

Indicators of Success for Proposed Implementation Actions

Pollutants	Sources/Causes (High and Mod Priority Only)	Management Measures	Indicators
Goal 1: Restoration of Water Quality			
Sediment Nutrients Hydrology	Agricultural Runoff: Loss of wetlands	Wetland Restoration Wetland Protection Ordinances	No net loss of wetlands. Amount of restored wetlands (goal is 4,050 acres). Number of local municipalities that have wetland protection ordinances (goal of 4 ordinances).
Sediment Nutrients Temperature	Agricultural Runoff: Lack of riparian buffers	Increase Buffers Riparian Overlays/Zoning	Quantity of permanent vegetation maintained along waterbodies (goal is 219,000 ft in high priority agricultural areas). Number of local municipalities that have riparian protection ordinances/zoning (goal of 5 new ordinances).
Sediment Nutrients Hydrology	Agricultural Runoff: Lack of BMPs	Implementation of Various BMPs MAEAP Verification	Number of farmers utilizing cover crops and or conservation tillage (goal is 17,000 acres in high priority agricultural areas). Quantity of grassed waterways implemented (goal is 37 acres). Quantity of critical area plantings (goal is 106 acres). Amount of farmland being treated with gypsum amendments (goal is 10, 465 acres). Length of two stage ditch installed (goal is 20% of current drains). Number of drainage water management systems installed (goal is to install systems to treat 5,000 acres). Number of newly MAEAP verified farms (goal is 20 farms that complete A-Syst Checklist and 10 verified farms).
Nutrients <i>E.coli</i>	Agricultural Runoff: Improper Use or over application of Agricultural Fertilizers/Manure	Nutrient/Manure Management Plans Refraining from Winter Application	Percent of farms covered by nutrient or manure management plan (goal is 25 new farms covered by plans). Percent of farmers that report not applying manure in the winter (goal is 25%).
Sediment Nutrients Hydrology	Urban/Residential Sources: Wetland Loss	Wetland Protection Ordinances	Number of local municipalities that have wetland protection ordinances (goal of 4 ordinances).
Nutrients	Urban/Residential Sources: Improper use or overapplication of fertilizers	Lawn Care Seal of Approval Program	Number of approved lawn care companies (goal is 15 companies). Percent of residents that indicate using only Seal of Approval Companies (goal is 50%).
Nutrients Sediment Temperature <i>E.coli</i>	Urban/Residential Sources:Lack of riparian buffers	Increase Buffers Riparian Overlays/Zoning	Quantity of permanent vegetation maintained along waterbodies (goal is 31.5 acres of buffer in high priority urban areas). Number of local municipalities that have riparian protection ordinances/zoning (goal of 5 ordinances).
Nutrients Sediment Hydrology	Urban/Residential Sources: Poor storm water mgt practices	Implementation of Various BMPs Storm Water Ordinances Improved Site Plan Review	Number of rain barrels installed (goal of 5,000 installed in highly critical urban areas). Number of rain gardens installed (2,050 of acres treated in highly critical urban areas). Number of porous pavement projects installed (345 acres installed in highly critical urban areas). Acres of turf grass converted to native vegetation (goal is 1,841 acres installed in highly critical areas). Number of tree planted (goal is 6,000 trees planted in highly critical urban areas). Percent increase in urban tree canopy (goal is undetermined pending further study). Number of other storm water management practices installed.
Sediment Hydrology Temperature	Urban Stormwater: Storm Drains/ Impervious Surfaces	Implementation of Various BMPs Street Sweeping, Catch Basin Cleaning	Number of porous pavement projects installed (345 acres installed in highly critical urban areas). Number of rain gardens installed (2,050 of acres treated in highly critical urban areas). Number of miles, location and frequency of street sweeping conducted annually (75% coverage of highly critical urban areas). Number and location of catch basins cleaned annually (goal is 75% coverage of highly critical urban areas).
Sediment	Streambanks: Erosion (loss of vegetation and logjams)	Implementation of Various BMPs Revised County Drain Maintenance Procedures	Quantity of streambanks stabilized (goal is 107,898 ft). Number of log jams removed (50% removed in highly critical subwatersheds). Quantity of permanent vegetation maintained along waterbodies (90,336 of buffers in highly critical urban areas and in high priority urban areas and 219,000 ft in high priority agricultural areas). Revised drain maintenance procedures (goal is to update procedures at both Ottawa and Allegan County).
Sediment Hydrology	Road Stream Crossings: Improper design, alignment or maintenance	Repair/replacement	Number of high risk road stream crossings replaced or repaired (goal is to repair 30% of high risk crossings in highly critical urban and agricultural areas). Number of moderate risk road stream crossings replaced or repaired (goal is to repair 10% of moderate risk crossings in highly critical urban and agricultural areas).
Hydrology Temperature	Agricultural Runoff: Drain Tiling and Artificial Drainage	Implementation of Various BMPs	Amount of farmland being treated with gypsum amendments (goal is 10, 465 acres). Length of two stage ditch installed (goal is 20% of current drains). Number of drainage water management systems installed (goal is to install systems to treat 5,000 acres).
<i>E.coli</i>	Agricultural Runoff: Manure Applications	Implementation of Various BMPs	Number of farmers utilizing cover crops and or conservation tillage (goal is 17,000 acres in high priority agricultural areas). Number of drainage water management systems installed (goal is to install systems to treat 5,000 acres). Quantity of permanent vegetation maintained along waterbodies (goal is 219,000 ft in high priority agricultural areas).
	Agricultural Runoff: Biofilms in drain tiles	UNKNOWN Further study required	Source and cause confirmed or denied by research. Action plan and remediation strategies developed.
	Urban/Residential Runoff: Biofilms in Storm Drains		Source and cause confirmed or denied by research. Action plan and remediation strategies developed.