Indian Creek Flood Control Project

Overland Park, Kansas

The City of Overland Park, Kansas is in the process of completing a watershed study for Indian Creek. As part of that study, an area of existing commercial development, known as Foxhill South, has been identified as being in the 100-year floodplain. Potential flooding poses a risk to multiple buildings in the area. A conceptual improvement project was developed as part of the Indian Creek Watershed Study to address flooding concerns at the existing development. Because the conceptual project effected private property east of the main channel, an in-depth flood control project study was needed. The City of Overland Park retained HNTB and Intuition & Logic to perform the Indian Creek Flood Control Project Preliminary Engineering Study to evaluate the existing conditions in more detail and develop potential improvements.

Intuition & Logic was responsible for the geomorphic investigation of approximately 5,100 feet of channel to determine the physical stability of the channel and to predict the likely response to proposed improvements. Based on our analysis, management recommendations and preliminary interventions were developed to address existing bank erosion and potential impacts associated with the flood control improvements.

The preferred alternative includes overbank excavation to lower the floodplain elevation and gain additional channel capacity. The location and extent of floodplain excavation was optimized along the project reach to achieve the maximum allowable improvement in water surface elevation reductions, while minimizing disturbance to the surrounding riparian corridor. A pair of grade control structures, combined with a composite revetment and rock toe bank protection, are proposed to help manage the increase in shear stresses due to the sharp decrease in water surface elevations.