BOIS DE SIOUX & MUSTINKA RIVER WATERSHEDS COMPREHENSIVE WATERSHED MANAGEMENT PLAN

PLAN SECTIONS

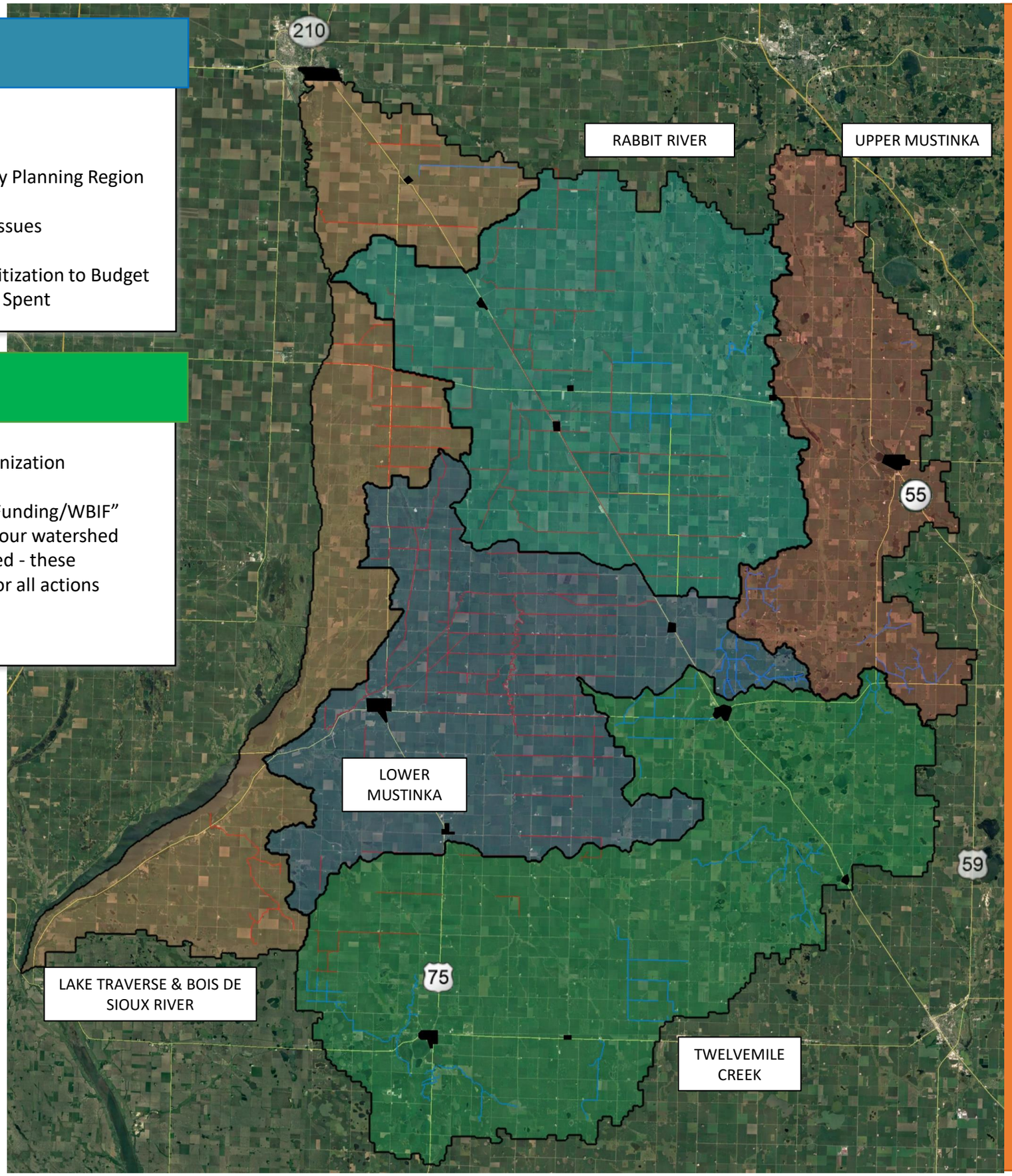
SECTION ONE	Introduction & 5 Planning Regions
SECTION TWO	Prioritization of Our Top 12 Issues by Planning Region
SECTION THREE	Measureable Goals for Our Top 12 Issues
SECTION FOUR	Actions & How We Used Issue Prioritization to Budget for How Scenario 2 Funding May be Spent

FUNDING SCENARIOS

SCENARIO ONE	Current Funding Levels for Each Organization
SCENARIO TWO	"Watershed-Based Implementation Funding/WBIF" the BWSR-determined allocation for our watershed (1W1Plan funding); eligibility is limited - these Clean Water Funds cannot be used for all actions
SCENARIO THREE	Scenario 2 + Additional Funding

TOP ISSUES IDENTIFIED BY PUBLIC KICKOFF MEETINGS

- Drainage system inadequacy
- Sediment loading to surface waters
- Out of date benefit determinations
- Protect and improve agricultural land productivity
- Flood damage to farmland, homesteads, and public infrastructure surrounding farmland.
- Flood damage to communities and public infrastructure
- Drainage system records modernization and standardization
- Drainage system instability
- Inadequate funding for conservation practices
- Unstable river and stream channels



OUR FIVE PLANNING REGIONS

OUR PLAN'S 12 ISSUES AND MEASUREABLE GOALS

VULNERABLE GROUNDWATER	SEDIMENT	UNSTABLE CHANNELS	PUBLIC FLOODING	PRIVATE FLOODING	ALTERED HYDROLOGY
SEAL WELLS & MONITOR GROUNDWATER SUPPLIES	**REDUCE SEDIMENT LOADS**	**PRIORITY CHANNELS ASSESSED AND INCREASE STABILIZED MILES**	**DEFINE COMMUNITY FLOOD RISK & INCREASE PROTECTION**	**IDENTIFY AT-RISK AREAS & ADD RING DIKES**	**INCREASE STORAGE**
ELIGIBLE FOR STATE 1W1PLAN $	**ELIGIBLE FOR STATE 1W1PLAN $**	**ELIGIBLE FOR STATE 1W1PLAN $**			**ELIGIBLE FOR STATE 1W1PLAN $**

HIGH PRIORITY IN ALL PLANNING REGIONS

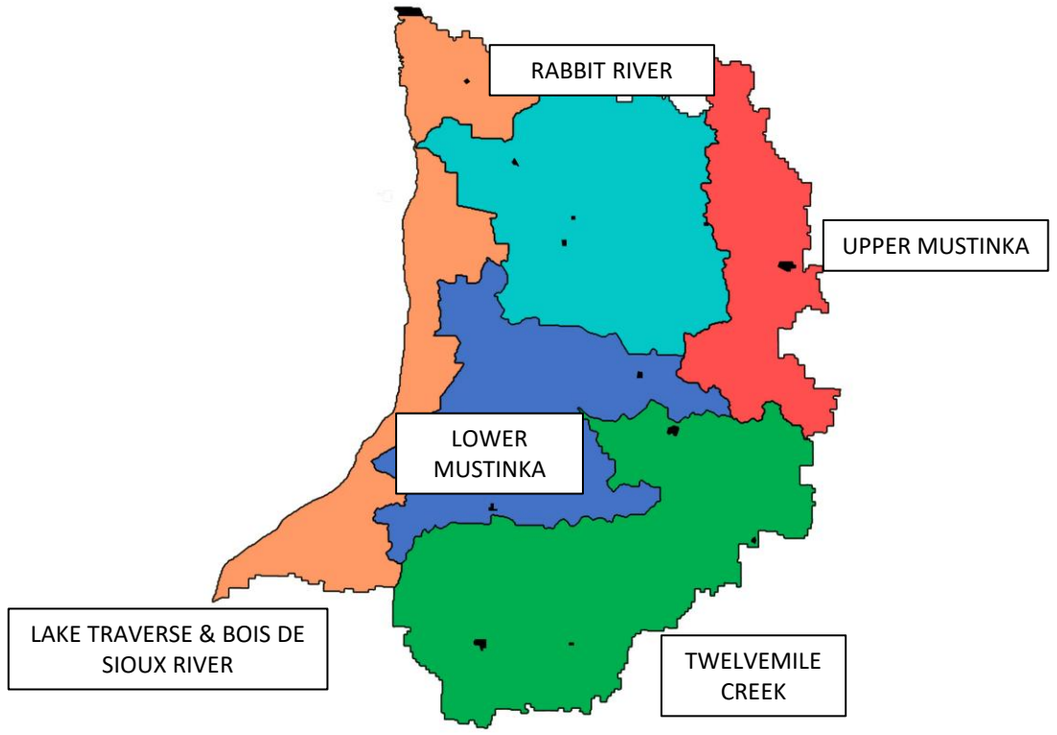
STORMWATER MANAGEMENT	DITCH SYSTEM INSTABILITY	DITCH SYSTEM INADEQUACY	SOIL HEALTH	BACTERIA LOADING	NUTRIENT LOADING
PRIORITY CITIES WRITE A PLAN	**INCREASE STABILIZED DITCH MILES**	**INCREASE REPEAIRED OR IMPROVED DITCH MILES**	**INCREASE SOIL MANAGEMENT ACRES**	**DELIST HUMAN SOURCES OF E.COLI IMPAIRMENTS**	**REDUCE PHOSPHORUS LOADS**
			ELIGIBLE FOR STATE 1W1PLAN $	**ELIGIBLE FOR STATE 1W1PLAN $**	**ELIGIBLE FOR STATE 1W1PLAN $**

HIGH PRIORITY IN ALL PLANNING REGIONS

PRIORITIZATION LEVELS

HIGH	We must absolutely do this; needs a measureable goal.
MEDIUM	We will do some of this; needs a measureable goal.
LOW	We need more data, or will tackle if there are excess funds, or this is already addressed through ordinance/rules.

OUR PLAN'S 12 ISSUES PRIORITIZED BY PLANNING REGION



EXISTING DOCUMENTS & PUBLIC MEETINGS → **LED TO DEFINING 12 ISSUES** → **12 ISSUES PRIORITIZED BY PLANNING REGION (BELOW) AND HIGH-MEDIUM PRIORITIES LINKED TO A MEASUREABLE GOAL**

ACTIONS WITH DIRECT/INDIRECT RELATIONSHIP TO ISSUE GOALS ARE BUDGETED UNDER SCENARIO 2 (NEXT PAGE) → **12 ISSUES PRIORITIZED BY PLANNING REGION (BELOW) AND HIGH-MEDIUM PRIORITIES LINKED TO A MEASUREABLE GOAL**

	Goal	LAKE TRAVERSE	RABBIT	LOWER MUSTINKA	UPPER MUSTINKA	12-MILE CREEK	
SCENARIO 2 ELIGIBLE	Sediment: Loading to Surface Water	High	High	High	High	High	ALL HIGH
	Sediment: Loss and Degredation of Lake Habitat	Medium	Low	Medium	High	High	
	Sediment: Loss and Degredation of Riparian Habitat	Low	Medium	Low	High	High	
	Nutrient Loading	High	Medium	Medium	Medium	**High**	
	Altered Hydrology: Altered Hydrologic Conditions	Medium	High	High	High	High	
	Altered Hydrology: Loss and Degredation of Wetland Habitat	Medium	Medium	Medium	High	High	
	Altered Hydrology: Loss and Degredation of Upland Habitat	Low	Medium	Low	Medium	Medium	
	Unstable Channels	High	Medium	High	Medium	Medium	
	Bacteria Loading	Medium	Medium	Medium	Low	Low	
	Soil Health	High	High	High	High	High	ALL HIGH
	Vulnerable Groundwater	**Private Wells**	**Private Wells**	**Private Wells**	**Private Wells**	**Private Wells**	ALL HIGH
	Public Flooding	High	High	High	Medium	Medium	
	Private Flooding	High	High	High	Medium	Medium	
	Stormwater Management	Low	Medium	Low	Medium	Medium	
	Public Ditch System Instability	High	High	High	Low	High	
	Public Ditch System Inadequacy	High	High	High	Low	High	

DIRECT AND INDIRECT ACTIONS TO MAKE PROGRESS ON GOALS

PROJECTS & PRACTICES + CAPITAL IMPROVEMENT PROJECTS

MANY ELIGIBLE ACTIONS UNDER SCENARIO 2 RULES ➔ 98% OF SCENARIO 2 FUNDING BUDGETED ($4,900,500 OVER 10 YEARS)

BUDGET SET BY PLANNING REGION, THEN DVIDED BETWEEN P & P ACTIONS AND CAPITAL IMPROVEMENT PROJECTS (STREAM RESTORATIONS)

OPERATIONS & MAINTENANCE | **DATA COLLECTION** | **EDUCATION & OUTREACH** | **REGULATORY**

FEWER ELIGIBILE ACTIONS UNDER SCENARIO 2 RULES ➔ 3% OF SCENARIO 2 FUNDING BUDGETED ($171,510 OVER 10 YEARS)

WEIGHTED PERCENTAGE IS THE AVERAGE OF PLANNING REGION AREA, SEDIMENT & PHOSPHOROUS CONTRIBUTIONS

	LAKE TRAVERSE	RABBIT	LOWER MUSTINKA	UPPER MUSTINKA	12-MILE CREEK	TOTAL
Weighted Percentage	16%	20%	18%	19%	27%	100%
Budget	$770,000	$1,003,000	$869,500	$927,000	$1,339,470	$4,900,500

	Groundwater Quality	Sediment	Unstable Channels	Public Flooding	Private Flooding	Altered Hydrology	Stormwater Mgmt	Ditch System Instability	Ditch System Inadequcy	Soil Health	Bacteria	Nutrient Loading	LAKE TRAVERSE	RABBIT	LOWER MUSTINKA	UPPER MUSTINKA	12-MILE CREEK	TOTAL %	
Projects and Practices													**TOTAL**	$ 391,000.00	$ 1,003,000.00	$ 348,000.00	$ 927,000.00	$ 895,000.00	$ 3,564,000.00	
1. Implement filtration practices (e.g. filter strips, grass waterways, etc) to control erosion and sediment runoff on-field. Staff time for CRP and grass programs.		●										●	9.0%	10.0%	10.0%	14.0%	21.0%	13.6%	
2. Implement storage practices (e.g. WASCOBS and drainage water management) to reduce erosion and increase water storage capacity. Potentially use these actions in combination with multipurpose drainage management actions.		○		●	●	●							15.0%	20.0%	20.0%	29.0%	21.0%	21.2%	
3. Implement protection practices (e.g. grade stabilization, streambank protection, and side water inlets) to reduce ditch/stream scouring and reduce edge-of-field and in-channel sediment loss. Potentially use these actions in combination with multipurpose drainage management actions and streambank restoration capital improvement projects.		●	●	○	○			○				●	22.0%	19.0%	27.0%	20.0%	21.0%	21.7%	
4. Implement soil management practices to improve soil structure, increase water retention, and reduce input needs. Example may include residue management (e.g. conservation- , no-, or strip-till management), crop rotations, cover crops, precision agriculture, Whole-Farm Management plans, and nutrient and manure management plans.		○				○				●		○	18.0%	21.0%	20.0%	20.0%	20.0%	19.9%	73%
6. Implement shoreline BMPs to reduce shoreline erosion and improve recreational and wildlife habitat, lakeshore owners.		○	●		○			○				○	10.0%	0.0%	0.0%	10.0%	10.0%	6.2%	
7. Implement mutipurpose drainage management practices (DITCH RETROFITS) to improve ditch system stability.		●		●	●	●		●	●			○	20.0%	25.5%	20.0%	0.0%	0.0%	11.9%	
9. Implement urban stormwater practices (e.g., rain gardens, rain barrels, etc.) on urban and commercial parcels.		○		○	○	○	○					○	0.0%	2.5%		5.0%	5.0%	2.8%	
10. Seal abandoned wells.	●												2.0%	1.0%	2.0%	1.0%	1.0%	1.3%	
11. Install fencing to restrict livestock access to identified unstable riparian areas and shorelines.		○	○								●	○	2.5%	0.0%	0.0%	0.0%	0.0%	0.4%	
12. Establish field windbreaks (CWF eligible and not identified in PTMapp), farm shelterbelts and living snow fences (not CWF eligible).		○								○		○	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	
													100%	100%	100%	100%	100%		
Capital Improvements													**TOTAL**	$ 379,000.00	$ -	$ 521,500.00	$ -	$ 436,000.00	$ 1,336,500.00	27%
Stream Restorations		●	●			●						○	49.2%	0.0%	60.0%	0.0%	33.0%	28.0%	
														Doran Creek Restoration		Twelvemile Creek Restoration		Fivemile Creek Restoration		

Goal Impact Key: 1 = indirect; 2 = direct / accomplishes goal