

Menomonee River Watershed Restoration Plan Fact Sheet MN-1, Reach 6, North Branch Menomonee River

Data resulting from model runs:

Figure	Overall Project Team Assessment	Analysis
Flashiness index	Very 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 reasonably low at this location.
Dissolved oxygen v. days per year	Moderate to Poor	Typically, aquatic communities need 5 mg/l or more of dissolved oxygen to survive. Concentrations at this site are typically below this level about 20% of the time. The water leaving the nearby wetlands may be anoxic at times which would decrease oxygen levels in the stream.
Fecal coliform v. days per year	Good	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 'below 400'. Unlike many of the downstream sites, this site does not exhibit frequent spikes of >5,000 counts. This may be related to settling and solar exposure in the wetlands.
Phosphorus v. days per year	Very Good to Good	Phosphorus is a nutrient that can lead to increased growth of algae. The concentrations of phosphorus, 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	Very Good	Suspended solids cause water to become cloudy, which is aesthetically unpleasant. They can also 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 and the concentrations of suspended solids do not exceed 100 mg/l on any day.
Monthly dissolved oxygen	Moderate to Poor	The decline in dissolved oxygen concentrations during the summer is normal due to the decreased solubility of oxygen in warmer water. The upper portion of the concentration ranges for each month is fairly typical; however, the lower portions of the ranges (below the median or 25 th percentile) decline more than would be expected. This may indicate excess organic matter or biochemical oxygen demand in the stream.
Monthly fecal coliform	Good to Moderate	While the ranges of values are fairly consistent throughout the year, notice that the median and 75 th percentile values decline during the summer swimming season. This may be related to the die-off of bacteria due to solar radiation. Also note that the conditions are poorest in March and are likely related to snow melt.
Monthly phosphorus	Very Good	Phosphorus concentrations rarely exceed the planning guideline. They increase slightly during late spring and summer. This may be related to a combination of snow melt and fertilizer runoff from agricultural fields.
Monthly suspended solids	Very Good	The concentrations of suspended solids are relatively low year-round and lower during the winter months. The lower concentrations during the winter are probably related to a number of factors including frozen conditions and low-impact storms (snow doesn't pound the soil like rain).

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Dissolved oxygen by flow	Moderate	Note that the largest declines in dissolved oxygen concentrations occur at low flows. This is partly due to a combination of decreased water agitation and higher temperatures (low flow conditions are often naturally associated with the warm summer months). Decreases during low-flow conditions may be exacerbated by oxygen demand from organic material and in-stream biochemical oxygen demand.
Fecal coliform by flow	Moderate	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. Note that during any period with the higher flows, fecal coliform counts exceed the regulatory standard about 50% of the time. During low flows and dry conditions, the standard is met well over 75% of the time. This would also be the safest time for any recreational uses (boating, swimming, wading, etc.), although the amount of water in the stream may limit recreational uses to wading.
Phosphorus by flow	Very Good to Good	Concentrations of phosphorus only exceed the planning guideline at higher flows. This suggests that the excess phosphorus is originating from non-point sources. The similarities between the phosphorus and suspended solids data suggest that the phosphorus may be associated with suspended sediment.
Suspended solids by flow	Very Good	The concentrations of suspended solids increase with increased flows, suggesting contributions from non-point sources. The suspended solids may come from runoff that carries a sediment load, from stream bank erosion, or re-suspended stream sediments.