

Bridle Creek Stabilization

City of Chesterfield, MO



vegetation to provide additional hydraulic roughness for the reduction of near surface stress. The weirs and composite structures were also used to isolate confluence hydraulics and induce scour at intended locations.

This project called for stabilization of over 2,600 feet of stream through developed residential neighborhoods. The primary stabilization design challenge involved replacing a 160-foot long, 10% sloped concrete ramp with a functional, natural stream form. Dominant alpine fluvial process and geomorphic parameters were applied to the design of a stable step pool system. Stream energy is dissipated in the pools, while the steep channel grade is accommodated through the steps. Construction was completed in early spring 2002 and the system has already been tested by 2 to 10 year storms with great success. The stream designs also included in-stream weirs to guide and focus high velocity isovels, control profile grade, and reduce near bank stress. The weirs were used in combination with composite bank structures of limestone, coir fabric, geogrid, and native Missouri riparian

