

**Identify and address ground and surface water quality problems stemming from inadequate wastewater treatment by supporting the enforcement of Sub Surface Treatment Systems (SSTS) ordinances and inventory and upgrade 50% of non-compliant systems in priority areas**

What		How Much		Where		Who	When					Cost
Action	Program	Level of Effort	10-year measurable Outcome	Targeted Resources	Other Resources	Lead/ Supporting entities	2023-2024	2025-2026	2027-2028	2029-2030	2031-2032	Total 10-year cost
Review septic system records to assess potential risks	D	WBIF	Completed records review	Bacteria Impaired Waters		St. Louis County, Carlton County	✓	✓				
Cost share 10 high priority septic systems for low-income residents.	C	WBIF / Other	10 systems replaced	Bacteria Impaired Waters		St. Louis County, Carlton County		✓	✓	✓	✓	
Design and implement an education and outreach campaign to SSTS landowners and SSTS professionals in targeted areas.	E&O	WBIF / Baseline	1 campaign implemented	Impaired & Phosphorous Sensitive Lakes / Bacteria Impaired Waters	Watershed Wide	Counties	✓	✓	✓	✓	✓	
Support enforcement follow-up for non-low-income systems	Policy	Baseline	Continued Local Program	See above	Watershed Wide	See above	✓	✓	✓	✓	✓	
Assistance to small communities to navigate public facilities authority funding	Policy	WBIF	X meetings	See above	Watershed Wide	Counties						
Infrared surveys of septic system runoff into waterways in key areas	Data	Other	1 study completed	See above	Watershed Wide	MPCA			✓			

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Work to address the list of imminent public health threats	C	WBIF	10 systems updated	See above	Watershed Wide	Counties	✓	✓	✓	✓	✓	

**Complete farm projects on 50% of properties identified as needing enhancements (e.g., livestock exclusion, manure storage, pasture management) where there are bacteria impairments.**

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Work with 2 producers to develop and implement rotational grazing plans	C	WBIF / Other	2 rotational grazing plans	Bacteria Impaired Waters		St. Louis & Carlton SWCDs / MDA & NRCS		✓	✓	✓	✓	
Develop comprehensive manure management plans for 4 priority farms	C	WBIF / Other	4 CNMP developed	Bacteria Impaired Waters		NRCS (SWCD supporting)	✓	✓	✓			
Implement 4 feedlot practices that store manure in ways that prevent runoff	C	WBIF / Other	At least 4 practices implemented	Bacteria Impaired Waters		NRCS (SWCD supporting)		✓	✓	✓	✓	
Review riparian corridor survey for livestock exclusion and implement 2 projects to increase livestock exclusion	D	WBIF / Other	2 projects implemented	Bacteria Impaired Waters		NRCS (SWCD supporting)	✓					

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Develop and implement an Education and Outreach campaign to livestock owners in priority areas.	E&O	WBIF / Other	Developed and implemented outreach campaign	Bacteria Impaired Waters	NSL	St. Louis & Carlton SWCDs / MDA, Extension & NRCS	✓	✓	✓	✓	✓	
Continue the enforcement of Open lot runoff management to meet 7020 rules	Policy	Baseline	Continued Enforcement	Watershed Wide	Watershed Wide	MPCA	✓	✓	✓	✓	✓	

**Manage chlorides reaching surface and ground water from road salts and water softener salts by ensuring 100% of municipalities have Smart Salt Certified Staff, 20% Communities achieved Level 2 Certified & education & outreach to 100% of priority landowners.**

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Identify high priority private landowners (owners with large amounts of impervious surface)	D	WBIF	1 list developed	Municipalities along Midway and St. Louis River and tributaries		Carlton SWCD / MPCA	✓					\$500
Work with MPCA to provide Level 2 Certification to 2 municipalities; Evaluate St. Louis County's salt training with Smart Salt training and identify gaps; provide cost share for staff to attend smart salt trainings	C	WBIF / Other	2 Level-2 certified municipalities	Municipalities along Midway and St. Louis River and tributaries		Carlton SWCD / MPCA	✓	✓	✓	✓	✓	
Evaluate County's salt training with Smart Salt training and identify gaps.	D	WBIF	1 report	Watershed Wide	Watershed Wide	RSPT / municipalities	✓					
Provide cost share to purchase salt reduction equipment.	C	WBIF / Other	1 equipment purchase	Municipalities near public waters / Lakeshore owners	Watershed Wide	RSPT / municipalities		✓				
Development & implement a salt use reduction education and outreach campaign	E&O	WBIF	1 campaign implemented	Municipalities near public waters / Lakeshore owners	Watershed Wide	RSPT / municipalities	✓	✓	✓	✓	✓	

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Track salt use to determine salt trends	D	Baseline	Continued Local Program	Watershed Wide	Watershed Wide	Counties, Municipalities	✓	✓	✓	✓	✓	
Make road salt alternatives (sand, grit) readily available to homeowners	C	WBIF	1 program developed	Municipalities near public waters	Watershed Wide	RSPT / municipalities	✓	✓	✓	✓	✓	
Include better planning for snow storage to keep roads and sidewalks cleared, minimize moving snow and protect stormwater BMPs	C	WBIF	1 plan developed	Watershed Wide	Watershed Wide	RSPT / municipalities	✓	✓				

**Protect groundwater quality by sealing 25 unused, unsealed wells watershed wide.**

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Develop and implement an education & outreach campaign to promote drinking water quality	E&O	WBIF	1 outreach campaign developed and implemented	Midway, Thomson Watersheds, 1 mile buffer DWSMAs	NSL	St. Louis & Carlton SWCDs, MDH	✓	✓	✓	✓	✓	
Seal 25 unused, unsealed wells	C	WBIF	25 wells sealed	Midway, Thomson Watersheds,		St. Louis & Carlton SWCDs	✓	✓	✓	✓	✓	

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Develop and implement a groundwater monitoring program	D	Other	1 monitoring developed and implemented	Watershed Wide	Watershed Wide	SWCDs / MDH			✓	✓	✓	

**Promote the implementation of low impact development techniques to reduce stormwater runoff, volume and rate control in 20% of communities**

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Implement the City of Carlton Stormwater Plan	C	WBIF / Other	1 Plan Implemented	Otter Creek, Slaughterhouse Creek, Tributaries		Carlton SWCD	✓	✓				
Develop an education and outreach campaign to urban landowners and municipalities on stormwater BMPs	E&O	WBIF	1 outreach campaign developed and implemented	Municipalities along Midway and St. Louis River and tributaries		Carlton SWCDs	✓	✓	✓	✓	✓	
Install 10 rain gardens/catch basins in priority areas	C	WBIF / Other	10 raingardens installed	Municipalities along Midway and St. Louis River and tributaries		St. Louis & Carlton SWCDs	✓	✓				

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Review MS4 plans and look for green infrastructure opportunities; design & implement identified projects	Data	WBIF	2 plans reviewed	Municipalities along Midway and St. Louis River and tributaries		Carlton SWCD	✓	✓	✓			
Assist communities to develop stormwater management plans.	Data	WBIF	2 plans developed	Municipalities along Midway and St. Louis River and tributaries		St. Louis & Carlton SWCDs		✓	✓			\$50,000
Develop and implement a homeowner program for help with design and implementation of BMPS's such as rain gardens and urban forestry	C	WBIF	1 program implemented	Urban Trout Streams & Tributaries	DUA, North St. Louis	Carlton SWCD, South St. Louis SWCD	✓	✓	✓	✓	✓	
Look for opportunities to reduce flood risk and associated infrastructure damage	C	Other		Watershed Wide	Watershed Wide							
Work with road authorities to educate and implement stormwater BMPs associated with roadside ditches to help slow the flow and minimize will minimize un-vegetated channels and associated erosion	C	WBIF	5 projects implemented	Midway, Thomson	DUA, North St. Louis	Carlton SWCD / DUWAC, Counties, Townships	✓	✓	✓	✓	✓	

**Reconnect 30 miles of priority streams and tributaries to benefit aquatic life and improve water quality.**

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Cost share the replacement of 6 private driveway culverts over high priority trout streams and tributaries	C	WBIF	6 culverts	Midway & St. Louis River & Tributaries		St. Louis & Carlton SWCDs	✓	✓	✓	✓	✓	
Complete fish friendly culvert designs for 14 high priority trout streams and tributaries	C	WBIF	14 culvert designs	Midway & St. Louis River & Tributaries		St. Louis & Carlton SWCDs / Road Authorities	✓	✓	✓			
Provide cost share to replace high priority township culverts for structures under 10 feet	C	WBIF	5 culverts	Midway & St. Louis River & Tributaries		St. Louis & Carlton SWCDs / Townships		✓	✓	✓	✓	
Work with county transportation staff to seek funding for 3 county owned high priority structures.	C	Other	3 culverts	Midway & St. Louis River & Tributaries		St. Louis & Carlton SWCDs & Counties				✓	✓	
Work with road authorities to incorporate stormwater BMPs into ditch design	C	WBIF	1 education campaign / 3 projects implemented	Midway & St. Louis River & Tributaries		Carlton SWCD / County, Townships		✓	✓	✓	✓	
Use road authorities 5–10-year plans to coordinate with crossing upgrades	C	Baseline	Annual Plan Review	Trout Streams & Tributaries	Watershed Wide	Counties / SWCDs	✓	✓	✓	✓	✓	



**Restore stream reaches that have been altered by human activity, including impounded, straightened, and incised stream reaches on 3500 Linear Feet of high priority streams and tributaries.**

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Evaluate feasibility of the identified 13 targeted stream restoration sites in the Midway subwatershed	C	WBIF	13 Feasibility Studies	Midway & St. Louis River & Tributaries		St. Louis & Carlton SWCDs	✓	✓				
Develop designs for 3 restorations in the Midway Subwatershed	C	WBIF	3 restoration designs	Midway & St. Louis River & Tributaries		St. Louis & Carlton SWCDs		✓	✓	✓		
Implement 3 stream restoration projects in the Midway Subwatershed	C	WBIF / Other	3 restorations	Midway & St. Louis River & Tributaries		St. Louis & Carlton SWCDs			✓	✓	✓	
Evaluate, design and restore 1000 feet of Slaughterhouse Creek adjacent to Hwy 45 in Carlton on County owned parcel	C	WBIF / Other	1000 feet restored	Midway & St. Louis River & Tributaries		& Carlton SWCD & County	✓	✓	✓			

**Protect & manage 4500 acres of private owned forests in areas that protect surface water, drinking/groundwater water quality and riparian habitat.**

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Develop Forest Management Plans for 4500 acres in the Midway & Thomson Subwatersheds (~17 plans per year)	C	WBIF / Other	170 forest management plans	Midway & Thomson (RAQ prioritized parcels)		St. Louis & Carlton SWCDs, Private Foresters /DNR/NRCS	✓	✓	✓	✓	✓	
Enroll 4500 acres of forest in SFIA or Easements in the Midway & Thomson subwatersheds	C	Other	4500 acres protected	Midway & Thomson (RAQ prioritized parcels)		St. Louis & Carlton SWCDs, Private Foresters /DNR/NRCS		✓	✓	✓	✓	
Develop and implement an education and outreach campaign for forest landowners.	E&O	WBIF	1 outreach campaign developed and implemented	Midway & Thomson (RAQ prioritized parcels)	Watershed Wide	St. Louis & Carlton SWCDs/DNR/NRCS	✓	✓	✓	✓	✓	
Coordinate forestry activities within the watershed to promote forest health for water quality	C	WBIF	Ongoing coordination	High RAQ Scored Parcels	Watershed Wide	SWCD / DNR & NRCS	✓	✓	✓	✓	✓	

**1000 feet of shoreline in prioritized lakes and streams have natural buffers and near shore areas are protected and restored to reduce erosion using bank stabilization, bioengineering, etc. techniques.**

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Use South St. Louis & MPCA Midway Watershed study to target riparian restoration outreach	E&O	WBIF	1 outreach campaign developed and implemented	Midway River & Tributaries		St. Louis & Carlton SWCDs	✓	✓				
Develop plans and complete riparian restorations for 15 high priority sites, including restoration post invasive species removal	C	WBIF / Other	15 sites restored	Midway River & Tributaries		St. Louis & Carlton SWCDs			✓	✓	✓	
Develop a BMP education and outreach campaign to shoreline and riparian landowners in targeted areas.	E&O	WBIF	1 outreach campaign developed and implemented	Midway & Thomson		St. Louis & Carlton SWCDs	✓	✓	✓	✓	✓	
Enforce shoreland setbacks/buffers in all parts of the watershed	Policy	Baseline	Continued Local Program	Watershed Wide	Watershed Wide	Counties, Cities, Townships	✓	✓	✓	✓	✓	
Develop and implement a BMP education and outreach campaign to shoreline landowners in targeted areas	E&O	WBIF	1 Campaign implemented	Trout Streams & Tributaries, Wild Rice Waters	Watershed Wide	SWCD	✓	✓	✓	✓	✓	
Use RIM program to protect indicator species habitat	C	Other	See Forest Protection Action	Trout Streams & Tributaries, Wild Rice Waters, Wood Turtle	Watershed Wide	SWCD	✓	✓	✓	✓	✓	

**Shoreline ordinances are updated, developed, and enforced for 100% of municipalities with priority resource shoreline areas.**

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Action	Program	Level of Effort	10-year measurable Outcome	Targeted Resources	Other Areas	Lead/ Supporting entities	2023-2024	2025-2026	2027-2028	2029-2030	2031-2032	Total 10-year cost
Survey municipalities that are not covered under County zoning to determine the status of their shoreline ordinances	D	WBIF	1 Survey Completed	Midway & Thomson		Carlton SWCD / Carlton County	✓					
Assist municipalities to develop and enforce shoreland ordinances	Policy	Other	2 municipalities developed	Midway & Thomson		DNR / MN Carlton SWCD & County		✓	✓			