

# Agenda

## Bois de Sioux – Mustinka One Watershed, One Plan

### Steering Committee Meeting

#### MEETING INFORMATION

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<b>Date:</b>	October 3, 2019	<b>Location:</b>	Bois de Sioux Watershed District 704 Hwy 75 South Wheaton, Minnesota 56296
<b>Time:</b>	1:00 - 4:00 PM		
<b>Invitees / Attendees:</b>	Steering Committee	<b>Facilitator:</b>	Houston Engineering, Inc. Bois de Sioux Watershed District

#### PREPARATION FOR MEETING

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<b>Read:</b>	Example Measurable Goal Factsheet Revised (draft) Measurable Goals
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AGENDA ITEMS	ACTION	TIME ALLOTTED
1. Welcome and Updates <ul style="list-style-type: none"><li>• Introduce agenda</li><li>• Approve minutes from last meeting</li><li>• Review most recent financial report</li><li>• Review planning timeline and milestones</li></ul>	Introduce	15 min.
2. Measurable Goals <ul style="list-style-type: none"><li>• <b>Meeting Goal:</b> Review example measurable goal factsheet</li></ul>	Discuss	10 min.
3. Targeted Implementation <ul style="list-style-type: none"><li>• <b>Meeting Goal:</b> Review and decide on format for outline of Plan Section 4 and targeted implementation schedule</li></ul>	Discuss / Decide	40 min.
4. PTMApp Implementation Scenario <ul style="list-style-type: none"><li>• <b>Meeting Goal:</b> Make decisions on PTMApp Implementation Scenario to guide plan content</li></ul>	Discuss / Decide	45 min.
5. Implementation Programs <ul style="list-style-type: none"><li>• <b>Meeting Goal:</b> Arrive at consensus for initial implementation program structure; Introduce homework activities</li></ul>	Discuss	30 min.
6. (As time allows) Mapping Activity <ul style="list-style-type: none"><li>• <b>Meeting Goal:</b> Identify priority resources for streambank and ditch stabilization efforts</li></ul>	Discuss	30 min.
7. Next Steps <ul style="list-style-type: none"><li>• <b>Meeting Goal:</b> Short description of discussion, action items, future meetings and homework</li><li>• <b>Next meeting:</b> November 7th</li></ul>	Decide	10 min.

# Measurable Goal: Sediment

## Priority Issues

- Sediment
- Lake Habitat
- Riparian Habitat

## Background

Excess sediment entering streams and rivers from upland sources is an extensive issue in the Bois de Sioux River and Mustinka River Watersheds. As of 2018 there were eleven stream reaches listed as impaired for excess sediment in these two watersheds. These sediment impairments impact surface water drinking supplies, aquatic life such as fish and aquatic insects, and overall aesthetic appeal. Moreover, sediment loss in upland areas degrades agricultural production and damages roads and bridges. The measurable goals presented here set short-term and long-term targets for addressing excess sediment in a prioritized, targeted, and measurable way using the Bois de Sioux River and Mustinka River Watershed Restoration and Protection Strategies (WRAPS) and Total Maximum Daily Load (TMDL) reports as the scientific basis for the goals and starting point for implementation actions.

## Measurable Goals



**Long-Term Goal:** Achieve sediment TMDL percent reduction goals for stream/river reaches, thereby promoting surface water quality, which supports aquatic life and aquatic recreation.



**Short-Term Goal:** Meet 10% of long-term TMDL goal; 20% in high priority planning regions for habitat.

**Sediment Loading to Surface Water**  
Bois de Sioux River Watershed    Mustinka River Watershed

**Loss and Degradation of Lake Habitat**  
Bois de Sioux River Watershed    Mustinka River Watershed

**Loss and Degradation of Riparian Habitat**  
Bois de Sioux River Watershed    Mustinka River Watershed

**Resource Priorities for Protection**  
Lake Traverse (78-0025-00)

**Resource Priorities for Restoration**  
Upper Lightning Lake (56-0957-00)

## Planning Region Focus



Bois de Sioux Watershed		Mustinka Watershed		
Lake Traverse & Bois de Sioux River	Rabbit River	Upper Mustinka River	Lower Mustinka and Twelvemile Creek	Twelvemile Creek Headwaters
50%	34%	14%	58%	10%
5%	3%	3%	6%	2%



## Introduction

The Steering and Advisory Committees have been working on drafting measurable goals for this plan. The summary below is a brief overview of goals that are developed and how they will be measured. Additional detail about issues and goals will be added in a fact sheet for each goal. Short-term goals are meant to be achieved during the ten-year lifespan of the plan. Long-term goals are desired future conditions, regardless of time or resource needs to achieve the goal.

**Map Key:**

- Low Priority
- Medium Priority
- High Priority

### Vulnerable Groundwater Protection

**Priority Issues:**

- Groundwater quality protection
- Groundwater quantity protection

**Groundwater Quality Protection**

**Groundwater Quantity Protection**

**Measurable Goals**

**Long-Term:** Maintain safe and sustainable drinking supplies throughout the watershed. “Safe” means maintaining zero wells with nitrate-nitrogen greater than 3 mg/L and managing arsenic to attain levels below 10 ug/L. “Sustainable” means no well interference complaints.

**Short-Term:** Same as long-term goal

**Metric:** # of wells below 3 mg/L for nitrate-nitrogen or below 10 ug/L arsenic, as measured through the County Well Index (2018)

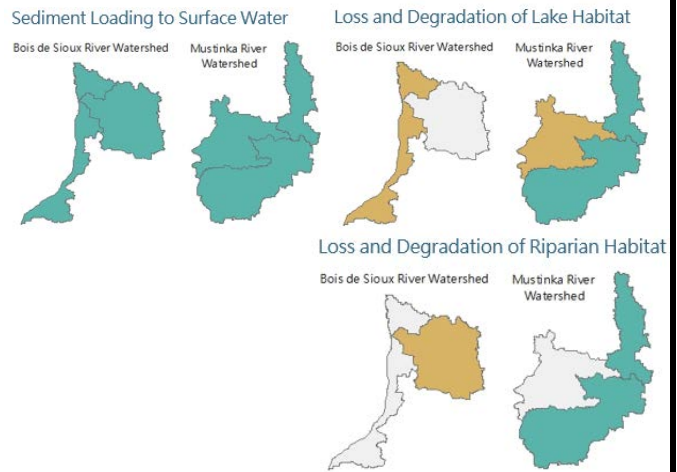
**Planning Region Focus**

	Bois de Sioux Watershed		Mustinka Watershed		
	Lake Traverse & Bois de Sioux River	Rabbit River	Upper Mustinka River	Lower Mustinka and Twelvemile Creek	Twelvemile Creek Headwaters
<b>Long-Term</b>	Nitrate: 83 wells Arsenic: 26 wells	Nitrate: 56 wells Arsenic: 21 wells	Nitrate: 56 wells Arsenic: 8 wells	Nitrate: 89 wells Arsenic: 12 wells	Nitrate: 112 wells Arsenic: 19 wells
<b>Short-Term</b>	Same as long-term goal				

## Sediment Loading

### Priority Issues:

- Sediment loading to surface waters*
- Loss and degradation of lake habitat*
- Loss and degradation of riparian habitat*



### Measurable Goals

**Long-Term:** Achieve sediment Total Maximum Daily Load (TMDL) percent reduction goals for stream/river reaches, thereby promoting surface water quality which supports aquatic life and aquatic recreation.

**Short-Term:** Meet 10% of long-term TMDL goal; 20% in high priority planning regions for habitat

**Metric:** % load reduction as modeled in the Prioritize, Target, and Measure Application (PTMApp)

### Planning Region Focus

	Bois de Sioux Watershed		Mustinka Watershed		
	Lake Traverse & Bois de Sioux River	Rabbit River	Upper Mustinka River	Lower Mustinka and Twelvemile Creek	Twelvemile Creek Headwaters
Long-Term	50%	34%	14%	58%	10%
Short-Term	5%	3%	3%	6%	2%

**Map Key:**

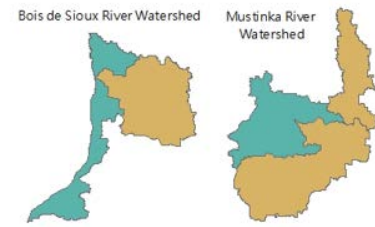
- Low Priority
- Medium Priority
- High Priority

## Unstable Channels

Priority Issues:

- Unstable river and stream channels

Unstable River and Stream Channels



### Measurable Goals

- Long-Term:** Define, assess, and stabilize the river and stream banks of all channels across the watersheds prone to erosion
- Short-Term:** Define, assess, and stabilize the river and stream banks for an achievable percentage of channels prone to erosion over the next 10 years, with emphasis on planning regions with a higher issue priority. **[Note: Revisit with Steering Committee to estimate attainable length based on current unstable reach length]**
- Metric:** Stream miles (based on % of total miles in planning region)

### Planning Region Focus

	Bois de Sioux Watershed		Mustinka Watershed		
	Lake Traverse & Bois de Sioux River	Rabbit River	Upper Mustinka River	Lower Mustinka and Twelvemile Creek	Twelvemile Creek Headwaters
Long-Term	100% (113 miles)	100% (49 miles)	100% (66 miles)	100% (98 miles)	100% (139 miles)
Short-Term	30% (34 miles)	15% (7 miles)	15% (10 miles)	30% (29 miles)	15% (21 miles)

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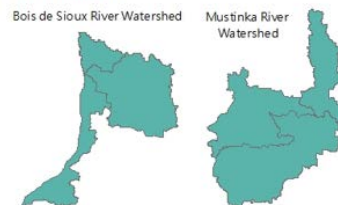
- Low Priority
- Medium Priority
- High Priority

## Public Flooding

Priority Issues:

- Flood damage to communities and public infrastructure

Flood Damage to Communities and Public Infrastructure



### Measurable Goals

- Long-Term:** Provide flood risk reduction against the 100-year event for all communities and provide flood risk reduction against at least the 10-year event for all rural public infrastructure.
- Short-Term:** Provide flood risk reduction against 100-year event for 50% of communities and provide flood risk reduction against at least the 10-year event for all rural public infrastructure.
- Metric:** % communities, rural public infrastructure “protected” with flood risk reduction

### Planning Region Focus

	Bois de Sioux Watershed		Mustinka Watershed		
	Lake Traverse & Bois de Sioux River	Rabbit River	Upper Mustinka River	Lower Mustinka and Twelvemile Creek	Twelvemile Creek Headwaters
Long-Term	100% of Communities Protected from 100-yr event; 100% of Rural Public Infrastructure Protected Against At Least 10-yr Event				
Short-Term	50% of Communities Protected from 100-yr event; 100% of Rural Public Infrastructure Protected Against At Least 10-yr Event				

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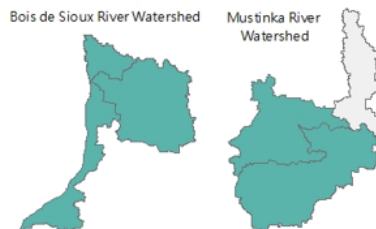
- Low Priority
- Medium Priority
- High Priority

## Private Flooding

Priority Issues:

Flood damage to farmland, homesteads, and private infrastructure surrounding farmland

Flood Damage to Farmland, Homesteads, and Private Infrastructure Surrounding Farmlands



### Measurable Goals

**Long-Term:** Provide flood risk reduction against the 100-year event for all rural homesteads and provide flood risk reduction against the 10-year event for farmlands and other private infrastructure.

**Short-Term:** Provide flood risk reduction against the 100-year event for 50% of rural homesteads and provide flood risk reduction against the 10-year event for 50% of farmlands and other private infrastructure.

**Metric:** % homesteads and farmlands, rural infrastructure “protected” with flood risk reduction

### Planning Region Focus

	Bois de Sioux Watershed		Mustinka Watershed		
	Lake Traverse & Bois de Sioux River	Rabbit River	Upper Mustinka River	Lower Mustinka and Twelvemile Creek	Twelvemile Creek Headwaters
Long-Term	100% protection	100% protection	No goal	100% protection	100% protection
Short-Term	50% protection	50% protection	No goal	50% protection	50% protection

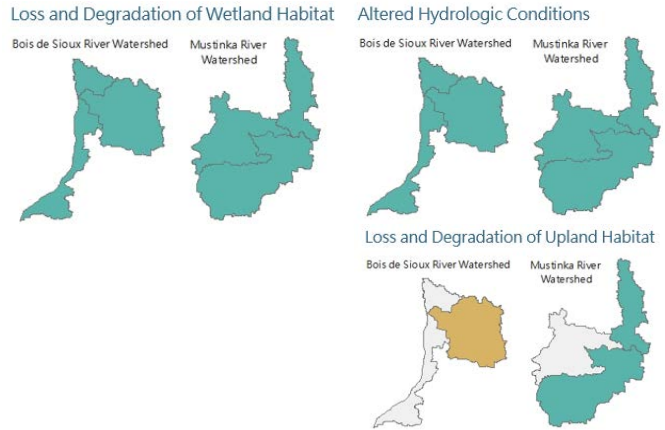
Map Key:

- Low Priority
- Medium Priority
- High Priority

## Altered Hydrology

**Priority Issues:**

- Altered hydrologic conditions
- Loss and degradation of wetland habitat
- Loss and degradation of upland habitat



### Measurable Goals

- Long-Term:** Achieve 1 inch of additional water storage across the watersheds, or 75,328 acre-feet of storage across the watersheds.
- Short-Term:** Achieve 0.1 inches of water storage across the watersheds, or 7,533 acre-feet of storage across the watersheds.
- Metric:** Acre-feet of volume reduced

### Planning Region Focus

	Bois de Sioux Watershed		Mustinka Watershed		
	Lake Traverse & Bois de Sioux River	Rabbit River	Upper Mustinka River	Lower Mustinka and Twelvemile Creek	Twelvemile Creek Headwaters
Long-Term	12,864 acre-feet	17,842 acre-feet	9,533 acre-feet	15,361 acre-feet	22,742 acre-feet
Short-Term	1,237 acre-feet	1,716 acre-feet	917 acre-feet	1,477 acre-feet	2,187 acre-feet

**Map Key:**

- Low Priority
- Medium Priority
- High Priority

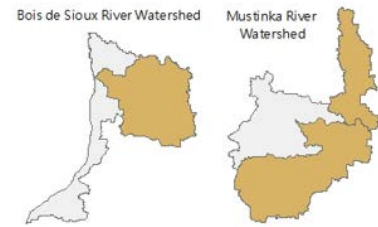


## Stormwater Management

Priority Issues:

- Lack of stormwater management

Lack of Stormwater Management



### Measurable Goals

- Long-Term:** Develop stormwater management plan for all major municipalities in each planning region.
- Short-Term:** Develop stormwater management plan for one major municipality in each planning region.
- Metric:** # of major municipalities with stormwater management plan

### Planning Region Focus

	Bois de Sioux Watershed		Mustinka Watershed		
	Lake Traverse & Bois de Sioux River	Rabbit River	Upper Mustinka River	Lower Mustinka and Twelvemile Creek	Twelvemile Creek Headwaters
Long-Term	No goal	Plan for all major municipalities	Plan for all major municipalities	No goal	Plan for all major municipalities
Short-Term	No goal	Plan for Wendell	Plan for Elbow Lake	No goal	Plan for Graceville

Map Key:

- Low Priority
- Medium Priority
- High Priority

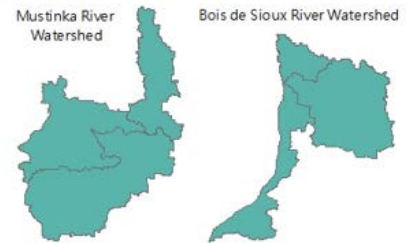


## Ditch System Instability

Priority Issues:

**|** Drainage system instability

Drainage System Instability



### Measurable Goals

**Long-Term:** Assess and stabilize all unstable ditches.

**Short-Term:** Assess and stabilize attainable percentage (25%) of ditches by planning region. **[Note: Revisit with Steering Committee to estimate attainable length based on current unstable reach length]**

**Metric:** % of stabilized ditches

### Planning Region Focus

	Bois de Sioux Watershed		Mustinka Watershed		
	Lake Traverse & Bois de Sioux River	Rabbit River	Upper Mustinka River	Lower Mustinka and Twelvemile Creek	Twelvemile Creek Headwaters
Long-Term	100% (64 miles)	100% (163 miles)	100% (15 miles)	100% (184 miles)	100% (116 miles)
Short-Term	25% (16 miles)	25% (41 miles)	25% (4 miles)	25% (46 miles)	25% (29 miles)

Map Key:

Low Priority

Medium Priority

High Priority



INTRO



ISSUE  
PRIORITIZATION



MEASURABLE  
GOALS



TARGETED  
IMPLEMENTATION



IMPLEMENTATION  
PROGRAMS

## Ditch System Inadequacy

**Priority Issues:**

- Drainage system inadequacy*
- Out-of-date benefit determinations*

Out of Date Benefits Determination

Drainage System Inadequacy

### Measurable Goals

**Long-Term:** All public drainage systems have capacity to convey 10-yr, 24-yr storm event.

**Short-Term:** Repair/Improve attainable percentage (by planning region) of public ditch systems to reach capacity to convey 10-yr, 24-hr event.

**Metric:** % of ditch miles

### Planning Region Focus

	Bois de Sioux Watershed		Mustinka Watershed		
	Lake Traverse & Bois de Sioux River	Rabbit River	Upper Mustinka River	Lower Mustinka and Twelvemile Creek	Twelvemile Creek Headwaters
Long-Term	100% adequate	100% adequate	100% adequate	100% adequate	100% adequate
Short-Term	10% adequate	10% adequate	10% adequate	10% adequate	10% adequate

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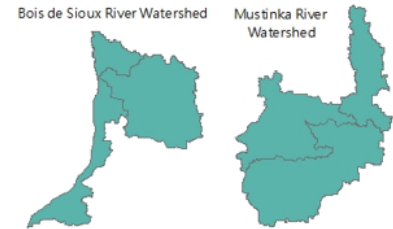
- Low Priority
- Medium Priority
- High Priority

## Soil Health

Priority Issues:

*Protect and improve agricultural land productivity and soil health*

Protect and Improve Agricultural Land Productivity and Soil Health



### Measurable Goals

Long-Term: Promote conservation to protect all farmed soils in the watersheds.

Short-Term: Promote conservation on [XX] farmed acres to protect the watershed's most critical farmed soils

Metric: Acres of farmed land

### Planning Region Focus

	Bois de Sioux Watershed		Mustinka Watershed		
	Lake Traverse & Bois de Sioux River	Rabbit River	Upper Mustinka River	Lower Mustinka and Twelvemile Creek	Twelvemile Creek Headwaters
Long-Term	[TBD based on soil health analysis]				
Short-Term	[TBD based on soil health analysis]				

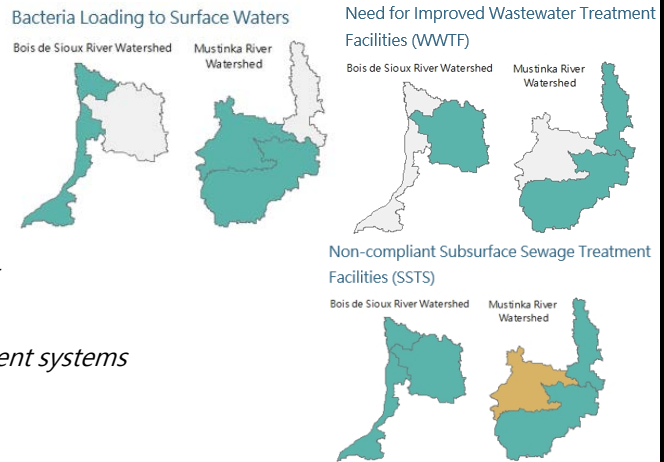
Map Key:

- Low Priority
- Medium Priority
- High Priority

## Bacteria Loading

**Priority Issues:**

- Bacteria loading to surface waters*
- Need for improved wastewater treatment facilities*
- Noncompliant subsurface sewage treatment systems*



### Measurable Goals

**Long-Term:** Achieve bacteria TMDL percent reduction goals for stream/river reaches within each planning region, thereby promoting surface water quality which supports aquatic recreation and delisting waterbodies which are currently impaired for bacteria.

**Short-Term:** Develop and implement [XX] bacteria management projects (i.e. rotational grazing, manure management, SSTS compliance) to address sources of bacteria and make progress towards delisting impaired streams.

**Metric:** Long-Term: # of impaired reaches  
Short-Term: # of projects

### Planning Region Focus

	Bois de Sioux Watershed		Mustinka Watershed		
	Lake Traverse & Bois de Sioux River	Rabbit River	Upper Mustinka River	Lower Mustinka and Twelvemile Creek	Twelvemile Creek Headwaters
Long-Term	Delist all (2)	<i>No goal</i>	<i>No goal</i>	Delist all (5)	Delist all (2)
Short-Term	[TBD action development process]	<i>No goal</i>	<i>No goal</i>	[TBD action development process]	[TBD action development process]

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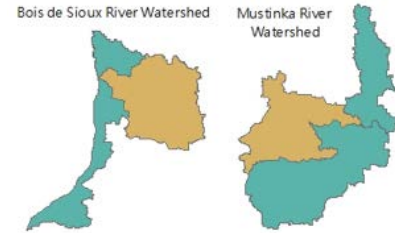
- Low Priority
- Medium Priority
- High Priority

## Nutrient Loading

Priority Issues:

- Nutrient loading to surface waters

Nutrient Loading to Surface Waters



### Measurable Goals

**Long-Term:** Achieve phosphorus TMDL percent load reduction goal for streams, rivers, and lakes, thereby promoting surface water quality which supports aquatic life and aquatic recreation.

**Short-Term:** Meet 10% of long-term TMDL goal; 20% in high priority planning regions

**Metric:** % load reduction as modeled in PTMApp

### Planning Region Focus

	Bois de Sioux Watershed		Mustinka Watershed		
	Lake Traverse & Bois de Sioux River	Rabbit River	Upper Mustinka River	Lower Mustinka and Twelvemile Creek	Twelvemile Creek Headwaters
Long-Term	64%	44%	55%	41%	27%
Short-Term	13%	4%	11%	4%	5%

Map Key:

- Low Priority
- Medium Priority
- High Priority