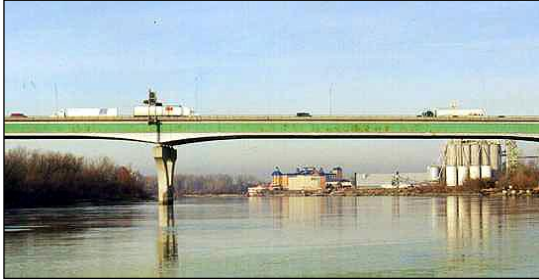


I-80 Spring Street Bridge over the Missouri River

Fatigue Evaluation, Instrumentation, and Retrofit Program

Council Bluffs, Iowa



CLIENT

Iowa Department of Transportation

CHALLENGE

Due to a history of fatigue cracking problems with this important transportation link, the Iowa Department of Transportation wanted to carry out an in-depth condition evaluation and develop retrofit measures to prolong its useful life.

STRUCTURE

Constructed in 1972, this five-girder structure connects Council Bluffs, Iowa, and Omaha, Nebraska. The twelve-span welded plate girder bridge is supported on concrete piers and has a total length of 2,462 feet.

SOLUTION

WJE completed a comprehensive close-up inspection of fatigue-sensitive details throughout the structure. We also implemented a field testing and instrumentation program to measure the response of selected connection and fatigue-sensitive details when subjected to controlled truck loads and normal traffic. Using information obtained from our investigation, we developed a series of retrofit measures. We also installed all stiffener butt weld retrofits and fifty trial retrofits to address web-gap fatigue cracking.

