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## When Cities Shrink, Affordability Does Too

Joanna Ganning  
*Cleveland State University*

Jenna Rosie Tighe  
*Cleveland State University*

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## WHEN CITIES SHRINK, AFFORDABILITY DOES TOO

*A research project examines the trade-offs between housing and transportation costs in the context of shrinking cities.*

### The Issue

In late 2013, the Department of Housing and Urban Development (HUD) launched the Location Affordability Index (LAI) Portal. Their dataset uses models to estimate the median amount households spend on housing and transportation, and calculates housing and transportation affordability: the percent of household income spent on these items. The tool is meant to help consumers and communities understand the combined costs of housing and transportation associated with living in a specific neighborhood. However, there is virtually no validation of the estimates in any setting, and no studies delving into how accurate the estimates are in the context of “shrinking” or weak-market cities.

To better understand the real costs of housing and transportation in a declining urban context, NITC researchers implemented a household survey to determine whether the assumptions made in existing research literature and in the LAI regarding household expenditures and transportation accessibility hold true in shrinking cities—that is, cities characterized by a long-term loss in occupied housing units. The project was led by Joanna Ganning of Cleveland State University, who has conducted previous research into shrinking cities with the support of the NITC program.

### The Research

Ganning and co-investigator J. Rosie Tighe of Cleveland State University completed the project in two major phases. In the first, they rebuilt the LAI from scratch to examine its assumptions and potential shortcomings for a shrinking city context. In this phase, the research team evaluated margins of



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### THE ISSUE

HUD's Location Affordability Index is designed to estimate housing and transportation costs, but falls short of reliability, especially in transportation costs.

### THE RESEARCH

Researchers:

- Performed a quantitative analysis to determine the accuracy of the LAI;
- Surveyed Cleveland, Ohio residents about their transportation and housing costs;
- Contrasted survey results with the LAI estimates.

### IMPLICATIONS

The final report provides policy recommendations to help transit authorities respond to the needs of shrinking cities.

*Photo: Downtown Cleveland, Ohio; the declining urban core studied in this research*

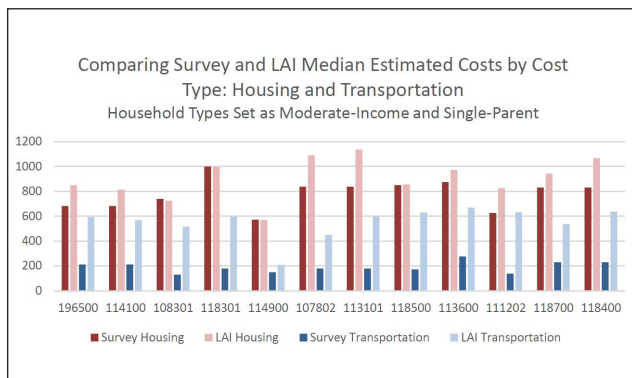
error for input variables, variable construction for larger geographic areas than the block group (the focal point of HUD's LAI) and modeling considerations. After reproducing the LAI in its entirety and producing housing cost estimates, a comparison suggests that the estimates published by HUD overestimate both housing cost and housing cost burden. Overestimates are larger for renter households and larger in metropolitan areas.

In the second phase of the project researchers developed, deployed and analyzed data from a household-level survey in 12 census tracts in Cleveland, Ohio. The survey sought to better understand household trade-offs for unaffordable transportation costs, and to better estimate household-level transportation costs as a means of assessing the quality of those published by HUD. The survey found that less than 9 percent of households resemble any household type used by the LAI. Supporting findings from the first phase of the research, the survey results also showed that the published LAI estimates likely overestimate housing costs. The survey also indicates that the published LAI overestimates transportation costs, and does so at a much higher margin of error than for housing costs.

### Implications

Survey results show that when households must make tradeoffs to pay for transportation, two-thirds do so by foregoing paying bills, buying essentials (like food and clothing), paying down debt, paying for experiences for children (like field trips, educational opportunities or sports equipment) and investing. Thus, for households facing these budgetary decisions, transportation costs more by imposing an out-of-pocket cost now and the cost of interest on overdue bills or lost investment income in the future.

Results also indicate that many low-income households in shrinking cities lack



#### Survey results compared to LAI estimates

This graph shows the housing and transportation costs for moderate-income and single-parent households as estimated by the LAI, compared with those same costs according to the survey results.

mobility both in terms of housing and transportation. As employment suburbanizes but transit budgets remain stable or decline, residents may face increasing difficulties with access to jobs, school or medical care. The report provides policy recommendations to help transit authorities overcome these obstacles, including ridesharing and van pools, bike share programs, and better bicycle and pedestrian infrastructure. What seems necessary is greater connectivity between all modes of transportation. However, for transit authorities to respond to the needs of diverse communities, they must have accurate information. The strongest recommendation of this research is that HUD and its partners work to improve the reliability and reproducibility of the transportation cost estimates.

### PROJECT INFORMATION

**TITLE:** What do we know about Location Affordability in U.S. Shrinking Cities?

**LEAD INVESTIGATOR:** Joanna Ganning, Ph.D., Cleveland State University

**PROJECT NUMBER:** 2017-872

**CONTACT:** TREC, 503-725-8545 asktrec@pdx.edu

**MORE INFORMATION** <http://nitc.trec.pdx.edu/research/project/872>