



Quick Facts

- 86% of water samples collected during June, July, and August exceed the state standard of 235 mpn/100mL for *E. coli*.
- Due to impervious surfaces a typical city block generates more than 5x the runoff than a woodland area of the same size.

The Headwaters Yellow River Watershed Steering Committee Meeting is having a meeting on **September 30th at 11:00am**. The meeting will be located at the Marshall County Building Room: 207. The Marshall County Building is located at 112 West Jefferson Street in Plymouth. All are welcome to attend.

For more information on the Headwaters Yellow River Project feel free to contact:

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Headwaters Yellow River Watershed Planning Project

Fall 2015

Data Collection Begins in the Watershed

Streams are a reflection of the interaction between the physical, chemical, and biological features of the ecosystem. Therefore, an impairment to any one of these features can impact the whole system. In order to better understand the streams of the Headwaters Yellow River Watershed physical, chemical, and biological data is currently being collected throughout the watershed.

In June the collection of water samples officially began in the Headwaters Yellow River Watershed. Water samples were collected in June, July, and August. Dissolved oxygen, conductivity, temperature, pH, total phosphorus, dissolved phosphorus, nitrite + nitrate, ammonia, TKN, *E. coli*, turbidity, TSS, and atrazine readings have been taken at twelve locations. In addition to water sampling, biological and habitat data was collected throughout the watershed. Macroinvertebrates (aquatic insects) were sampled from each sample site in August. Macroinvertebrates are good

indicators of water quality because they show the cumulative impacts of pollution and habitat degradation. The habitat at each sample site was measured using a Qualitative Habitat Evaluation Index (QHEI). This index is designed to provide a measure of habitat that generally corresponds to the physical factors that affect aquatic organisms.



Photo: Cardno staff collecting stream flow measurements in a tributary of the Yellow River.

Impervious Surfaces and Water Quality

The porous and varied terrain of natural landscapes like forests, wetlands, and grasslands traps rainwater and snowmelt and allows them to slowly filter into the ground. Impervious surfaces are artificial structures such as roads, sidewalks, driveways, and parking lots that are covered by impenetrable materials. In contrast, impervious (nonporous) surfaces like roads, parking lots and rooftops prevent rain and

snowmelt from infiltrating, or soaking, into the ground. Most of the rainfall and snowmelt remains above the surface, where it runs off rapidly in large quantities. The runoff from impervious surfaces often contains pollutants such as sediment, nutrients, pesticides, road salts, oils, and bacteria. To decrease polluted runoff from paved surfaces, households

can develop alternatives to areas traditionally covered by impervious materials. Individuals can prevent polluted runoff by picking up after pets and using, storing and disposing of chemicals properly. To reduce future runoff developers and city planners should utilize low-impact development techniques that promote water infiltration.