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Michael G Monticino* (monticino@unt.edu), University of North Texas, P.O. Box 305189, Denton, TX 76203. *Least Cost Check Routing*. Preliminary report.

A check must be presented to the bank upon which it was drawn in order for that check to clear. Up until 2003, this meant presenting a physical piece of paper. Every night hundreds of millions of pieces of paper criss-crossed the country as air carriers transferred checks from one bank to another. A massive break-down of the check clearing process occurred after 9/11 when all air traffic was grounded for three days. This motivated Congress to pass the Check Clearing for the 21st Century Act. The law allows a substitute electronic document to serve as a legal equivalent of the original (paper) check. Electronic-based check clearing allows the opportunity to use dynamic optimization techniques to route checks through the least cost clearing options. This talk will discuss analytical methods to optimally allocate checks to available clearing options to minimize cost to the sending institution. Clearing costs involve per item fees, cash letter fees, and losses from the clearing service float. Challenges to the optimization process include multiple clearing options with dynamic fee schedules, millions of checks that must be cleared in a given time window and the uncertainty of check volume throughout a day. This work is being conducted with ARGO Data Resources Corporation. (Received September 08, 2008)