

Using LODES Data in Transportation Planning

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Acknowledgements

Findings from NCHRP 8-36, Task 98 *Improving Employment Data for Transportation Planning*

– Sponsored by AASHTO Standing Committee on Planning

– Final Report posted at

[http://onlinepubs.trb.org/onlinepubs/nchrp/docs/NCHRP08-36\(98\)_FR.pdf](http://onlinepubs.trb.org/onlinepubs/nchrp/docs/NCHRP08-36(98)_FR.pdf)

Understanding the Work Trip

- Travel between home and work comprises:
 - 19 percent of all person trips
 - 30 percent of all auto Vehicle Miles Traveled (VMT)
 - Majority of peak period VMT
- The workplace is the second highest origin location for person trips
- Home-to-work O-D flows (trip distribution) are the least understood and poorest modeled of all urban travel behavior.

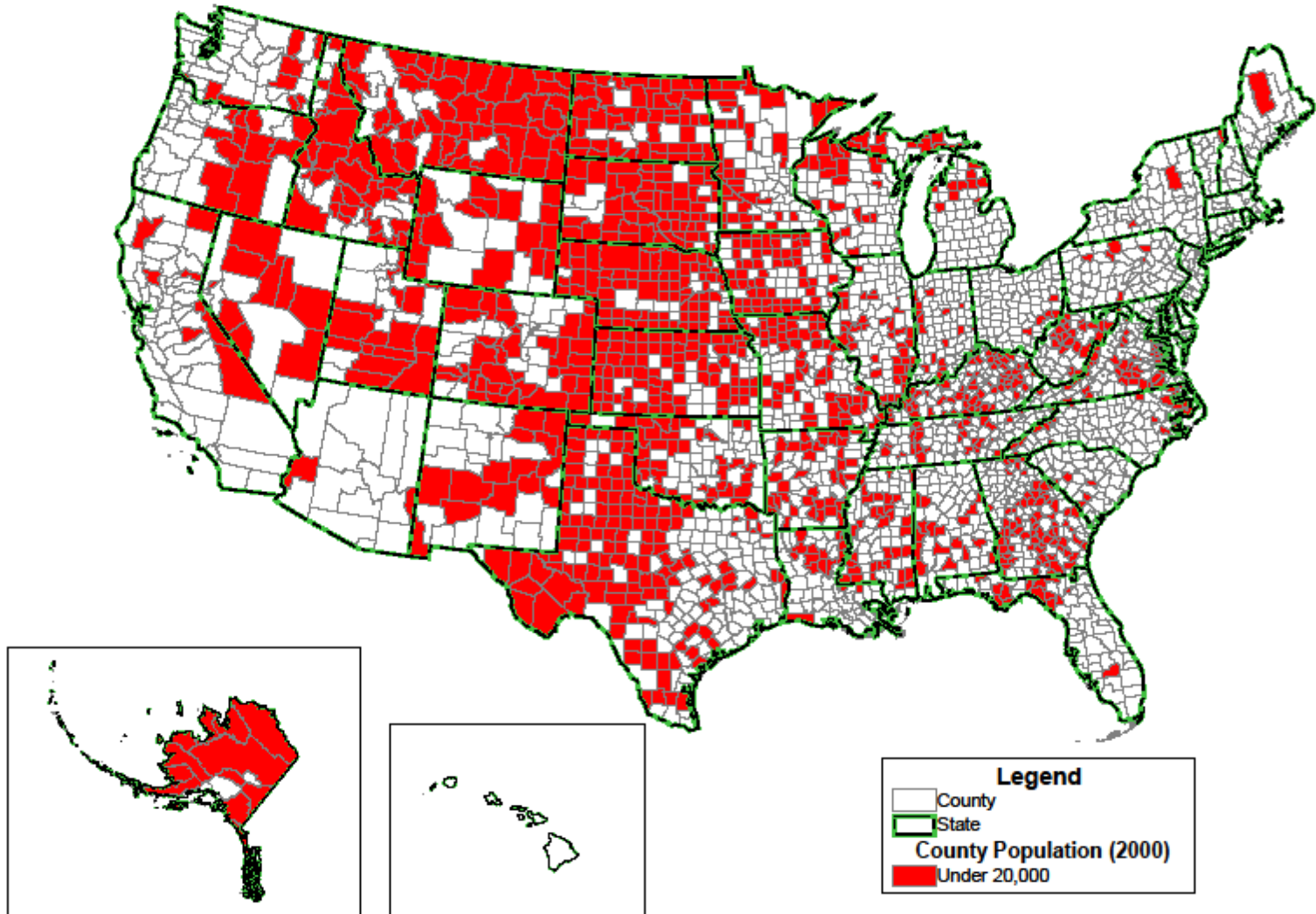
Home-to-Work Flow Data Sources

1. Regional household travel surveys
 - <1 percent sample of all households
2. Census Long Form Journey-to-Work Questions
 - 17 percent of all U.S. households (2000 Census)
 - Special tabulations of journey to work questions provided through Census Transportation Planning Products (CTPP)

Home-to-Work Flow Data Sources

3. American Community Survey (ACS)
 - Replaced Census long form questionnaire
 - Annual survey of approximately 2.5 percent of U.S. households
 - 3-year aggregation required for county level data
 - 5-year aggregation required for tract level data
 - Significant suppression of data for multi-way tabulations and for areas with low populations

3-Year ACS Data Suppressed for Counties under 20,000 Population



Home-to-Work Flow Data Sources

4. LEHD Origin-Destination Employment Statistics (LODES)
 - Annual data on locations and characteristics of workers by residence and workplace, and home-to-work flows
 - Compiled from federal administrative records, not surveys
 - Data covers 90 percent of all U.S. workers
 - Home-to-work flows between Census Blocks

LODES Data Limitations

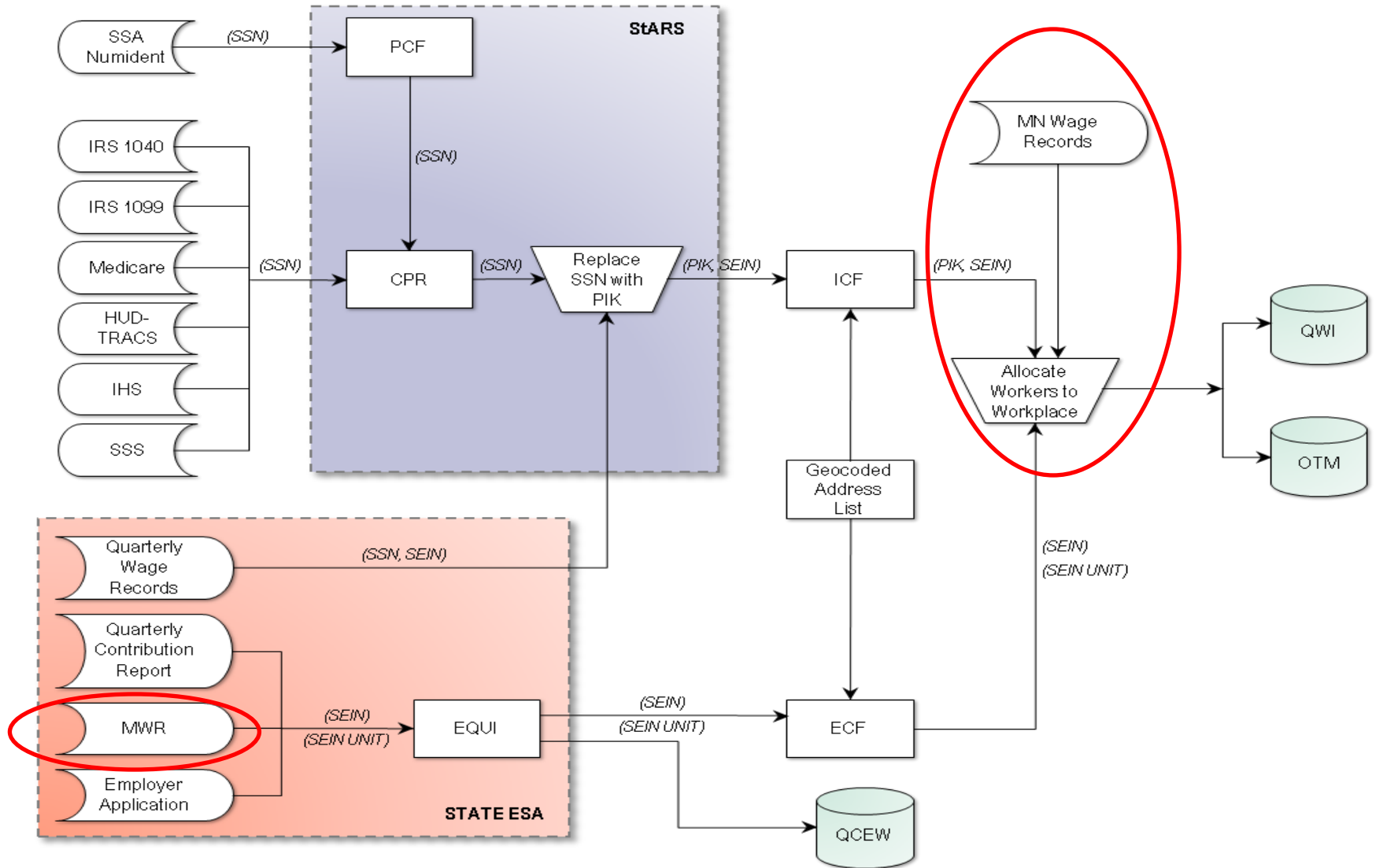
1. Excludes some employment categories

- Self-Employed & Sole Proprietors (6% - 17%)
- Federal/Military/Railroad Workers (1% - 20%)
- Employment exempt from UI laws (0% - 2%)

2. Data not yet produced for all States

- States missing data include: DC, MA, PR, VI

LEHD Processing Steps



LODES Data Issues

● Multiple Worksite Employers

- Some multi-worksite employers refuse to file multiple worksite reports (MWR)
- Employers with multiple worksites may show all employees located at primary employer address
- MWR non-compliance affects about 5% of all employment, nationwide:
 - Rates vary significantly from state to state
 - Lower in States with mandatory MWR reporting
 - Highest non-compliance among local government agencies

LODES Data Issues

- Assigning Workers to Worksites
 - Only one state (Minnesota) requires employers to identify specific worksites on employee wage records
 - Workers of multi worksite employers are assigned to worksites based on a distribution model calibrated using MN data.

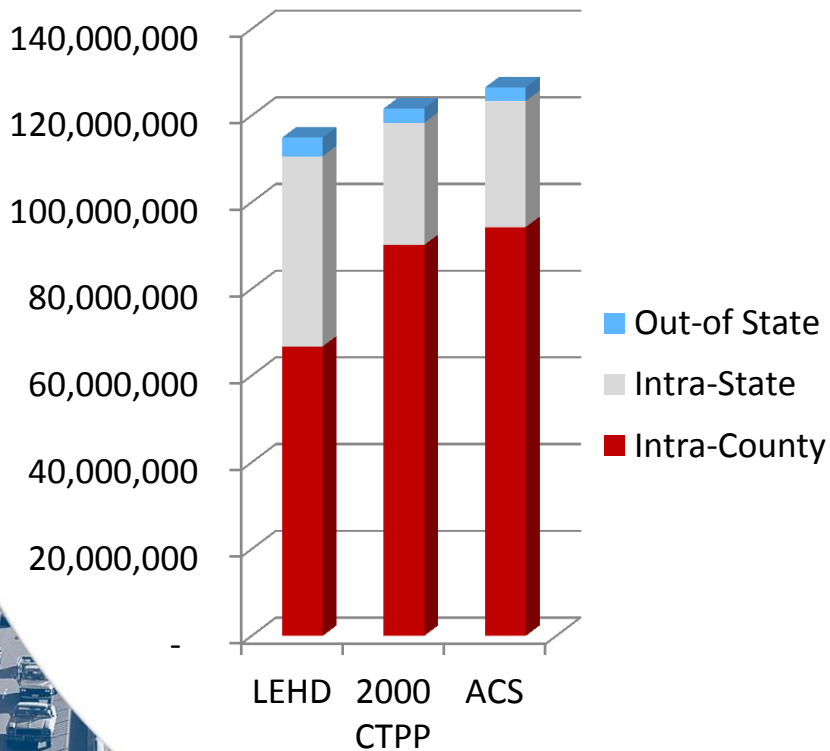
LODES vs. ACS (2006-2008) County Level Findings

- Both LODES and ACS under report total employment
 - LEHD (-15%): excluded employer categories & missing states
 - ACS (-8%) – secondary work trips and suppressed data
- ACS reports higher average work flows per OD pair than LODES, but distributes them over significantly fewer county pairs.

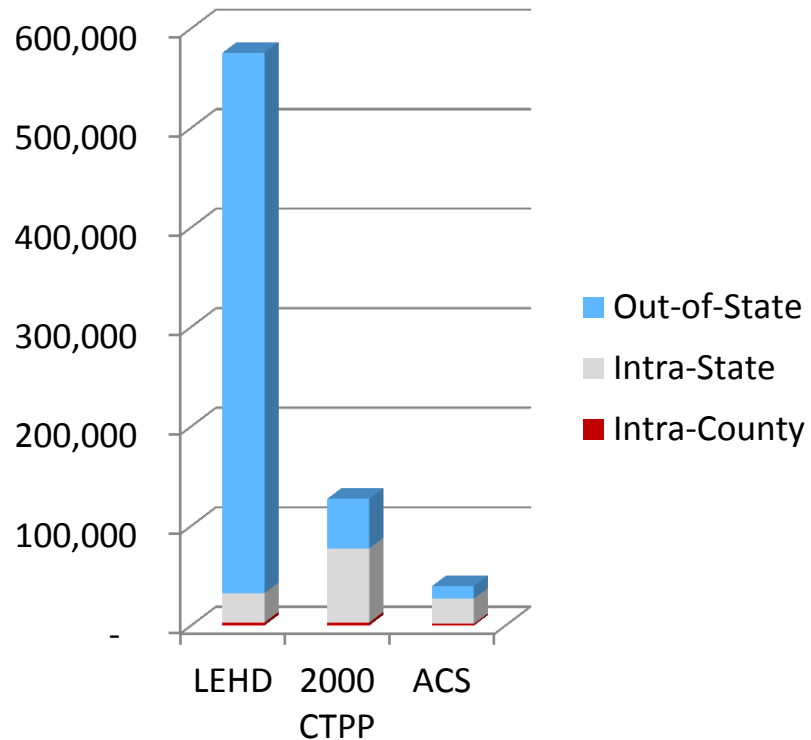
LODES vs. CTPP

County Level Summary Statistics

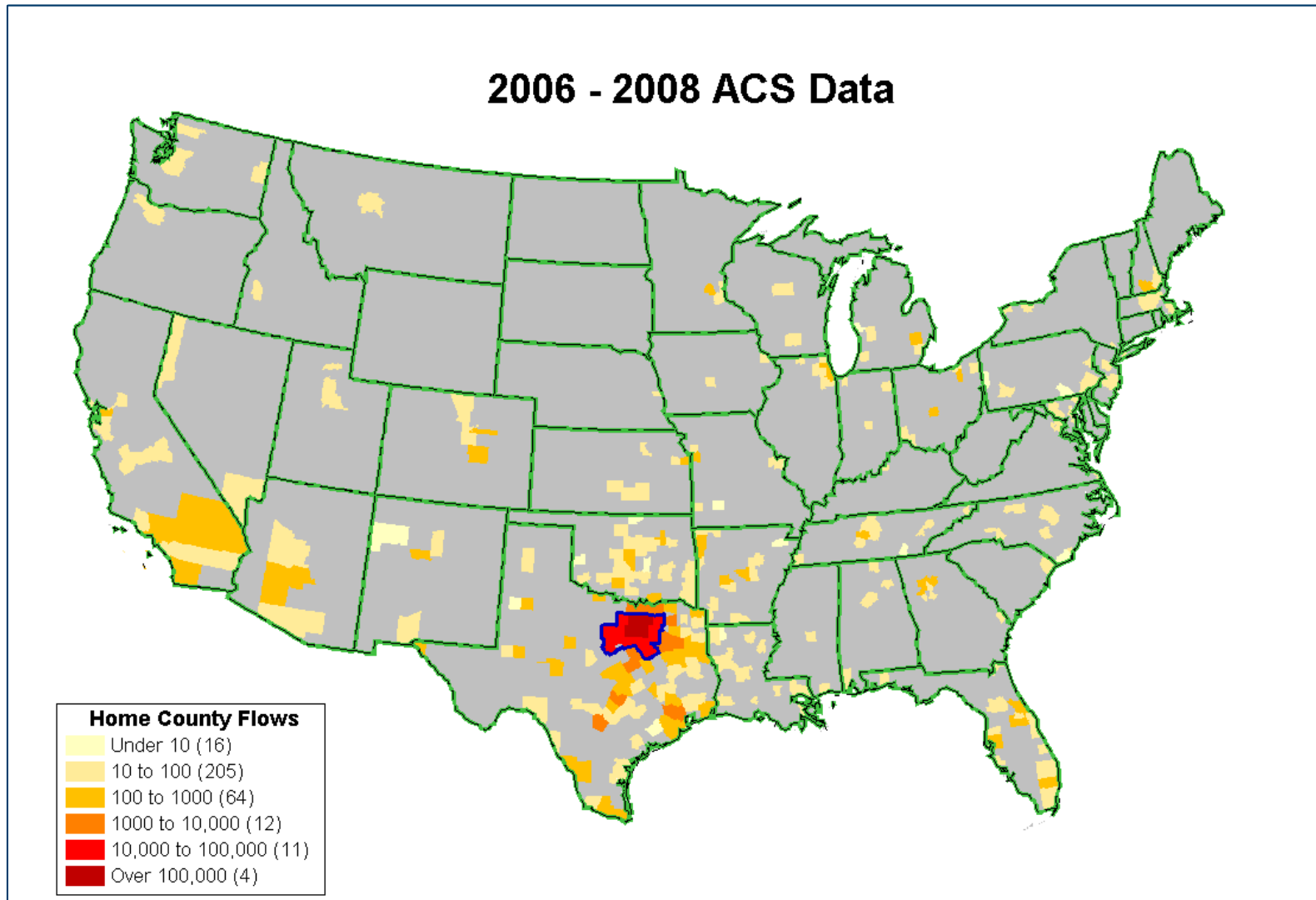
Home-to-Work Flows



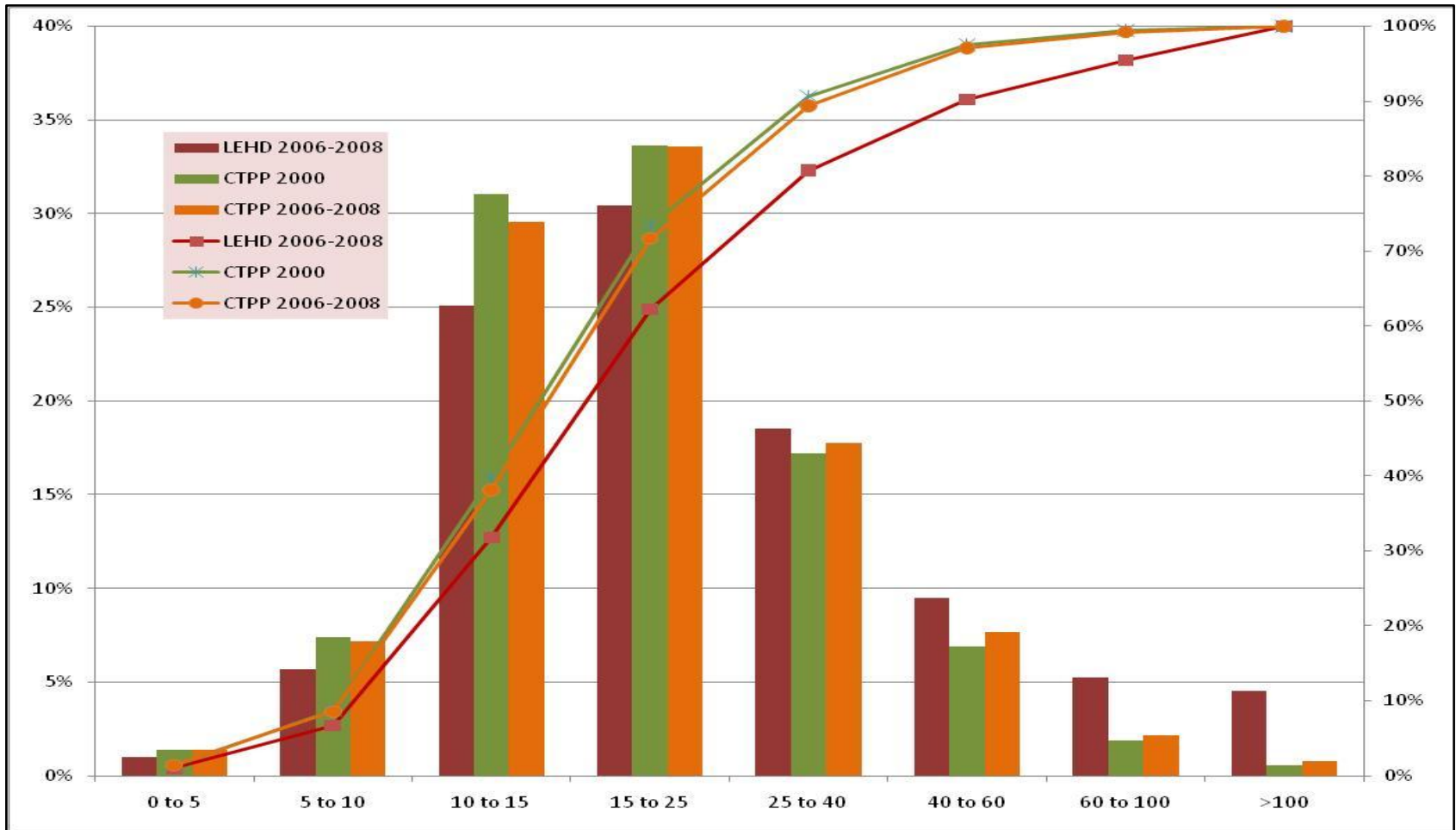
County O-D Pairs



Home Counties of Workers Commuting to Dallas-Ft. Worth MPO



Work Trip Length Distributions

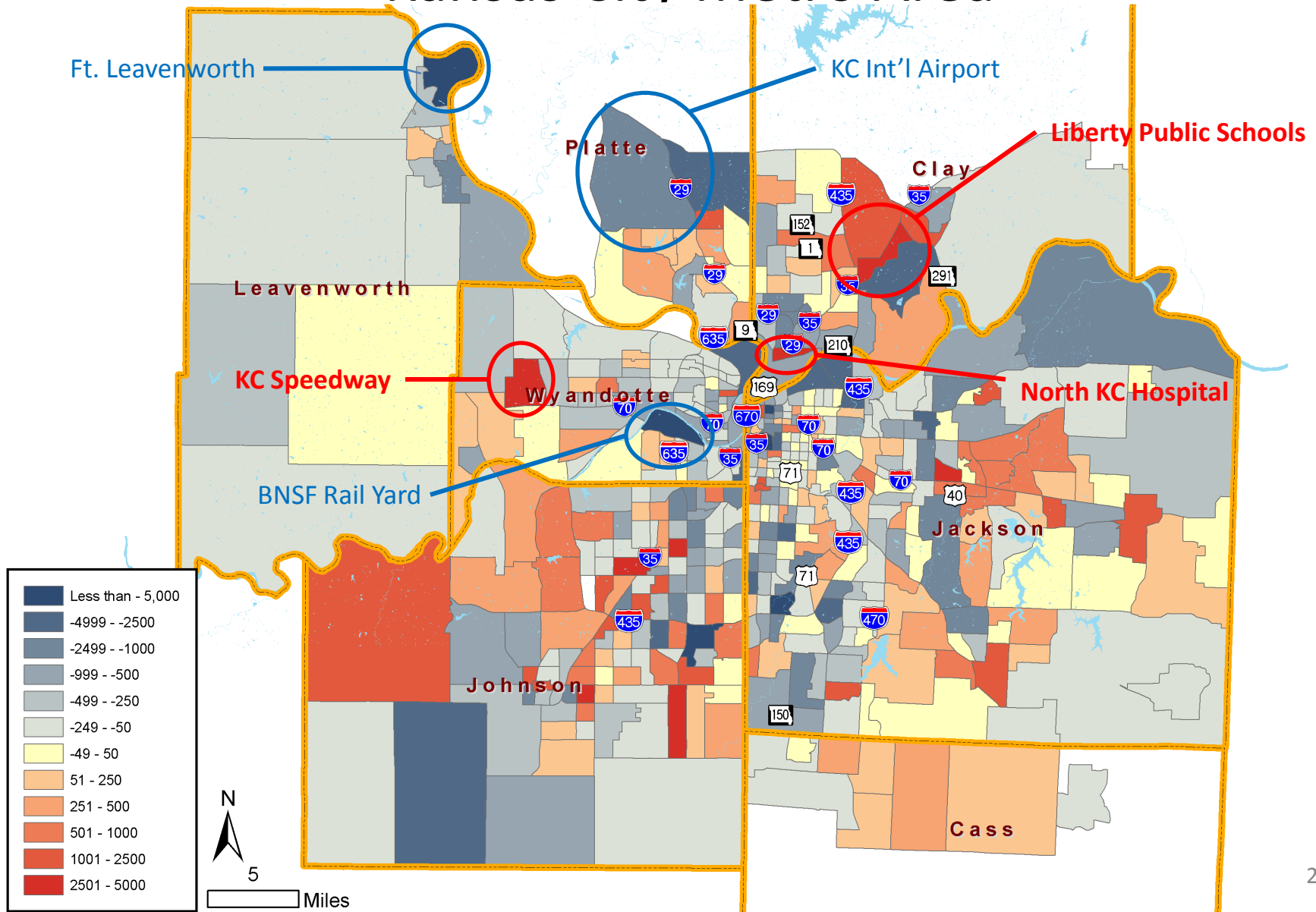


LODES vs. CTPP (2000) Tract Level Findings

- CTPP (2000) produced higher trip rates per OD pair than LODES, but distributed them over many fewer Tract-to-Tract pairs.
 - Differences in flow rates between common Tracts were much smaller
- Differences in employment for individual Tracts could generally be attributed to:
 - Missing employment categories in LODES
 - New development occurring after 2000

Work Destinations: LODES – 2000 CTPP

Kansas City Metro Area



Study Conclusions

- LODES is NOT a substitute for CTPP
 - No trip characteristics in LODES (mode, travel time, departure time)
- LODES is a good source of data on work locations and the distribution of home-to-work flows
 - More comprehensive and current than CTPP
- LODES data should be used carefully and supplemented with local knowledge
 - Missing employment categories
 - Multiple worksite employers