



Transit Impacts on Jobs, People and Real Estate: Job Location

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The latest report funded by the National Institute for Transportation and Communities – Transit Impacts on Jobs, People and Real Estate, from the University of Arizona – represents the culmination of nearly a decade of research into the economic effects of transit. To unpack the dense and substantial findings and make sense of what professionals can take away from this work, we're telling the story in chapters. We'll start by zeroing in on one aspect of the research: how transit stations impact the location of jobs.

Dr. Arthur N. Nelson of the University of Arizona has served as principal investigator on projects researching this topic for many years. He and fellow researchers Robert Hibberd, Kristina Currans and Nicole Iroz-Elardo of UA have now published the final phase of research into the development outcomes of light rail, bus rapid transit, streetcar, and commuter rail. The findings shed light on the complex interactions between transit station location and design, real estate rents, and where people live and work. The final report also offers ideas for consideration of how to improve these outcomes through better transit design and investment.

HOW DOES TRANSIT IMPACT JOB LOCATIONS OVER TIME?

To start answering this question, the researchers divided places into four categories evaluating the Mixed Use / Accessibility of areas (this place typology is abbreviated to MA): High-MA, Moderate-MA, Low-MA and Poor-MA. Mixed-use refers to the variety of land uses while accessibility refers to walkability and ease of access to transit. See Volume 1 for more details on this Place Typology, which plays a key role in the analysis.

“Transit systems ought to improve accessibility across large regions. If that is happening successfully, then the nodes - the transit station themselves - will be attractors to jobs, because jobs depend on interactions with other jobs around the metropolitan area. If this is not happening, we could

conclude that the transit system and/or the stations are not performing as intended,” Nelson said.

Perhaps the most surprising finding from this analysis was that **transit systems vary substantially in their attractiveness to jobs with respect to place typology:**

- **Bus Rapid Transit (BRT)** proved to be exceptionally adaptable to the land use context of each place type, showing robust employment growth in three of the four place types, and best attracting jobs in Moderate-MA places. In Poor-MA places, BRT was the best-performing of all the transit systems; in order to attract more employers there, BRT may need to better adapt to the context of the outlying areas.
- **Commuter Rail Transit (CRT)** showed mostly modest gains in job share for the Low-MA place type stations, leading researchers to speculate that perhaps firms are opting for locations farther from stations because of factors like noise and air pollution. CRT best attracts jobs in Moderate-MA places, illustrating its utility to the suburban commuter. Newer CRT systems, like that in Salt Lake City, use quieter, less polluting train technology for these commuter-oriented stations. Upgraded CRT systems may be necessary in other metropolitan areas to attract further job share gain near these stations.
- **Light Rail Transit (LRT)** saw modest growth at Poor-MA station areas but realized large gains in share in Low-MA and Moderate-MA places, with reasonable gains in High-MA areas. This seems sensible given the scale of LRT networks and potential competition from streetcar systems for the most urban land. Light rail transit's highest performance in the middle ranges (Moderate and Low MA) may be due to the size and capacity of this mode.
- **Streetcar Transit (SCT)** did best in the contest for which it was designed, the High-MA and Moderate-MA places. Streetcar transit's success at High-MA places or at the urban core level clearly demonstrates the importance of its urban context. It saw a slight loss of job share in Poor-MA place types, for

reasons that are likely to be similar to the other transit modes. Streetcar transit, like light rail, may benefit from being integrated with BRT to increase the utility of the system for all place types.

A second surprising theme that emerged from the analysis: while one might assume that higher wage jobs would be more attracted to transit stations than middle or lower wage jobs, this is not necessarily the case. Analysis revealed **important contextual differences for each transit mode**.

Each mode has different levels of attractiveness to jobs by economic and wage group (low-, moderate-, and high-wage), at different distances from transit stations and also depending on the place typology, confirming the adage that “one size does not fit all.” For instance, the Poor-MA place types struggled with low job numbers overall, but all transit modes except streetcar gained respectable shares of jobs.

At the Low-MA place type areas, with the exception of commuter rail, **all job groups were repelled from the station**. For their part, High-MA places mostly suffered from competition, with most wage and economic groups **competing with each other for station proximity**.

The counterintuitive nature of these findings indicate that a new approach to measuring jobs-housing balance may be more informative for planning and policy than conventional measures. To that end, the researchers developed what they call the **Employment-Worker Balance (EWB) metric**.

A more accessible workplace translates to a more productive and resilient workforce. **Low EWB scores near transit stations reveal**

low-hanging fruit for planners who wish to increase economic and housing resiliency. Volume 2 of the report offers more detailed information on EWB scores. When appropriate housing is provided for workers of all sectors of the economy, greater economic diversification is possible. Targeted solutions are needed to increase EWB. Volume 5 of the final report, which we'll summarize in a forthcoming edition, concentrates on potential strategies to improve EWB and other metrics through design and investment. The researchers hope to offer their knowledge of transit's impacts to spark ideas for planners and engineers who may be looking to leverage the benefits of transit to meet regional goals.

ABOUT THE AUTHORS

The research team consisted of Arthur C. Nelson, Robert Hibberd, Kristina Currans and Nicole Iroz-Elardo of the University of Arizona.

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THE FULL REPORT and ONLINE RESOURCES

For more details about the study, download the full five-volume report **Transit Impacts on Jobs, People and Real Estate** at nitc.trec.pdx.edu/research/project/1253

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