

Menomonee River Watershed Restoration Plan Fact Sheet MN-16, Reach 914, Honey Creek

Data resulting from model runs:

Figure	Overall Project Team Assessment	Analysis
Flashiness index	Good to Moderate	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 slightly high at this location.
Dissolved oxygen v. days per year	Very Good to 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. An additional goal could be to find ways 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 concentration does not exceed 0.35 mg/l on any day.
Suspended solids v. days per year	Very Good to 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 lower dissolved oxygen concentrations during the summer. This is normal due to the decreased solubility of oxygen in warmer water.
Monthly fecal coliform	Moderate	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.
Monthly phosphorus	Moderate	While the ranges of concentrations are fairly consistent throughout the year, note that the median concentration increases in March. This may be related to snow melt. Also, concentrations are more consistent and the 75-95% group is generally lower during the late spring, summer, and early fall. This may be related, in part, to uptake by plants during the growing season and the release of phosphorus from sediments and decomposing organic matter.
Monthly suspended solids	Very Good	Suspended solids concentrations are relatively low year-round and 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). In addition, the concrete-lined channel limits the amount of in-stream erosion.

Figure	Overall Project Team Assessment	Analysis
Dissolved oxygen by flow	Good	Note that the dissolved oxygen concentration declines during low flows (though still well above the variance standard). 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 sources are already present. Note that during any period with the highest flows, fecal coliform counts exceed the regulatory variance standard. During dry conditions, the variance standard is met 75% of the time and during low flows, the standard is met consistently. This would be the safest time for any recreational uses (boating, swimming, wading, etc.), although the amount of water in the stream would most likely limit recreational uses to wading.
Phosphorus by flow	Moderate	Concentrations are greatest at high flows, with concentrations exceeding the 0.1 mg/l planning guideline nearly 75% of the time at the highest flows. This suggests phosphorus loads are originating primarily 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	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. Note that this site is located downstream of some concrete-lined reaches within the watershed. As a result, upstream activities such as stream bank erosion and re-suspension of stream sediments likely make less of a contribution to suspended sediment loads at this site compared to sites that are situated downstream of natural reaches that experience these activities.