



Yellow Medicine River 1W1P Midpoint Planning

PURPOSE

The Yellow Medicine River 1W1P was developed in 2015 using the HSPF SAM tool with a plan to meet several measurable goals through best management practice (BMP) implementation and other water quality improvement activities. The plan's objectives are being applied over a ten-year period from 2017 through 2026. A midpoint evaluation of the Yellow Medicine 1W1P was facilitated by the 1W1P Mid-Point Grant program. The midpoint evaluation incorporates new information and updated analysis to evaluate progress toward the measurable goals and make potential amendments to the next plan. The HSPF SAM tool was used to represent the flow, water quality, and BMP implementation conditions prior to the 1W1P period. BMP implementation data from the start of the 1W1P period up to the midpoint was integrated into the HSPF SAM tool to evaluate water quality improvement progress. The expected progress simulated by HSPF SAM was compared to the observed data to adjust SAM BMP assumptions to represent BMP effectiveness more accurately. The Yellow Medicine 1W1P measurable goals were then reevaluated factoring in the HSPF SAM adjustments to make needed amendments to the plan to achieve the measurable goals and identify effective and ineffective actions.

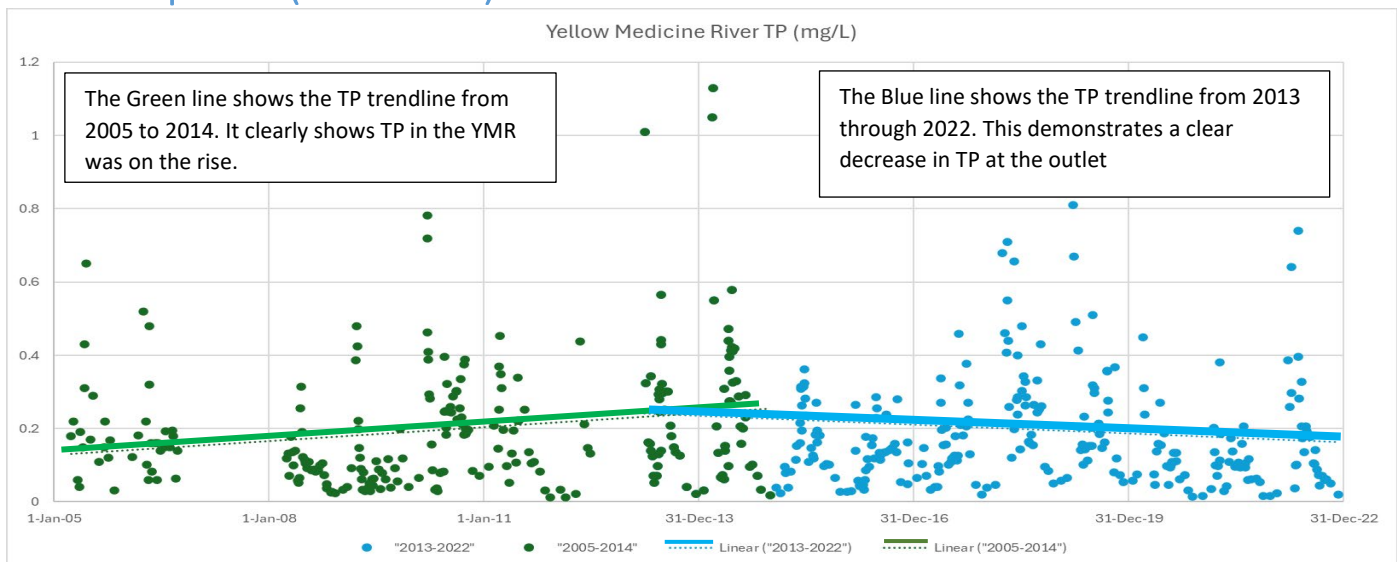
ESTIMATE WATER QUALITY PROGRESS

2008-2014 Original 1W1P Analysis Period

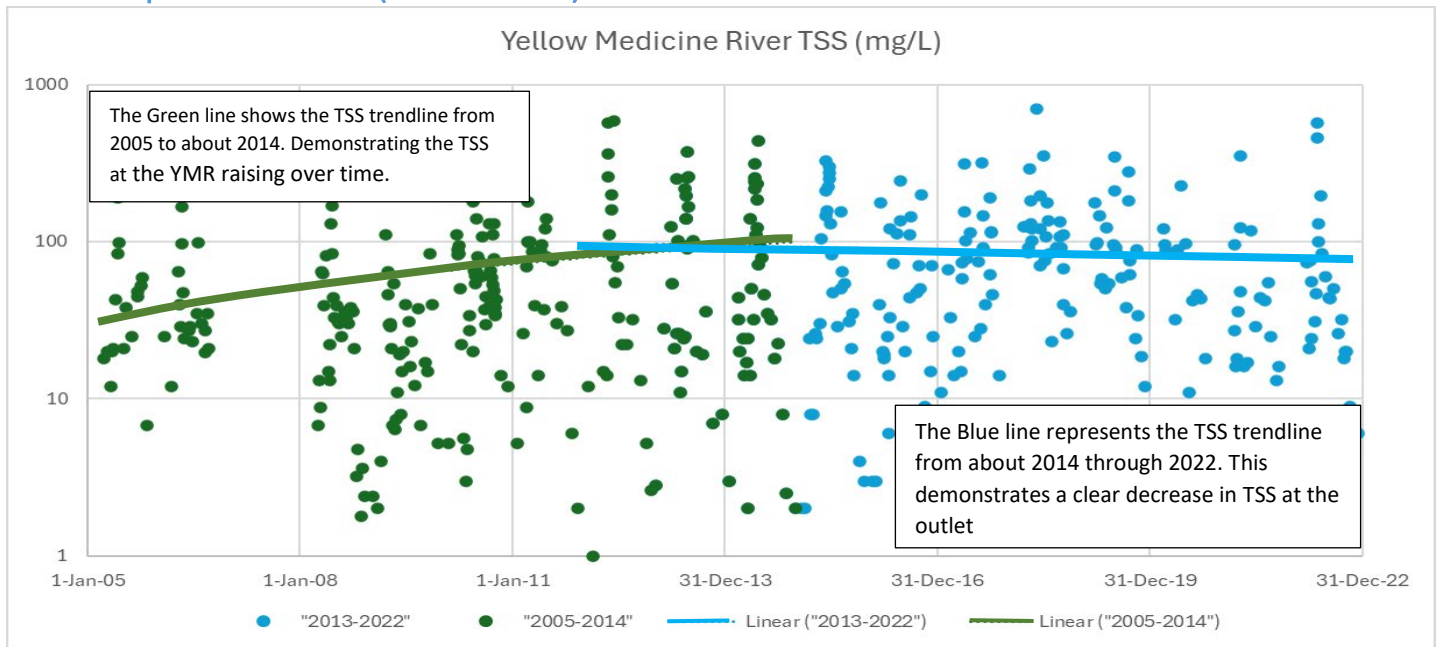
2015-2022 Implementation Period

TP was the primary parameter used for progress evaluation. Specifically at priority locations

Total Phosphorus (YMR Outlet)



Total Suspended Solids (YMR Outlet)



Main Stem YMR Estimated Reductions

TSS – 10% TN – 2% TP – 10%

There is limited Nitrogen Data available during this period.

TP Water Quality Evaluation at Priority Locations

HUC 10	TP Reduction
Upper	28%
North Branch	31%
Mud Creek	12%
JD 24	27%

HUC 10	TP Reduction
JD 10	17%
JD 24	27%
Stoney Run	13%
*Spring Creek	14%
*South Branch	25%

*Included but not a priority location

Upper YM and North Branch show significant reductions, which is what we would expect to see since 68% of the projects have been placed in those areas.

Plan Amendment Recommendations

Continue effective BMP implementation. Most effective BMPs were found to be, conservation cover, cover crops, side inlets, nutrient management, and reduced tillage.

Increase more nitrogen focused BMPs and tracking and reporting on Nitrogen reductions from project implementation. Encourage landowners to maintain implementation long term.

Consider Spring Creek as a priority area in the next plan. Spring Creek is showing high TP concentrations.

Yellow Medicine Average Recent TP (mg/L) = 0.20

Spring Creek Average Recent TP (mg/L) = 0.31

Most Other Priority Areas Show Recent TP (mg/L) < 0.1