

Is Transit-Oriented Development Affordable for Low- and Moderate-Income Households  
(In Terms of Housing & Transportation)?

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

**Center Name:** Center for Equitable Transit Oriented Communities (CETOC)

**Research Priority:** Preserving the Environment

**Principal Investigator(s):**

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**Project Partners:**

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Jon Larsen; City of Salt Lake City; Jon.Larsen@slcgov.com; Role: Technical Guidance

**Research Project Funding:** \$120,000 (USDOT) + \$60,000 (Matching funds) = \$180,000

**Project Start and End Date:** 10/01/2023 to 09/30/2024

**Project Description:** This proposed study explores the role of transit-oriented development (TOD) in producing affordable housing and building inclusive communities. Understanding the relationship between TOD and housing affordability requires accounting for two dimensions of affordability: the potential cost savings of living in a transit-accessible, mixed-use, and walkable location and the willingness of people to pay a housing premium for that benefit. This tradeoff has led to a push to consider both the cost of housing and transportation (H+T) in determining housing affordability. In an ongoing study, the faculty in this consortium has compiled a complete (100%) inventory of TODs adjacent to rail stations in the U.S. and investigated the H (housing cost) component of location affordability. Using apartment rental data for all 102 TODs, the study has found that market rate housing at TODs is generally affordable for moderate-income households, those earning between 80 and 100 percent of area median income (AMI). Indeed, only 20 percent of the apartments are affordable to low-income households (but only those earning between 60 and 80 percent of AMI), using HUD standards. This number includes naturally occurring affordable housing (NOAH) and designated, deed-restricted affordable housing (DAH). The greater number of apartments in these TODs are priced and advertised as “luxury” apartments with ample parking, occupied by renters who are not naturally transit users. Incorporating deed restricted affordable housing (or low-income housing) units into a TOD project, or any project as a matter of fact, requires a significant amount of effort during the planning phase. In many instances it requires securing dedicated funding or many sources of such funding which takes up to two years. In all instances it means planning for dedicated low-income units. It is virtually impossible to incorporate dedicated affordable housing units into finished projects. This and the fact that a great number of TODs are currently being planned for and built best illustrate the need for projects like ours. Building upon housing costs from the ongoing study, this project will integrate transportation costs for these exemplary TODs (102 of them) to determine if the combination of H+T is affordable at 45 percent of household income

for households at different income levels. Transportation cost for current TOD residents will be computed in three ways. (1) For seven TODs, we have already counted vehicles coming and going from TODs, counted people coming and going, counted parked cars at various intervals during the day and night, and conducted intercept surveys to determine modes of transportation used by residents. This allows us to calculate vehicle ownership and transit use for residents, two main components of transportation costs. Vehicle ownership per household can be computed from the nighttime parking counts divided by the number of dwelling units. VMT will be computed from vehicle counts and four-step model outputs for their respective traffic analysis zones. (2) For all 102 TODs in our sample, we will directly extract transportation costs using HUD's Location Affordability Index (LAI). The LAI provides estimates of household housing and transportation costs at the neighborhood level along with constituent data on the built environment and demographics. The HUD site provides access to data as well as comprehensive documentation of how the LAI was developed and updated. Household transportation costs are the sum of three components: Household T Costs =  $[CAO * FAO(X)] + [CAU * FAU(X)] + [CTU * FTU(X)]$  where C = cost factor (i.e., dollars per unit) F = function of the independent variables (*FAO* is auto ownership, *FAU* is auto use, and *FTU* is transit use) (3) Most importantly, for all 102 TODs in our sample, our team is planning to leverage StreetLight Data and their capabilities to deliver data and analyses about commuting behavior and patterns near Transit Oriented Developments across the country. This will minimize costs related to project travel and on-site work. StreetLight aggregates multiple big data sources and distills them into usable analyses including Traffic volumes, Origin / Destinations Studies, commuting patterns, Vehicle Miles traveled along with the ability to connect certain analyses to demographic data. All this data is key to completing this study.

**USDOT Priorities:** This research addresses the USDOT strategic goal of *Equity*, assessing the equity impacts of transit-oriented development in order to allow for more equitable future planning.

**Outputs:** Results of this study will be published in research journals and presented at multiple conferences. The methods (especially the approach used to assess transportation costs) will be well documented for instructional purposes and shared with the wider public via a dedicated website/ArcGIS story map.

**Outcomes/Impacts:** There are two main intended impacts of the study. First, to disseminate methods used in our study for widespread use. Second, to illustrate that based on H+T combined costs, market rate rental units located in TODs are not affordable to low-income households earning less than 80 percent of AML. In this regard, the intended outcome of our study would be for each transit agency in the U.S. to adopt a Transit-Oriented Development Policy with an affordability component (like those adopted by MBTA and Sound Transit), and each city with a rail/bus rapid transit within its boundaries set appropriate zoning and affordability requirements for transit corridors (like those adopted in California, Washington, and Massachusetts). If properly implemented, these changes would lead to much more equitable access to transit and housing near transit and would promote inclusive and sustainable communities.

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