

50 Years of Trends in Station Areas across the United States

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

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

Research Priority: Preserving the Environment

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Project Partners: N/A

Research Project Funding: \$150,000 (USDOT) + \$75,000 (matching funds) = \$225,000

Project Start and End Date: 10/01/2023 to 5/31/2025

Project Description: Building upon earlier work, including the National TOD Database established by the former Center for Transit-Oriented Development / Reconnecting America and other studies led by Dr. Renne in collaboration with Dr. Ewing, Ms. Tolford and others, this study will create a database and examine travel behavior, vehicle ownership, demographics, equity, location affordability, built environment measures, and other related topics for all station areas across the United States. The project will build upon previous work that classifies station areas by TOD typology based on walkability, density, and land use mix. The data created for this project will not only allow for the analysis of trends in station areas over the past 50 years but will also be available on an open-data platform that will serve CETOC and anyone in the public to examine several of US DOT strategic goals including performance indicators towards climate and sustainability and net-zero emissions and climate justice. The platform will also enable a greater level of equity analysis toward wealth creation and expanding access to housing and transportation affordability. The data platform will be a geocoded, layered database that will focus on integrating data for neighborhoods around all fixed transit stations across the nation. Data will be included also for the surrounding metropolitan region to allow for comparison of station areas to control areas outside the stations and to see the influence of the stations well beyond the typical half-mile unit of analysis. The study will also compare the similarities and differences between the concepts of TODs and Transit-Oriented Communities (TOCs) and conduct a literature review to identify what this means from a data collection and analysis perspective. The study will analyze which variables are important to collect and how this may have changed over time since the original TOD database was published in the 2000s. We will update and build a database representing station areas a half-mile from fixed route stations, including about 4,700 stations, representing subway/metro, light rail/tram, commuter rail, intercity passenger rail, bus rapid transit, and ferry stations with available data commuting, vehicle ownership, demographics, equity, location affordability, jobs, and built environment measures from each station representing 1970, 1980, 1990, 2000, 2010, and 2020. Note that not all stations may have all historical data. The data will then be published on GitHub or a similar platform for public use.

Methods used will include 1) using the National Transportation Atlas Database (NTAD) published by the Bureau of Transportation Statistics, develop an updated, geocoded list of all station areas; 2) utilizing the US Census, EPA Smart Location Database, National Walkability Index, Longitudinal Employer-Household Dynamics data, and other available databases including the outdated National TOD Database, develop data for each census tract within each station, by year; 3) creating a typology for each station area based on built environment measures including walkability, density and potentially other measures to classify each station typology as a TOD, Hybrid, and Transit-Adjacent Development and examining station areas based on equity variables including race, ethnicity, and income based on prior studies of gentrification in TODs led by Renne and others on the team and within the literature to identify Equitable TODs (ETODs); and 4) using various station classification measures, analyze longitudinal trends and cross-sectional patterns in station areas.

USDOT Priorities: This research addresses the USDOT strategic goals of *Climate and Sustainability* and *Equity*. Both social and climate/environmental equity will be central to the assessment of station area development patterns, with a goal towards informing for more equitable and sustainable future development patterns.

Outputs: 1) Literature review on data collection to measure TODs and TOCs; 2) Creation of a database; 3) One or more peer-reviewed publications; 4) One conference presentation; 5) One webinar; and 6) One policy brief for the CETOC website.

Outcomes/Impacts: The project's outcomes, including detailed longitudinal and cross-sectional analyses, will aid in understanding the effectiveness of past and current transportation policies, guiding future legislative and regulatory actions. By highlighting trends in station area development, the research will showcase how changes in land use and transportation planning can improve safety, reliability, and cost-efficiency in the transportation system. Additionally, it will offer valuable data for transportation workforce development, helping to train professionals in the nuances of equitable and sustainable transit-oriented community planning.

Furthermore, the project's dissemination through peer-reviewed publications, policy briefs, and an open-data platform will ensure wide accessibility of its findings. This transparency is expected to drive innovation in urban planning and transportation, potentially leading to new products, developments and changes in practice. For instance, the research could inform the development of new planning tools or software that assist in creating more equitable and efficient transit areas. By connecting research results directly with policy decisions and practice, the project will contribute to a more informed and effective approach to transit-oriented community development, ultimately benefiting the broader transportation system in terms of sustainability, equity, and overall functionality.

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