



## *Transit Impacts on Jobs, People and Real Estate: Real Estate Rents*

**Arthur C. Nelson, Ph.D.; Robert Hibberd; Kristina Currans, Ph.D.; Nicole Iroz-Elardo, Ph.D.**

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. Previously we have focused on how transit affects where people live and the locations of jobs. Now we’re diving into transit’s impacts on real estate rents.

Dr. Arthur C. 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.

### **WHAT DO REAL ESTATE RENTS TELL US ABOUT TRANSIT?**

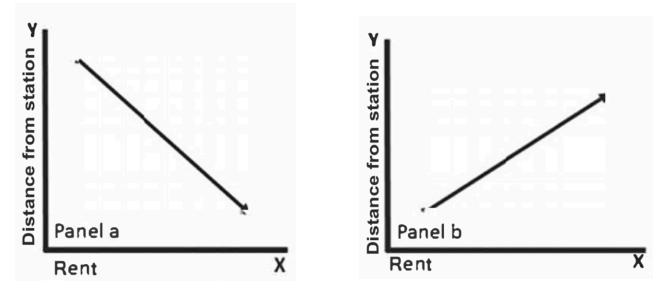
“Real estate markets can tell transit and land use planners much about the effectiveness of transit stations in influencing real estate development around them,” said Arthur C. Nelson, the lead researcher on the project. For example, if office, apartment and retail rents go up the farther away they are from transit stations, the market is signaling that those stations are not attractive places around which to locate; this is a negative market signal. If, on the other hand, rents fall as they get farther away from transit stations, this is a positive signal; it means investors and tenants are willing to pay more for locations near the station. The research reported in this volume is the most comprehensive assessment of market responsiveness to transit station proximity ever published. It applies the same modeling and database used in the previous volumes to

real estate rents for more than half a million office, multifamily and retail properties and more than 50 transit systems, operating in more than 30 metropolitan areas. Four major transit modes were studied: light rail, streetcars, bus rapid transit and commuter rail.

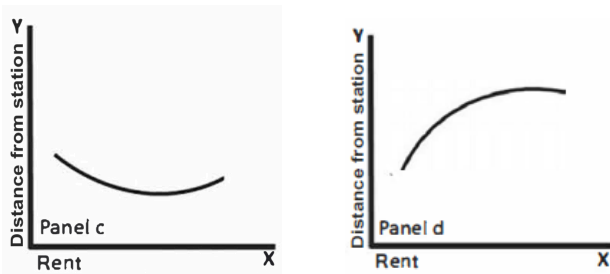
“Results are mixed but the bottom line is that the real estate market is telling planners what needs to be done to make station locations, designs, and land use around them more effective in attracting real estate investment,” Nelson said.

### **QUANTIFYING TRANSIT IMPACTS ON THE REAL ESTATE MARKET**

Living, working and shopping around transit stations offers the ease of car-free travel by public transportation, and rents are affected by this **amenity** benefit of transit station proximity. However, this benefit can be offset by **externalities** such as noise, traffic, and simply the unattractiveness of stations and station areas. To reflect the push and pull of amenities and externalities, the researchers identified four theoretical outcomes of transit station proximity on rents. To put it simply, transit station area rent slopes consistent with **panels A and C would seem to advance transit objectives**, while rent slopes consistent with panels B and D would not.



**Panel A:** Rent falls as distance from a transit station increases, signaling proximity is an **amenity**. **Panel B:** Rent rises as distance from a station increases, signaling proximity is an **externality**.



**Panel C:** A **convex** relationship where amenity effects prevail at some point before externality effects do. **Panel D:** A **concave** relationship where externality effects prevail at some point before amenity effects do.

## CITIES THAT ADVANCE TRANSIT OBJECTIVES

The research sought to answer two questions: Is there an association between commercial real estate rent and proximity to fixed route transit stations? If so, what is the form of that relationship? Researchers used a temporal, cross-section quasi-experimental research design. Examining office rents from 2019, and multifamily and retail rents from 2018, the team tested for the association between transit station proximity on real estate rents per square foot. Though not causal, the associations can be used as guidance for transit and land use planning nonetheless. For the most part, they found that **transit station areas do not advance transit station area purposes** with respect to attracting real estate investment, because rents are mostly upward/concave, sloping away from transit stations or ambiguous. However, researchers did **identify individual systems with downward/convex sloping rent gradients that are worthy of case study analysis** to draw lessons for other systems to emulate. They selected metropolitan areas with positive associations between rent and transit stations to serve as “exemplars” for advancing transit objectives. If case study analyses are done on the selected sites, planners and urban designers could learn important lessons about station design, transit and land use planning, and urban design from the station outward.

### Exemplar Cities Based On Office Rents

**Light Rail:** Charlotte and Cleveland

**Streetcar:** New Orleans, Portland and Seattle

**Commuter Rail:** Albuquerque-Santa Fe, Salt Lake City, and San Jose-Stockton

**Bus Rapid Transit:** Albuquerque and San Jose

### Exemplar Cities Based On Multifamily Rents

**Light Rail:** Charlotte, Houston, Portland, and Sacramento

**Streetcar:** Kansas City, New Orleans, Seattle, Tacoma, and Tucson

**Commuter Rail:** Orlando and San Diego

**Bus Rapid Transit:** Cleveland

### Exemplar Cities Based On Retail Rents

**Light Rail:** Denver, Pittsburgh, and Virginia Beach

**Streetcar:** New Orleans and Tucson

**Commuter Rail:** Orlando and San Jose-Stockton

**Bus Rapid Transit:** Kansas City and San Antonio

## GENERAL TRENDS AND PATTERNS

The relationships between rents and transit systems are complex and vary greatly. However, a few general trends can be seen.

- Overall, the analysis suggests that **multifamily and retail land uses may push office real estate away from light rail transit stations**, to about 0.50-mile. But as we see for individual metropolitan areas, this trend is not evident everywhere.
- Similarly, **multifamily and retail real estate may be outbidding office real estate at or near streetcar stations**, pushing offices further away. With streetcars gaining popularity around the US, the researchers recommend in-depth case studies of all six “exemplar” cities identified.
- In general, **real estate rents do not respond well to bus rapid transit station proximity**. Researchers found ambiguous office and multifamily market responses to BRT proximity. Retail rents were higher in the second distance band, about 0.25 miles from the station, and lower in the first and third – i.e. rents went down both closer to the station, and farther away from that 0.25 mile sweet spot. Researchers surmise that for the most part, BRT stations are sources of externalities. They expect that improved transit and land use planning and better urban design can overcome these externalities, making BRT stations sources of amenity value.
- **Commuter rail transit stations had positive impacts on office and retail rents, but only flat or ambiguous impacts on multifamily rents**. While CRT stations can be sources of externalities such as noise, smells, unappealing freight-based rail infrastructure and so forth, perhaps with sensitive transit and land use planning, and especially urban design, these potential nodes of externalities could be turned into places of amenities for multifamily development as well – or at least places where the amenity benefits exceed externality effects.

## IMPLICATIONS FOR TRANSIT AND LAND USE PLANNING

Transit systems do a lot of things. Primarily they move people from Point A to Point B, but they are also used to achieve social justice and other goals—for example, connecting lower income neighborhoods to regional job opportunities; renewing historically disinvested areas to create jobs and connect them to their regions; reducing congestion on roads, thereby providing public health benefits; and even elevating the public relations prestige of local and regional governments. But there can be downsides as well. Transit stations can become localized sources of disinvestment if the real estate market—both investors and consumers—are unwilling to invest at or near them. They can also contribute to displacement of lower-income households through gentrification.

But how do we really know the effects of transit stations on people and the economy? Without meaning to overstate it, **the real estate market may be the single best indicator** of whether transit

stations are having desirable or undesirable effects. Transportation professionals can use the market to gauge the extent to which transit and land use planning, and urban design interventions achieve desirable outcomes. Learning how to interpret the lessons of real estate markets can help cities achieve their economic, equity, sustainability-related goals as well as other desired outcomes.

### ABOUT THE AUTHORS

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

### ABOUT THE FUNDERS

This research was funded by the National Institute for Transportation and Communities, with additional support from the University of Arizona, Tucson.

### 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](http://nitc.trec.pdx.edu/research/project/1253)

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