

Menomonee River Watershed Restoration Plan Fact Sheet

MN-15, Reach 883, Menomonee Mainstem

Data resulting from model runs:

Figure	Overall Project Team Assessment	Analysis
Flashiness index	Good	The Flashiness Index quantifies the frequency and rapidity of short-term changes in stream flow. The index ranges from 0 to 2, with 0 being constant flow. The flashiness is reasonable at this location.
Dissolved oxygen v. days per year	Good	Typically, aquatic communities need 5 mg/l or more of dissolved oxygen to survive. Concentrations at this site are normally higher than this level.
Fecal coliform v. days per year	Variable (some good, some bad)	For recreational uses, lower fecal coliform counts (a measure of bacteria) are better (preferably under 400 counts / 100ml). The counts on majority of the days are either 'below 400' or 'above 5,000'. A goal may be to determine the conditions that create the 'above 5,000' days and discourage recreational use on these days. An additional goal could be to decrease fecal coliform loads in order to increase the number of days that have 'below 400' counts.
Phosphorus v. days per year	Good	Phosphorus is a nutrient that can lead to increased growth of algae. The concentrations on most of the days are at or below the 0.1 mg/l planning guideline. Throughout the year, the phosphorus concentrations do not exceed 0.3 mg/l on any day
Suspended solids v. days per year	Good	Suspended solids cause water to become cloudy and aesthetically unpleasant. They can clog the gills of fish and invertebrates, make feeding difficult, and lead to sediment deposition (poor habitat). The concentrations are less than 25 mg/l on most of the days, but the concentrations exceed 100 mg/l on some of the days.
Monthly dissolved oxygen	Very Good to Good	It is natural for dissolved oxygen concentrations to decline during warmer months due to decreased solubility.
Monthly fecal coliform	Moderate to Poor	While the ranges of values are fairly consistent throughout the year, notice that the median and 75 th percentile values decline substantially during the summer and early fall. This may be related to the die-off of bacteria. Conditions are particularly poor in March and are likely related to snow melt. Also note that the summer accounts for many of the 'below 400' days while the winter has many of the 'above 5,000' days.
Monthly phosphorus	Good	Phosphorus concentrations are greatest in March and likely related to snow-melt. The 75 th percentiles decline slightly in the summer and early fall. This is likely related to uptake by plants during the growing season.
Monthly suspended solids	Good	Suspended solids concentrations are below the reference concentration most of the time. The majority of the higher concentrations are likely related to larger rain or snow melt events that disturb bare soil. Winter has lower concentrations due to a number of factors including frozen conditions, decreased construction activities, and low-impact storms (snow vs. rain).

Figure	Overall Project Team Assessment	Analysis
Dissolved oxygen by flow	Good	Note that dissolved oxygen concentrations decline slightly during low flows. This is likely due to a combination of decreased water agitation and higher temperatures (low flow conditions are often associated with the warm summer months).
Fecal coliform by flow	Poor	Generally, a pollutant that is present at high concentrations during high flows and low concentrations during low flows (fecal coliform, in this case) is attributed primarily to non-point sources. Infrequent sewer overflows (once every 2-5 years) would only contribute during the high flows when substantial non-point loads are already present. During periods with the highest flows, fecal coliform counts exceed the regulatory standard; during moist conditions, fecal coliform counts exceed the standard 75% of the time. During low flows, the standard is met over 75% of the time. These conditions would be the safest time for recreational use (boating, wading, swimming).
Phosphorus by flow	Good to Moderate	Concentrations are greatest at high flows, with concentrations exceeding the 0.1 mg/l planning guideline about 50% of the time during the highest flows. This suggests that phosphorus sources are primarily non-point. The similarities between the phosphorus and suspended solids data suggest that the phosphorus may be associated with suspended sediment.
Suspended solids by flow	Good	The concentrations of suspended solids increase with increased flows, suggesting contributions from non-point sources. All of the instances when the concentration exceeds the reference occur at the moist-to-high flow conditions. The suspended solids may come from runoff that carries a sediment load, from stream bank erosion, or re-suspended stream sediments.