

Fivemile and Tenmile Creek Water Quality Sampling Results Showing Seasonal and Longitudinal Variations in “Pollutants of Concern”

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In this presentation, results from 2012 water quality sampling conducted by Ada County Highway District (ACHD) in Fivemile and Tenmile Creeks will be summarized. The primary focus of the sampling was on sediment (TSS), phosphorus, and *E. coli* identified in ACHD's Phase II NPDES MS4 Permit as the “pollutants of concern”. The samples were collected as part of two sampling programs: (1) “long-term monitoring” initiated to assess how water quality varies throughout summer, and (2) mid-summer “synoptic” sampling of a 4.3-mile reach of Tenmile Creek to assess longitudinal variability. Initial results from long-term monitoring are generally consistent with data collected by others: TSS results show a general trend of higher levels in the spring (> 40 mg/L) with gradually decreasing levels tapering to < 10 mg/L during latter summer months. The phosphorus results showed higher variability in data, and thus, observational trends were less apparent. The *E. coli* levels ranged in the 100's of MPN /100mL, except for two values near 5000 MPN /100 mL. While concentrations of the pollutants of concern for the August synoptic sampling event were within the ranges generally reported, the relatively high longitudinal variation was unexpected. In less than a few miles and in multiple reaches, TSS concentrations varied from < 10 mg/L to > 30 mg/L. Phosphorus levels increased from < 0.05 mg/L to > 0.4 mg/L and then dropped to a relatively consistent 0.2 mg/L. In addition, bacteria levels varied over 2 orders of magnitude, peaking to > 2000 counts/100mL and dropping to < 200 counts/100 mL twice within four miles. Based on these results, it is evident that land uses are affecting water quality quite differently throughout this reach.