The Economics of Closing Bridges on Very Low Volume Rural Roads in Kansas

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Abstract

The State of Kansas has approximately 25,464 bridges that are located on state, county, and city roadway networks. As of May 2012, approximately 1,229 bridges on very low volume roads were determined through inspection to be structurally deficient and a candidate structure to be potentially closed, replaced or repaired. County commissioners have a critical role in deciding the fate of many of these bridges with limited resources, political pressure, and knowing that these structures may be the only way for some people to get to a paved roadway from their homes and businesses. This study was designed to provide critical information for Kansas county commissioners or practicing engineers such as (1) Where structurally deficient bridges on low volume roads are located within Kansas; (2) What distance is the shortest drivable detour if these bridges were to be closed; and (3) Whether to recommend closing or repair/replace the structurally deficient bridge based on both potential detour length and Average Daily Traffic (ADT). The results of the study indicated that many of Kansas’ structurally deficient bridges on very low volume roadways had a detour less than two miles, were steel bridges, and candidate bridges recommended for closing had an ADT of under eight vehicles and detour length of nine miles or less.

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