

Stabilization of Caulks Creek at Strecker Road Bridge

City of Wildwood, MO

The Strecker Road bridge in Wildwood, Missouri, was aging, threatened by the advancing cutbanks of Caulks Creek, and inadequate to pass storm flows. Sverdrup was retained to design a new bridge and Intuition & Logic was retained to evaluate and stabilize the eroding channel.

We analyzed the stream's meander geometry and stream migration over the past 40 years using historic aerial photo interpretation and lineation analysis to determine rate and direction of both meandering and channel widening. Our analysis results indicated that stabilizing the channel downstream of Strecker Road would shift shear stress away from the high bank and center flows under the new bridge. The final design incorporated vegetated composite revetment to reshape and stabilize the high scour bank. Stream barbs (turn vanes) were placed at the toe of slope to focus the high velocity flow thread toward the middle of the channel and encourage sediment deposition and natural re-vegetation behind each barb. The deposition and subsequent vegetation effectively re-built a floodplain shelf, thereby catalyzing the stream's self-repair abilities. Design was completed December 2000.

