

**Fee Fee Road Bridge Channel Design  
(ASCE Outstanding Civil Engineering Achievement Award Winner, 2000)**

City of Maryland Heights, MO



In 1999, the Fee Road Bridge was approaching the end of its design life and had to be replaced. Because of changes in regulatory requirements and property constraints, the bridge had to be moved north of its previous location. The bridge design was substantially complete at the time the channel design was commissioned so no alteration in the orientation or design of the bridge was possible. The design had to account for and prevent future instability of the stream channel while maintaining or improving conveyance through the new

bridge section.

A channel design had already been completed that required relocation of about 420 feet of channel with slopes and bed armored with gabion baskets. Our alternative design rerouted only 280 feet of channel and restored some of the natural function by replacing the lost bankfull floodplain using a two-stage channel. The design also enhanced the stability of the entire reach by re-establishing a riffle-pool sequence, dissipating energy and halting incision. The bankfull floodplains and side slopes are vegetated with native riparian species to provide further stabilization, habitat and aesthetic value.



The design requirements were met while returning the stream to a more normal, stable configuration, enhancing the aquatic and riparian habitat and improving aesthetics.

