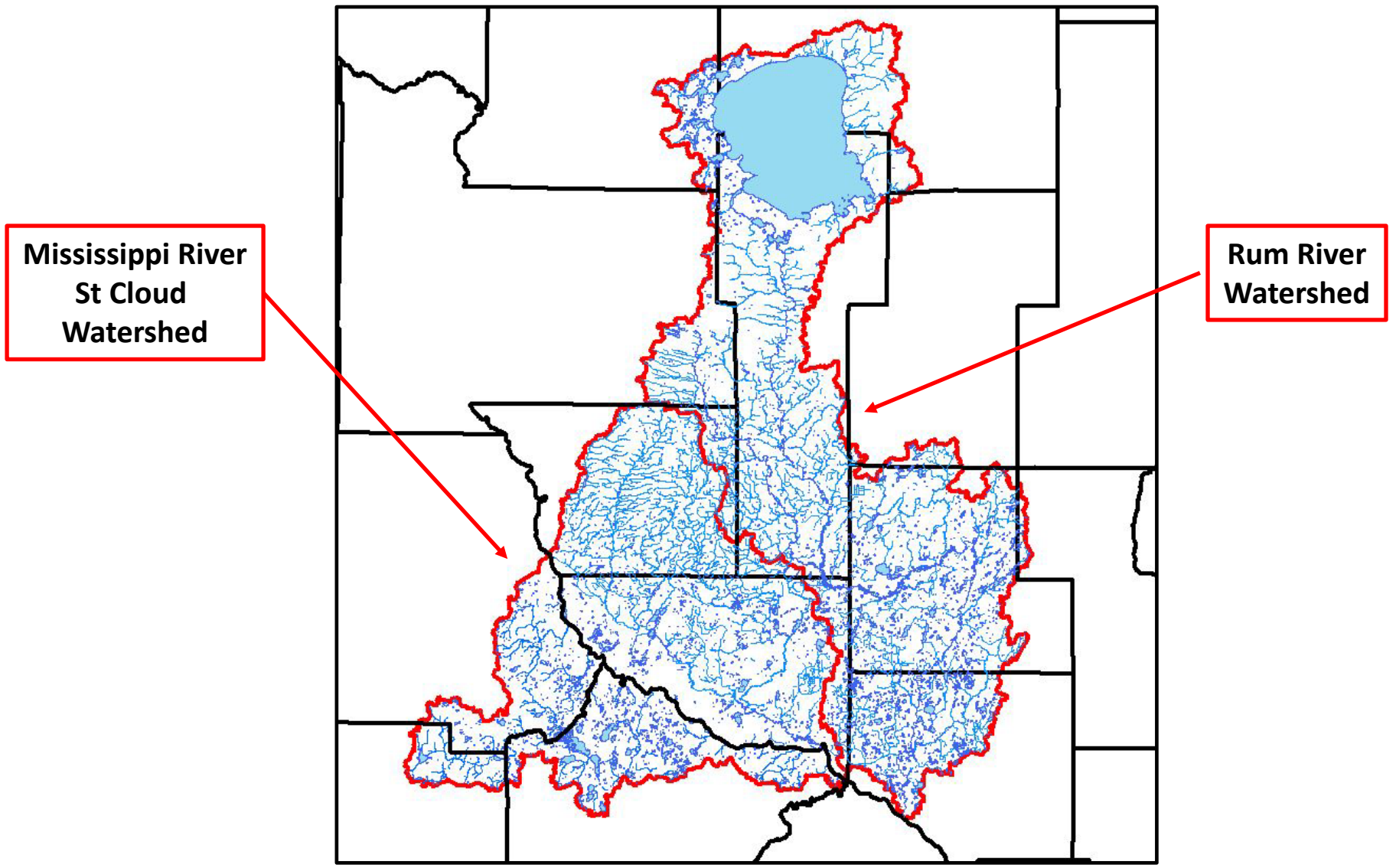
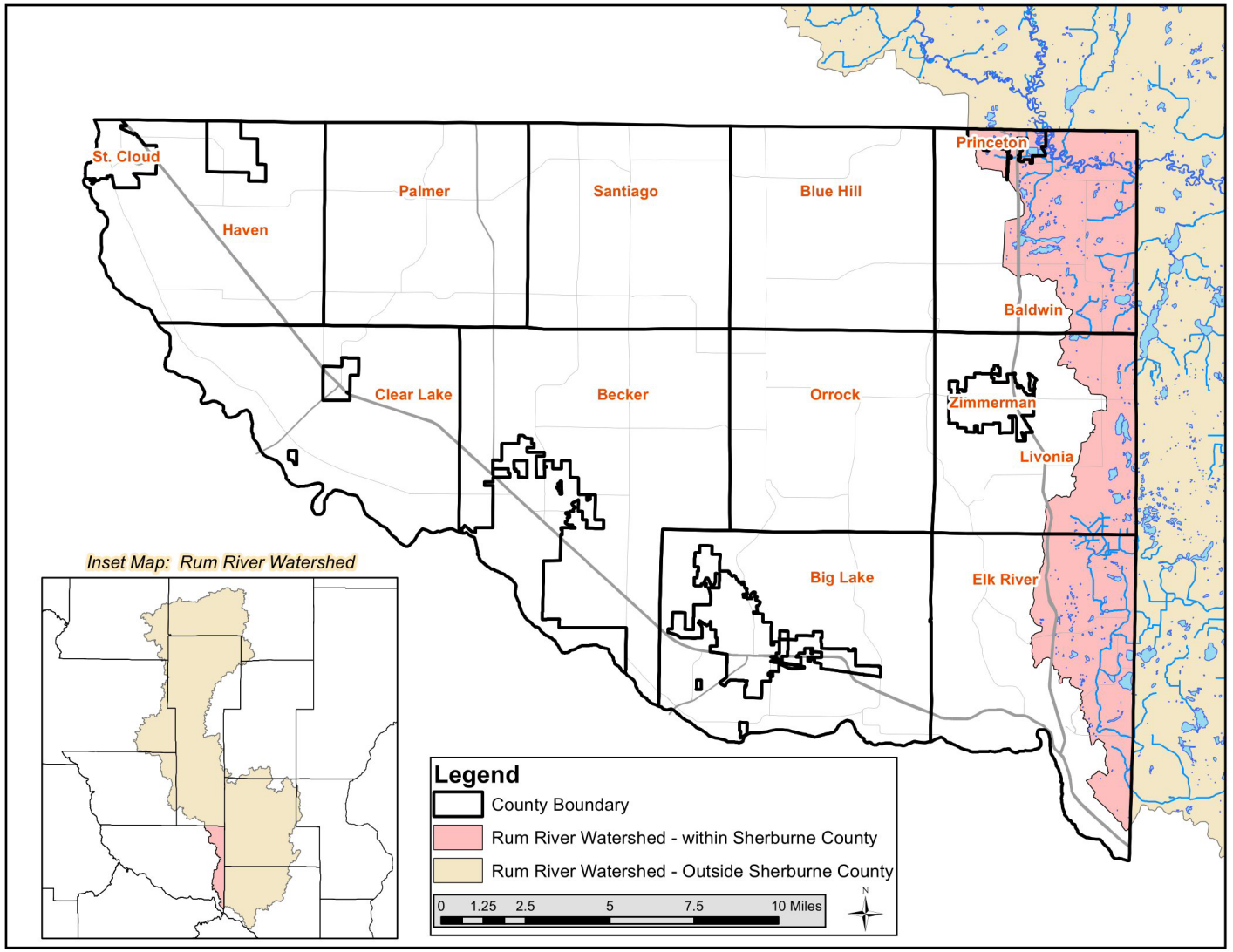
Sherburne County Major Watersheds



Sherburne County Major Watersheds

1) Intensive Watershed Monitoring (IWM)
   - *Data collection and tabulation*
2) Water Condition Assessment
   - *Are water standards are being met?*
   - *What stressors exist?*
3) Watershed Restoration and Protection Strategies (WRAPS)
   - *Development of Total Maximum Daily Loads*
   - *Identification of conservation efforts needed*
4) Comprehensive Watershed Plan development (1w1p)
   - *Prioritization*
   - *Implementation Funding*

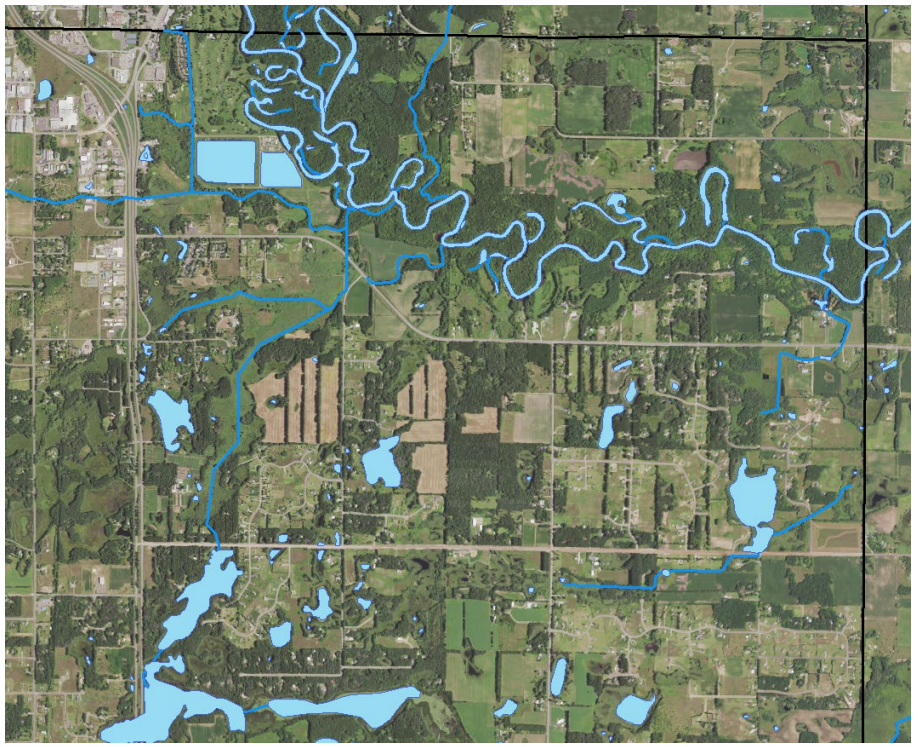
Rum River Watershed



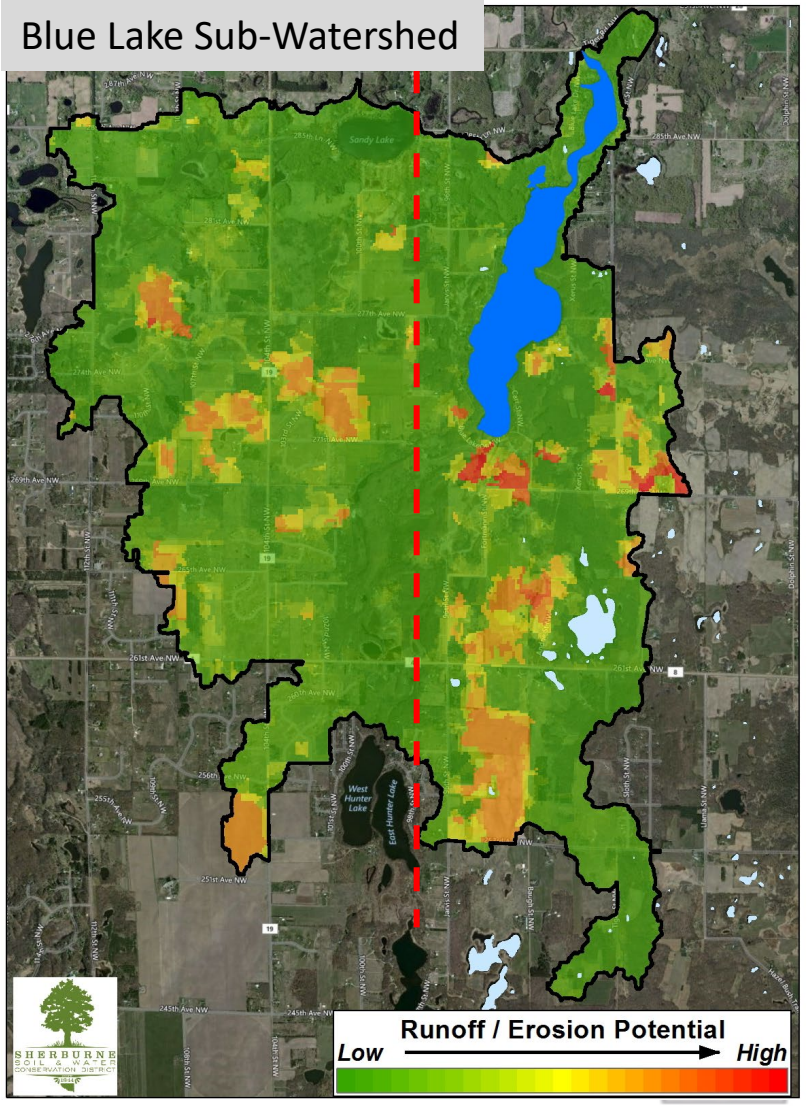
Rum River Watershed

2023 – 2024 Conservation

- Blue Lake Sub-Watershed
- Rum River Corridor
- Practices include:
  - Non-structural agriculture
  - Forestry
  - Wetland Restoration
  - RIM Easements
- $10k for project development and practices



Blue Lake Sub-Watershed



Sherburne County Major Watersheds

Rum River Accomplishments FY23
(Implementation Year 1 Progress to-date, watershed-wide)

FY23 WBIF WORK PLAN GOALS	ESTIMATED PLANNED
22-lb/yr TP reduction	107.11-lb/yr TP reduction
10,560 linear feet of shoreline protection	420 linear feet of shoreline protection
175 acres of soil health practices	370 acres soil health practices
10 acres of agroforestry/silvopasture	--
6 private forest management plans	5 private forest management plans
4 subwatershed assessments	5 subwatershed assessments

1w1p - Priority Resources Update

Priority Resources

- Protection Lakes
- Restoration Lakes

- Nearly / Barely impaired waters
- Watershed to Lake Area Ratio
- Water Clarity Trend
- Percent Disturbed Land Use
- Public Access
- Park or Public Land Adjacent
- Lakes of Biological Significance

- Protection Streams
- Restoration Streams

- Count of Impairment Parameters
- Nearly / Barely Based on Biotics Scores
- Altered Watercourses
- Public Access
- Park or Public Land Adjacent
- MPCA protection streams database
- Coldwater stream designation

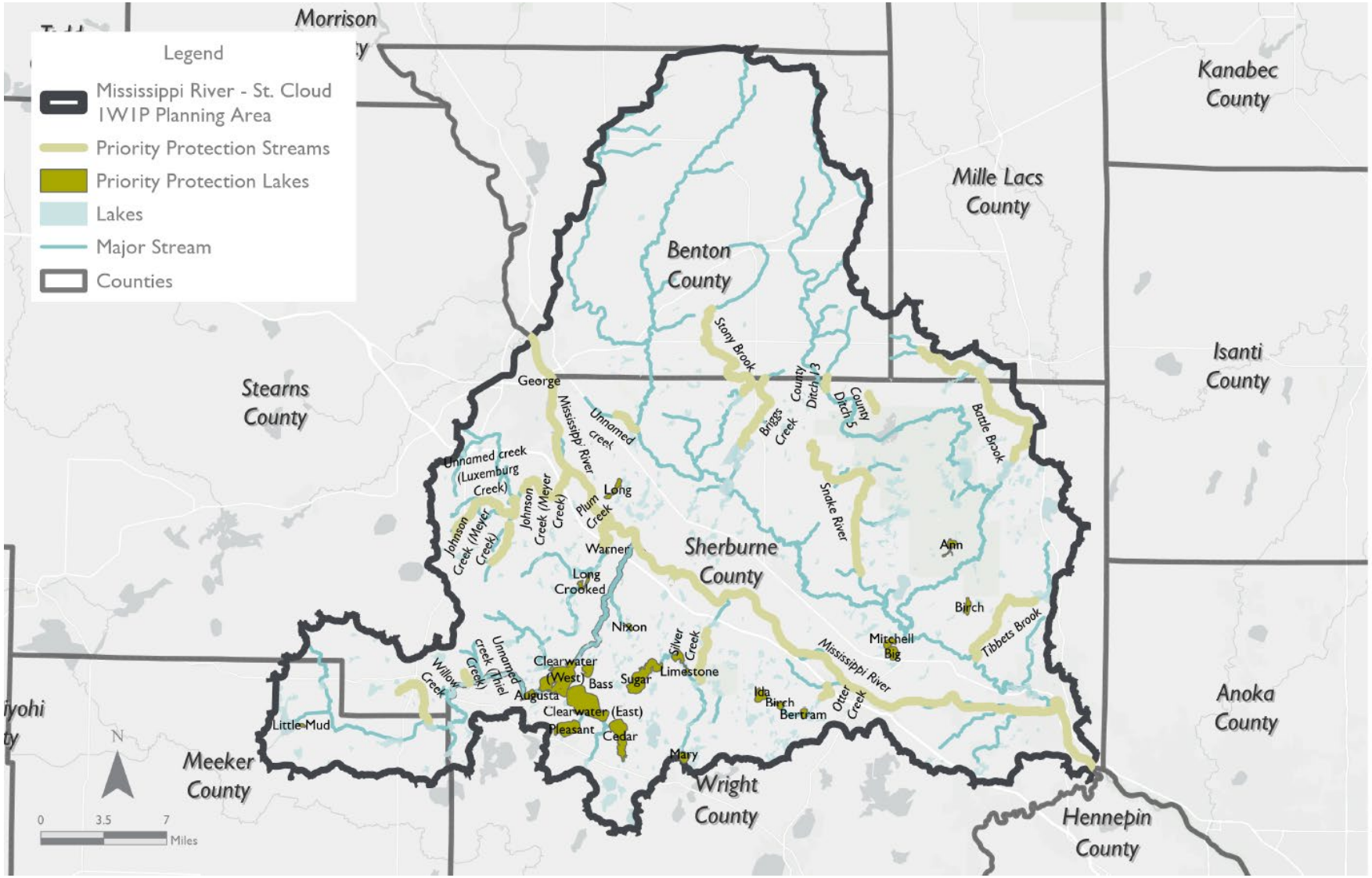
Added element: Professional Judgement

Priority Resources

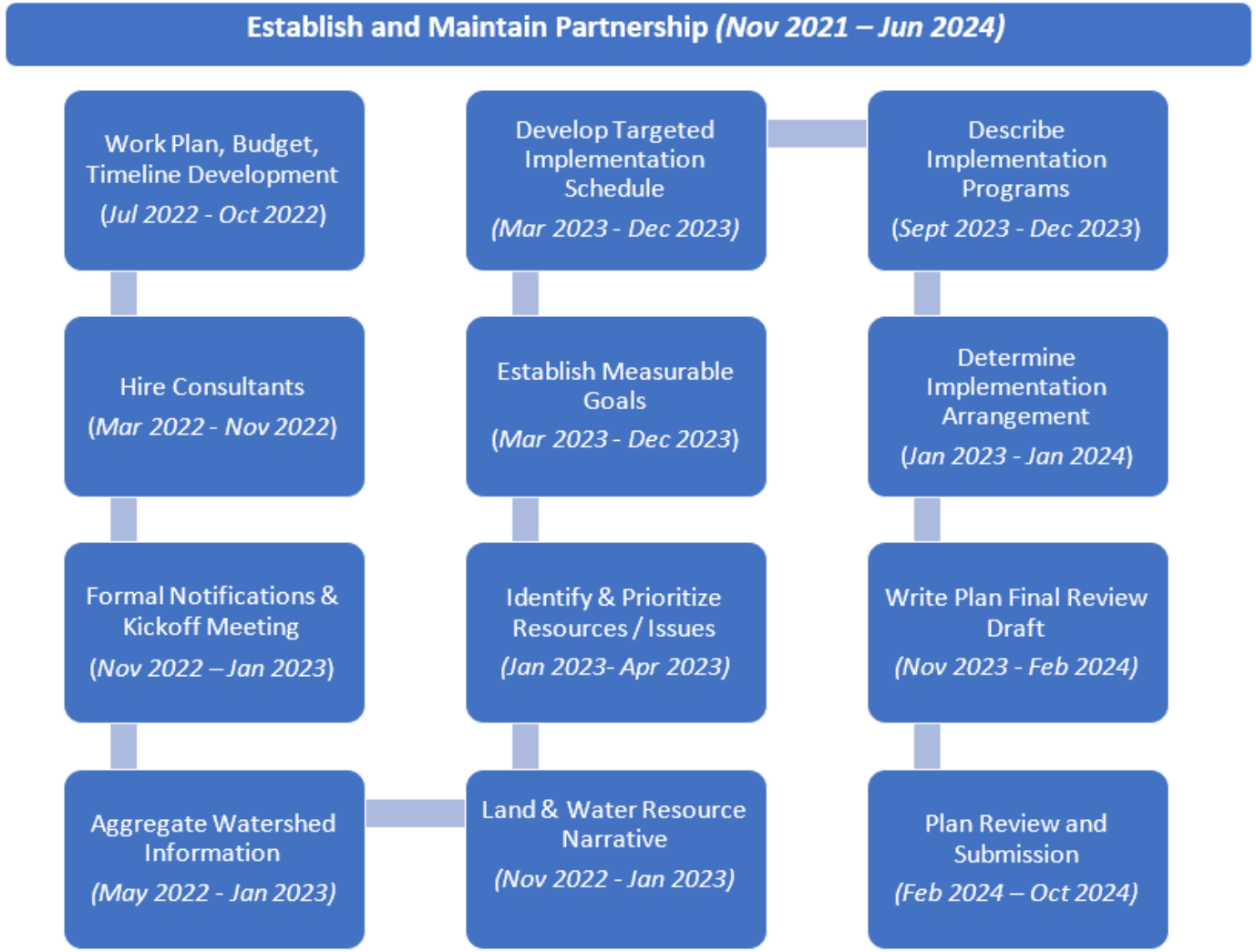
Restoration

Priority Resources

Protection



MRSC 1w1p Timeline



Tasks Completed:

- ✓ Workplan and budget approved
- ✓ Consultant interviewed, hired
- ✓ Committee format established
- ✓ Formal notifications delivered
- ✓ Establish committees
- ✓ Aggregate watershed data
- ✓ Land & Water Resource Narrative
- ✓ Identify & Prioritize Issues
- ✓ Establish Measurable Goals (in progress)
- ✓ Develop Targeting Criteria (in progress)

Next Steps:

- Develop Targeted Implementation Schedule
- Describe Implementation Programs
- Determine Implementation Arrangement

Measurable Goals & Targeting

What is a Measurable Goal?

The quantifiable change in resource condition expected after implementation of the 10-year plan.

What are Targeting Criteria?

Three components:

1. Activity type (what is being done?)
2. Timing (schedule of activities)
3. Location (where is activity being done?)

Why are Measurable Goals important?

Measurable goals are developed to track progress towards completing the plan, they should reflect the issues and concerns identified earlier in the planning process.

Why is Targeting Criteria important?

Targeting describes the what, where, and when of what is being done. Work is optimized to reach the project goals by focusing on the key areas or regions where accomplishments are needed.

What should I be aware of?

"Measurable" implies a numeric value. In some cases, numeric values are currently held with an "x" placeholder. Those values are being refined.

What should I be aware of?

Targeting is often based upon the science of what needs to be done and where. On-the-ground data and information is critical as well, this is where your input is helpful.

Surface Water - Pollutant Runoff

Issue Statement: Surface waters threatened or impaired by pollutants result in damaging impacts to the environment, economy, and quality of life.
Desired Future Condition: Surface waters across the watershed have a healthy and thriving environment that supports aquatic life and human recreation.

Measurable Goals:

1. Delist x number of waterbodies from the state's impaired waters list for nutrients and sediment.
2. Reduce total phosphorus loading to priority lakes according to the following table:
    1. Create table of priority resources
    2. Provide load reductions in lbs and %, use % of Total Mass Daily Load to derive the lbs goal
3. No new nutrient impairments on priority protections waterbodies.
4. Reduce acute/chronic exceedances of E.coli loading to priority streams.
    1. Provide a table with the priority streams and the exceedance goal

Targeting Criteria:

1. Areas contributing high pollutant loads to priority lakes and streams
2. Areas that provide greatest multiple benefits of other priority issues listed below:
    1. Groundwater protection areas
    2. Habitat/perennial cover
3. Areas with higher animal unit densities from feedlot data layer and E.coli values with greatest exceedance of acute standard.
4. Identify in plan that additional tools will be used during site selection such as:
    1. Existing feasibility studies
    2. Land use models, where completed

Surface Water - Altered Hydrology

Issue Statement: Altered Hydrology - Altered hydrology changes the timing and volume of water delivered downstream impacting the environment, economy, and quality of life.

Desired Future Condition: The watershed has achieved a balanced and sustainable surface water hydrologic regime with timing and volume of water delivered downstream supporting the ecological functioning of riparian areas and aquatic habitats.

Measurable Goals:

1. Peak Flow
    1. Reduce 100-year, 10-day event peak flow by X% (potential convert to X acre-feet)
2. Base Flow
    1. Maintain a mean daily flow of X cfs during (months) to support aquatic habitat for streams/subwatersheds in the priority areas
    2. Reduce / maintain the 10th percentile flows in X months for streams/subwatersheds in the priority areas.
3. *Proposed additional goal is being developed by the subcommittee. There is a desire to have a goal related to something that is directly measurable, such as channel morphology or specifics related to Stressor ID reports.*

Targeting Criteria:

1. Drainage areas to priority resources.
2. Restorable wetland inventory data GIS layer.

Surface Water - Internal Loading

Issue Statement: Internal Load Processes - Surface waters are impaired by sediment, nutrient release, recreational activities, and invasive species.

Desired Future Condition: Internal nutrient cycling and disturbance of bottom sediments is not a significant source of phosphorus for lakes throughout the watershed.

Measurable Goals:

1. Complete feasibility studies and/or lake management plans to address potential internal nutrients
2. Reduce internal nutrient sources on X waterbodies.

Targeting Criteria:

1. Nearly / barely lakes
2. Previous data / models
3. Trend data.

Habitat / Natural Resources

Issue Statement: Restoration, Protection + Preservation - Aquatic and terrestrial habitats are diminished due to fragmentation, degradation, and loss, which risks the stability of native species and ecosystems.

Desired Future Condition: Aquatic and terrestrial habitats are enhanced, restored, and connected with existing habitat complexes to build resiliency for native plant and animal communities in priority areas.

Measurable Goals:

1. Increase protected landscape acres by X% in priority areas.
2. Restore landscape habitat acreage by X% in priority areas.
3. Improve aquatic habitat within priority waterways as demonstrated by a X% increase in fish and insect scores in X waterbodies.
4. Restore or permanently protect X units of shoreline habitat along priority waterbodies.

Targeting Criteria:

1. Priority areas identified in Landscape Stewardship Plan.
2. Areas contributing high pollutant loads to priority lakes and streams.
3. Resources identified previous studies/reports that identify poor habitat as a stressor.
4. Priority Lakes/Streams with TNC multiple-benefit analysis
5. Streams/lakes with IBI issues, would rely on Stressor ID reports/WRAPS/DNR/USFWS to determine applicable areas and BMP types

Groundwater Quantity

Issue Statement: Quantity - Groundwater quantity resiliency is threatened when there is an imbalance between recharge and withdrawals.

Desired Future Condition: Groundwater systems demonstrate a balanced relationship between recharge and withdrawals.

Measurable Goals:

1. Groundwater levels are maintained to baseline year (TBD) levels relative to precipitation as indicated by the DNR groundwater-level monitoring program report.

Targeting Criteria:

1. Priority groundwater recharge areas which include the Anoka Sand Plain
2. Use running averages and trend data to get a holistic picture of what is happening and not a snapshot in time

Groundwater Quality

Issue Statement: Quality - Groundwater quality is impacted by naturally occurring processes and land use practices that degrade drinking water and surface water connections.

Desired Future Condition: Land use practices are managed sustainably to minimize impacts on groundwater quality and allow safe drinking water for all people in the watershed.

Measurable Goals:

1. Decrease nutrient loading by x lbs to groundwater sources.
    1. Note: Nitrogen and phosphorus reduction estimators are available via MPCA
2. Minimize groundwater source contamination by sealing x wells.
3. Establish x number of acres in a nutrient or nitrogen management federal, state, or local program.
4. Establish x acres of newly enrolled cover crop (nitrogen scavenging) in groundwater protection priority areas.
5. Partner with X number municipalities and large-parcel landowners on turf management BMPs in high priority areas.

Targeting Criteria:

1. Areas with medium, high, and very high pollution sensitivity of near surface materials
2. DWSMAs (Drinking Water Supply Mgmt Areas)

Landscape Resiliency

Issue Statement: Soil Health - Landscape resiliency is impacted by soil health, which also affects land productivity and natural resources.
Desired Future Condition: Adoption of soil health practices across the entire watershed that results in increased resiliency to erosion and maintain productivity of the land.

Measurable Goals:

1. Implement soil health practices in each management zone as outlined in Table X.
    1. Note: Table X includes agricultural land, pastureland, and turfgrass.
2. Demonstrate an increase in soil health adoption amongst agricultural producers in the watershed.

Targeting Criteria:

1. Areas contributing high pollutant loads to priority lakes and streams
2. Highly erodible lands
3. Wind-prone erosion areas (data source needed)
4. BWSR works with UofM using remote sensing