

## Kinnickinnic River Watershed Restoration Plan Fact Sheet

### KK-7, Reach 19, Cherokee Park 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	Moderate to Poor	Typically, aquatic communities need 5 mg/l or more of dissolved oxygen to survive. Concentrations at this site fall below this level about 25% of the time, but never below 3 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 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 are 'below 400'.
Phosphorus v. days per year	Good	Phosphorus is a nutrient that can lead to increased growth of algae. The phosphorus concentrations on most days are at or below the 0.1 mg/l planning guideline. However, the concentrations do not exceed 0.4 mg/l on any day.
Suspended solids v. days per year	Very Good	Suspended solids cause water to become cloudy and aesthetically unpleasant. They can clog the gills of fish and invertebrates, make feeding difficult, and lead to sediment deposition (poor habitat). The concentrations on most of the days are less than 25 mg/l. The concentrations do not exceed 100 mg/l on any day.
Monthly dissolved oxygen	Poor	While it is natural for dissolved oxygen to decline in warmer months, the concentration falls below the standard more than 75% of the time during June, July and August. Dissolved oxygen is also highly variable, particularly in the spring. This variability suggests that either there is excessive algal growth or organic enrichment and biochemical oxygen demand within the ecosystem.
Monthly fecal coliform	Moderate	While the ranges of values are fairly consistent throughout the year, notice that the 75 <sup>th</sup> percentile value declines substantially during the summer and early fall. This may be related to the die-off of bacteria. Conditions are particularly poor in March and are likely related to snow melt. March is the only month when the standard is exceeded more than half the time.
Monthly phosphorus	Good	Phosphorus concentrations rise in the spring, possibly due to a combination of snow-melt and fertilizer. Concentrations then decline during the summer and early fall, likely related to uptake by plants during the growing season.
Monthly suspended solids	Very Good	Suspended solids concentrations fall below the reference concentration most of the time. The majority of the higher concentrations are likely related to larger rain or snow melt events that disturb bare soil. Most of the reaches upstream of this site are natural; additionally, ponds and wetlands along the watercourse may also be allowing the sediment to settle.

Figure	Overall Project Team Assessment	Analysis
Dissolved oxygen by flow	Moderate to Poor	During medium to low flows, dissolved oxygen concentrations are lower relative to the higher flow conditions. This may be related to a lack of water agitation (which would allow greater diffusion of oxygen into the water).
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 any period with the highest flows, fecal coliform counts exceed the regulatory standard and during moist conditions, fecal coliform counts exceed the standard 50- 75% of the time. During low flows and dry conditions, the standard is met nearly all of the time. During these low flows would be the safest time for recreational uses like wading.
Phosphorus by flow	Good to Moderate	Concentrations are greatest at high flows, with concentrations exceeding the 0.1 mg/l planning guideline nearly 50% of the time at the highest flows. This suggests that phosphorus inputs are primarily from non-point sources.
Suspended solids by flow	Very Good	Suspended solids concentrations increase with increased flows. This suggests a prevalence of non-point sources. The concentrations only exceed the reference condition during the high flow condition. Nevertheless, the reference level is met 25% of the time during high flows.