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<p>15. Abstract</p> <p>The purpose of this research is to analyze the flowline data and relate it to the degradation of the river bed at bridge locations in the river. This information may then be used to replace or rehabilitate those bridges that experienced severe degradation.</p> <p>This report evaluates channel degradation in 409.76-mile reach of Canadian River in Oklahoma. In this study, the 409.76 mile river length is divided into two Reaches: Reach 1- river station (RS1) to Eufaula Dam, and Reach 2- Eufaula Lake Dam to RS18. The flowlines of Canadian River in Oklahoma were observed for a long period. In Reach-1, RS 14 shows the maximum degradation of 17.60 feet in 19 years from 1985 to 2004. On the other hand, maximum channel aggradation of 3.00 feet is observed at RS 17 in the Eufaula Lake. It was also found that the river station 18, 8.86 mile downstream of the Eufaula Dam, has experienced the degradation of 3.5 feet in 6 years from 1983 to 1989.</p> <p>River station (RS) 7 at U.S. 81, river station 12 at S.H. 3W, and river station 14 at U.S. 283 has experienced 12.05, 10.00, and 17.6 feet of degradation respectively. Degradations in these bridges are experienced in 45, 34, and 19 years respectively. Therefore, RS 7 (Bridge Key b13537), RS 12 (Bridge Key b14520), and RS 14 (Bridge Key b22420) are determined as critical and recommended for rehabilitation or replacement in the replacement cycle. A detailed hydraulic and geotechnical analysis should be performed before reconstruction.</p> <p>It is recommended that degradation of tributaries is evaluated to determine the structures where flowline is severely degrading in Canadian River basin.</p>			
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