New Transit, Bike Infrastructure, and Green Space: Do They Have a Multiplying Effect on Gentrification and Displacement?

Recipient/Grant (Contract) Number: University of New Orleans; University of Utah; Florida Atlantic University/69A3552348337

Center Name: Center for Transit Oriented Communities (CETOC)

Research Priority: Preserving the Environment

Principal Investigator(s): Alessandro Rigolon; University of Utah; alessandro.rigolon@utah.edu; ORCiD: 0000-0001-5197-6394
Andy Hong; University of Utah; a.hong@utah.edu; ORCiD: 0000-0002-1295-1431
John Renne; Florida Atlantic University; jrenne@fau.edu; ORCiD: 0000-0002-1554-7557

Project Partners: None

Project Funding: $200,000 (USDOT) + $100,000 (matching funds) = $300,000 (total)

Project Start and End Date: 10/1/2024 – 5/31/2026

Project Description: Researchers have documented how new rail transit and bus rapid transit (BRT), new bike infrastructure, and new parks have contributed to gentrification. Much of this research, however, has focused on one type of investment at a time, has used aggregate tract-level data, and has only examined whether gentrification follows public investment, and now whether it can also precede it. To start addressing this gap, this project seeks to disentangle the impacts of different public investments on neighborhood change. We ask: Do new transit, bike infrastructure, and green space have a multiplying effect on gentrification and displacement? Specifically, when new transit is built in low-income communities, do concurrent investments in bike infrastructure or green space increase the odds of gentrification and displacement? And does gentrification precede public investments in new transit, bike infrastructure, and green space? We will focus on four metropolitan areas in the Western U.S. (Denver, Wasatch Front, Portland, and Seattle) that have seen significant investment in new rail/BRT, bike infrastructure, and parks. We will build a longitudinal dataset with household-level data from Data Axle between 2006 and 2023 in the four regions. Data for public investments will come from Transit Explorer (transit and BRT), metropolitan planning organizations and cities (bike infrastructure), and the Trust for Public Land (parks). We will classify households in gentrification-eligible tracts as treatment if within a half mile of a new public investment (e.g., new rail transit) and as control if otherwise, considering multiple combinations of proximity to several types of public investments (e.g., proximity to new rail transit and park vs. proximity to park only). We will then build mixed-effect models to track residential mobility in and out of areas near new transit but without new park investment and bike infrastructure investments and compare such residential mobility with new transit areas that do have new parks and/or new bike infrastructure. To do so, models will include interaction terms between the various treatments (e.g., transit treatment and park treatment). Thanks to this household-level dataset, we will be able to track the low-income households who will move out of various treatment areas, which will enable us to model

potential displacement processes. In these models, we will control for several other variables such as neighborhood demographics, housing characteristics, crime, and other characteristics known to affect gentrification and displacement. We will use evidence from this study to define gentrification and displacement propensity factors associated with new public investments in sustainable infrastructure. We will disseminate such propensity factors via a peer-reviewed publication and policy brief. We believe that these factors will inform the planning of transit-oriented developments by providing planners with information about the potential impacts of other public investments alongside transit. To make it easier for researchers to use household-level data such as Data Axle to model gentrification and displacement, we will share publicly the code we will develop to process and analyze such data. If permitted, we will share data about new parks and new bike infrastructure in the four selected metropolitan areas.

USDOT Priorities: *Transformation***-** The potential displacement of transit-dependent populations, most of who are low-income, is an unintended consequence of building new transit infrastructure. In the context of transformation, the future of transportation is multi-modal, involving multiple travel options in dense cities, such as transit and cycling. Therefore, to ensure that multi-modal transportation remains an option for lower-income people who are less likely to own cars, it is important to understand the combined effect of transit, bike infrastructure, and green space on neighborhood change. This is because the displacement of transit-dependent populations can reduce the likelihood that multi-modal neighborhoods succeed.

Outputs: 1. A peer-reviewed publication describing the results of the study 2. A peer-reviewed publication describing the technical aspects of using Data Axle to model neighborhood change and residential mobility 3. A policy brief for practitioners summarizing our main findings and providing recommendations about propensity factors of gentrification and displacement induced by new transit on its own and in conjunction with other investments 4. A presentation for practitioners disseminated via a webinar 5. A conference presentation 6. A webpage that will host the R and Python codes we used to process and analyze Data Axle data; the page will also host all data collected and processed in this study, except for Data Axle data.

Outcomes/Impacts: Results will enable us to identify displacement propensity factors associated with new transit with and without other public investments nearby. In addition to peer-reviewed publications, we will create a publicly available report for practitioners and community partners in which we will lay out the potential multiplying effects of other public investments alongside new transit on gentrification and displacement. A webinar will disseminate our findings to planning and transportation practitioners. Transit agencies, cities, and their nonprofit partners will be able to make more informed decisions about how new rail transit and other sustainability investments affect neighborhood change. As noted earlier, cities cannot achieve successful transit-oriented communities and an effective multi-modal transportation system if new transit results in displacement, and our research will provide critical information to cities and their partners about where to prioritize anti-displacement strategies, such as affordable housing. We will form a technical advisory committee composed of at least three practitioners and meet with such a committee at least three times during the grant period.

Final Research Report: (Link to be provided after project completion).