

TECHNICAL REPORT DOCUMENTATION PAGE

1. REPORT NO. FHWA-OK-09-01	2. GOVERNMENT ACCESSION NO.	3. RECIPIENT=S CATALOG NO.	
4. TITLE AND SUBTITLE Degradation in Rush, Wildhorse and Salt Creeks of Washita River in Oklahoma for Transportation Planning		5. REPORT DATE March 2010	
		6. PERFORMING ORGANIZATION CODE	
7. AUTHOR(S) Avdhesh K. Tyagi, Abdul-Sahib Al-Madhhachi, and James Brown		8. PERFORMING ORGANIZATION REPORT	
9. PERFORMING ORGANIZATION NAME AND ADDRESS Avdhesh K. Tyagi School of Civil & Environmental Engineering Oklahoma State University Stillwater, OK 74078		10. WORK UNIT NO.	
		11. CONTRACT OR GRANT NO. ODOT SPR Item Number 2194	
12. SPONSORING AGENCY NAME AND ADDRESS Oklahoma Department of Transportation Planning and Research Division 200 N.E. 21st Street, Room 3A7 Oklahoma City, OK 73105		13. TYPE OF REPORT AND PERIOD COVERED Final Report 2008 - 2010	
		14. SPONSORING AGENCY CODE	
15. SUPPLEMENTARY NOTES			
<p>16. ABSTRACT</p> <p>The purpose of this research is to analyze the flow line data and relate it to the degradation of the Rush, Wildhorse and Salt Creeks at bridge location in the Washita River tributaries. This information may then be used to replace or rehabilitate those bridges that experienced severe degradation.</p> <p>This report evaluates channel degradation in three tributaries of the Washita River in Oklahoma. The three creeks include Rush Creek at 29.18 miles of the Washita River and Wildhorse Creek at 54.82 miles of the Washita River and Salt Creek at 14.62 miles in Wildhorse Creek watershed. In Rush Creek, the maximum degradation is computed 0.46 feet per year over 15 years. Salt Creek has a maximum degradation of 0.63 feet per year over 8 years. The maximum degradation for Wildhorse Creek is determined 0.43 feet per year over 35 years. Washita River degradation rates ranged from 0.1 to 0.3 feet per year as determined in a previous study, while the degradation of Rush, Wildhorse and Salt Creeks ranged from 0.22 to 0.46, 0.072 to 0.43 and 0.02 to 0.63 feet per year, respectively.</p> <p>After detailed hydraulic and geotechnical analysis the following bridges were recommended for further evaluation and possibly rehabilitation; b17568, b17569, b17590, and b17591. The foundation of piers is determined to be very close to the current flow line.</p>			
17. KEY WORDS Degradation, Washita River, Rush, Wildhorse and Salt Creeks, and Flow lines		18. DISTRIBUTION STATEMENT No restrictions. This publication is available from the Planning & Research Div., Oklahoma DOT.	
19. SECURITY CLASSIF. (OF THIS REPORT) Unclassified	20. SECURITY CLASSIF. (OF THIS PAGE) Unclassified	21. NO. OF PAGES 136	22. PRICE N/A