

Transit-Oriented Development Without Displacement: Comparing Equity Outcomes Around Rail Stations

Maulsri Jha

Ph.D., AICP, LEED GA
Senior Project Manager
CDM Smith, Seattle, WA

Abstract:

Transit-oriented development is widely promoted as a strategy for reducing automobile dependence, increasing transit ridership, and concentrating housing and employment near high-capacity rail. Yet the accessibility benefits created by rail investment can be capitalized into land prices and rents, exposing low-income residents, renters, informal occupants, and small businesses to displacement or exclusion. This article develops an Equitable Station-Area Development framework and applies it to comparative case studies in Delhi, Seattle, Washington, DC, and Vienna. The cases represent contrasting combinations of land tenure, housing systems, transit governance, public land ownership, and anti-displacement capacity. Delhi demonstrates the challenge of applying density-led transit-oriented development in a city characterized by informality, fragmented authority, and uneven tenure security. Seattle's Rainier Valley shows how rail investment can intersect with racialized housing-market pressure, while subsequent equitable-development programs and public-land requirements illustrate a more preventive approach. Washington, DC, demonstrates the possibilities and limits of joint development, inclusionary zoning, and affordable-housing preservation in a strong rail-accessibility market. Vienna, particularly Aspern Seestadt, shows how extensive social housing, public land policy, and transit-first sequencing can embed affordability more deeply in urban development, although access rules and greenfield conditions limit direct transferability. The comparison finds that equitable outcomes depend less on density alone than on the timing, scale, durability, and governance of housing and community protections. The article proposes performance measures covering residential stability, affordable-housing production and preservation, commercial and cultural continuity, accessibility, public value capture, participation, and distributional outcomes. It concludes that transit-oriented development can avoid displacement only when anti-displacement policy precedes market escalation and treats existing residents as intended beneficiaries of accessibility investment.

Keywords: transit-oriented development; displacement; housing equity; rail stations; affordable housing; land value; accessibility.

1. Introduction

Rail investment can reshape the geography of urban opportunity. A new station reduces generalized travel costs, expands access to employment and services, and can support compact development with

lower automobile use. These effects create public value, but they also change private land markets. When households and firms compete for newly accessible locations, rents and property values may rise. Owners may gain wealth, while renters, informal occupants, and small businesses may face involuntary moves, crowding, rent burden, or exclusion from future development.

This tension has produced a critical question for contemporary planning: can transit-oriented development increase density and accessibility without displacing the people most dependent on transit? The question is not resolved by adding an affordable-housing percentage to an otherwise market-led project. Displacement can occur before construction, beyond the project boundary, through redevelopment of existing low-cost housing, through commercial turnover, or through a gradual loss of cultural institutions and social networks. It can also take the form of exclusion when lower-income households are unable to enter an improving station area even if current residents are not directly removed.

The empirical literature does not support a universal claim that rail automatically causes displacement. Outcomes vary by housing-market strength, preexisting neighborhood change, tenure, zoning, public investment, and the timing of policy intervention. Systematic reviews find heterogeneous evidence, partly because gentrification, direct displacement, indirect displacement, and demographic change are measured differently (Padeiro et al., 2019; Zuk et al., 2018). This variability makes comparative institutional analysis valuable. The relevant question is which combinations of housing, land, transit, and community policy allow accessibility gains to be shared.

This article compares Delhi, Seattle, Washington, DC, and Vienna. Delhi represents rapid metro expansion within a high-density city where informal housing and fragmented land governance complicate conventional transit-oriented development. Seattle's Rainier Valley represents a historically diverse corridor where light rail arrived amid growing regional housing pressure. Washington, DC, combines a mature rail network, strong accessibility premiums, joint development, and local inclusionary and preservation tools. Vienna offers a contrasting housing regime in which municipal and limited-profit housing occupy a large share of the market and transit is coordinated with new district development.

The article asks four questions. First, how do station-area planning systems define and measure equity? Second, which mechanisms preserve residential, commercial, and cultural stability as accessibility improves? Third, how do public land ownership, housing institutions, and project sequencing affect outcomes? Fourth, which performance framework can distinguish equitable transit-oriented development from density that merely relocates transit-dependent households? The central argument is that displacement is not an inevitable physical effect of rail. It is a distributional outcome shaped by institutions, policy timing, and control over land and housing.

2. Transit Accessibility, Land Value, and Displacement

Classical transit-oriented development links density, land-use diversity, pedestrian-oriented design, destination accessibility, and proximity to transit. These features can increase ridership and reduce vehicle travel, although outcomes depend on regional context and service quality (Carlton, 2009; Cervero et al., 2004; Suzuki et al., 2013). Accessibility is economically valuable. Households and firms may pay more for locations that reduce travel time, and developers may respond to higher allowable density and market demand. This capitalization can support tax revenue and land-value capture, but it can also intensify competition for land.

Equity analysis requires precise concepts. Direct displacement occurs when households or businesses are removed through demolition, eviction, acquisition, or conversion. Indirect economic displacement occurs when rising rents, taxes, fees, or operating costs make remaining unaffordable. Cultural displacement occurs when demographic and commercial change weakens a community's identity, institutions, language networks, or sense of belonging. Exclusionary displacement describes the inability of similarly situated lower-income households to move into a neighborhood because prices have risen. These processes can overlap but require different evidence and policy responses (Chapple & Loukaitou-Sideris, 2021; Zuk et al., 2018).

Transit may contribute to neighborhood change without being its sole cause. Rail projects are usually located in corridors already affected by regional job growth, credit availability, zoning change, public-realm investment, and speculative expectations. Announcements can influence markets years before service opens. Conversely, weak-market station areas may experience little private investment and continue to face vacancy, disinvestment, or poor pedestrian conditions. Empirical studies consequently report conditional effects rather than a universal transit impact (Dawkins & Moeckel, 2016; Dong, 2017; Kahn, 2007). Equitable planning must address both displacement pressure and the unequal absence of investment.

The temporal problem is fundamental. Affordable housing created after land prices escalate is more expensive to deliver and may not compensate for losses that occurred during project planning and construction. Preservation, acquisition funds, tenant protections, and community ownership are most effective when deployed before or at the time of route selection (Pollack et al., 2010). Anti-displacement policy should be understood as enabling infrastructure for transit, not as mitigation added after a preferred alignment has generated market expectations.

The spatial scale also matters. A half-mile station radius is useful for pedestrian planning but can obscure displacement beyond that boundary. Households may relocate to locations with worse transit access, while market pressure travels along bus routes and redevelopment corridors. Analysis should track origin and destination of displaced households, changes in combined housing and transportation costs, and access to jobs and essential services.

3. Analytical Framework and Comparative Method

This study uses a structured qualitative comparison based on planning documents, housing and transit policies, agency reports, public program information, and peer-reviewed research available through August 2026. Cases were selected for institutional contrast rather than statistical representativeness. Delhi illustrates density-oriented policy in a setting of informality and multiple public authorities. Seattle and Washington, DC, show two United States approaches with different transit-agency land policies and municipal anti-displacement tools. Vienna illustrates a social-housing system with extensive public and limited-profit ownership.

The unit of analysis is the station area as a housing, mobility, land, and community system. Rail stations are not treated as isolated real-estate projects. The framework in Table 1 evaluates eight dimensions: residential stability, affordable-housing supply, accessibility, commercial and cultural continuity, public land and value capture, participation and power, spatial quality, and long-term accountability. The dimensions separate outputs, such as units constructed, from outcomes, such as whether low-income residents remain and gain accessibility.



The comparison does not assign a composite score because tenure categories, income thresholds, geographic units, and displacement data are not consistent across cases. Instead, it identifies causal mechanisms, institutional strengths, implementation gaps, and transferable principles. Claims about association are distinguished from claims about causation, consistent with the methodological cautions in the displacement literature (Padeiro et al., 2019; Zuk et al., 2018).

Table 1. Equitable Station-Area Development analytical framework

Dimension	Core question	Illustrative measures
Residential stability	Can existing residents remain through planning, construction, and market change?	Evictions, moves, rent burden, right of return, destination access
Affordable housing	Are low-cost homes preserved and added at relevant income levels?	No-net-loss, income depth, duration, family and accessible units
Accessibility	Do target populations gain useful and affordable access?	Travel time, fare burden, first-last mile, combined housing and transport cost
Commerce and culture	Can businesses, vendors, and institutions remain?	Business retention, lease cost, cultural anchors, community space
Public land and value	Is publicly created land value converted into durable benefits?	Ground leases, affordability covenants, community ownership, revenue
Participation and power	Can affected communities shape binding decisions?	Early involvement, compensated participation, enforceable agreements
Spatial quality	Is the station area safe, inclusive, and usable?	Walkability, universal design, public space, services, environmental quality
Accountability	Are outcomes monitored and enforced over decades?	Baseline data, reporting, compliance, affordability expiration, remedies

Source: Author's synthesis of cited research and policy documents.

4. Delhi: Density-Led TOD in a City of Uneven Tenure

Delhi's metro system has transformed regional accessibility and expanded the geography of rail-connected employment, education, and services. The Delhi Development Authority's transit-oriented development policy establishes an intense development area around mass rapid transit stations, generally within a 500-meter radius, and promotes higher density, mixed use, walkability, and redevelopment (Delhi Development Authority, 2020, 2021). This framework responds to severe congestion, air pollution, and fragmented urban form by seeking to place more activity within walking and cycling distance of rail.

The equity challenge begins with the difference between physical density and social inclusion. Many Delhi station areas are already dense, mixed-use, and transit-dependent, but they include unauthorized colonies, resettlement areas, rental rooms, informal commerce, and settlements with uncertain tenure. Redevelopment based on parcel assembly and formal development rights can regard these areas as underutilized even when they support intensive social and economic life. Floor-area incentives may create additional housing supply, yet they do not by themselves protect low-rent units or informal livelihoods.

Delhi's policy includes requirements and incentives related to economically weaker section housing and public amenities, but implementation depends on land assembly, agency coordination, infrastructure capacity, and enforceable rehabilitation. A unit-count approach can miss whether replacement housing is affordable in practice, appropriately sized, completed before relocation, and located close enough to preserve employment and school access. The quality of pedestrian routes is equally important because

metro proximity on a map does not guarantee safe access across wide roads, walls, drains, or hostile intersections.

Karkardooma in East Delhi has emerged as a prominent test of state-led TOD on public land. Its significance lies not only in proposed density but in whether public ownership can be used to secure lasting affordability, public facilities, and accessible open space rather than maximizing a one-time land return. Public land creates leverage to specify tenure mix, affordability duration, phasing, and community infrastructure. That leverage weakens if land is transferred without long-term covenants or if affordability is defined through unit size rather than household cost burden.

Informal and small-scale commerce must be included in the equity framework. Street vendors, repair services, food businesses, and home-based work often depend on station footfall and low-cost space. Formal redevelopment may improve sidewalks while eliminating the businesses that make transit useful to low-income passengers. Vendor accommodation, graduated commercial rents, relocation within the project, and rights to return should therefore be treated as station-area performance requirements rather than optional social programs.

Delhi demonstrates the limits of importing a standardized TOD model. High density is not scarce everywhere, and redevelopment is not synonymous with accessibility. The priority is to formalize benefits without erasing existing urban systems. This requires settlement mapping, tenure-sensitive enumeration, predevelopment affordability baselines, phased rehabilitation, rental-housing strategies, and institutional coordination among the development authority, metro operator, municipal bodies, utilities, and social agencies.

5. Seattle: Rainier Valley and the Shift toward Equitable Development

Seattle's Rainier Valley provides a revealing case because Link light rail opened through one of the city's most racially and ethnically diverse corridors in 2009. The corridor includes immigrant and refugee communities, lower-income renters, small businesses, and neighborhoods shaped by redlining and uneven public investment. Rail improved access to downtown and the airport, but it arrived as Seattle's regional economy and housing demand accelerated. The resulting changes cannot be attributed to transit alone, yet station-area investment became part of a wider geography of displacement risk.

The case illustrates why market change must be monitored before opening day. Rising rents, redevelopment, and business turnover can begin during planning and construction. Households displaced outward may lose the accessibility benefit that justified the public investment. City monitoring has identified several south Seattle urban villages as having high displacement risk, reinforcing the need to evaluate race, tenure, income, cost burden, and business stability alongside housing production (City of Seattle, 2018).

Seattle's response has gradually moved from generalized growth management toward explicit equitable development. The Equitable Development Initiative funds community-led projects intended to combat displacement, support cultural anchors, and increase community ownership in high-risk areas (City of Seattle, n.d.). These investments broaden the definition of transit-oriented development by treating childcare, food systems, arts, small-business space, and community facilities as part of neighborhood stability.

Regional transit policy adds another mechanism. Washington law and Sound Transit's equitable TOD policy use an 80/80/80 structure: at least 80 percent of suitable surplus property is offered first to qualified entities for housing, at least 80 percent of units on accepted property must be affordable, and

affordability generally reaches households at or below 80 percent of area median income (Sound Transit, 2018, n.d.). The rule converts temporary construction and staging land into a pipeline for below-market housing, although the 80 percent income threshold may remain too high for the lowest-income households in an expensive region.

Cedar Crossing at Roosevelt Station demonstrates the potential of coordinated public land, discounted disposition, city housing funds, and nonprofit development. The project includes 254 affordable apartments, including family-sized units, along with childcare and community-serving space (Sound Transit, 2022). Although Roosevelt differs from Rainier Valley, the project shows how affordability can be embedded before a station-area parcel enters the open market.

Seattle's lesson is that equitable TOD requires multiple scales of action. Transit-agency land is valuable but limited, so surplus-property policy cannot stabilize an entire corridor. Tenant protections, acquisition funding, community land trusts, preservation of naturally occurring affordable housing, commercial affordability, and zoning-linked housing requirements must operate beyond agency parcels. Bus connections and pedestrian safety also determine whether residents outside the immediate walkshed share rail accessibility.

6. Washington, DC: Joint Development and the Preservation Challenge

The Washington metropolitan region has decades of experience with development around Metrorail stations. WMATA's joint-development program coordinates non-transit development on agency-owned land and pursues housing, ridership, tax-base, and public-realm objectives. By 2022, projects at 27 stations had delivered more than 13 million square feet of residential, office, retail, and hotel development (Washington Metropolitan Area Transit Authority, 2022a). This scale demonstrates the market power of rail accessibility and the importance of public land in shaping station outcomes.

Washington, DC, also illustrates how accessibility premiums can interact with neighborhood change. Stations such as Columbia Heights, Shaw-Howard University, and Navy Yard sit within areas that experienced substantial reinvestment and demographic change. Rail was one element among public redevelopment, federal employment access, zoning, crime reduction, and regional housing demand. The equity issue is not whether investment occurred, but whether low-income residents and businesses captured a fair share of its benefits.

The District's policy toolkit includes inclusionary zoning, publicly subsidized affordable housing, tenant opportunity mechanisms, rent regulation for covered units, and preservation programs. These tools operate across private and public land, which is essential because WMATA can impose terms only on property it controls. Joint-development policy can establish affordable-housing expectations, but local land-use approvals, subsidy commitments, and market conditions determine project feasibility and depth of affordability (Washington Metropolitan Area Transit Authority, 2022b).

Congress Heights provides an instructive community-centered case. Plans for redevelopment near the station became tied to preservation of affordable housing and community advocacy over ownership, habitability, and redevelopment terms. The case shows that station-area equity may depend on organizing and legal capacity as much as formal TOD policy. A participation process that begins after a development concept is fixed offers less power than early control over land disposition, affordability requirements, and selection criteria.

The region also demonstrates the fiscal attraction of joint development. New projects can generate lease revenue, property taxes, and ridership. These benefits are legitimate, but a highest-return land strategy

can conflict with deeper affordability. Public agencies should calculate a broader public return that includes avoided displacement, reduced household transportation costs, access to opportunity, and long-term affordable-housing value. Discounted land is not a loss when it purchases durable public outcomes. Washington's principal limitation is fragmentation. WMATA, the District, Maryland, Virginia, counties, housing agencies, and private developers operate under different rules and fiscal capacities. A regional rail system can therefore produce uneven affordability across jurisdictional boundaries. Station-area plans need shared outcome reporting and cross-jurisdictional preservation strategies, particularly where lower-income households are moving farther from frequent transit.

7. Vienna: Social Housing as Transit Equity Infrastructure

Vienna offers a structurally different model. Approximately half of the city's residents live in municipal or subsidized housing, including roughly 220,000 municipal dwellings and 200,000 cooperative or limited-profit units supported by the city (City of Vienna, n.d.-a). This large, durable nonmarket and limited-profit sector dampens rents and gives the city tools that extend beyond project-by-project inclusionary requirements. Housing policy functions as transportation equity policy because it allows a broad income range to remain within a transit-rich city.

The model's importance is not simply the number of subsidized units. Vienna combines land policy, long-term finance, developer competitions, cost and rent limits, tenant protections, and continuing municipal ownership (City of Vienna, n.d.-b; Friesenecker et al., 2021). Broad eligibility supports social mixing and political durability, although access requirements can disadvantage newcomers and some migrants. Empirical research suggests that municipal housing and rent regulation can reduce income sorting near urban amenities, demonstrating how housing institutions influence who captures accessibility value (Morawetz et al., 2023).

Aspern Seestadt illustrates transit-first district development. The U2 metro extension reached the area before much of the planned housing and employment was complete. The district combines dense development, walking and cycling networks, public space, social infrastructure, and a substantial affordable and subsidized housing component. Direct metro service is therefore part of the land-development structure rather than an amenity added after automobile-oriented buildout.

Public control and advance infrastructure reduce some displacement pressures because Seestadt is primarily a large new-development area rather than a redevelopment program imposed on a settled low-income neighborhood. This is also a limitation of the comparison. Greenfield and brownfield district building cannot reveal the same direct displacement dynamics as Delhi's inhabited station areas or Seattle's established communities. The transferable lesson is institutional: acquire or retain land early, commit to affordability before appreciation, and sequence transit, housing, schools, public space, and services as a single program.

Vienna is not displacement-proof. Private rents have risen, eligibility rules can exclude recent arrivals, and the social-housing system does not remove all inequalities in location or unit access. Moreover, its fiscal and legal institutions emerged over a century and cannot be replicated quickly. Still, the case shifts the policy baseline. Instead of asking how many affordable units can be negotiated from each station-area project, Vienna shows the protective effect of a citywide stock of permanently or durably affordable housing.

The most important comparative insight is that universal or broad-based systems can complement targeted anti-displacement measures. Targeted programs help communities facing immediate pressure,

while a large social-housing sector reduces the number of households exposed to market escalation in the first place. Equitable TOD is most durable when it rests on both.

8. Comparative Findings

The comparison identifies four different institutional pathways. Delhi relies on development regulation and public land within a context of tenure informality and fragmented implementation. Seattle combines transit-agency surplus-property requirements with municipal equitable-development investment and nonprofit delivery. Washington, DC, uses joint development and a broader local housing-policy toolkit within a fragmented regional system. Vienna embeds station-area development within a large social and limited-profit housing sector.

First, policy timing is more important than policy branding. Delhi's redevelopment potential and United States station-area appreciation can outpace site-specific affordability negotiations. Seattle's later equitable-development programs provide important resources, but the Rainier Valley experience shows the cost of acting after market pressure is visible. Vienna's advance land and housing institutions illustrate prevention. Anti-displacement resources should be authorized when corridors are selected, not after construction begins.

Second, public land is a powerful but finite asset. Karkardooma, Sound Transit surplus parcels, WMATA joint-development sites, and Vienna's land-development role all demonstrate that public ownership can secure affordability and community facilities. The central question is the disposition rule. Long-term leases, affordability covenants, community or nonprofit ownership, and public-value scoring preserve leverage more effectively than unrestricted sale.

Third, affordable-housing production cannot substitute for preservation. New units may serve different income groups, arrive after displacement, or replace a larger amount of low-cost housing. Station plans should establish a no-net-loss baseline for deeply affordable units, family-sized housing, and protected rental stock. Acquisition and rehabilitation of existing buildings can be faster and less expensive than replacing them after market escalation.

Fourth, equity is multidimensional. Residential stability is necessary but insufficient. Small businesses, street vendors, cultural organizations, schools, childcare, and social networks determine whether a community remains functional. Delhi highlights informal livelihoods, Seattle emphasizes cultural anchors and community ownership, Washington shows the role of organizing, and Vienna shows the stabilizing effect of social infrastructure integrated with housing.

Fifth, accessibility must be measured for people, not parcels. A dense project near a station can still exclude people with disabilities, households priced beyond the transit zone, or residents separated by unsafe streets. Combined housing and transportation costs, travel times to essential destinations, universal design, feeder service, and pedestrian safety are outcome measures. Rail proximity is only an input.

Finally, governance capacity determines whether commitments last. Affordability periods, income verification, tenant rights, vendor agreements, data reporting, and benefit-sharing require administration over decades. Temporary grants and voluntary agreements are vulnerable to political and market cycles. Equitable TOD needs durable institutions with funding, enforcement authority, and transparent public reporting.

9. An Equitable Station-Area Development Framework

The comparative evidence supports a prevention-first framework. The first step is an early-warning assessment completed before route or station decisions are finalized. It should map renters, informal occupants, subsidized and low-cost units, eviction and rent trends, property ownership, small businesses, cultural institutions, land speculation, and access to opportunity. Data should be disaggregated by income, race or caste, gender, disability, age, tenure, and household type where legally and ethically appropriate.

The second step is preservation before upzoning. Public and mission-driven entities need acquisition funds, rapid-purchase authority, and access to low-cost capital. Existing affordable housing should receive rehabilitation support in exchange for durable affordability. Tenant right-to-purchase or opportunity-to-purchase mechanisms can create time for collective or nonprofit acquisition. Informal settlements require tenure-sensitive upgrading and negotiated rehabilitation rather than erasure from the baseline.

Third, new development should produce permanently or durably affordable housing at income levels matched to current residents. Requirements should address unit size, accessibility, operating costs, and right of return, not only nominal rent. Public land should carry stronger requirements than private land because its opportunity cost is a public investment. Cross-subsidy can be useful, but deeply affordable units usually require public finance or land value.

Fourth, commercial and cultural stability must be financed. Tools include community ownership, master leasing, graduated rents, small-business relocation within the station area, vendor space, technical assistance, and construction-impact support. Ground-floor retail should not be treated as a generic amenity if the leasing model excludes existing businesses.

Fifth, participation should confer power. Community members should influence corridor selection, land disposition, developer evaluation, affordability standards, public-realm design, and monitoring. Community-benefit agreements may help, but only when representation is legitimate, obligations are enforceable, and public agencies retain responsibility. Participation should be compensated and accessible in relevant languages and formats.

Sixth, evaluation should track outcomes over time. Table 2 proposes a concise dashboard. Agencies should publish baseline, construction-period, opening-year, and recurring post-opening measures. The geographic frame should include both walksheds and likely displacement destinations. Independent evaluation is necessary because agencies responsible for delivering projects may otherwise emphasize development outputs over distributional effects (Wan et al., 2023).

Table 2. Longitudinal equity monitoring dashboard

Stage	Priority measures	Accountability requirement
Before planning	Tenure and vulnerability baseline; land and business inventory	Publish before alignment and zoning decisions
Preconstruction	Affordable acquisition; tenant protection; land disposition commitments	Confirm funding, ownership, and enforceable terms
Construction	Temporary relocation; business impacts; access and service continuity	Quarterly reporting and rapid remedies
Opening year	Housing cost, resident and business retention, transit access	Compare with baseline and matched areas

Long term	Displacement destinations, affordability durability, accessibility and wealth outcomes	Report at 2-, 5-, and 10-year intervals
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Source: Author's synthesis of cited research and policy documents.

10. Policy Implications

National and state governments should align transit capital funding with housing preservation. Major rail grants should require an anti-displacement plan, baseline data, funded implementation commitments, and periodic outcome reporting. Planning requirements without dedicated resources can burden local agencies without changing outcomes. Funding formulas should reward durable affordability, community ownership, and no-net-loss performance.

Transit agencies should adopt public-land policies that prioritize long-term public value. Qualified affordable-housing and community-serving entities should receive early access to suitable property, and agencies should use ground leases where they preserve control. Developer selection should weight affordability depth, duration, family housing, local business space, accessibility, and community governance alongside financial return and delivery capacity.

Municipalities should sequence zoning with protections. Upzoning can expand supply and support transit, but it should follow or coincide with preservation funds, tenant protections, public land acquisition, and inclusionary requirements. Development bonuses should be calibrated to market conditions and tested for feasibility, while direct subsidy should support households too poor to be served through cross-subsidy alone.

Housing and transportation agencies should jointly measure accessibility. A project should not be labeled equitable because it is close to rail and contains some income-restricted units. Evaluation should estimate household travel times, transit fares, housing and utility costs, displacement destinations, pedestrian conditions, and access for people with disabilities. Service frequency and affordability must be protected as neighborhoods change.

Finally, planners should treat community institutions as infrastructure. Affordable childcare, schools, markets, health services, cultural organizations, and gathering spaces enable households to remain and thrive. Capital programs should finance these uses and protect them through ownership or long leases. Without them, residential retention alone may not prevent cultural displacement.

11. Limitations and Research Agenda

This study relies on secondary evidence and compares cases with substantially different legal systems, housing tenures, income measures, and data capacity. Vienna's social-housing categories are not equivalent to United States income-restricted housing, while Delhi's informal tenure cannot be captured by conventional property and lease data. The analysis therefore identifies institutional mechanisms rather than estimating a uniform treatment effect.

Causal attribution remains difficult. Rail, zoning, public-realm investment, economic growth, credit, and demographic preferences interact. Researchers should distinguish project announcement, construction, opening, and mature operation and use comparison areas carefully. Administrative eviction data, rental listings, business records, school enrollment, and longitudinal household data can supplement census measures, but privacy and undercounting require attention.

Future research should follow displaced households and firms, not only neighborhoods. A station area can appear economically improved while former residents experience longer commutes, higher combined costs, or lost social support. Studies should also compare the durability of inclusionary units, community land trusts, public housing, limited-profit housing, vouchers, and preservation acquisitions across market cycles.

Commercial and cultural displacement remain undermeasured. Future work should develop indicators for business ownership, lease terms, customer networks, cultural institutions, language access, and community perceptions. Comparative research should also examine whether anti-displacement policies change project timelines, land prices, housing production, and transit ridership, and which combinations achieve both growth and stability.

12. Conclusion

Transit-oriented development can advance climate mitigation, accessibility, and urban efficiency, but these benefits are not distributed automatically. Delhi, Seattle, Washington, DC, and Vienna demonstrate that similar language about density and mixed use can operate through very different land and housing institutions. Where accessibility gains enter an unprotected market, displacement and exclusion can undermine the social purpose of transit. Where public land, durable affordability, preservation, and community power are established early, rail investment can expand opportunity without requiring vulnerable residents to leave.

The strongest lesson is prevention. Affordable-housing funds, acquisition authority, tenant and informal-occupant protections, commercial stabilization, and community governance should be in place before station announcements and zoning changes accelerate expectations. Remedial programs created after appreciation face higher costs and cannot fully reconstruct lost networks.

A second lesson is that equitable TOD requires a citywide housing system as well as station-specific projects. Sound Transit and WMATA can use their land strategically, and Delhi can impose conditions on public redevelopment, but transit-agency parcels represent only a fraction of station areas. Vienna demonstrates the stabilizing value of a large, durable social-housing sector, even though its institutions are not directly transferable.

Governments should therefore judge station-area development through residential stability, affordability depth and duration, accessibility, commercial and cultural continuity, public value capture, participation, and long-term enforcement. Density remains important, but it is a means rather than an equity outcome. Transit-oriented development succeeds when existing and future low-income residents can remain near rail, use it affordably, and share in the opportunities created by public investment.

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