross section of potential stakeholders
- Respondents included:

| Type  | Response # | Count |
|---|------------|-------|
| Landowner-Farmer                                | 1          | 11    |
| Tenant-Farmer                                   | 2          |       |
| Absentee Landowner                              | 3          |       |
| Urban homeowner                                 | 4          | 4     |
| Lakeshore homeowner                             | 5          | 8     |
| Rural homeowner                                 | 6          | 9     |
| City/township official/staff                    | 7          | 1     |
| County/Local government official/staff          | 8          | 7     |
| State Agency Employee                           | 9          | 2     |
| Federal Agency Employee                         | 10         | 1     |
| Student - college                               | 11         |       |
| Student – high school                           | 12         |       |
| Outdoors-person (hunting, fishing, hiking, etc) | 13         | 12    |
| Other, please describe below                    | 14         |       |

**12. In which county do you live?**

- Big Stone: 1
- Douglas: 3
- Grant: 6
- Otter Tail: 2
- Stevens: 6

- Swift: 2
- Roberts: 1
- Prefer not to say: 1

**13. What is your gender?**

- Female – 5
- Male – 17
- Prefer not to say: 1

**14. What is your age?**

| Under 18 | 18 to 25 | 26 to 35 | 36 to 45 | 46 to 55 | 56 to 70 | 71 or older |
|----------|----------|----------|----------|----------|----------|-------------|
| 0        | 1        | 4        | 4        | 5        | 9        | 0           |

**15. How familiar are you with the One Watershed One Plan planning process?**

- Only two respondents are “Not at all familiar” with 1W1P processes.
- Six respondents claimed to be “A Little Familiar” with the process.
- Ten respondents stated they were at least “Moderately Familiar” with the 1W1P planning process.
- Five respondents claimed to be “Very Familiar” with the process.

**16. Have you participated in previous One Watershed One Plan or other watershed planning processes?**

- Eight participants have previously participated in 1W1P or other watershed planning processes. Those processes include:
  - Water planning task forces
  - Chippewa River Watershed Project
  - Watershed Management Plan
  - Multiple county water plans, and comprehensive plans
  - Red Lake River 1W1P& Thief River 1W1P
  - Ottertail WRAPS

**17. Please provide any other comments you may have below:**

- Multiple respondents left comments.
- One respondent wrote a long comment qualifying his/her responses as not “as crucial,” and noting that her/his answers were “weighted with a groundwater protection/draining water protection emphasis and that I love outdoor recreation.”



# Identifying and Prioritizing Resources and Issues



*Supporting information for Section II.2 of the 1W1P Plan Content Requirements*

The following document provides suggestions for identifying and prioritizing resources and issues that will be addressed in your comprehensive watershed management plan (Task 3.2 in the template work plan). The intent is not to prescribe a particular process, but rather to stimulate ideas that lead to a robust discussion around priority issues and potential solutions. When designing your process, ask: What outcome(s) do we want? Who participates, and what is each participant's role in the process? What technique(s) will we use?

Identifying and prioritizing issues lays the foundation for the rest of the plan. The process should:

- Be thoughtful, inclusive, defensible, and documented
- Build on priorities established through other local and state planning efforts
- Be limited to, and focused on, creating and prioritizing issue statements and identifying geographic priorities (setting measurable goals and selecting targeted strategies/actions will happen later)
- Use group decision-making techniques that keep the process moving forward
- Result in issue statements that clearly articulate real and actionable problems, risks, and opportunities that are connected to local values

## Definitions

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**Prioritize** – determining the relative importance and precedence of the resources and issues you have identified in your plan. This includes not only agreeing upon which items will be tackled **first**, but also those that will not be included in your plan.

**Resources** – natural features on the landscape that can be grouped into categories for management activities (e.g., unimpaired lakes, shallow groundwater aquifers, stream riparian corridors, productive soils).

**Issues** – problems, risks, or opportunities for your watershed's priority resources (e.g. flood damage, groundwater contamination, protect unimpaired waters, etc.) that will be addressed in your plan (see example issue statements below).

## Setting the Stage

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It's important that you make sure participants understand the process your group will use to identify issues and set priorities, and their role in that process. Transparency about the process before you start can help mitigate conflict later on. Note that the concepts below apply in the other stages of plan development, too.



## Set Expectations

Clearly communicate the process design and goals to the participants. What are you trying to achieve? Who will be involved? How long will it take? Who will make the decisions and how? When will you know you are done?

## Clarify Roles

Ideally, people who are interested in the planning effort or who may be affected by the resulting plan get a chance to *provide input* in identifying and/or setting priorities. While gathering input from a large and diverse group of people will give a good base of information about local values, a smaller set of people who are more intimately engaged in the process (e.g., policy or advisory committees) will *make decisions* about the priority issues that go into the plan. Participants should be clear about their role and how their input will be used. The [IAP2 spectrum](#) offers a framework for thinking about goals for public participation (Inform, Consult, Involve, Collaborate, Empower), and the “promise to the public” that is associated with the opportunity to provide input.

You may want to consult with a **skilled facilitator** who has expertise in designing and leading a group decision making process.

## Identify and group resources and issues

Once the process is set, generate a list of resources and issues. The Overview section of the 1W1P Plan Content Requirements page 3) has a list of “issue areas” that must be addressed in the plan plus additional items that may enter the discussion. See section II.2 1W1P Plan Content Requirements for more information on sources of information to use in this process. The Land and Water Resources Inventory is also a good source of information for identifying resources and issues.

Planning kickoff meetings are a good venue to gather information and feedback from a **broader group of watershed citizens and stakeholders** about their watershed values and concerns. That feedback can be used to inform how issue statements are crafted and prioritized and subsequent planning steps. Going into the community, instead of asking them to come to you, is often the best way to reach audiences that don’t normally participate in water conversations (but who may be important implementation partners).

Asking participants, especially those who will play a role in implementing the plan, to **share their values and concerns** around water resources will help in writing clear, meaningful, and actionable issue statements. That information will also be valuable in the process of prioritizing and targeting. You may also want to provide maps where people can indicate the resources that are most important to them.

The information you collect should be organized and summarized in two main ways. Your consultant, BWSR staff, or partnership development coach may recommend techniques, such as Zonation or other spatial models for mapping and prioritizing **resources** and “affinity mapping” or other methods for grouping **issues** by theme.

## Map and prioritize resources

Which water resources will become the focal point of the planning effort? In all likelihood, your plan won't be able to address all waters in the watershed at one time so it will be important to identify those that the community wants to protect and restore first.

## Group issues by theme

The problems, risks, and opportunities faced by the priority resources must be well understood in order to move forward with effective planning and implementation. You may identify dozens of issues as you aggregate across existing plans and other sources of input, and those issues may relate to multiple resources. Review to see if there are opportunities to "lump" common statements (e.g., describe multiple contaminants for groundwater in one statement). Allow themes to emerge based on your watershed – and your partnership's – unique "personality." It is best to narrow your list to as few themes as possible to ensure your prioritization has the desired focus.

### Examples of clear, meaningful issue statements:

- Groundwater is at risk of being depleted because of overuse and loss of recharge.
- Water clarity in lakes are threatened because of increased runoff and associated pollution from potential new development.
- Flooding is causing damage to homes and businesses located near the river.
- Trout populations in the watershed are highly sensitive to increased water temperatures and flashy peak flows resulting from loss of forest cover.

## Prioritizing issue statements

There are a number of prioritization techniques your group can use to determine which of the issues will be addressed in the plan (and which will not). As part of this process, your plan should consider the high-level state priorities identified in the state's Nonpoint Priority Funding Plan. Your group may decide to further prioritize issues (e.g., A, B, C) to help you focus implementation efforts.

Keep in mind that the value of prioritization not only lies in agreeing upon what you work on FIRST, but also in clarifying which activities will NOT be addressed in the plan (the plan should include an explanation of why certain priorities were rejected).

These priorities will drive the next steps in the planning process, which are setting measurable goals and targeting strategies and actions. During those future discussions, you can consider other factors:

- feasibility of the actions required to address the issue
- cost effectiveness of actions/return on investment
- landowner willingness to adopt the right practices in the right places

"Sticky dots" are often used as a method for "voting" on priorities. While they can be useful for "taking the temperature" of a group (provided you are working from well-crafted issue statements), other more robust techniques for prioritization may be appropriate for setting plan priorities. Check with your partnership development coach for ideas.



- limitations from lack of data or modeling
- time/resources available or anticipated to complete implementation actions

If you find during the next planning steps that you need to revisit and adjust your priorities, do so. This process is not linear and you may need to revisit and adjust your priorities as more information and data are provided.

## Getting to a quality plan

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At the end of this part of the planning process, you should have: 1) a prioritized list of issue statements that clearly conveys the most pressing problems, risks, and opportunities facing the watershed and 2) maps depicting locations of priority resources. The list can indicate those issues identified during the process that are not priorities for the plan, but that could be priorities for other groups. Keep in mind: your plan should guide you to work on the things that are MOST important - in the locations that are most important. "Opportunistic" plans will not serve your partnership when it comes to deciding where to invest your limited implementation resources. The measurable goals, targeted actions, and overall implementation plans and program in the rest of the plan should relate directly to the priority issues.





# Compiling a Land and Water Resources Inventory



## *Supporting information for Section II.6 of 1W1P Plan Content Requirements*

Section II.6 of the Plan Content Requirements for One Watershed, One Plan outlines the minimum requirements for the Land and Water Resources Inventory. This document provides additional considerations for what types of information to include, where to find the information, and how to effectively use it.

The inventory, at least in draft format, should be completed before - and used to inform - the identification and prioritization of resources and issues (Section II.2). The inventory should help explain why issues exist in the watershed, and ultimately provides the justification for the actions identified in the plan.

## **The Importance of Telling the Watershed Story**

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Even though the Land and Water Resources Inventory is recommended to be included in the plan appendix, it is a critical component of the plan and the planning process because it sets the context for the other plan elements. Therefore, the Inventory should paint a clear picture of watershed characteristics using a narrative description, maps, and tables.

Every watershed has a story – its long geological history and its location determine the native soils, vegetation, and natural abundance and quality of lakes, streams, and groundwater. Historical and recent land use changes and hydrologic alterations determine the watershed's current characteristics, while social and economic factors can give clues about the watershed's future. It's also important to acknowledge the watershed's context within the broader basin because actions in upstream watersheds affect downstream neighbors.

Effectively "telling" the watershed story will establish a common understanding among planning participants, help planning groups identify and prioritize issues, and support the plan's strategies and actions.

## **Content Considerations and Sources**

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There are multiple reports, plans, and studies that already contain most, if not all, of the pieces of information you include in your Inventory, but they may not be organized by your planning boundary. The plan must contain sufficient land and water resource information to inform the planning process. Specifically, the plan must include a general description of the available land and water resource information, and where to find that information.

Some types of information are critical to supporting priorities and actions of the plan and may need to be described more thoroughly. For example, a description of trend analysis results may need more in-depth coverage to support a priority issue in the plan, but the data used in the analysis does not need to be included (it

can be referenced). If gaps in inventory information are identified through the plan development process, consider implementation action(s) to fill the gap rather than delaying planning to generate new data.

## Physical Characteristics

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**Table 1** (page 3) lists information types and sources to consider for each required element of the Land and Water Resources Inventory. Some items on this list may not be available or applicable in your watershed, and there may be additional items important to your watershed that are not included. This is simply meant to stimulate ideas on what items to include in the Inventory. The information sources below are good starting points to gather information on your watershed's physical characteristics.

- [Existing local water plans](#)
- [Minnesota Nutrient Planning Portal](#)
- [WRAPS reports \(MPCA\)](#)
- [GRAPS reports \(MDH\)](#)
- [DNR Watershed Health Assessment Framework Context reports](#)
- [Minnesota Forest Resources Council Landscape Stewardship Plans](#)
- [NRCS Rapid Watershed Assessments](#)
- [Minnesota Geospatial Commons](#)

## Socioeconomic Characteristics

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Knowing about the people that live and work in the watershed is crucial to the success of your planning effort. This is a critical, but often overlooked, body of information - it can help you begin to think about the values and motivations of the people in your watershed. **Table 2** (page 4) lists additional characteristics that you may want to consider, and the list below gives some ideas about where to start gathering information.

- [US Census American Fact Finder](#)
- [MN State Demographic Center](#)
- [USDA Economic Research Service](#)

## Getting to a quality plan

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At the end of this process, you should have a **detailed description of the watershed and its story**, giving the reader a clear picture of the characteristics that make the watershed unique. This description should also explain why the issues and actions identified in the plan are relevant and necessary. More detailed inventory information will allow you to be more accurate as you prioritize and target implementation.

The watershed story should explain the watershed's context – the geology, climate, and position in the basin. The main focus should be the major land uses, the people who are responsible for managing the land use, and the economy as a result. This information should appear in the appendix at a minimum, and could also be included in the executive summary and plan introduction sections. Include maps that support the story.





**Table 1.** Information types and sources to consider for plan content requirements for the Land and Water Resources Inventory.

| Plan Content Requirements   |  | Potential Information to Include  | Potential Sources   |
|---|--|---|---|
| Topography, Soils, General Geology  |  | <p><b>Topography:</b> LIDAR Elevations, Slope; <b>Soils:</b> Soil Texture (percent sand, silt, and clay), Crop Productivity Index, Forest Productivity, Hydric Rating, Wind Erodibility; <b>General Geology:</b> Bedrock, Surficial Geology, Karst Features, Mineral Deposits, Ecological Classifications</p> | MN Geospatial Commons, NRCS Web Soil Survey, United States Geological Survey, MN Geological Survey  |
| Precipitation   |  | Normal Annual Precipitation and Temperature, Precipitation and Temperature Trends, Runoff Rates   | MN Climatology Office, National Weather Service, NOAA Atlas 14, Modeling (HSPF)   |
| Surface water resources, including streams, lakes, wetlands, public waters and public ditches   |  | Streams (perennial, seasonal), Lakes, Wetlands (current, historical), Public Waters, Public Ditches, Altered Watercourses, Hydrologic Position Index  | MN Geospatial Commons, MN Department of Natural Resources, Drainage Authorities   |
| Groundwater resources, including groundwater and surface water connections if known   |  | Groundwater Vulnerability, Springs, Recharge Areas, Depth to Water Table, Well Locations and Depths, Nitrate Levels, Aquifer Properties and Boundaries, Aquifer Water Level Trends, Direction of Groundwater Flow, Water Chemistry  | County Geologic Atlas, Regional Hydrogeologic Assessment, MN Geospatial Commons, MN Department of Agriculture Township Testing Program, MN Geological Survey, MN Department of Natural Resources, MN Department of Health |
| Water quality and quantity, including trends of key locations and 100-year flood levels and discharges, regulated pollutant sources and permitted wastewater discharges |  | <p><b>Water Quality:</b> Impairments, Stressors, Trend Information, Regulated Pollutant Sources, Wastewater Treatment Plants; <b>Water Quantity:</b> 100-year Floodplain, Known Damages</p>   | Watershed Restoration and Protection Strategies (and associated reports), MN Pollution Control Agency, MN Department of Natural Resources, Federal Emergency Management Agency  |
| Stormwater systems, drainage systems and control structures   |  | Stormwater Systems, Drainage Systems, Dams, Impoundments, Drain Tile Systems  | MN Department of Natural Resources, Watershed Districts, Counties, US Army Corps of Engineers, Cities   |
| Water-based recreation areas  |  | Parks, Public Accesses, State Water Trails, Public Beaches, Fishing Piers, Wildlife Management Areas, Waterfowl Production Areas  | MN Geospatial Commons, MN Department of Natural Resources, US Fish and Wildlife Service, Cities, Counties   |
| Fish and wildlife habitat, rare and endangered species  |  | Conservation Lands (public conservation lands, easements, etc.), Native Prairie, Important Wild Rice Areas, Tullibee Lakes, Designated Trout Streams, Rare and Endangered Species   | MN Geospatial Commons, MN Department of Natural Resources, US Fish and Wildlife Service   |
| Existing land uses and proposed development   |  | Land Cover (present and pre-settlement), Crop Data (types, average yields, irrigated/non-irrigated), Feedlots (type, animal units), Road Network, Impervious Surfaces, Landfills (active, closed), Subsurface Sewage Treatment Systems, Proposed Development  | MN Geospatial Commons, USDA Ag Census, MN Department of Natural Resources, MN Pollution Control Agency, MN Department of Agriculture, Counties, Cities  |

**Table 2. Socioeconomic information that can be useful in the Land and Water Resources Inventory.**

|                | Source(s)   |
|----------------|---|
| People         | Population size, U.S. Census Bureau, Population Estimates Program. Point-in-time estimate, as of July 1st   |
|                | Age distribution  |
|                | Sex by age, 2011-2015 American Community Survey 5-year estimates  |
|                | Educational attainment  |
|                | Educational Attainment: population 25 years and older (U.S. Census Bureau)  |
| Economy        | Employment by industry  |
|                | Industry by occupation for civilian employed population 16 years and over, 2011-2015 American Community Survey 5-year estimates                                   |
|                | Income  |
|                | Per capita income, 2011-2015. U.S. Census Bureau, American Community Survey   |
|                | County economic base  |
| Land ownership | U.S. Department of Agriculture, Economic Research Service, County Typology Codes, using data from the Bureau of Economic Analysis and the U.S. Census Bureau      |
|                | Minnesota Geospatial Information Office, County recorders, assessor's, or land surveyor's offices. Some Minnesota counties provide their parcel data sets online. |