

Menomonee River Watershed Restoration Plan Fact Sheet MN-10, Reach 861, Little Menomonee Creek

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 reasonable at this location. |
| Dissolved oxygen v. days per year | Good to Moderate | Typically, aquatic communities need 5 mg/l or more of dissolved oxygen to survive. Concentrations at this site fall below 2 mg/l infrequently. |
| 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 | Very Good to 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, 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 during the majority of the days, but the concentrations exceed 200 mg/l on some of the days. |
| Monthly dissolved oxygen | Moderate | 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 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, particularly during the summer. This may indicate excess organic matter and biochemical oxygen demand in the stream. |
| Monthly fecal coliform | Moderate to Poor | While the ranges of values are fairly consistent throughout the year, note 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 to Good | In each month, phosphorus concentrations exceed the planning guideline less than 25% of the time. Note that the minimum values increase during the late spring and into the summer. This is likely related to runoff of fertilizer. |
| Monthly suspended solids | Good to Moderate | The maximum concentrations of suspended solids are lowest during the winter, likely due to 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 to Moderate | 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 the warm summer months). Also, note that dissolved oxygen concentrations decline during high flows, suggesting that the stormwater runoff may carry a relatively large organic load and biochemical oxygen demand in the stream. |
| 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. Note that during periods with the highest flows, fecal coliform counts exceed the regulatory standard more the 75% of the time. During low flows, the standard is consistently met. This would be the safest time for any recreational uses (boating, swimming, wading, etc.), although the amount of water in the stream may limit recreational use to wading. |
| Phosphorus by flow | Good | Concentrations of phosphorus are highest at high flows. This suggests the prevalence of non-point loads of phosphorus. Unlike many of the other sites, the phosphorus concentrations do not appear to correlate well with suspended solids concentration data. |
| Suspended solids by flow | Moderate | 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. |