

UTC Project Information	
Project Title	Estimating county to county transportation and trade flow
University	University of Idaho
Principal Investigator	Mike Lowry
PI Contact Information	mlowry@uidaho.edu
Funding Source(s) and Amounts Provided (by each agency or organization)	University of Washington PacTrans \$40,000 University of Idaho \$ 40,000
Total Project Cost	\$80,000
Agency ID or Contract Number	69A3551747110
Start and End Dates	August 16, 2020-August 15, 2022
Brief Description of Research Project	The goal of this research is to develop a trade model to estimate foreign and domestic county-to-county and county-to-port commodity shipments. It is important to understand the mobility of goods across counties and to ports to better understand how shocks to supply chains will disrupt regional economies. This research will also enable a better understanding of regional economic resilience in relation to supply chains and the movement of goods.
Describe Implementation of Research Outcomes (or why not implemented) Place Any Photos Here	This research project developed a proof-of-concept trade model to estimate foreign and domestic county-to-county and county-to-port commodity shipments. A gravity model was developed using Python code. The code for the gravity model is presented in the appendix of this document. The model runs on a standard desktop in 22 seconds per commodity per year. It runs on a University of Idaho network computer in 3.3 seconds per commodity per year. The model can successfully distribute commodities across the 3,142 counties of the United States.

Impacts/Benefits of Implementation (actual, or anticipated)	This project created a method for researchers to share data and results. Researchers can work together to develop more sophisticated and accurate methods for overcoming data suppression. By working collaboratively and sharing our knowledge and tools, we can move beyond the days of relying on crude estimates and instead develop more effective strategies for analyzing and utilizing suppressed data. This work will enable a better understanding of regional economic resilience in relation to supply chains and the movement of goods.
Web Links <ul style="list-style-type: none">• Reports• Project Website	Employment, commodity trade data, and county to county trade totals are available at: https://tapestry.nkn.uidaho.edu/