

Menomonee River Watershed Restoration Plan Fact Sheet
MN-17, Reach 908, RI-09, Menomonee River Downstream of Honey Creek (North 70th Street)

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 reasonably good 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 consistently above this level as well as the variance standard of 2 mg/l.
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 potential goal in this case may be to determine the conditions that create the 'above 5,000' days and discourage recreational use on days that meet these conditions. As there is a variance that allows the fecal coliform to reach 2,000 counts, another goal could be to find ways to decrease coliform loads in order to increase the number of days that have fewer than 2,000 counts.
Phosphorus v. days per year	Moderate to Poor	Phosphorus is a nutrient that can lead to increased growth of algae. The concentrations are at or below the 0.1 mg/l planning standard on most of the days, but the concentrations exceed 0.5mg/l on some of the days.
Suspended solids v. days per year	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.
Monthly chloride grab samples (CL not from models)	Inconclusive (no winter data)	These samples have chloride concentrations that are below levels that are toxic to fish and invertebrates. However, a common source of chloride is road salt and there is no winter data. Note that concentrations in March samples (which include snow melt and spring runoff) are higher than the rest of the year. Winter chloride concentrations in samples would be expected to exceed March's chloride concentrations.
Monthly dissolved oxygen	Very Good to Good	Notice the decline in dissolved oxygen concentrations during the summer. This is normal due to the decreased solubility of oxygen in warmer water.
Monthly fecal coliform	Moderate to Poor	While the ranges of values are fairly consistent throughout the year, note that the median value declines during in the summer swimming season. This may be related to the die-off of bacteria due to solar radiation. Also note that the summer accounts for many of the 'below 400' days mentioned above while the winter has many of the 'above 5,000' days.
Monthly phosphorus	Moderate to Poor	While the ranges of values are fairly consistent throughout the year, note that the median value increases in March. This may be related to snow melt. Also note that concentrations are lower in May (75 th percentile below 0.1 mg/l); this could be due to increased plant uptake.
Monthly suspended solids	Good	Suspended solids are relatively low year-round and slightly lower during the winter months. This is probably linked to a number of factors including frozen conditions, decreased construction activities, and low-impact storms (snow doesn't pound the soil like rain).

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Chloride by flow (Cl not from models)	Inconclusive (no winter data)	It is difficult to assess chloride trends without data from the winter months; however, it appears that when chloride is not being actively applied, some amount is in a 'reservoir' (sediment). This chloride is gradually released and is particularly noticeable during mid-to-dry conditions. During higher flow conditions, the concentration becomes diluted.
Dissolved oxygen by flow	Good	Note that the decline in dissolved oxygen occurs at 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	Moderate to 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. The infrequent sewer overflows (once every 2-5 years) would only contribute during the high flows when substantial non-point loads are already present. Note that during any period with the highest flows, fecal coliform counts exceed the variance standard. During moist conditions, the counts exceed the variance standard over 50% of the time. During low flows, the variance standard is met all of the time. This would be the safest time for any recreational uses (boating, swimming, wading, etc.).
Phosphorus by flow	Moderate to Poor	Concentrations of phosphorus are greatest at high and low flows. This suggests a background source of phosphorus that is particularly noticeable at low flows (perhaps from non-contact cooling water) as well as non-point sources of phosphorus at high flows.
Suspended solids by flow	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.