

Materials Packet: Thief 1W1P Meeting 5/9/18

Below is a list of items for you to review prior to the meeting. They have been included as .pdf attachments to this packet. For any questions, please contact Peter Nelson at Pennington SWCD. Peter's email address is peter.nelson@mn.nacdnet.net. He can be reached at 218-683-7075.

Please note that revisions on items have not been fully completed. The intent of this meeting is to gain consensus on the revisions that will be performed to finalize those where a decision is being asked for items for the policy committee.

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| 1. Agenda | Pg: 1-6 |
| 2. Section 3: Measurable Goals Table | Pg: 7-24 |

PLANNING PHASE

MEETING INFORMATION

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| Date: | May 9, 2018 | Location: | Grygla Community Center |
| Time: | 9AM to Noon | Call-In Number: | N/A |
| Invitees / Attendees: | Planning Work Group (PWG) Advisory Committee (AC) Policy Committee (PC) | Facilitator: | Drew Kessler, HEI |
| PWG Lead: | Myron Jesme | | |

PREPARATION FOR MEETING

Review: *Policy Committee reserves the last 30 min. of the meeting to conduct business. AC is invited to the full meeting and is called at 9AM.*

Come prepared to discuss setting Measurable Goals for Section 3 of the Plan

AGENDA ITEMS

AC Business

| | ACTION | TIME |
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| 1. Recap on Progress and Direction | | 15 min. |
| 2. Discuss – Plan Section3: Measurable Goals Meeting Goal: Focused discussion on measurable goals to inform how they group recommends they be set. Materials will be provided to guide the discussion. Homework assignment to review Plan Section 3 and provide written comments to Peter Nelson by May 18, 2018. | Decide | 60 min. |
| 3. Introduce – Plan Section 4 – Tools for Targeting Practices | Discuss | 45 min. |

PC Business (Add Time 11AM)

- Approve Financials
- Decide – Plan Section 2

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| PC Business | 30 min. |
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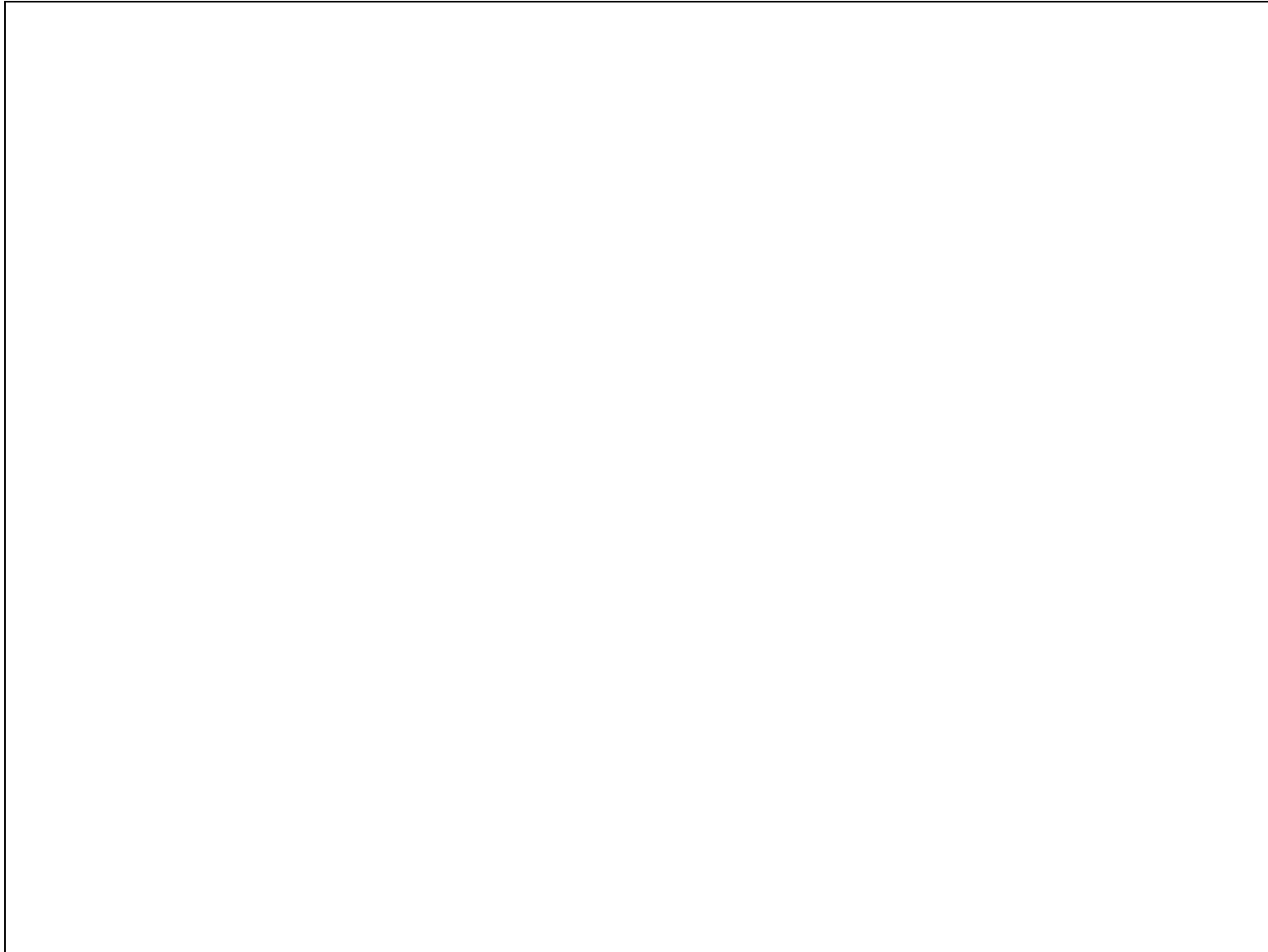
Informational (All invited, optional attendance)–

Water and Wildlife Management of Agassiz National Wildlife Refuge

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| Inform | 30 min. |
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NOTES

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Table 1. Policy Committee Members

| Name | Designated (D) or Alternate (A) | Affiliation | Address | Phone | Email |
|------------------|---------------------------------|-------------------|--|--------------|--|
| Tim Sumner | D | Beltrami County | | | Timsumner15@gmail.com |
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| Ray Hendrickson | D | Beltrami SWCD | | | jackpine@gvtel.com |
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| Wallace Bengston | A | Marshall SWCD | | | wdbengtson@wiktel.com |
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| Linda Hanson | A | Pennington SWCD | | | miliha@gvtel.com |
| Grant Nelson | D | Pennington SWCD | 17349 110 th Street NW TRF, MN 56701 | | grantnelson@gvtel.com |
| LeRoy Ose | D | RLWD | 15115 229 th Street NE TRF, MN 56701 | 218-689-6675 | leroyose@gmail.com |
| Dale M. Nelson | A | RLWD | 10367 140 th Street NW TRF, MN 56701 | 218-686-0032 | Dalenelson62@gmail.com |

Table 2. Advisory Committee Members

| Name | Affiliation | Address | Phone | Email |
|--------------------------|--|--|--------------|-------------------------------------|
| Local Members | | | | |
| Ralph Smith | Beltrami County Landowner | PO Box 142 Grygla, MN 56727 | 218-294-6358 | |
| Zach Gutknecht | Beltrami SWCD Clean Water Specialist | Beltrami County Administration 701 MN Ave Suite 173 Bemidji, MN 56601 | 218-333-4157 | Zachrie.Gutknecht@co.beltrami.mn.us |
| Lowell Smeby | Beltrami County Landowner | 62881 Flintlock Road Grygla, MN 56727 | 218-280-6916 | |
| Bill Neuschwander | Beltrami County Landowner | 6252 Lee Rd NW Grygla, MN 56727 | 218-294-6000 | |
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| Curtiss Hunt | Beltrami County lakes and Rivers Association | 9217 Oman Rd Ne Bemidji, MN 56601 | 218-766-4529 | |
| Josh Johnston | Marshall County Water Planner/Zoning Administrator | Marshall County Water and Land Office 208 E. Colvin Avenue, Suite 3 Warren, MN 56762 | 218-745-4217 | Josh.johnston@co.marshall.mn.us |
| Loiell Dyrud | Marshall County Landowner | 23484 150th Ave NE Thief River Falls, MN 56701 | 218-681-6964 | lod@wiktel.com |
| Lon Aune | Marshall County Hwy Dept. | 447 S. Main St. Warren, MN 56762 | 218-745-4381 | Lon.Aune@co.marshall.mn.us |
| Randy McMillian | Marshall County Landowner | 38847 380th St NE Grygla, MN 56747 | 218-686-3320 | ranmac@gvtel.com |
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| Bryan Malone | Pennington SWCD | 201 Sherwood Ave S. Thief River Falls, MN 56701 | 218-683-7075 ext. 118 | Bryan.malone@mn.nacdnet.net |
| Sportsman Club James Counter | Pennington SWCD | James Counter, Box 232, Thief River Falls, MN | 218-791-9808 218681-1901 | jcounter@mncable.net |
| Golf Club | Pennington SWCD | Tim Erickson | 218-681-4020 | Tim.erickson@nsbtrf.com |
| Dale Nelson | RLWD | 10367 140 th St NW Thief River Falls, MN 56701 | 218-686-0032 | Dalenelson62@gmail.com |
| Brian Dwight | RLWD | PO Box 427 Waskish MN 56685 | 218-556-7109 | Waskish1954@gmail.com |
| State and Federal Agency Members | | | | |
| Denise Oakes | MPCA Watershed Project Management | 714 Lake Ave Suite 220 Detroit Lakes, MN 56501 | 218-846-8119 | Denise.oakes@state.mn.us |
| Matt Fischer | BWSR Board Conservationist | 403 4 th St NW Rm 200 Bemidji, MN 56601 | 218-755-2683 | Matt.fischer@state.mn.us |
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| Jenilynn Marchand | Principal Planner Environmental Health Division, MDH | 705 5 th ST NW, Suite A Bemidji, MN 56601 | 218-308-5153 | Jenilynn.marchand@state.mn.us |
| Robert Sip | MN Dept. of Ag. | 625 N Robert Street St Paul, MN 55155 | 651-201-6456 | Rob.Sip@state.mn.us |
| Annette Drewes | DNR | 2532 Hannah Ave NW, Bemidji, MN 56601 | 218-308-2466 | Annette.Drewes@state.mn.us |
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| Craig Mowry | Agassiz NWR | 22996 290th Street NE Middle River, Minnesota 56737 | 218-449-4115 | craig_mowry@fws.gov |
| Shane Bowe | Red Lake Tribal | PO Box 279 Red Lake MN 56671 | 218-679-3959 | Shane.bowe@redklakenation.org |
| Laurie Fairchild | USFWS Private Lands Biologist | Rydell and Glacial Ridge, Erskine MN 56535 | 218-687-2229 701-425-9080 | laurie_fairchild@fws.gov |
| Jeff Franson | Golf Club Grounds Superintendent | NA | NA | JDsDodge@hotmail.com |

Table 3. Planning Work Group Members.

| Name | Affiliation | Address | City/State/Zip | Phone | email |
|-----------------------|--------------------|------------------------------------|--------------------------------|--------------|-------------------------------------|
| Peter Nelson | Pennington SWCD | 201 Sherwood Ave S | Thief River Falls, MN 56701 | 218-683-7075 | peter.nelson@mn.nacdnet.net |
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| Matt Fischer | BWSR | 403 Fourth Street NW, Room 200 | Bemidji, MN 56601 | 218-755-2683 | matt.fischer@state.mn.us |

| Measurable Goal Development | |
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| 3.2.1 Groundwater – Drinking Water Quality | |
| Issues Addressed: | <ul style="list-style-type: none"> • Protection of generally good quality groundwater supplies from elevated levels of nitrates, arsenic, or other contaminants which if excessive can result in implications to human health and treatment costs for public and private wells. Protection is particularly important in vulnerable DWSMAs. (Issue 1.1.1) • 1.1.2: Water Quality: A limited amount of data available for nitrate, arsenic, and other types of groundwater contamination, which can lead to poorly informed management decisions. |
| Rationale: | <ul style="list-style-type: none"> • Nitrates: MDH Nitrate Reduction Framework • Arsenic: Federal Drinking Water Standard • Bacteria: Data gap for wells |
| Short-Term Goals: | <p>Short-term goals are set at the watershed scale.</p> <p><i>Nitrates</i></p> <ul style="list-style-type: none"> • Develop and implement an action plan to establish a baseline evaluation of nitrate-nitrogen levels in public and private wells within the plan area. <p><i>Arsenic</i></p> <ul style="list-style-type: none"> • 10% reduction in arsenic concentration (Standard: 10 mg/L) in public wells or community water supplies <p><i>Bacteria</i></p> <ul style="list-style-type: none"> • Develop and implement an action plan to establish a baseline evaluation of bacteria (fecal coliform or <i>E. coli</i>) levels in public and private wells within the plan area. |
| Long Term Goals: | <p><i>Nitrates</i></p> <ul style="list-style-type: none"> • Protection – Vigilance Goal - Maintain unaffected private and public drinking water supply wells with nitrate-nitrogen concentrations at or near a concentration representative of background and transitional levels (0-4.9 mg/L). |

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| | <ul style="list-style-type: none"> • Protection – Threatened Goal - Reduce the number of public and private drinking water supplies that have nitrate-nitrogen concentrations at risk for nitrate impairment (≥ 5 mg/L but < 9.9 mg/L). • Restoration - Treatment Goal - Restore private and public drinking water supplies that have nitrate-nitrogen concentrations that currently represent a health concern (≥ 10 mg/l) <p><i>Arsenic</i></p> <ul style="list-style-type: none"> • Extend short-term goal. <p><i>Bacteria</i></p> <ul style="list-style-type: none"> • Reduce or maintain public and private wells so zero wells test positive for bacteria |
| Metrics: | <ul style="list-style-type: none"> • Number of private and public water supplies with nitrate-nitrogen concentrations in each category of protection or restoration. • Number of wells that meet the standard for arsenic. • Number of public and private wells tested for bacteria (fecal coliform or <i>E. coli</i>), used to establish a baseline evaluation. |

Measurable Goal Development

Measurable Goal 3.2.2 Aquatic Life and Aquatic Recreation – Reduce Sediment and Phosphorus Delivery and Load

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| Issues Addressed: | <ul style="list-style-type: none"> • Decreased stream channel stability driven by hydrologic changes that increase erosion and sediment transport, which can decrease beneficial uses of streams, rivers, and lakes. (Issue 2.1.7) • Elevated concentrations of suspended solids, sediment, and total phosphorus approaching (protection) or exceeding (restoration) water quality standards for aquatic life, which can lead to aquatic life impairments. (Issue 2.1.1) • Water Quality: Elevated concentrations of sediment, and organic matter have a detrimental impact on drinking water quality. (Issue 2.5.1) |
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| <p>Rationale:</p> | <ul style="list-style-type: none"> • Phosphorus Use the phosphorus reduction targets outlined by the Minnesota Nutrient Reduction Strategy for the Lake Winnipeg Basin in each planning region. • Sediment: Use the sediment reduction targets outlined by the TMDL and the Thief River 1W1P Advisory Committee. |
| <p>Short-Term Goals:</p> | <p>Short-term goals are set at planning region and reach-specific scales.</p> <ul style="list-style-type: none"> • Planning Region scale (Total Phosphorus): <ul style="list-style-type: none"> ○ Protection (Nearly Impaired): Judicial Ditch 30/18/13: 10% ○ Restoration (Potential Impairment): Lost River: 10% ○ Protection (Highest Quality): Lower Thief River: 10% ○ Protection (Nearly Impaired): Marshall County Ditch 20: 10% ○ Restoration (Potential Impairment): Middle Thief River: 10% ○ Restoration (Potential Impairment): Moose River: 10% ○ Restoration (Potential Impairment): Mud River: 10% ○ Protection (Highest Quality): Upper Thief River: 10% • Planning Region Scale (Sediment): <ul style="list-style-type: none"> ○ Protection (Highest Quality): Judicial Ditch 30/18/13: 10% ○ Protection: Lost River: 10% ○ Restoration (Impaired): Lower Thief River: 15% progress towards the 42.1% TMDL reduction ○ Protection (Highest Quality): Marshall County Ditch 20: 10% ○ Protection: Middle Thief River: 10% ○ Protection (Highest Quality): Moose River: 10% ○ Protection (Nearly Impaired): Mud River: 10% ○ Protection (Highest Quality): Upper Thief River: 10% |

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| | <ul style="list-style-type: none"> • Reach-specific scale (Sediment and Total Phosphorus): <ul style="list-style-type: none"> ○ Restoration: Reduction in the length of streams classified as impaired by meeting a load allocation (where a TMDL has been completed). |
| Long Term Goals: | <ul style="list-style-type: none"> • Planning Region Scale: <ul style="list-style-type: none"> ○ Extend short-term protection and restoration goals; • Reach-Specific Scale: <ul style="list-style-type: none"> ○ Extend short-term restoration goals. |
| Metrics: | <ul style="list-style-type: none"> • Planning Region Scale: Percentage load reduction anticipated from BMP implementation, as estimated by PTMApp. • Reach-Specific Scale: Length of streams classified as meeting state standards for water quality. |

Measurable Goal Development

3.2.3 Aquatic Life and Aquatic Recreation – Reduce Bacteria Delivery and Load

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| Issues Addressed: | <ul style="list-style-type: none"> • Elevated concentrations of bacteria approaching (protection) or exceeding (restoration) water quality standards for aquatic recreation, which can impact beneficial uses. (Issue 2.1.2); • High levels of E. coli in water monitoring data at stormwater outlets in Thief River Falls, which can impact the beneficial use of downstream resources. (Issue 5.1.4). |
| Rationale: | <ul style="list-style-type: none"> • The bacteria measurable goal was developed to align with the percent load reduction goal for mid-range flow conditions in the TMDL. If a stream or river is categorized for restoration and does not have a completed TMDL study, the measurable goal for that stream or river is to reduce existing loads to meet state water quality standards. |

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| <p>Short-Term Goals:</p> | <p>Short-term goals are set at planning region and reach-specific scales.</p> <ul style="list-style-type: none"> • Planning Region Scale: <ul style="list-style-type: none"> ○ Protection (Highest Quality): Judicial Ditch 30/18/13: Maintain current conditions. ○ Protection (Nearly Impaired): Lower Thief River: Maintain current conditions. ○ Protection (Highest Quality): Lost River: Maintain current conditions. ○ Protection (Highest Quality): Marshall County Ditch 20: Maintain current conditions. ○ Restoration (Potential Impairment): Middle Thief River: 15% towards XX% load reduction goal. ○ Protection (Highest Quality): Moose River: Maintain current conditions. ○ Restoration (Impaired): Mud River: 20% towards 66% load reduction goal ○ Protection (Nearly Impaired): Upper Thief River - Maintain current conditions. • Reach-specific scale <ul style="list-style-type: none"> ○ Restoration: Reduction in the length of streams classified as impaired by meeting a load allocation (where a TMDL has been completed). |
| <p>Long Term Goals:</p> | <ul style="list-style-type: none"> • Planning Region Scale: <ul style="list-style-type: none"> ○ Restoration: Middle Thief River: XX% ○ Restoration: Mud River: 76.2% • Reach-specific scale: <ul style="list-style-type: none"> ○ Restoration: Reduction in the length of streams classified as impaired by meeting a load allocation (where a TMDL has been completed). |

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| Metrics: | <ul style="list-style-type: none"> • Planning Region Scale: Percent load reduction anticipated from BMP implementation. • Reach-Specific Scale: Length of streams classified as meeting state standards for water quality. |
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| Measurable Goal Development | |
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| 3.2.4 Aquatic Life and Aquatic Recreation – Increase Dissolved Oxygen Concentration | |
| Issues Addressed: | <ul style="list-style-type: none"> • Water Quality: Reduced concentrations of dissolved oxygen approaching (protection) or exceeding (restoration) tolerable levels that can affect the diversity of quality of aquatic life (Issue 2.1.3). |
| Rationale: | <ul style="list-style-type: none"> • The DO goal was developed to align with the WRAPS. |
| Short-Term Goals: | Short-term goals are set at the planning region and reach-specific scales. |

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| | <ul style="list-style-type: none"> • Planning Region Scale: <ul style="list-style-type: none"> ○ Protection (Highest Quality): Judicial Ditch 30/18/13: >95% of readings are above or equal to daily minimum of 5 mg/L ○ Protection (Highest Quality): Lower Thief River: >95% of readings are above or equal to daily minimum of 5 mg/L ○ Restoration (Potential Impairment): Lost River: >90% of readings are above or equal to daily minimum of 5 mg/L; maintain base flow within channel ○ Protection (Nearly Impaired): Marshall County Ditch 20: >90% of readings are above or equal to daily minimum of 5 mg/L ○ Protection (Nearly Impaired): Middle Thief River: >90% of readings are above or equal to daily minimum of 5 mg/L ○ Restoration (Impaired): Moose River: >90% of readings are above or equal to daily minimum of 5 mg/L; maintain measurable flow within channel during late summer ○ Restoration (Impaired): Mud River: >90% of readings are above or equal to daily minimum of 5 mg/L; maintain >5 CFS of flow at Hwy 89 during late summer ○ Protection (Highest Quality): Upper Thief River: >95% of readings are above or equal to daily minimum of 5 mg/L |
| | <ul style="list-style-type: none"> • Reach-Specific Scale: <ul style="list-style-type: none"> ○ Restoration: Reduction in the length of streams classified as impaired by meeting a % percent daily minimum (where a TMDL has been completed). |
| Long Term Goals: | <ul style="list-style-type: none"> • Planning Region Scale: <ul style="list-style-type: none"> ○ Extend short-term goal |
| | <ul style="list-style-type: none"> • Reach-Specific Scale: <ul style="list-style-type: none"> ○ Extend short-term goal |
| Metrics: | <ul style="list-style-type: none"> • Percent of samples above the daily minimum of 5 mg/l |

Measurable Goal Development

3.2.5 Surface Runoff and Flooding – Reduce Damages from Peak Flows and Overland Flooding

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| <p>Issues Addressed:</p> | <ul style="list-style-type: none"> • Changes in natural water storage and vegetative cover on the landscape, including natural depressional areas, wetlands, loss of vegetative cover and soil organic matter, which can cause an increase in the volume of runoff, peak discharges, and water levels, causing flooding and flood damages to agricultural land, wildlife habitat, transportation systems, and building and structures. (Issue 2.2.1). • High peak flows causing flood damages to agricultural land and public infrastructure, homes and other structures, rerouted flows, and accelerated bank erosion to artificial and natural waterways; low flows which can impact aquatic life and aquatic recreation. (Issue 2.2.2) • Regional and basin wide flood issues that might not be addressed by local actions, which can impact local infrastructure, natural resources, agricultural lands and communities. (Issue 2.2.3) |
| <p>Rationale:</p> | <ul style="list-style-type: none"> • The Surface Runoff and Flooding goal was developed to align with the Red Lake Watershed Expanded Distributed Detention Study, Red Lake Watershed District Comprehensive Plan and Flood Damage Reduction goals: |
| <p>Short-Term Goals:</p> | <p>Short-term goals are set at the watershed scale.</p> <ul style="list-style-type: none"> ○ XX% progress towards long term goal. |
| <p>Long Term Goals:</p> | <ul style="list-style-type: none"> • 14% reduction in peak flow and 4% reduction in volume using off-channel detention. • 39% peak flow reductions and 17.4% volume reductions using off-channel and mainstem storage. • Reduce the 100-year flood flow in the TRW by 20%. |
| <p>Metrics:</p> | <ul style="list-style-type: none"> • Percent reduction in peak flow at the outlet of the Thief River. • Percent reduction of volume at the outlet of the Thief River. |

Measurable Goal Development

3.2.6 Drainage Management Systems Erosion and Sedimentation Reduction

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| Issues Addressed: | <ul style="list-style-type: none">Increased erosion and sedimentation resulting from bank failure and slumping, and gully formation prevents the proper function of drainage systems and increases maintenance costs. (Issue 2.3.1). |
| Rationale: | <ul style="list-style-type: none">The Drainage goal was developed to align with recommendations outlined in the Thief River Watershed Fluvial Geomorphology Report as summarized in the WRAPS as well as recognizing the multiple purposes of drainage management. |
| Short-Term Goals: | <p>Short-term goals are set at the watershed and planning region scale.</p> <ul style="list-style-type: none">Stabilize XX miles of drainage ditches in subwatersheds with high BANCs erosion estimates: Lower Thief River, Moose River, Mud River, and County Ditch 20. |
| Long Term Goals: | <ul style="list-style-type: none">Extend short-term goal.XX% of drainage ditch channels have floodplain access (1.5 – 2-year recurrence interval) at bankfull elevation. |
| Metrics: | <ul style="list-style-type: none">Length of ditch segments stabilizedPercent of drainage ditch channels with access to floodplain |

Measurable Goal Development

3.2.7 Shoreland and Riparian Areas – Improve and Increase Vegetative Cover

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| <p>Issues Addressed:</p> | <ul style="list-style-type: none"> • Quantity and quality of vegetation along waterways, including riparian forests and buffers along ditches in shorelines, that filter pollutants, retain soil, improve water quality, and restore wildlife habitat. (Issue 3.2.1). • Degradation of aquatic habitat, aquatic vegetation, and riparian habitat associated with increased drainage, channelization, ditch maintenance, and development, and the physical damage to the banks and beds of creeks, streams and rivers from higher and faster flows pose public lands and waters management challenges. (Issue 3.1.3). |
| <p>Rationale:</p> | <ul style="list-style-type: none"> • The Shoreland and Riparian Areas goal is based on the MN Buffer Law. |
| <p>Short-Term Goals:</p> | <p>Short-term goals are set at the watershed scale.</p> <ul style="list-style-type: none"> • Achieve 100% compliance of MN State Buffer Law within 1W1P area, increase riparian vegetation, structure, and habitat and decreasing overland sediment and nutrient runoff. <p><u>RECOMMENDATION:</u> Implement XX miles annually of additional filter strips/ buffers on other waters not covered by Buffer Law.</p> |
| <p>Long Term Goals:</p> | <ul style="list-style-type: none"> • Continue 100% MN Buffer Law Compliance in perpetuity. |
| <p>Metrics:</p> | <ul style="list-style-type: none"> • Percentage of area not in Buffer Law Compliance • Number of enforcements for Buffer Law Compliance |

Measurable Goal Development

3.2.8 Habitat for Wildlife – Increase Connectivity and Acreage

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| Issues Addressed: | <ul style="list-style-type: none">• Increased habitat fragmentation and loss of habitat providing food, shelter, terrestrial ecological corridors, and breeding territory for both protected (e.g. endangered, threatened, special concern, and Species of Greatest Conservation Need) and unprotected species. (Issue 3.3.1).• Wetlands have been altered or drained for agricultural production, resulting in a loss of wildlife habitat and temporary water storage on the landscape. (Issue 2.6.2). |
| Rationale: | <ul style="list-style-type: none">• TBD |
| Short-Term Goals: | <p>Short-term goals are set at the watershed scale.</p> <ul style="list-style-type: none">• Maintain, enhance and increase, the number of large terrestrial habitat blocks with a minimum size necessary to sustain ecosystem services representative of a terrestrial landscape within the plan area. Block sizes of XX square miles with approximately XX% cropland, XX% woodland and forest, XX% wetland and XX% grassland are desired.• Use PTMAApp results and/or other datasets (e.g. MDNR Restorable Depressional Wetland Inventory) to locate restorable wetland opportunities and install XX acres of wetlands. |
| Long Term Goals: | <ul style="list-style-type: none">• Extend short-term goal. |
| Metrics: | <ul style="list-style-type: none">• Acres of new terrestrial habitat blocks• Acres of new wetlands |

Measurable Goal Development

3.2.9 Aquatic Habitat for Fish, Macroinvertebrates and Aquatic Life – Restore Connectivity, Habitat, Moderated Flow Regimes and Promoted Vegetated Banks and Buffers

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| <p>Issues Addressed:</p> | <ul style="list-style-type: none"> • Modification of waterways, culverts, and dams at impoundment outlets reduce hydrologic connectivity and altered the flow regime resulting in the reduced potential of waterways to support quality fish populations. (Issue 3.1.1); • Degradation of aquatic habitat, aquatic vegetation, and riparian habitat associated with increased drainage, channelization, ditch maintenance, and development, and the physical damage to the banks and beds of creeks, streams and rivers from higher and faster flows pose public lands and waters management challenges. (Issue 3.1.3) |
| <p>Rationale:</p> | <ul style="list-style-type: none"> • The Aquatic Habitat goal was developed to align with the WRAPs and the Minnesota Stream Habitat Assessment (MSHA) conducted during the MPCA Intensive Watershed Monitoring process in 2014. |
| <p>Short-Term Goals:</p> | <p>Short-term goals are set at the watershed and planning region scales.</p> <p>Branch 200 of Judicial Ditch 11 (Lost River):</p> <ul style="list-style-type: none"> • Establish goal to improve MSHA score of 34.5 (poor). <p>Lower Thief River (Agassiz Pool to Red Lake River):</p> <ul style="list-style-type: none"> • Reduce peak flows by XX% and increase base flows by XX%. <p>Marshall County Ditch 20:</p> <ul style="list-style-type: none"> • Establish goal to improve MSHA score of 42.55 (poor). <p>Middle Thief River:</p> <ul style="list-style-type: none"> • Reduce peak flows by XX% and increase base flows by XX%. <p>Moose River:</p> <ul style="list-style-type: none"> • Establish goal to improve MSHA score of 44.75 (poor). • Maintain flow >0 CFS during the late summer and early fall downstream of the Moose River Impoundment outlet. <p>Mud River:</p> <ul style="list-style-type: none"> • Establish goal to improve MSHA score of 45.10 (fair). |

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| | <ul style="list-style-type: none"> Reduce peak flows by XX% and increase base flows by XX%. <p>Upper Thief River:</p> <ul style="list-style-type: none"> Reduce peak flows by XX% and increase base flows by XX%. |
| Long Term Goals: | <ul style="list-style-type: none"> Extend short-term goal. |
| Metrics: | <ul style="list-style-type: none"> Percentage peak flow reduction Percentage base flow increase MSHA score improvement |

Measurable Goal Development

3.2.10 Public Knowledge of and Behavior Related to Water Resources – Increase Stakeholder Participation

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| Issues Addressed: | <ul style="list-style-type: none"> Increase public awareness and knowledge of water management issues including general citizens down through school aged children (Issue 4.1.1). Increase regular input from stakeholders to guide future efforts related to this plan (Issue 4.1.3). |
| Rationale: | <ul style="list-style-type: none"> The Thief River Watershed Public Participation Strategy Document, developed by RMB Labs in 2013, is the basis for development of this goal. |
| Short-Term Goals: | <p>Short-term goals are set at the watershed scale.</p> <ul style="list-style-type: none"> Host XX events per year across 1W1P area addressing one or more of the following activities: Networking, education and demonstrations including programming on soil health, altered hydrology, residential stormwater, septic systems, and manure management. Events lead to XX% increase in enrollment for cost-share programs Use field walkovers and BMP demonstrations as a means of increasing farmer awareness of BMPs, cost share programs, and conservation delivery. Complete 100 walkovers per year, or 1,000 during plan duration. This amount may include walkovers conducted as part of MDA Minnesota Agricultural Water Quality Certification Program (MAWQCP) (or similar program) enrollment process. Walkovers lead to a XX% increase in BMP adoption and an XX acre increase in MAWQCP certified lands. |
| Long Term Goals: | <ul style="list-style-type: none"> Extend short-term goal. |

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| Metrics: | <ul style="list-style-type: none"> • Percent increase in cost-share program participation • Percent increase in BMP adoption • Acre increase in MAWQCP enrollment |
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Measurable Goal Development

3.2.11 Public Knowledge of and Behavior Related to Water Resources – Enhance Knowledge of Baseline Conditions

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| Issues Addressed: | <ul style="list-style-type: none"> • Information needed to understand baseline conditions for resources to better inform management decisions. (Issue 4.2.1). |
| Rationale: | <ul style="list-style-type: none"> • This goal is based on data gaps as identified throughout the planning process. |
| Short-Term Goals: | <p>Short-term goals are set at the watershed scale.</p> <ul style="list-style-type: none"> • Altered Hydrology <ul style="list-style-type: none"> ○ Collect 10 years of continuous flow monitoring data at pour points of all eight subwatersheds • Groundwater Quantity <ul style="list-style-type: none"> ○ Collect 10 years of groundwater level monitoring data to establish a watershed-wide baseline • Tile Drainage <ul style="list-style-type: none"> ○ Develop records and spatial data of tilled acres within the watershed |
| Long Term Goals: | <ul style="list-style-type: none"> • Extend short-term goal. |
| Metrics: | <ul style="list-style-type: none"> • Altered Hydrology <ul style="list-style-type: none"> ○ Years of continuous flow monitoring data • Groundwater Quantity <ul style="list-style-type: none"> ○ Years of groundwater level monitoring data • Tile Drainage <ul style="list-style-type: none"> ○ Data collected of tilled acres |

Measurable Goal Development

Note: This goal is under development. Some options to guide development of this goal:

- 1. Because this goal addresses one priority issue related to the impacts of stormwater runoff on water quality, this goal could be incorporated into an existing surface water quality goal.**
- 2. A goal could be developed based on criteria for stormwater management as compiled by HEI. These criteria are used to assess land stewardship.**
- 3. Other options as discussed by the PWG, AC, and PC.**

3.2.12 Healthy Urban Landscapes – Improve Water Quality from Stormwater Runoff

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| Issues Addressed: | <ul style="list-style-type: none">Downstream water quality consequences from stormwater runoff due to increased impervious surface area around water bodies such as lake, streams, and wetlands. (Issue 5.1.1); |
| Rationale: | <ul style="list-style-type: none">TBD |
| Short-Term Goals: | |
| Long Term Goals: | |
| Metrics: | |

| Criteria Parameter | Criteria | Criteria Type | Used to Assess Current Stewardship Level? (Y/N) |
|----------------------------------|---|---------------------|---|
| Stormwater | Written stormwater management plan, adopted and implemented through ordinance, rules, or other processes. | Management Practice | Yes |
| Stormwater | Adopted Minimal Impact Design Standards (or similar) for stormwater. | Management Practice | Yes |
| Stormwater | Rules or ordinance which includes components for managing runoff volumes and pollutant loads associated with development. | Management Practice | Yes |
| Stormwater | Municipal Separate Storm Sewer System permitted city and demonstrating reasonable progress toward waste load allocations for lakes and rivers within City boundary. | Management Practice | Yes |
| Streams | Determined to be making "reasonable progress" toward implementation of the waste load allocation established by a completed by Total Maximum Daily Load study. | Management Practice | Yes |
| Floodplains | Floodplains defined. Participant in FEMA floodplain program. | Management Practice | Yes |
| Groundwater | Delineated Drinking Water Source Management area and Wellhead Protection Area if supply community water supply is groundwater. | Management Practice | Yes |
| Wastewater | Compliance with National Point Discharge Elimination System permit. | Management Practice | Yes |
| Critical Areas Protection | County-wide and city ordinances in place for the protection of critical areas. Areas subject to erosion are known / mapped. | Management Practice | Yes |

Measurable Goal Development

3.2.13 Healthy Rural Landscapes – Improve Agricultural Soil Health

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| Issues Addressed: | <ul style="list-style-type: none">• Reduced soil health, soil protection, excess loss of fertilizers or pesticides, and its impact on agricultural productivity, surface water quality and quantity, sedimentation in water features, and water holding capacity. (Issue 5.2.1).• Increased sheet, rill, and wind erosion, and its impact on agricultural productivity, surface water quality, and deposits in drainage systems. (Issue 5.2.2). |
| Rationale: | <ul style="list-style-type: none">• This goal will be guided by the results of the Land Stewardship Analysis. |
| Short-Term Goals: | <p>Short-term goals are set at the watershed scale.</p> <ul style="list-style-type: none">• Implement management practices in XX% of all cropland areas in the watershed to increase Soil Organic Matter (SOM) content 1%. Areas to be managed are cropland areas categorized as rural stewardship “Probability Low” and “Probability Depends on Practice Effectiveness” which have SOM content > X% and =< X %. |
| Long Term Goals: | <ul style="list-style-type: none">• Implement management practices in YY% of all cropland areas in the watershed to increase Soil Organic Matter (SOM) content 1%. Areas to be managed are cropland areas categorized as rural stewardship “Probability Low” and “Probability Depends on Practice Effectiveness” which have SOM content > Y% and =< Y %. |
| Metrics: | <ul style="list-style-type: none">• Percentage of applicable cropland acres treated with management practices. |

Measurable Goal Development

3.2.14 Healthy Rural Landscapes – Reduce Surface and Groundwater Contamination

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| Issues Addressed: | <ul style="list-style-type: none">• Improperly installed or poorly functioning subsurface sewage treatment systems (SSTS) and individual sewage treatment system (ISTS) increase the potential for ground and surface water contamination, adversely impacting human health and water quality. (Issue 5.2.3); and• The impact of feedlots on surface and groundwater quality. (Issue 5.2.4) |
| Rationale: | <ul style="list-style-type: none">• This measurable goal was developed to align with MPCA SSTS Rules (Chapters 7080; 7081; 7082; 7083) and Minnesota state statute §115.55. |
| Short-Term Goals: | Short-term goals are set at the watershed scale. <ul style="list-style-type: none">• XX% of septic systems are brought into compliance• XX% of feedlots are brought into compliance |
| Long Term Goals: | <ul style="list-style-type: none">• Extend short-term goals |
| Metrics: | <ul style="list-style-type: none">• Percentage of compliant septic systems• Percentage of compliant feedlots |