STORMWATER TOPIC MEETING DATA

Introduction

The Kettle River & Upper St. Croix Watershed flows south from its headwaters in Carlton County to its confluence with the Snake River just south of St. Croix State Park. Although largely forested, the watershed is dotted with farmland and small cities including Moose Lake, Sandstone and Hinckley. This watershed is lucky to have abundant healthy natural resources including rivers, streams, lakes, wetlands, groundwater and forests.

The **Kettle River & Upper St. Croix One Watershed, One Plan** (1W1P) is a planning partnership between Pine SWCD, Pine County, Carlton SWCD, Carlton County and Kanabec SWCD. The goal of this partnership is to **prioritize** restoration and protection opportunities and **target** valuable resources. The result will be the development of a comprehensive watershed management plan with actions that make progress towards **measurable** goals.

The general 1W1P process is outlined in Figure 1. For the first step, which is to gather and prioritize opportunities/issues in the watershed, a series of five topic meetings will be held. The meeting topics include: 1) lakes, 2) forests, 3) rivers, streams & wetlands, 4) agriculture & groundwater and 5) stormwater.

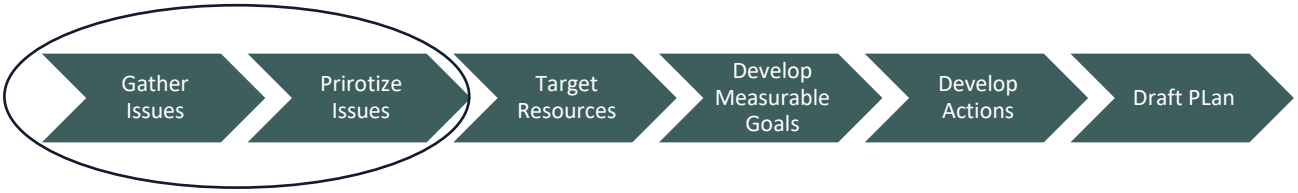

Figure 1. The 1W1P process is divided into six main steps. The topic meetings are the first step in the process (circled).

The 1W1P process is driven by local units of government, guided by an Advisory Committee made up of local stakeholders and state agencies. The decision-making body for the plan is a Policy Committee made up of elected officials from each County and SWCD.

To gather diverse viewpoints, topic experts were invited to attend the stormwater meeting in addition to the Kettle River & Upper St. Croix Watershed Advisory Committee. Topic experts included road authorities and city representatives from Moose Lake, Sandstone and Hinkley.

Kettle River & Upper St. Croix Watershed Stormwater

Although the watershed is largely forested and rural land, there are several communities located near waterbodies. In these areas, managing stormwater is an important consideration. Stormwater best management practices help protect property and natural resources by reducing flood risks and flood damage and filtering pollutants before they are washed to lakes and streams. However, stormwater planning, designs and construction can be expensive.

Figure 2. Managing stormwater is an important consideration for several communities in the watershed.

The largest community in the watershed is Sandstone (population 2379) which has the Kettle River flowing through the city limits. The Moose River subwatershed has the most impervious surface at six percent. The cities of Sturgeon Lake, Moose Lake and Barnum (population 449, 2565 and 620 respectively) are located in the Moose River subwatershed and have waterbodies within city limits including the Moose Horn River, Moosehead Lake and Bear Lake. There are no communities in the watershed that are required to have a Municipal Stormwater Permit (MS4).

Kettle River & Upper St. Croix Watershed's Stormwater Issues

To illustrate the diversity of viewpoints, at the beginning of the meeting, we asked the experts and Advisory Committee members to tell us what comes to mind when they think about stormwater in the Kettle River & Upper St Croix Watershed. The responses were assembled to create word clouds (figure 3).

Figure 3. A word cloud depicting the diversity of responses to the question, "what do you think of the Kettle River and Upper St. Croix Watersheds stormwater?"

To help us understand what issues/opportunities surround stormwater in the Kettle River & Upper St. Croix Watershed, issues listed in previous plans, reports state agency comments letters and public input were gathered and compiled into common themes, becoming the basis of creating the priority issues for stormwater for the Kettle River & Upper St. Croix Watershed (see References for sources).

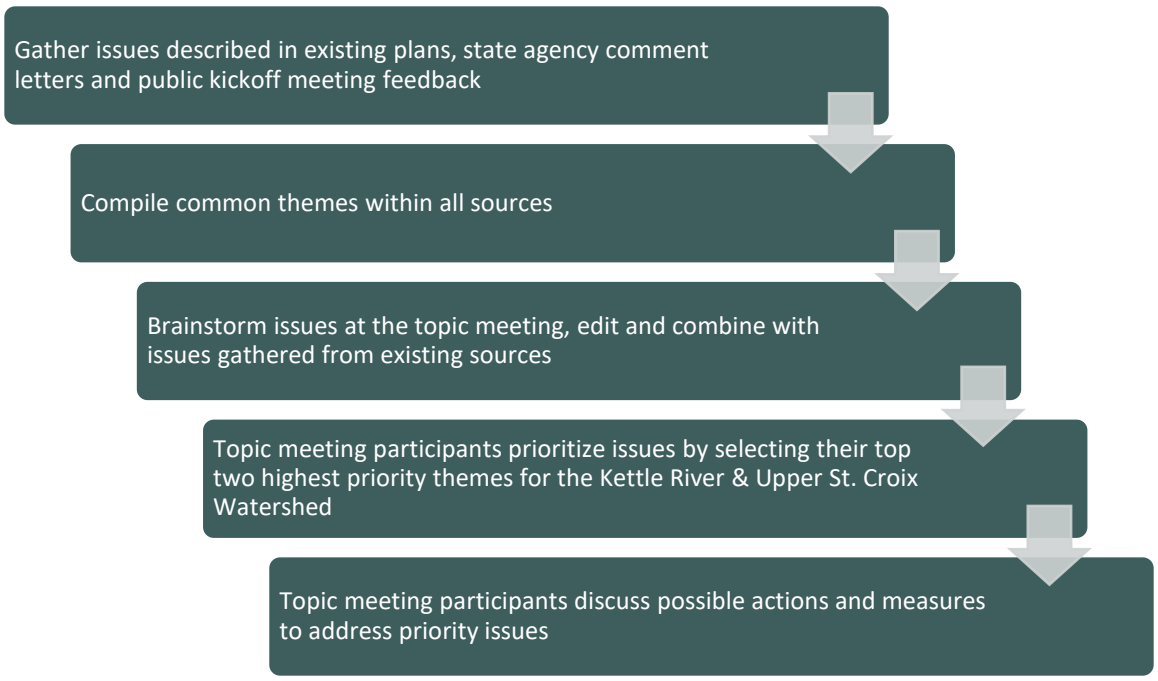

Figure 4. Issue Statement Development

A diverse group of stormwater experts plus the Kettle River & Upper St. Croix Watershed Advisory Committee gathered to brainstorm issues for stormwater. The brainstormed list was either grouped with compiled themes or new themes were created. The group then agreed on a final list of two topic themes for stormwater.

Table 1. River and Stream issue statements developed at the Topic Meeting.

#	Draft Issue Statement	References
1	Technical and financial assistance is needed for communities to prevent **sewage overflow** during flooding	Carlton County Water Plan
2	Municipal **stormwater management plans and effective regulations** are needed to protect lakes or streams	Pine & Carlton County Water Plans, BWSR letter, Topic Meeting
3	Stormwater runoff delivers sediment and nutrients to lakes or streams and **best management practices (BMPs), and the maintenance** of current stormwater practices is needed	Rapid Watershed Assessment, Carlton & Pine County Water Plans, DNR Letter, Public Kickoff Meeting, Topic Meeting
4	**Chloride/salt** could impact lakes/streams and cooperation with road authorities could help protect water quality, and more data is needed to know where waters are at greatest risk	Topic Meeting, St. Croix River Report

Each participant ranked their top two issues for stormwater. The top two priorities overall were:

- Municipal **stormwater management plans and effective regulations** are needed to protect lakes or streams
- Stormwater runoff delivers sediment and nutrients to lakes or streams and **best management practices (BMPs), and the maintenance** of current stormwater practices, is needed

From the meeting discussion, the importance of BMP maintenance was highlighted. Municipalities face many challenges of maintaining BMPs such as lack of proper equipment, staff shortages and turnover, and lack of funding, which can result in either a BMP not functioning appropriately or shortening its lifespan. Green infrastructure BMPs such as rain gardens and buffers also require unique expertise that is not always available within city staff. For this reason, maintenance was added to the BMP issue statement.

One BMP that was highlighted as a priority was street sweeping equipment. For example, Carlton County has one street sweeper that is used for all municipalities in the Carlton portion of the watershed. In the past, Carlton County has also served the city of Willow River. Timing to complete street sweeping has a narrow window and equipment breakdowns have occurred, resulting in overloading BMPs and sediment/nutrients being washed into water resources.

Salt from both roads and dust control was recognized as an emerging concern. There are no current chloride impairments in the watershed, but lakes with high road density were highlighted as a concern. The group believed that identifying high-risk waterbodies and meeting with individual maintenance workers annually would be an effective and inexpensive solution to best protect these resources.

One positive highlight from the meeting is that there is already good cooperation occurring to help manage stormwater in the watershed. The group agreed that meeting annually would be helpful to strengthen cooperation in the future.

The group brainstormed a list of possible actions to address the priority issues, along with ways success might be measured.

Stormwater Actions

- Local annual meeting to discuss stormwater opportunities in the watershed
- Contact/meet with local communities and review stormwater plans, create new plans or update plans. These meetings should:
    - Identify gaps in current stormwater regulations
    - Identify locally appropriate design standards for municipal adoption
    - Require a review process for development to address stormwater
    - Review ordinances to see if they are helping/hurting stormwater systems
- See if stormwater infrastructure is mapped (GIS) and add it to the County GIS systems
- Purchase/lease a Street Sweeper and develop a street sweeper program
- Replace catch basins and maintain them
- Require long-term maintenance agreements for BMPs
- Provide long-term technical assistance for green infrastructure (raingarden, buffers, swales, trees)
- Increase stormwater storage and retention planning
- Identifying opportunities for BMP / Green Infrastructure
- Add retention ponds
- Increase capacity for summer help to maintain stormwater BMPs
- Increase professional certifications and skill sets/ training for staff on Stormwater
- Leverage funds for stormwater projects
- Advertise the SWCDs ability to help municipalities

HUC -10 Watershed	Percent Developed Land (WRAPS)	Towns / Cities (Population) (2021 US Census)	Cities Near Lake/River (Water Resource Name) (MPCA)	Wastewater Treatment Methods (MPCA)*
Upper Kettle River	2%	Kettle River (172) Denham (34)	Kettle River (Kettle River) Denham (Birch Creek)	Kettle River (WWTP) Denham (SSTS)
Moose River	6%	Sturgeon Lake (449) Moose Lake (2565) Barnum (620)	Sturgeon Lake (Moose Horn River) Moose Lake (Moosehead Lake, Moose Horn River) Barnum (Bear Lake, Moose Horn River)	Sturgeon Lake (WWTP) Moose Lake (WWTP) Barnum (WWTP)
Willow River	4%	Willow River (390) Kerrick (72) Bruno (85)	Willow River (Willow River, Willow River Reservoir) Kerrick (Lake Margaret) Bruno (Unnamed Stream)	Willow River (WWTP) Kerrick (SSTS) Bruno (SSTS)
Pine River	4%	Rutledge (215) Finlayson (303)	Rutledge (Kettle River, Pine River) Finlayson (Mud Lake, Fish Lake, Medicine Creek)	Rutledge (SSTS) Finlayson (WWTP)
Grindstone River	5%	Hinckley (1935)	Hinckley (Lower Grindstone Lake, Grindstone River)	Hinckley (WWTP)
Lower Kettle River	5%	Sandstone (2379)	Sandstone (Kettle River, Skunk Creek)	Sandstone (WWTP)
Bear Creek	3%	Askov (333)	None	Askov (WWTP)
Sand Creek	3%	None	None	None
Crooked Creek	2%	None	None	None
Lower Tamarack	1%	None	None	None
Upper Tamarack	3%	None	None	None
Chases Brook – St. Croix	1.4%	None	None	None

- WWTP = Wastewater Treatment Plant and SSTS = Subsurface Sewage Treatment System

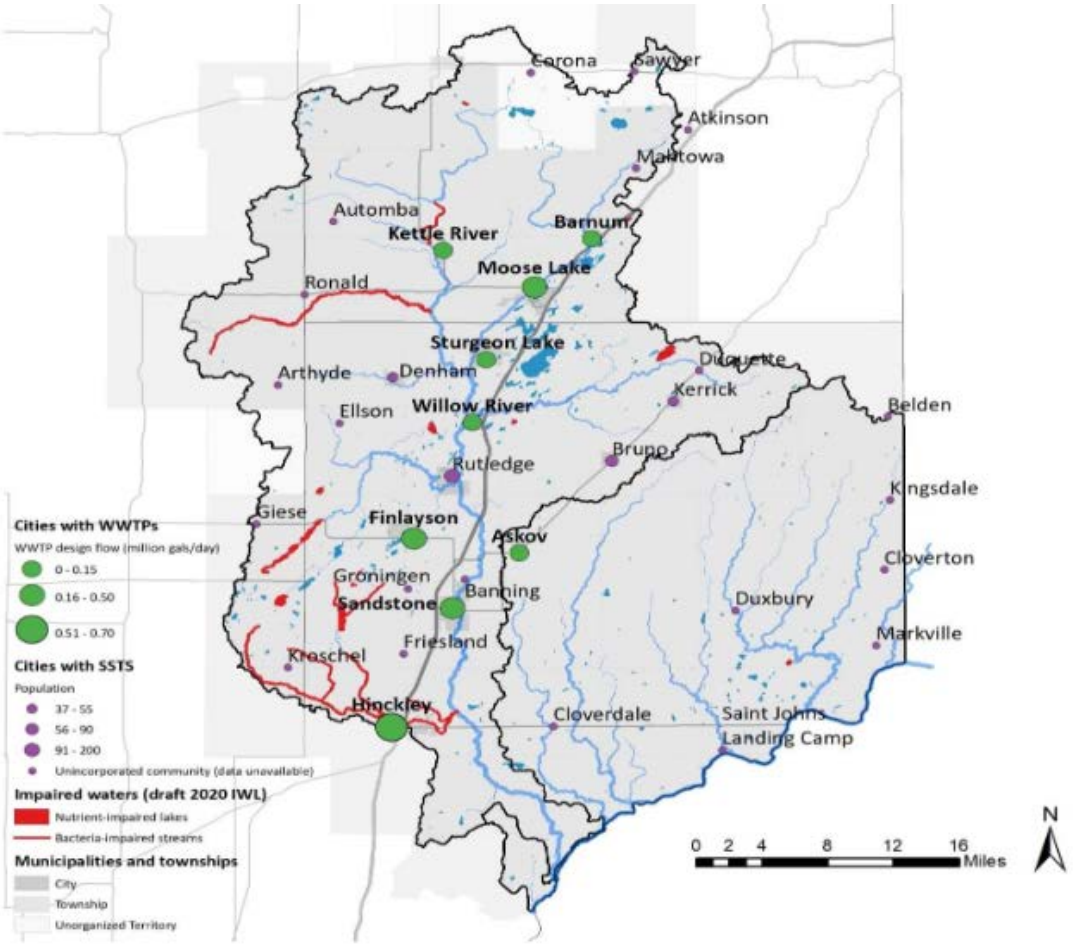

Figure 5. Wastewater treatment methods in the Kettle River & Upper St. Croix Watershed. Map curtesy of the MPCA Watershed Restoration and Protection Strategy (WRAPS).

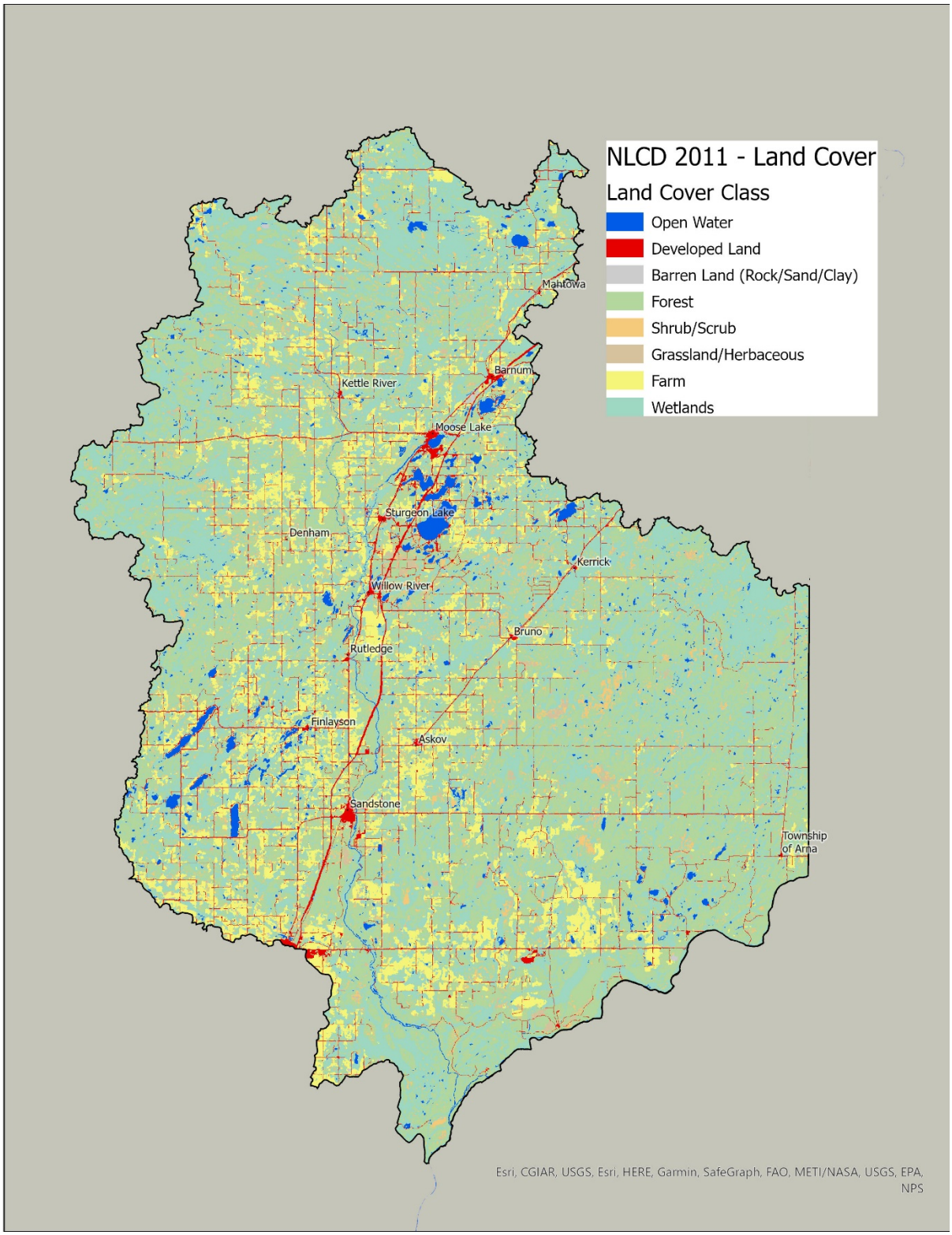

Figure 6. Developed land in the Kettle River & Upper St. Croix Watershed (indicated in red).

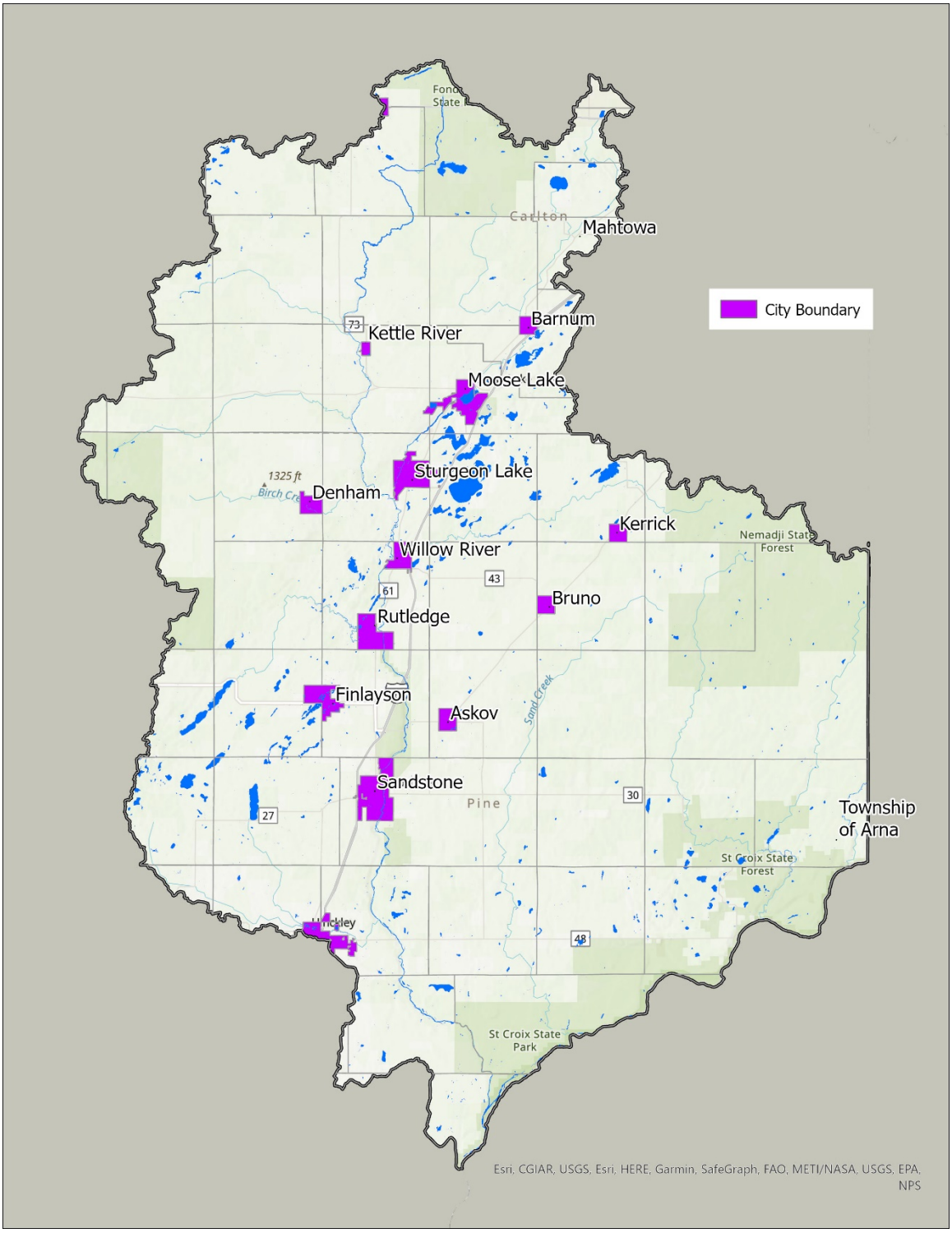

Figure 7. Incorporated cities in the Kettle River & Upper St. Croix Watershed.

References

WRAPS: 2021, Kettle River & Upper St. Croix River Watersheds Watershed Restoration and Protection Strategy Report

MPCA. 2022. Letter outlining Minnesota Pollution Control Agency priorities for the Kettle River & Upper St. Croix One Watershed, One Plan

DNR. 2022. Letter outlining Minnesota Department of Natural Resources priorities for the Kettle River & Upper St. Croix One Watershed, One Plan

BWSR. 2022. Letter outlining Minnesota Board of Water and Soil Resources priorities for the Kettle River & Upper St. Croix One Watershed, One Plan

Natural Resources Conservation Service. Rapid Watershed Assessments for Kettle River & Upper St. Croix Watersheds

U.S. Geological Survey. 2011. NLCD 2011 Land Cover

MnDOT. 2019 City, Township, and Unorganized Territory in Minnesota

Meeting Attendees

- Caleb Anderson, Pine County
- Melanie Bomier, Carlton SWCD
- Will Bomier, Carlton County Transportation
- Phil Entner, City of Moose Lake
- Karen Evens, MPCA
- Leah Jackson, City of Sandstone
- Barb Peichel, BWSR
- Mark Perry, City of Hinkley
- Dave Ropke, Big Pine Lake Association
- Paul Swanson, Pine SWCD

Meeting Topic Expert Invites

- Will Bomier, Carlton County Transportation
- Anna Bosch, MPCA
- Brett Collier, City of Barnum
- Phil Entner, City of Moose Lake
- Sue Grill, Kettle River Township
- Aaron Gunderson, Pine County Transportation
- Leah Jackson, City of Sandstone
- Mark Perry, City of Hinkley
- Dave Ropke, Big Pine Lake Association