

Barkman Drive Tributary Stabilization

St. Louis County, Missouri



The Barkman Drive Tributary was a deteriorating concrete swale, used to convey stormwater flow from an enclosed pipesystem to a tributary of Fee Fee Creek, in unincorporated St. Louis County. The project was initially identified by the County through resident complaints concerning yard flooding during severe storm events. The existing concrete swale did not have the capacity to convey the storm flows. In addition, the smooth concrete surface accelerated the flow, resulting in severe channel bed scouring at the downstream end of the swale, undermining the concrete.

Intuition & Logic was hired by the County to analyze the existing swale and design a new channel with enough capacity to eliminate the backyard flooding, while preventing scour. Our proposed design included the removal of the concrete swale and railroad tie lining, to create a stable, natural-looking drainage swale. Two grade controls were designed to protect the reach from future channel incision and any unexpected changes in the watershed both upstream and downstream of the project site.

The swale was planted with native riparian trees, shrubs, and herbaceous vegetation. In addition, urban forestry was included in the management of the surrounding wooded area to remove invasive vines and bush honeysuckle that could compromise the long-term success of the native plantings. When fully established, the new swale will closely approximate the function of a natural, upland rainwater swale, attenuating flows and improving water quality by increasing the time of concentration and improving infiltration and evapotranspiration.