

Menomonee River Watershed Restoration Plan Fact Sheet
MN-18, Reach 919, RI-10, Menomonee River Near the Upper Limit of the Estuary (Falk Dam)

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 nearly always above this level and are consistently above 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 loading 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. About half of the days had concentrations that exceeded the 0.1 mg/l planning guideline.
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 dissolved oxygen	Very Good to Good	Note the decline in dissolved oxygen concentrations during the summer. This is normal due to the decreased solubility of oxygen in warmer water. Concentrations are well above the special variance level.
Monthly fecal coliform	Moderate to Poor	While the ranges of values are fairly consistent throughout the year, notice that the median 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 summer accounts for many of the 'below 400' days mentioned above while the winter has many of the 'above 5,000' days. Fecal coliform counts increase noticeably in March and are potentially related to snow melt.
Monthly phosphorus	Moderate to Poor	While the ranges of values are fairly consistent throughout the year, note that the median concentration increases slightly in March. This could be explained by snow melt.
Monthly suspended solids	Good	Suspended solids concentrations 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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Dissolved oxygen by flow	Good	Note the decline in dissolved oxygen concentrations during low flows. This is likely due to a combination of decreased water agitation and higher temperatures (low flow conditions are often associated with 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 regulatory variance standard. During moist conditions, the counts are above 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, although concentrations are frequently greater than the planning guideline under all flow conditions. The higher concentrations at flow extremes suggests a background source of phosphorus that is particularly noticeable at low flows (perhaps due to inputs of 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.