

Scoring Equitable Transit: A Data-Driven Framework for Affordable Transit-Oriented Development in California

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Introduction

California has invested heavily in public transit and affordable housing policies, but equitable access to these resources remains uneven. High-Quality Transit Areas (HQTAs)—zones within walking distance of frequent transit—are central to the state’s climate and land use strategy. Yet, not all HQTAs function as inclusive, livable communities. This study asks: Where are California’s transit station areas succeeding in delivering affordable, equitable Transit Oriented Development (TOD), and where are they falling short? We introduce a novel framework for Affordable Transit-Oriented Development (A-TOD) that evaluates every HQTA station in the state across three dimensions: built environment, affordability, and minority presence. By classifying and scoring more than 60,000 transit station areas, we offer policymakers, planners, and housing advocates a diagnostic tool to identify opportunity sites, assess equity risks, and target interventions where they are most needed.

Study Methods

Our study focuses on California’s HQTAs, defined by the California Air Resources Board and the Strategic Growth Council as areas within a half-mile of high-frequency transit stops. Recognizing the limitations of a fixed half-mile buffer, we expanded the analysis using network based pedestrian buffers of 1.5 miles, which better capture realistic walkable and bikeable access. We developed a three-stage clustering framework to classify station areas:

1. Built Environment: indicators of density, connectivity, land use mix, and transit service frequency, producing four typologies: TOD, Transit-Supportive Development (TSD), Limited TOD (L-TOD), and Transit-Adjacent Development (TAD).

2. Affordability: modeled housing-plus-transportation cost burdens and presence of subsidized housing, distinguishing between Livable & Affordable (L&A) and Unlivable & Unaffordable (U&U) station areas.
3. Social Vulnerability: equity-focused indicators, including racial/ethnic minority presence, socioeconomic disadvantage, disability, and housing instability.

Each station received a composite equity score (0.5–6), normalized to a 0–100 scale for comparability. The analysis included 66,000+ stations statewide, covering rail, bus rapid transit, and high-frequency bus corridors. Results are presented both in this report and through a publicly accessible interactive webmap: <https://css-cappnodejmap.sjsu.edu/A-TOD/>.

Findings

Our results highlight both promising opportunities and urgent challenges in California’s transit landscape.

- Built Environment Typologies: Only 14% of stations qualify as full TODs—dense, walkable, and well-connected urban nodes. The majority fall into TSD (38%) or TAD (26%) categories, indicating that many HQTAs lack the physical form needed to fully support transit use.
- Affordability: Roughly 94% of HQTA stations are classified as Livable & Affordable under modeled housing-plus-transportation costs. However, many of these are concentrated in historically marginalized communities, raising concerns about displacement risk. Unlivable & Unaffordable stations, while fewer in number (≈6%), are clustered in high-demand areas such as San Francisco and Pasadena, where affordability has already eroded.

- **Race and Equity:** Nearly 99% of all HQTAs are located in communities of color. This means virtually every transit investment intersects with racialized patterns of vulnerability. Composite scores reveal that minority-serving stations consistently show higher socioeconomic vulnerability and greater dependence on transit, even when affordability is present.

In short, California's HQTAs system is deeply intertwined with racial and economic inequities. High-quality transit access exists, but equitable outcomes are not guaranteed without deliberate policy intervention.

Nearly 99% of California's High-Quality Transit Areas are located in communities of color—making racial equity central to every decision about transit and housing investment.

Policy Recommendations

Our findings demonstrate that equitable TOD cannot be achieved by transit investment alone—it requires intentional housing and equity policies. We recommend:

1. **Prioritize Equity Anchors:** Protect affordability in high-scoring L&A station areas, particularly those serving communities of color, through rent stabilization, tenant protections, and community land trusts.
2. **Target Reinvestment:** Focus state and regional resources on low-scoring U&U station areas, especially in exurban and auto-oriented contexts, with infrastructure upgrades, zoning reforms, and affordability incentives.
3. **Integrate Scoring into Policy Tools:** Use the composite HQTAs equity score in CEQA streamlining, AHSC funding, and Sustainable Communities Strategies to align investment with both environmental and social equity goals.
4. **Expand Public Access:** Encourage planners, advocates, and developers to use the interactive webmap to guide site selection, monitor displacement risk, and support community engagement.

By centering spatial equity and racial justice, this framework helps ensure California's climate and housing policies are not only sustainable but inclusive.

About the Authors

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To Learn More

For more details about the study, download the full report at transweb.sjsu.edu/research/2463



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