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Visualizing Statewide Trips: Tools to Leverage GPS Data in Transportation Planning

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3) Trips Between Counties, Chord Diagram

Exploration of trip origin-destination patterns is crucial to applications related to transportation planning. To demonstrate simple use of trajectory data to this end, the team developed interactive chord diagrams to enable transportation agencies to easily explore trip patterns between counties in Utah. By clicking on a specific county, the animation will emphasize trips between the selected county and the remaining counties.

4) Trips Entering and Exiting Salt Lake City

The above chord diagrams provide good insights into travel patterns between multiple selected geographies. However, the main downside is that chords show trips taking place in both directions. In order to facilitate directional exploration of trips, another animation was developed to show trips both starting and ending in the selected geographic region. This visualization shows the trip counts that start or end in Salt Lake City in a single hour. The top shows trips originating from Salt Lake City and ending elsewhere and the bottom shows the trips originating from elsewhere and ending in Salt Lake City. To change the day of the week, click the days on the timeline.

The results of these analyses can help transportation agencies to better understand the value of this type of mobility data in transportation system analyses. By leading in the

deployment of innovative practices and technologies like this, planners and DOTs can improve the safety and performance of the nation's transportation system.

ABOUT THE AUTHORS

The research team consisted of Seth Miller, Zachary Vander Laan, Yinhu Wang and Nikola Markovic of the University of Utah.

ABOUT THE FUNDERS

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THE FULL REPORT and ONLINE RESOURCES

For more details about the study, watch the April 7, 2020 webinar or download the full report **Visual Exploration of Utah Trajectory Data and their Applications in Transportation** at nita.trec.pdx.edu/research/project/1264

Photo by Seth Miller

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