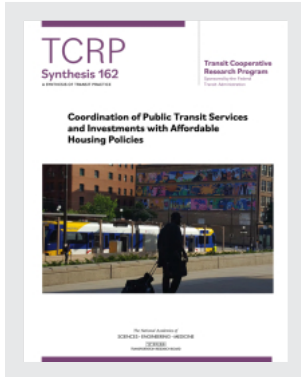


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TRANSIT COOPERATIVE RESEARCH PROGRAM

TCRP SYNTHESIS 162

**Coordination of Public Transit Services
and Investments with Affordable
Housing Policies**

A SYNTHESIS OF TRANSIT PRACTICE

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Subject Areas

Policy • Public Transportation

Research sponsored by the Federal Transit Administration in cooperation with the Transit Development Corporation

The National Academies of
SCIENCES • ENGINEERING • MEDICINE



TRANSPORTATION RESEARCH BOARD

2022

TRANSIT COOPERATIVE RESEARCH PROGRAM

The nation's growth and the need to meet mobility, environmental, and energy objectives place demands on public transit systems. Current systems, some of which are old and in need of upgrading, must expand service area, increase service frequency, and improve efficiency to serve these demands. Research is necessary to solve operating problems, adapt appropriate new technologies from other industries, and introduce innovations into the transit industry. The Transit Cooperative Research Program (TCRP) serves as one of the principal means by which the transit industry can develop innovative near-term solutions to meet demands placed on it.

The need for TCRP was originally identified in *TRB Special Report 213—Research for Public Transit: New Directions*, published in 1987 and based on a study sponsored by the Urban Mass Transportation Administration—now the Federal Transit Administration (FTA). A report by the American Public Transportation Association (APTA), *Transportation 2000*, also recognized the need for local, problem-solving research. TCRP, modeled after the successful National Cooperative Highway Research Program (NCHRP), undertakes research and other technical activities in response to the needs of transit service providers. The scope of TCRP includes various transit research fields including planning, service configuration, equipment, facilities, operations, human resources, maintenance, policy, and administrative practices.

TCRP was established under FTA sponsorship in July 1992. Proposed by the U.S. Department of Transportation, TCRP was authorized as part of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA). On May 13, 1992, a memorandum agreement outlining TCRP operating procedures was executed by the three cooperating organizations: FTA; the National Academies of Sciences, Engineering, and Medicine, acting through the Transportation Research Board (TRB); and the Transit Development Corporation, Inc. (TDC), a nonprofit educational and research organization established by APTA. TDC is responsible for forming the independent governing board, designated as the TCRP Oversight and Project Selection (TOPS) Commission.

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Because research cannot have the desired effect if products fail to reach the intended audience, special emphasis is placed on disseminating TCRP results to the intended users of the research: transit agencies, service providers, and suppliers. TRB provides a series of research reports, syntheses of transit practice, and other supporting material developed by TCRP research. APTA will arrange for workshops, training aids, field visits, and other activities to ensure that results are implemented by urban and rural transit industry practitioners.

TCRP provides a forum where transit agencies can cooperatively address common operational problems. TCRP results support and complement other ongoing transit research and training programs.

TCRP SYNTHESIS 162

Project J-07, Topic SB-34
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ABOUT THE TCRP SYNTHESIS PROGRAM

Transit administrators, engineers, and researchers often face problems for which information already exists, either in documented form or as undocumented experience and practice. This information may be fragmented, scattered, and unevaluated. As a consequence, full knowledge of what has been learned about a problem may not be brought to bear on its solution. Costly research findings may go unused, valuable experience may be overlooked, and due consideration may not be given to recommended practices for solving or alleviating the problem.

There is information on nearly every subject of concern to the transit industry. Much of it derives from research or from the work of practitioners faced with problems in their day-to-day work. To provide a systematic means for assembling and evaluating such useful information and to make it available to the entire transit community, the Transit Cooperative Research Program Oversight and Project Selection (TOPS) Committee authorized the Transportation Research Board to undertake a continuing study. This study, TCRP Project J-07, “Synthesis of Information Related to Transit Practices,” searches out and synthesizes useful knowledge from all available sources and prepares concise, documented reports on specific topics. Reports from this endeavor constitute a TCRP report series, Synthesis of Transit Practice.

This synthesis series reports on current knowledge and practice, in a compact format, without the detailed directions usually found in handbooks or design manuals. Each report in the series provides a compendium of the best knowledge available on those measures found to be the most successful in resolving specific problems.

FOREWORD

By Mariela Garcia-Colberg

Staff Officer

Transportation Research Board

There has been little systematic practical guidance for transit agencies and their external partners to identify approaches and practical tools that could be used to coordinate transit investments and services with affordable housing policies and programs. The organizational challenges are considerable since transit is primarily organized on a regional basis, while housing policies are generally municipal, and planners for each tend to work in independent silos. When major new transit investments are being planned, there are often efforts to develop secondary area plans around transit stations to encourage transit-oriented development and, in some cases, these provide for inclusionary zoning requirements as well. Such efforts to coordinate existing transit services and affordable housing policies are disparate, local, and ad hoc in nature.

The objective of this synthesis was therefore to identify the potential policies and/or programs to coordinate public transit services and capital investments with construction, operation, protection, and preservation of affordable housing. The study synthesized the state of the practice of transit system coordination with affordable housing initiatives in the broader sense.

A literature review and completed survey responses of 51 transit agencies were collected. *TCRP Synthesis 162: Coordination of Public Transit Services and Investments with Affordable Housing Policies* provides an analysis of the state of the practice, emphasizing lessons learned, current practices, challenges, and gaps in information. Five case examples that reflect a variety of approaches to coordinating affordable housing and transit and that reflect the barriers that limit coordination were also developed.

Mariia V. Zimmerman, along with Ashley Posthumus, also MZ Strategies, LLC, and Kathryn Howell, Virginia Commonwealth University, collected and synthesized the information and wrote the report, under the guidance of a panel of experts in the subject area. The members of the topic panel are acknowledged on page iv. This synthesis is an immediately useful document that records the practices that were acceptable within the limitations of the knowledge available at the time of its preparation. As progress in research and practice continues, new knowledge will be added to that now at hand.



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S U M M A R Y

Coordination of Public Transit Services and Investments with Affordable Housing Policies

The nexus of transit with affordable housing, in some ways, is fundamental to transit's very existence. Public transit provides a lower-cost mobility option for those who cannot or do not have a personal automobile to access regional destinations, including jobs, schools, and essential services. The lack of affordable, reliable, and accessible transit prevents residents living in affordable housing from fully participating in the regional economy or achieving a high quality of life. Despite this fundamental nexus, many transit agencies fail to prioritize frequent, high-quality service to areas with concentrated affordable housing. Within regions, major employers continue to locate themselves in suburban areas not well served by transit, exacerbating these challenges.

Against this backdrop, a growing housing affordability crisis is affecting moderate- and upper-income households, creating additional pressures and challenges that in some cases are displacing low-income households and increasing housing instability among very low-income households. Households across income levels make trade-offs between long commutes and housing costs. In a growing number of regions, both urban and rural, a lack of housing is creating a new urgency for planners, including those in transportation, to engage in regional housing conversations.

In 2021, as the country continued to grapple with the COVID-19 pandemic, almost every region is facing housing affordability and transit crises. Solutions to help recover both can be found in their improved coordination. People with low-incomes and those working in essential jobs that required workers to be on-site comprised the bulk of transit ridership during 2020-21. Rail ridership proved less resilient than bus ridership, reflecting the demographics of workers and the types of jobs that each primarily serve. Policies to provide more affordable transit fares and redesign transit networks to better connect low-income communities to essential destinations can help rebuild ridership. Improved planning coordination between federally required housing and transportation plans can help to leverage funding streams, including additional private and philanthropic resources. Commitments by transit agencies to develop housing near stations and along transit corridors that include affordable housing are recasting transit as more than mobility but as a community development tool.

This synthesis looks at the current body of published works that focused on the affordable housing and transit nexus. This information is supplemented by a national survey completed by 51 diverse transit agencies and five case examples that explore not only ways transit agencies are coordinating but also the ways regional planning agencies, local governments, and affordable housing partners are helping to bridge housing and transit

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to realize the full potential of each. While housing affordability is a challenge affecting a growing number of households, this research synthesis is focused on households earning at or below 80% of area median income (AMI). These low-income households face the greatest housing cost burdens and are more likely to rely on transit to provide mobility. The current state of the practice is presented, along with a set of future research questions and areas where additional information on best practices will facilitate improved transit equity results.

Introduction

1.1 Project Background and Objectives

Housing and transportation are the two highest annual costs each year for the average American household, together comprising roughly half of annual household budgets (CTOD and CNT 2006; HUD n.d.a). Many households make trade-offs between the two. Some households may forego automobile ownership and endure long commutes in the effort to reduce costs. These households are effectively trading off money and time. Yet other low-income households are unable to make this trade-off if they lack the ability to own and operate a car necessary to accessing lower-cost housing, or if they rely on publicly subsidized project-based affordable housing. Within the nation's largest metropolitan areas, zero-car households comprise roughly 10% of the population, and the highest percentages of zero-car households have lower incomes (Tomer 2011). Travel costs are a significant burden for many low-income households (Banjee 2018). Transit access and affordability is critical to enabling low-income households to access regional socio-economic opportunity (Sanchez 2008; Karner 2014).

How well transit serves to connect areas of a region with concentrations of affordable housing greatly impacts the lives of those who live in these neighborhoods. Yet transit agencies have little direct impact on the plans and policies of those who build and manage affordable housing, on employer location decisions, or on those who make local land use decisions.

The Transit Cooperative Research Program identified the need to better understand current efforts by transit agencies to coordinate with affordable housing. TCRP Synthesis Project J-07, SB-34 "Coordination of Public Transit Services and Investments with Affordable Housing Policies," was developed to identify the potential policy and programmatic mechanisms to coordinate public transit services and capital investments with the construction, operation, and preservation of affordable housing. This report synthesizes the state of the practice of transit system coordination with affordable housing initiatives in the broader sense, including, but not limited to, transit-oriented development (TOD).

MZ Strategies, LLC, served as principal investigator for Synthesis Project J-07/SB-34. The study team sought to identify existing practices utilized by transit agencies to coordinate with affordable housing stakeholders, including within local and regional governments. The study objectives include consideration of transit service coordination to provide regional mobility to residents of affordable housing and connect neighborhoods with high concentrations of housing affordable to broader regional economic opportunity.

The study also considers specific initiatives transit agencies are engaged in to support affordable housing plans and projects, including to utilize transit real estate assets. The extent to which transit agencies are involved in these types of programs and their motivation for engagement provide insights into tangible ways that housing and transit collectively can create longer-term impact.

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Despite the growing body of academic research on the interactions between public investment, including in transit improvements, and residential displacement, there has been little systematic practical guidance for transit agencies and their external partners to identify approaches and tools to coordinate transit investments and services with affordable housing (Chapple and Loukaitou-Sideris 2019). The organizational challenges are considerable since transportation is primarily organized on a regional basis, while housing decisions are most often made at the municipal or state levels. Efforts to coordinate existing transit services and affordable housing policies are disparate, local, and ad-hoc in nature. Yet a shared social goal for transit and affordable housing is to improve economic opportunity for low-income households.

1.2 Report Organization

The research synthesis is organized into five main chapters. Chapter 1 includes the description of the project background and the technical approach, and a glossary of key terms. Chapter 2 summarizes results from the project survey, noting overall trends shared by respondents and specific issues identified as requiring greater future coordination. Specific questions, responding agencies, and a snapshot of detailed survey responses are included in the appendices.

Chapter 3 summarizes findings from the literature review that describe key federal requirements influencing the coordination of affordable housing and transit. The literature review is divided into four components: (1) a basic introduction to the topic; (2) transit fare and service design issues; (3) planning coordination efforts; and (4) equitable transit-oriented development (ETOD). Individual survey responses relevant to each topic are interspersed as appropriate.

Chapter 4 provides detailed case examples of five regions to further illustrate the myriad of ways that coordination is happening by transit agencies, local governments, regional and metropolitan planning organizations, and housing and equity stakeholders as well as to illuminate the challenges to coordination that exist across these players. The five regions represent a range of approaches, tools, and barriers. Each highlights a particular aspect of coordination, from the influence of state mandates in California, to suburban coordination efforts in Kansas City, to housing finance issues in Atlanta, to transit finance challenges in Boise, to cross-sector coordination in Chicago.

Chapter 5 provides a summary of key findings and future research needs. Following the report's conclusion and project references list, several appendices are included.

1.3 Technical Approach to Project

Karner et al. (2016) describe transportation equity along four components: (1) participation, (2) benefits, (3) environment and quality of life burdens, and (4) financial burdens and affordability. This framework informed the research approach. Specifically, the study team defined transit and affordable housing coordination across a spectrum of potential actions that transit agencies and housing partners could undertake that address each component. The project survey asked questions addressing each. The literature review and case examples examine these issues to identify burdens and benefits that low-income transit riders living in affordable housing face relative to other populations.

Beyond the focus on transit agencies, the project team sought to identify ways that affordable housing stakeholders are considering and prioritizing transit access in their policies, projects, and programs. This report identifies a range of ways that coordination is occurring. It also identifies barriers and challenges that exist within siloed government agencies, between federal planning requirements, and across funding programs.

Existing research identifies many transportation and access challenges faced by low-income households. This research synthesis project identifies several areas where future research and analysis is needed to enable transit agencies, planners, and other decision makers to more intentionally prioritize needs of low-income riders and engage on housing issues.

A literature review was conducted between January and July 2021. Research focused primarily on published academic articles, federal reports, data tools, and guidance largely available online. In some cases, particularly related to COVID-19 impacts and the case examples, online articles are also included.

A project survey was designed in January 2021 and administered between February 1 and March 19, 2021. Appendix A provides the full set of survey questions. The survey included 50 questions, organized into the following categories:

- (A) Basic Respondent Information.
- (B) Transit Service and Fare Policy Coordination with Affordable Housing.
- (C) Planning Coordination between Transit and Housing.
- (D) Coordination of Affordable Housing with Transit-Oriented Development.
- (E) Case Examples.

The survey was sent to 75 transit agencies representing a mix of system sizes, modes, and geographies (see Appendix B for agencies targeted). The list includes the 50 largest transit providers and numerous smaller systems identified through the literature review and outreach to the American Public Transportation Association (APTA) and the Community Transportation Association of America. The survey was shared through social media and through direct correspondence with agencies. Fifty-one agencies responded, reflecting a 68% response rate. States and jurisdictions where transit agencies provided responses are shown in Figure 1 in Chapter 2.

Informed by the survey results and literature review, the study team selected five regions to develop into case examples. Selected regions and included transit systems include the following:

1. Atlanta [Metropolitan Atlanta Rapid Transit Authority (MARTA)].
2. Boise [Valley Regional Transit (VRT)].
3. Chicago [Regional Transportation Authority, Chicago Transit Authority (CTA), Metra, Pace].
4. Kansas City [Kansas City Area Transportation Authority (KCATA), RideKC].
5. San Francisco Bay Area [AC Transit, Bay Area Rapid Transit (BART), San Francisco Municipal Transportation Authority (SFMTA), Santa Clara Valley Transportation Authority (VTA)].

The case examples were developed between April and June 2021. These were informed by an analysis of transit agency survey results and relevant long-range plans and TOD policies; interviews with transit agency, local planning, or housing agency staff, and other key stakeholders; analysis of relevant national census, housing, and transit data; and a targeted literature review that includes published research, government agency websites, and recent news articles.

1.4 Glossary of Terms

Affordable fares: Transit fare policy that provides subsidies or alternative pricing to designated rider groups, such as low-income riders, seniors, people with disabilities, or youth. This may include zero- and fare-free transit.

Affordable housing: Market-rate or subsidized housing units that cost less than 30% of a low- or moderate-income household's income and provide residents with a healthy, safe, and stable place to live. For example, to a household earning \$40,000 a year, affordable housing would cost no more than \$12,000 a year (or \$1,000 a month), including rent or mortgage payments as well as utilities, insurance, and other associated costs.

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Area median income (AMI): The midpoint of a region’s income distribution.

Consolidated plan: A HUD-approved 3- to 5-year plan describing the jurisdiction’s community development priorities and multiyear goals based on an assessment of housing and community development needs, an analysis of housing and economic market conditions, and available resources.

Equitable transit-oriented development (ETOD): A TOD approach with an equity lens, development that enables all people, regardless of income, race, ethnicity, age, gender, or ability, to experience the benefits of dense, mixed-use, pedestrian-oriented development near transit hubs.

Equity: The relative fairness in the distribution of impacts (benefits and costs) across different population groups, particularly vulnerable or historically under-represented populations such as Black, Brown, Asian, Indigenous, and other people of color; those with physical or mental impairments, the elderly or youth, or marginalized genders.

Fare capping: An approach to fare policy where an individual pays the full cost per ride but can avoid additional fare charges with a single pass once they incur the equivalent cost of the appropriate multi-day pass.

First- or last-mile: The gap from the origin to public transit, often termed the first mile connection; or the gap from public transit to the final destination, often termed the last mile connection.

Fixed-service: A transportation system (e.g., buses, vans, or light rail) that operates on a pre-determined route according to a pre-determined schedule.

Gentrification: The process whereby the character of a poor urban area is changed by wealthier people moving in, improving housing, and attracting new businesses, typically displacing current inhabitants in the process.

Low- and moderate-income households: Low-income households are commonly defined as earning less than 80% of AMI as determined by HUD for each metropolitan region in the country. Moderate-income households earn between 80 and 120% of AMI.

Low-Income Housing Tax Credit (LIHTC): A federal government tool (a 15-year tax credit) used to incentivize the acquisition, construction, and rehabilitation of affordable rental housing for low- and moderate-income tenants.

Paratransit: A shared ride public service intended to serve as a “safety net” for individuals who, because of their disabilities, are unable to ride the Americans with Disabilities Act-compliant regional transit service fixed-route bus for some or all their travel. A specific diagnosis or use of mobility aid does not automatically result in paratransit eligibility.

Public transit: Local bus, rapid bus, light rail, commuter rail, paratransit, shuttles, and other forms of transportation that are available to the public.

Qualified allocation plan (QAP): A document that states, and a few local agencies, must develop in order to distribute federal LIHTCs, which can be awarded only to a building that fits the QAP’s priorities and criteria.

Stakeholder: An individual or group that has an interest in any decision or activity of an organization or cause. May also include different government agencies outside of the agency with responsibility for decision making.

Transit corridor: A generally linear area that is served by continuous transit service.

Transit-oriented development (TOD): Development within a ½ mile of fixed-transit or ¼ mile of high-frequency bus transit designed to maximize the amount of residential, business, and leisure space within walking distance of public transit service.

Transportation Improvement Program (TIP): A document, federally mandated for all metropolitan planning organizations (MPOs), that lists all transportation projects in an MPO's metropolitan planning area that seek federal transportation funding within at least a 4-year horizon.

Urban sprawl: The rapid expansion of the geographic boundaries of cities and towns, often characterized by low-density residential housing, single-use zoning, and increased reliance on the private automobiles for transportation.

Very low-income households: Households commonly defined as earning less than 30% of AMI as determined by HUD for each metropolitan region in the country. These can include working poor and seniors living on fixed incomes.

Zero fare or fare free: Public transport funded in full by means other than by collecting fares from passengers.



CHAPTER 2

Survey Findings

This survey was a helpful outline of all the things we're not doing to support affordable housing right now. While I advocate internally and externally, there are no local plans or policies that specifically call for locating affordable housing and transit together.

– Survey Respondent

2.1 Survey Respondent Characteristics

Figure 1 shows the geographic distribution of the 51 agencies that responded to the project survey. In several states and cities, more than one transit agency responded. Nine agencies responded from California, with almost every major metro area represented.

Survey responses include large agencies such as Houston Metro, Seattle's Sound Transit, and Washington Metropolitan Area Transit Authority (WMATA) as well as smaller systems operating in cities like Traverse City, Michigan; Pompano Beach, Florida; Greenville, South Carolina; and many mid-size cities like Akron, Ohio; Richmond, Virginia; and Eugene, Oregon. Northeastern systems, however, are not well reflected in survey responses.

Almost 30% of those responding were transit agencies that operate 250 to 999 peak vehicles during maximum service, reflecting the greatest representation among survey responses. Overall responses reflect an even mix between system size, as shown in Figure 2.

Bus service had the largest representation among the 51 survey responses (92%). Over 80% of those who responded also provide paratransit service, which is not surprising because services are mandatory for places that operate fixed-route service. Most smaller service transit agencies offer bus service. Twenty-six rail agencies, many also providing bus, bus rapid transit (BRT), commuter, and even ferry service, responded. Several commuter transit providers responded, including those serving suburban communities in Chicago, Orlando, South Florida, and Tampa.

2.2 Fare and Service Coordination Responses

Discounted fares are offered by 41% of reporting agencies (see Table 1), not including those that indicated temporary free fare service in response to the COVID-19 pandemic. Agencies not offering discounted fares include both large and smaller systems, though smaller systems (those with less than 100 vehicles) are more likely to not offer discounts. Responses varied across modal type.

The types of discounted fares offered include reduced fare passes, monthly discounts, and fare capping. Agencies report working with other human services to help low-income individuals access discounted fares. The most common populations to receive discounted fares are youth, individuals with disabilities, veterans, and older adults, but not necessarily low-income riders.



Figure 1. States and cities represented by transit agencies' survey responses.

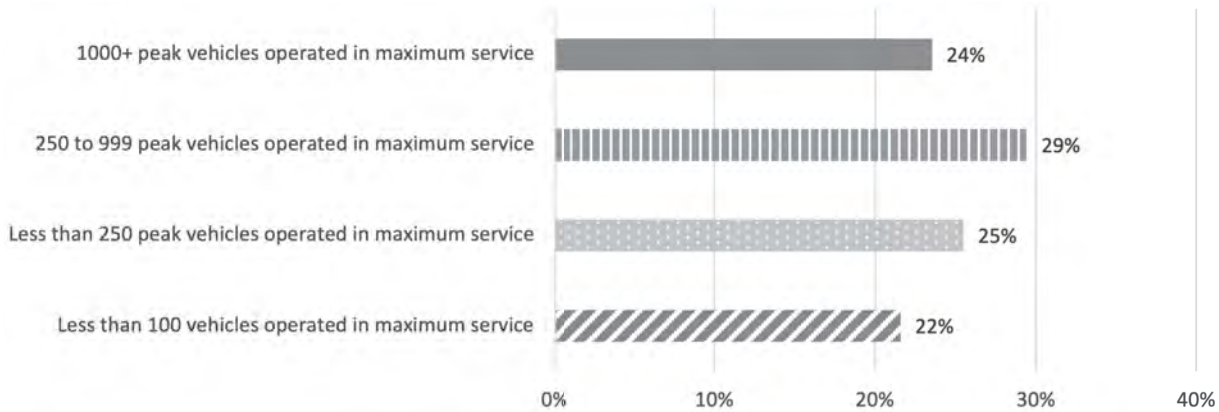


Figure 2. Relative size of transit agency systems represented by survey responses.

Table 1. Survey responses to whether agencies provide discounted fares.

Does your agency offer discounted fares for very low-income riders or those experiencing economic hardship? (N=51)	Frequency	Percent
Yes	21	41%
No	30	59%
Total	51	100%

Note: Low income is defined as:

- 80% AMI or below (this equates to about \$50,000, which at least one agency mentioned)
- 50% AMI or below (this equates to about \$35,000, which a few agencies mentioned)
- 30% AMI or below (this equates to about \$18,000)
- Federal Poverty Level (include anything that mentions poverty level, i.e., 200% of the poverty level)

Table 2. Survey responses to whether service is prioritized in low-income neighborhoods with high levels of affordable housing.

Does your agency prioritize serving neighborhoods with high levels of affordable housing when making transit service and route decisions? (N=51)	Frequency	Percent
Yes	26	51%
No	19	37%
Unknown	6	12%
Total	51	100%

In defining low income for fare and service decisions, responses included using AMI, a percent of the federal poverty level, or individuals receiving government relief. Some agencies report using partner agency definitions. The federal poverty level is the most consistent definition of affordable housing reported. For instance, reduced fare programs targeting households at or below 200% of the federal poverty income guidelines, based on household size.

When asked if neighborhoods with high levels of affordable housing are prioritized when making transit services/decisions, responses are slightly split, as reflected in Table 2. Fifty-one percent of agencies confirmed these neighborhoods are prioritized, whereas 37% reported they are not and 12% indicated this is unknown.

Figure 3 shows service frequency for neighborhoods with high levels of affordable housing. About a third of survey respondents indicate that most affordable housing neighborhoods are currently served by transit with 30-minute headways or less. Hourly transit service to affordable housing neighborhoods is the second most popular answer at 22%. Only one agency (AC Transit in Oakland, California) reports that all affordable housing neighborhoods are served with transit service that has 30-minute headways or less.

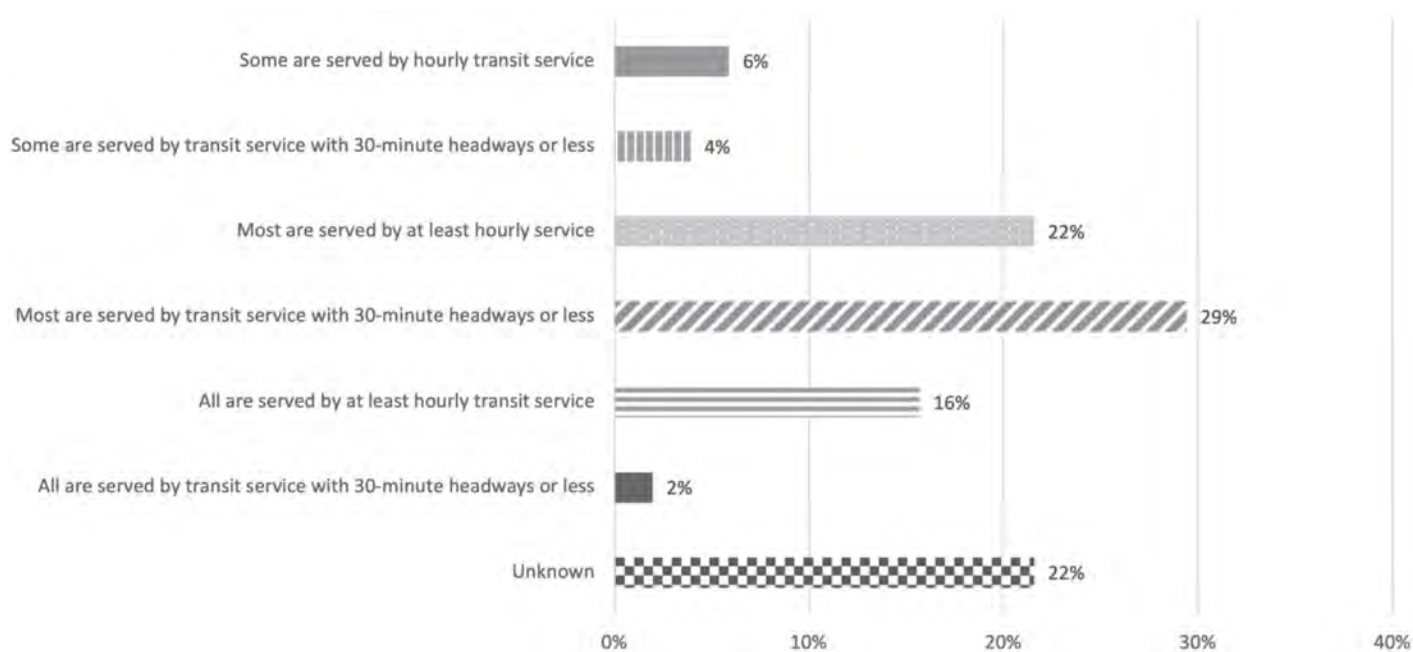


Figure 3. Survey responses to frequency of service to low-income neighborhoods with high levels of affordable housing.

2.3 Engagement with Affordable Housing Residents

Connecting with those living in affordable housing to engage them on transportation issues can be important to ensure that disadvantaged job seekers and lower-income workers have their needs considered in transit planning, service, and fare policy. Transportation barriers create challenges for these workers in urban, suburban, and rural neighborhoods who may not have access to an automobile to reach job opportunities or other essential destinations.

Half of agency responses reported that they inform and engage residents of affordable housing and public housing transit riders when fare policy or service changes are being considered (see Figure 4). Notable targeted outreach strategies included one agency who assembles a group of engaged residents called the “Equity Cabinet” to help shape a framework to update policies to be equity-centric. The group, while not specific to public housing, includes residents, providers and policymakers who advocate for low-income people and those in public housing. Another agency developed an ambitious communications strategy that includes targeted efforts to keep low-income residents informed as well as residents who are non-English speakers. Strategies shared in the survey among respondents include using multiple media, posting signs in the neighborhood, posting signs on buses, conducting radio interviews, and advertising on social media.

Five agencies CTA, AC Transit, BART, Birmingham Jefferson County Transit Authority, and TARC report using targeted hiring or recruitment of residents in public or affordable housing for employment opportunities. A notable example is CTA’s external workforce training and outreach programs. CTA has engaged community members in discussions on workforce development related to transit investment projects, most recently for the Red Line Extension Project. CTA also administers a Second Chance Program to hire people returning from the justice system. Other respondents, such as BART and TARC, are working with community-based organizations to create job training opportunities within their agencies for low-income residents to gain skills and employment.

The survey also asked about the range of ways that agencies may be engaging low-income riders in decision making that impacts planning, service, or fares. Forty-one percent report not intentionally engaging low-income riders in advisory roles. Survey responses reveal that of the agencies who prioritize low-income riders in advisory roles, they are represented through agency equity committees, specific positions on advisory or rider committees, or transit boards for low-income riders, or through other ways such as input via surveys, community meetings, or general outreach.

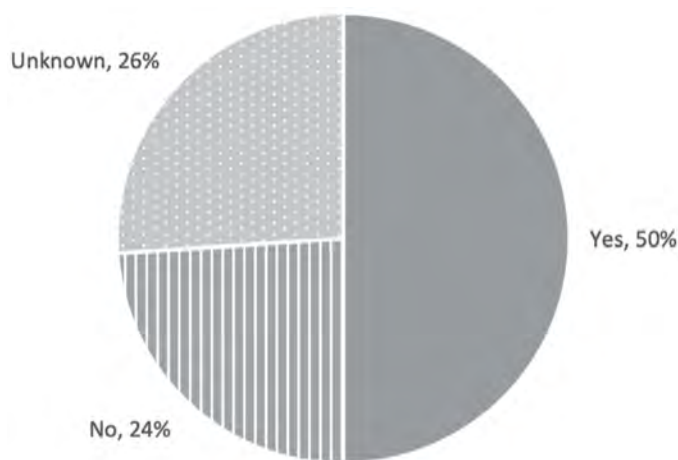


Figure 4. Transit agency engagement and outreach to residents of affordable housing.

2.4 Engagement and Coordination with Housing Stakeholders

Coordination with public housing authorities (PHAs) and other affordable housing organizations was reported by 80% of agencies, using a large distribution of strategies, as shown in Table 3. The reasons cited by transit agencies for coordinating with affordable housing advocates include

- To address other issues of transportation coordination or concern,
- To ensure transit access when making decisions about where to locate affordable housing projects,
- To help consider and plan for increased service or mobility improvement discussions,
- To provide transit passes to residents of affordable housing, and
- To provide route and service information to residents of affordable housing.

A majority of transit agencies (36) report partnering with affordable housing agencies and advocates. Many engage with local and regional agencies and non-profits that are active in conversations on affordable housing and transit projects. For example, transit agency staff sit on committees and have regular coordination meetings with housing policy staff, local affordable housing funders, regional affordable housing advocates, and other transit agencies to align

Table 3. Levels of coordination with housing stakeholders and other governmental partners.

Types of Coordination		
Have or do public housing authorities or other affordable housing organizations coordinate(d) with your agency on the following? (Check all that apply) (N=51)	Frequency	Percent
Public housing agencies do not coordinate with my agency	10	20%
To address other issues of transportation coordination or concern	23	45%
To ensure transit access when making decisions about where to locate affordable housing projects	21	41%
To help consider and plan for increased service or mobility improvement discussions	28	55%
To provide route and service information to residents of affordable housing	26	51%
To provide transit passes to residents of affordable housing	22	43%
Unknown	5	10%
Have or do regional or city governments coordinate(d) with your agency to address transit needs for affordable housing residents? (Check all that apply) (N=51)	Frequency	Percent
To ensure transit access when making decisions about where to locate affordable housing projects	28	55%
To inform local and regional transportation plans and transit investments	38	75%
To provide transit passes, or route and service information to residents of affordable housing	16	31%
Unknown	7	14%
Beyond fare or service policies, has your agency partnered or built a relationship with affordable housing agencies or advocates around transit? (N=51)	Frequency	Percent
Yes	38	75%
No	10	20%
Unknown	3	6%
Total	51	100%

funding with affordable housing opportunities in TOD projects and to work toward a strategic approach to aligning transit and affordable housing investments. Partnerships are also used in land use planning efforts and grant funding applications that support TOD.

Thirty-eight agencies report coordination with regional or city governments to inform local and regional transportation plans and transit investments. A range of ways this coordination is happening is shown in Figure 5. The survey also asked if local or regional planners report or track metrics on the combined costs of transportation and housing. Twenty-three respondents answered affirmatively. However, only 13 of those agencies confirm disaggregating data to report and track the cost burden specifically for low-income residents.

A majority report that regional housing or growth plans call out the need to increase affordable housing. Within these plans, respondents indicated that half include prioritizing affordable housing near transit. However, transit agencies are split in their responses as to whether transportation planners are prioritizing service to areas with higher levels of affordable housing in regional long-range transportation plans (LRTPs) (see Table 4). This split reflects a dichotomy in terms of how transportation and housing planners or providers understand the needs of their respective systems, and, most importantly, the needs of residents and workers who may rely on both affordable housing and more affordable transportation options, such as transit.

Transit agencies report that most PHAs, local governments, and affordable housing developers somewhat consider transit in making decisions about affordable housing. Whereas affordable housing non-profits and community development organizations consider transit in making decisions about affordable housing most of the time. Figure 5 shows results of the survey questions seeking to identify how well affordable housing stakeholders consider transit in their decision making. Overall, most do not feel these other players usually consider transit.

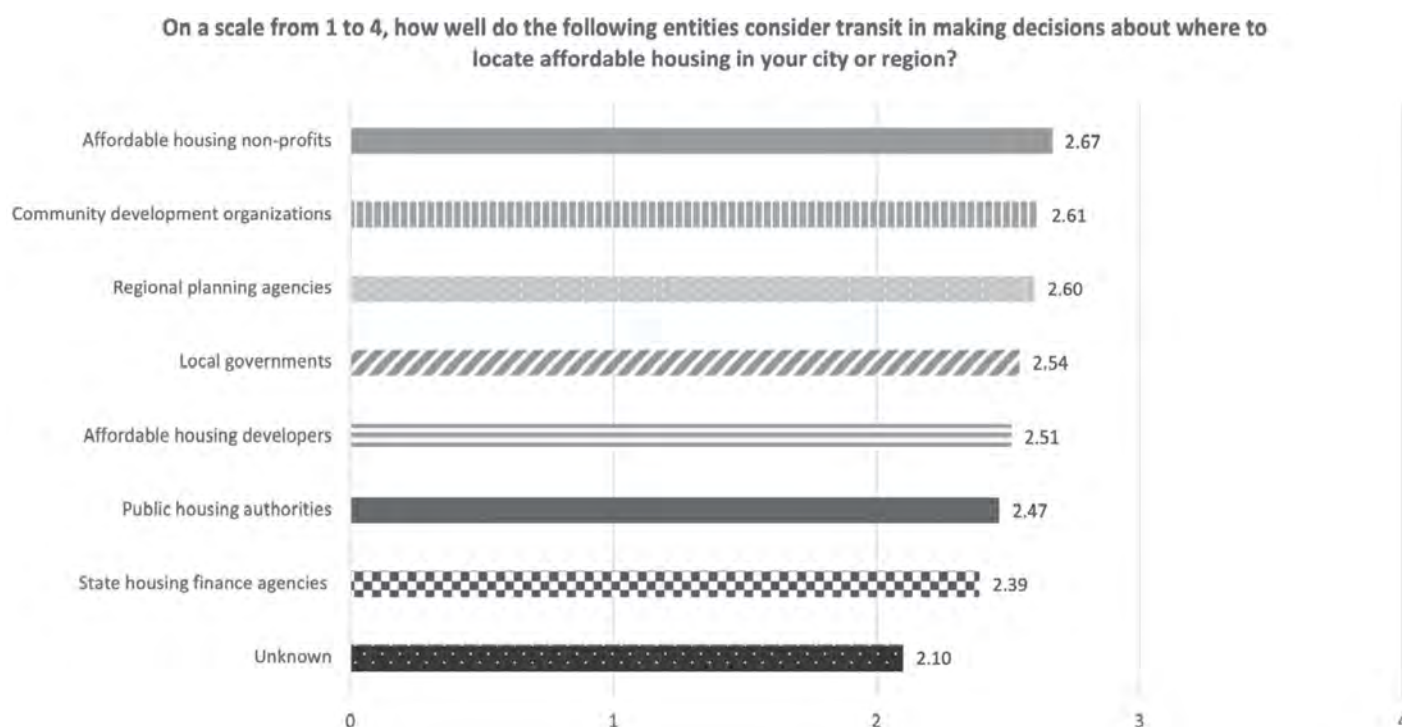


Figure 5. Survey responses show a range of limited transit consideration by affordable housing stakeholders, where 4 = always, 3 = most of the time, 2 = somewhat, and 1 = not at all.

Table 4. Survey responses indicating degree of prioritization for transit and affordable housing in regional plans.

Do regional housing or growth plans for your community or metropolitan area include specific targets for increasing affordable housing? (N=50)	Frequency	Percent
Yes	27	54%
No	9	18%
Unknown	14	28%
Total	50	100%
If yes, do these plans prioritize or call out affordable housing near transit as a policy priority? (N=44)	Frequency	Percent
Yes	22	50%
No	9	20%
Unknown	13	30%
Total	44	100%
Do your regional long-range transportation plan(s) include a prioritization for transit investments or service expansion to specifically serve areas with higher concentrations of affordable housing? (N=50)	Frequency	Percent
Yes	17	34%
No	18	36%
Unknown	15	30%
Total	50	100%

Several different examples from among the responses on how transit agencies are partnering with affordable housing advocates are provided and summarized in Appendix C. These include the following:

- Engagement as part of transit system redesign efforts to improve the network, including access to those neighborhoods and opportunities.
- Communication and coordination with family resource centers as part of the outreach network to address issues for low income and at-risk communities, including new immigrants, refugees, and ethnic group communities.
- Funding partnerships and opportunities to increase affordable and sustainable housing opportunities for individuals and families.

2.5 Addressing Homelessness

Twenty-eight transit agencies report that they are trying to address homelessness issues affecting their systems. The impacts of homelessness on transit systems shared in the survey responses include customers’ perceptions of safety, which can influence ridership; crime or targeting by the houseless population; increase in non-destination ridership; increase in operator assaults; increase in infrastructure damage; and increased rider complaints and security complaints.

Many respondents do not have specific programs in place to address riders who are homeless. Sixteen agencies report taking action to combat this issue. For instance, Los Angeles County Metropolitan Transportation Authority (LA Metro) is working to develop on-board and stop-specific communication tools to provide information to riders on homeless issues and offer resources to support homeless riders, including maps to shelter, food, and medical resources. They hope to partner with the local city to develop a program for the identification of chronically homeless on the system and connect them to volunteers or social workers who can provide support. Community advocates are encouraging the transit agency to deploy non-policing methods when intervening with homeless riders.

Similarly, Denver’s RTD and Sacramento Regional Transit are among agencies working to place social service agency staff on transit vehicles and stations to connect those experiencing housing instability with services. BART is piloting a fully subsidized fare pass program for people with extremely low or zero incomes. TARC created a “White Flag” program to transport homeless populations to area shelters during extreme weather conditions. CTA has a joint program with Chicago’s Department of Human Services and Police Department to assist homeless persons who have been using trains and stations for shelter. Under the program, a response team of social service workers during late-night hours are available to provide immediate supportive services to homeless persons.

2.6 Equitable Transit-Oriented Development

Of the transit agencies surveyed, 73% confirm engaging in TOD. Fourteen agencies have a TOD and/or joint development policy that specifically prioritizes affordable housing. Eleven additional agencies do not have a formal TOD policy but do encourage greater density, multi-family housing, and more compact residential housing development near transit. A focus on affordable housing and other equity issues within TOD is referred to in this research synthesis as ETOD. Table 5 provides a summary of survey results related to the ETOD questions asked.

Table 5. Survey responses to ETOD questions on affordable housing engagement.

Does your agency engage in transit-oriented development? (N=51)	Frequency	Percent
Yes	37	73%
No	14	27%
Unknown	0	0%
Total	51	100%
Does your agency have a TOD or joint development policy that addresses affordable housing? (N=37)	Frequency	Percent
Yes, our agency TOD and/or joint development policy specifically prioritizes affordable housing	14	38%
No, our agency TOD and/or joint development policy does not include specific prioritization for affordable housing but does encourage greater density, multi-family housing, and more compact residential housing development	11	30%
Our agency does not have a TOD or joint development policy	10	27%
Unknown	2	5%
Total	37	100%

(continued on next page)

Table 5. (Continued).

Does your agency give any prioritization for affordable housing in its process to dispose of surplus properties for redevelopment? (N=35)	Frequency	Percent
Yes	16	46%
No	15	43%
Unknown	4	11%
Total	35	100%
Has your agency participated in joint development projects that included affordable housing? (N=36)	Frequency	Percent
Yes	23	64%
No	10	28%
Unknown	3	8%
Total	36	100%
Do station area plans or TOD plans developed by your agency or other local jurisdictions include specific goals or regulatory measures to support or allow for affordable housing near transit? (N=35)	Frequency	Percent
Yes	18	51%
No	12	34%
Unknown	5	14%
Total	35	100%
Does your agency have specific production or preservation targets or goals for affordable housing (e.g. to create an additional 1,000 units of affordable housing on transit-adjacent properties over the next 10 years, or to preserve at least 50% of currently affordable housing units within a quarter-mile of light rail stations)? (N=36)	Frequency	Percent
Yes	10	28%
No	24	67%
Unknown	2	6%
Total	36	100%
Does your agency consider impacts of gentrification or displacement of low-income, affordable housing residents as part of its TOD and/or joint development policy? (N=36)	Frequency	Percent
Yes, we have specific policies or resolutions to address	4	11%
Yes, but nothing is formally adopted	19	53%
No, we do not	10	28%
Unknown	3	8%
Total	36	100%

Transit agencies are split on prioritizing affordable housing in their processes to dispose of surplus properties for redevelopment. Only 10 transit agencies report specific affordable housing targets, which can be either a portfolio percentage or a hard number of units to build over a specified period. For example, “at least 35% of units being affordable for households earning at or below 60% of AMI,” or “1,400 units over the next 10 years.” These examples are discussed in further detail in the ETOD literature review.

Twenty-three transit agencies report considering the impacts of gentrification or displacement of low-income residents as part of their TOD and/or joint development policy. However, 83% of those agencies do not have anything that is formally adopted. Only four survey respondents have specific policies or resolutions in place to address displacement.

LA Metro’s Equitable Transit Oriented Communities Policy directs the agency to evaluate the regulatory environment when planning high-frequency service and prioritizes service investments in areas that have inclusionary policies or anti-displacement measures in place. The Maryland Transit Administration works with the Purple Line Corridor Coalition to address preservation of affordable housing and small business retention along the new light rail corridor connecting several Maryland suburban communities outside of Washington, D.C. The Tri-County Metropolitan Transportation District of Oregon (TriMet) is pledging to deliver hundreds of affordable housing units to offset the gentrification effects of a proposed new light rail alignment.

Others are working to create these types of policies. For instance, Sound Transit incorporates TOD criteria as a decision-making factor during alternatives development, alternatives selection, design, and transit project delivery, including to “identify and pursue strategies that minimize displacement of existing businesses and individuals from properties impacted by Sound Transit.” BART is currently developing an anti-displacement strategy as part of implementing state legislative requirements.

Overall, survey responses to the 50 questions show a wide spectrum of types and levels of coordination that are occurring. Several respondents note that they are in the early stages of coordination, and that these are complex issues that their agencies are trying to navigate. To quote one respondent, “Part of the difficulty in answering some of these questions is that we’re moving in this direction, but still in the research and idea/plan generation stages. We’re exploring low-income fare products, building more consistent and effective relationships with affordable housing organizations and other community-based organizations, and [deciding] whether to include affordable housing targets or other strategies in our Joint Development Policy.”



CHAPTER 3

Literature Review

We weave ourselves into the fabric of the community. If you go with our pillars of public transit, if you understand that this is about people, about making a difference in people's lives, that's what we are here to do.

– Robbie Makinen, CEO of RideKC Transit (Holwick 2021)

3.1 Federal Coordination Context

The genesis for considering the connection between transit and affordable housing stems from the long history of public transit serving many societal objectives, including to provide mobility options to disadvantaged populations. Indeed, the creation of a federal transit program in the 1960s stemmed from this nexus. As originally authorized through the Urban Mass Transportation Act of 1964 and further amended in 1966, the Urban Mass Transit Administration (UMTA) moved from being a demonstration project to a formalized division of the newly created U.S. Department of Housing and Urban Development (HUD) with federal requirements for the coordination of planning between transit and housing (Smerk 1991; Cudahy 1995). In moving UMTA to the newly created U.S. Department of Transportation (U.S. DOT) in 1968, changing its name to the Federal Transit Administration (FTA), and with the rescission of joint planning requirements in the 1980s, formal coordination between housing and transit at the federal level declined. Yet the societal value of transit in providing mobility to vulnerable individuals remains.

The rise of the environmental justice (EJ) movement in the 1990s engendered greater focus on the equity implications of transit services and investments (Bullard and Johnson 1997). This includes increased focus on Title VI of the Civil Rights Act of 1964 that protects people from discrimination in programs and activities receiving federal financial assistance. In 1994, President Clinton issued Executive Order 12898, “Federal Actions to Address Environmental Justice (EJ) in Minority and Low-Income Populations,” with subsequent administrations building upon these EJ and Title VI foundations to push for greater racial and social equity in transportation policies and investments. Racial and socio-economic equity issues play out when transit agencies enact service changes that negatively impact low-income riders, people with disabilities, and communities of color.

Transportation costs are high for many American households, but for low-income households they often create a disproportionate burden. American families spend, on average, 17.8% of their annual income on transportation costs, second only to housing costs. However, for extremely low-income households the percentage spent on transportation can be as high as 50% of their annual income. For those living in transit-rich locations, however, these costs can be as low as 9% (U.S. DOT 2018).

Transit agencies and planners struggle to address the two often competing goals of providing service to attract new discretionary riders while striving to serve current users better (Walker 2012; Manaugh and El-Geneidy 2013). Over the past decade, a growing number of transit agencies have undertaken network redesigns to better balance these competing goals and to clarify goals for frequency of service versus network coverage. These dynamics are even more important as transit agencies work to recover ridership lost during the COVID-19 pandemic. Across most systems, low-income and essential workers have been key riders, and generally rely more heavily on bus service. One analysis estimated that COVID-19 “essential workers” accounted for 36% of total U.S. transit commuters (Transit Center 2020). Many professional jobs have enabled teleworking, resulting in loss of ridership, particularly on rail and other corridors primarily serving wealthier, rush-hour commuters (Puentes 2020).

In undertaking this work, transit agencies must consider important civil rights and equity considerations with trade-offs continually weighed between efficiency and equity, and between who benefits and who is burdened (Karner et al. 2016; Higashide 2019; Litman 2021). Explicit recognition of the impacts to low-income riders and areas with concentrated affordable housing from transit service decisions and fare policies are not adequately called out in the existing literature. Guidance is lacking on ways to improve these linkages and the benefits to ridership from prioritizing high-quality transit service in low-income neighborhoods (Zhao and Gustafson 2020). Low-income workers face financial and temporal impacts from traveling long distances or dealing with multiple transit transfers to reach suburban jobs, many of which are simply inaccessible by transit. Employers often fail to consider these impacts in their hiring practices, or penalize workers who face transit reliability issues (Coren and Lowe 2020).

3.2 Aligning Affordable Housing and Transit

The consolidated planning process, required by HUD for communities that receive HUD funding, creates a potential framework for aligning affordable housing and transit (HUD n.d.b; Dawkins et al. 2010). Starting in the early 2000s, federal attention on the need to improve coordination of housing and transportation planning and programs emerged.

Between 2005 and 2008, HUD and FTA entered into an interagency agreement to undertake joint research, followed by a published FTA-HUD action plan (GAO 2009). In 2009, Congressional appropriations for a federal Sustainable Communities grant program at HUD enabled transit agencies, local governments, metropolitan planning organizations, and local housing partners to address the interplay between transportation and housing costs, location, and access. At the same time, U.S. DOT was funded to provide Transportation Investment Generating Economic Recovery (TIGER II) grants, including a set of planning grants in fiscal year 2010 to be coordinated with HUD’s Challenge Grant program (EPA et al. 2010; HUD 2010). Many of these grants directly supported local planning efforts focused on coordinating affordable housing and transit.

TOD also gained increased attention by cities and transit agencies as a strategy to build more housing near transit and as a potential value capture tool to help fund new transit or affordable housing. In 2004, *TCRP Report 102: Transit Oriented Development in the United States* was published (Cervero et al. 2004). The following year, congressional language included in the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) 2005 authorization bill directed the FTA to fund the Center for Transit Oriented Development to specifically undertake TOD research. An FTA pilot program for TOD planning was included in Section 20005(b) of the Fixing America’s Surface Transportation Act in 2015, funding dozens of grants over the past 5 years in cities across the country, many with a focus on affordable housing.

More recently, FTA has provided new funding opportunities through the 2021 Areas of Persistent Poverty program and the 2020 Helping Obtain Prosperity for Everyone program to specifically improve transit planning, public engagement, and service for those living in very low-income census tracts.

A growing number of transit agencies have adopted TOD policies, with many including specific commitments to affordable housing (Reed 2019). For instance, in 2020, BART revised its TOD policy to allow for a higher property discount rate from fair market value for projects that include affordable housing (BART 2020). LA Metro refers to its TOD program as Transit-Oriented Communities (TOCs) with a specific emphasis on affordable housing. Since 2016 the agency has distributed \$9 million in low-interest rate loans for affordable housing on land adjacent to Metro stations (Reed 2019).

Through Title VI, environmental justice actions, fare policy and transit service decisions, and utilization of TOD approaches, transit agencies are finding a variety of tools that can advance equity goals. This can include greater coordination of the location of affordable housing with transit service in long-range planning and performance metrics, including the combined housing and transportation cost burdens.

Recently, the COVID-19 pandemic elevated the critical linkages that public transit provides to ensuring low-income households have access to jobs and other key destinations (Mader 2021a, Transit Center 2021). The pandemic illustrated the importance of transit to enable essential workers to reach jobs, and for those without other mobility options to reach health clinics and hospitals, re-established the importance of transit. Over 450 transit agencies in cities and rural communities across the country partnered with public health partners in 2021 to provide free rides to vaccination sites in their communities (Mader 2021b). As transit agencies and cities recover from the pandemic, recentering concepts and approaches to transit equity are already emerging but more attention is needed.

3.3 Fare Policy and Service Planning

Transit is a chance to operationalize equity.

– Phil Washington, Former CEO of Los Angeles Metro,
speaking at the Pritzker Forum on Global Cities (March 18, 2021)

Public transportation plays an essential role in today's economy. Accessible public transit is a significant asset in business recruitment, and enables all job seekers, regardless of mobility status, to seek regional job opportunities (Rosepace 2018). This is especially true for economically disadvantaged residents who are more likely to rely on public transit (Adhikari et al. 2018). Fare assistance schemes and transit optimization networks can benefit low-income riders and employers. Examples of public transit program improvements for underserved communities include

- Increased hours of service,
- Increased transit service frequencies in neighborhoods with higher concentrations of low-income populations,
- Flat fee or discounted fares aligned with ability to pay or providing fare-free transit,
- Improved bicycle and pedestrian access to transit, and
- Ride-hailing services to fill gaps and improve access to transit services.

3.3.a Affordable Fares

Transit agencies may offer affordable fares to riders, but low-income riders may not always be able to take advantage of these. For instance, monthly transit passes offer a discounted fare

but require an upfront purchase price that may be financially out of reach for some, particularly if payment is due at the same time as rent (Harmony 2018; Lotshaw and Hovenkotter 2019). Low-wage workers are less likely to benefit from transit passes provided through employer transportation demand management programs, which tend to benefit higher-wage workers (Higashide 2019).

Access to affordable transportation for low-income workers, older residents, and persons with disabilities promotes self-sustainability and allows spending on other household essentials that improve the quality of life (Criden 2008). Differing fare policies can make the transit system seem disorganized or confusing to navigate for riders and costly to administer for transit agencies. In response, some agencies are actively working to create fare programs that are simple and uniform (Fleisher 2017). In 2017, Sonoma County Transit, Santa Rosa City Bus, and Petaluma Transit, for example, coordinated a single trip fare during their fare box update (Metropolitan Transportation Commission 2020).

Several transit agencies are using flat rate fares, regardless of distance or time of day, to address both issues and reduce barriers to riding transit (Lotshaw and Hovenkotter 2019). TriMet is one of the few transit agencies in America to introduce fare capping (Derby 2019; Selinger et al. 2019). This concept ensures riders can avoid additional fares with a single pass once they incur the equivalent cost of an unlimited transit pass (Lotshaw and Hovenkotter 2019).

A past challenge faced in creating discounted fare programs was in designating target populations (Mehndiratta et al. 2014). However, many cities and transit agencies have developed socio-economic indicators, such as household demographics and income to help define and identify low-income populations (Harmony 2018). Electronic fare systems, mainly the use of smart cards, make identifying targeted populations for specific policies easier (Mehndiratta et al. 2014).

Over 50 agencies, including King County Metro, New York Metro, TriMet, Heritage Community Transportation, and Massachusetts Bay Transportation Authority, have designed affordable fare programs that discount the price of transit to allow individuals the freedom to travel without fare obstacles (Newmark 2014; Saphores et al. 2020; Darling et al. 2021). King County Metro has created a Low-Income Fare Options Advisory Committee to ensure low-income populations are targeted (King County Metro 2017). Kansas City's "Zero Fare Transit" program is described in the case example and is funded by a combination of public and private funds (Casale and Sanderson 2020).

Partnerships can increase usage of reduced fare programs, and enable the pooling of resources between transit agencies or help reduce the administrative impacts of implementing a targeted low-income fare strategy (Harmony 2018; Patskanick and D'Ambrosia 2019). For example, a smart card could be designed to function across multiple service areas, as is being piloted in the San Francisco Bay Area. Transit agencies can also collaborate with social service and affordable housing organizations that may provide financial or administrative assistance. TriMet works directly with non-profit organizations to provide their Fare Assistance program, reducing the administration load for the agency (Harmony 2018).

State funding can also be tapped to enable reduced fare programs. In Virginia, state lawmakers included funding for a Transit Incentive Ridership Program to provide zero fare pilots in a number of cities across the Commonwealth (Virginia DRPT 2021).

During the COVID-19 pandemic, many transit agencies nationwide provided zero fare transit service funded through limited federal emergency operating assistance (FTA 2021). Historically, federal transit funds cannot be used for operating assistance, creating a strong impetus for local agencies to generate revenues through transit fares. This federal policy can exacerbate inequities in transit service and fare policy.

3.3.b Transit Network Design

Transit network design plays a critical role in the livelihoods of low-income individuals. Substandard access to employment is a large burden for low-income travelers. Recent decades have seen growth in low-wage employment opportunities locating in areas that lack transit service. At the same time, poverty rates are increasing in suburban communities (Kneebone 2017). Both create significant obstacles for low-income residents to use public transit to access employment opportunities and essential services distributed throughout the region. Given how essential transit service is for low-income households, it is notable that only half of the survey respondents indicated that their agency “prioritizes serving neighborhoods with high levels of affordable housing when making transit service and route decisions.”

Survey respondents noted that there are different metrics that may be used to meet similar goals. For instance, one respondent noted, “The presence of affordable housing units is not a planning requirement, but WMATA’s service guidelines do require that the combined transit network provide some level of service to 95% of the region’s Equity Emphasis Areas, as defined by the MPO. Service types and levels are also developed based on population and employment density tiers.” A growing number of transit agencies are undergoing transit network redesigns in hopes of finding greater system efficiencies that balance needs of increased access and improved system performance (Byala et al. 2021).

Transit network redesign focuses on key trade-offs, like ridership versus coverage and the right balance between peak service and all-day service (Walker 2012; Byala et al. 2019). Sometimes it can simply be a matter of reallocating existing resources to optimize transit service. In Houston, transit expansion was achieved as a result of removing overlapping routes, deviations, and duplication, and in some cases removing transit that serves a small number of people (Walker 2014). New mobility options, like micro mobility, mobility hubs, and shared mobility, are emerging as critical elements to also consider and include in defining and designing transit networks and broader mobility service.

It is important to consider equity impacts when conducting public engagement as part of transit system network redesign efforts, and in evaluating the trade-offs (Higashide 2019). Transit is a public good. Some routes may need to be maintained if they provide critical mobility to low-income communities where a high percentage of residents lack other mobility options (Lownes et al. 2019).

The recently redesigned Greater Richmond Transit Company (GRTC) transit network provides a cautionary tale. The agency updated its transit network design in 2017 and chose a route model prioritizing higher frequency rather than higher coverage (Adhikari et al. 2018). This trade-off showed network-wide accessibility improvements, as well as an increased connection to major job centers. Yet an analysis of the redesign by VCU’s Center for Urban and Regional Analysis found that it led to a 22% decrease in the absolute number of residential dwelling units served within ¼ mile of transit stops, and a 3% decrease for dwelling units located within ½ mile (Adhikari et al. 2018). Approximately 10,000 households were required to walk longer distances or use other means of travel to access bus stops. In relation to transit stop connectivity, low-income neighborhoods were typically not served by high-connectivity nodes (Adhikari et al. 2018). Yet overall, GRTC continues to see transit ridership grow across the system and ridership impacts during COVID-19 were less severe than for many other transit systems.

3.3.c Future Research Needs

There are numerous opportunities to improve coordination between transit agencies and other organizations in the provision of low-income fare programs and network design or service

decisions. Additional research can answer key questions and provide best practices. For example, what barriers exist that prevent some transit agencies from offering reduced-fare programs to low-income riders, and what strategies exist that can improve the administrative costs or other challenges to administering these programs? How effective are these programs at improving low-income residents' access to jobs? What types of partnerships with non-transit stakeholders such as affordable housing developers, social service or public health agencies, or community non-profit organizations are most effective for engaging low-income households and public housing residents in service design decisions and in accessing discounted fare programs? How can these organizations be funded with federal transportation dollars? Further explaining the relationship between accessibility, travel behavior, and affordability will provide cities additional tools to address affordable housing needs in their communities.

3.4 Planning for Coordination

We have partnered with many local agencies and governments to provide supportive housing and additional units targeted to 60% of AMI and below. The mechanisms are complex and require lots of additional work to develop the complex funding stacks and maintenance, operations and service agreements. Stable service funding remains a challenge.

– Survey Respondent

3.4.a How Transportation Planners Are Coordinating on Affordable Housing

Transit planners and researchers have long recognized the importance of coordinating transportation, transit, and land use planning (Pushkarev and Zupan 1977; Weiner 1987). This typically involves trying to increase densities and encouraging mixed land uses near higher-capacity transit services to help build ridership, reduce congestion, and influence community development. The incorporation of equity concerns, of which affordable housing is included, dates back at least to the Civil Rights Act of 1964 (Bullard and Johnson 1997; Sanchez et al. 2007). Federal requirements (Section 5310) for state departments of transportation (DOTs), MPOs, and transit agencies to coordinate public transit and human service transportation plans took effect in the 1990s with SAFETEA-LU. Coordinated Service Plans can be used to align affordable housing and transit service and regional transportation planning as they identify gaps, recognize ways to serve unmet needs, and prioritize transportation funding for vulnerable populations.

Few regional planning agencies have explicit housing authorities. There are exceptions. As an example, the Metropolitan Council in Minnesota is enabled to develop a Housing Policy Plan for the region to provide guidance on regional housing issues. It also allocates a set of federal and state housing resources to localities. Similarly, MPOs in California oversee local compliance with state regional housing needs allocations (RHNA) and are required by state law to develop long-range plans that align transportation and housing goals. These are more exceptions than rules.

Federal transportation planning requirements administered and overseen by the Federal Highway Administration and the FTA require DOTs and MPOs to each develop LRTPs and short-term investment plans referred to as State Transportation Improvement Plans (STIPs) and metropolitan TIPS. Long-range plans cover a 20-year time horizon. The STIP and TIP focus on a 4-year time frame and must be consistent with the LRTP. Both must be fiscally constrained with funding sources identified and be aligned with coordinated transit and human service plans (Dawkins et al. 2010).

Neither housing nor equity is a federal requirement for consideration in developing these plans. However, the 10 federal planning factors do not preclude consideration of affordable housing location or the needs of low-income riders. Transportation planners have the latitude to incorporate specific equity considerations into planning, which can facilitate better coordination with state and local housing plans.

Federal Transportation Planning Factors

1. Support the economic vitality . . . especially by enabling global competitiveness, productivity, and efficiency;
2. Increase the safety of the transportation system for motorized and non-motorized users;
3. Increase the security of the transportation system for motorized and non-motorized users;
4. Increase the accessibility and mobility of people and for freight;
5. Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns;
6. Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
7. Promote efficient system management and operation;
8. Emphasize the preservation of the existing transportation system;
9. Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation; and
10. Enhance travel and tourism.

Source: 23 U.S. Code § 134.

As more metropolitan regions experience escalating housing costs and increased congestion, many MPOs are explicitly including housing issues in their LRTPs. A requirement of the 2010 HUD Sustainable Communities Regional Planning grants was conducting a regional fair housing and equity assessment (FHEA). The FHEA served as a trial run for the HUD Affirmatively Furthering Fair Housing (AFFH) rule issued in 2016 by the Obama Administration (Mattiuzzi 2017). This requirement catalyzed many MPOs to examine these issues. Case example interviews noted the role these grants played in elevating affordable housing and other equity concerns in their LRTPs and other regional plans.

Additionally, several MPOs identify regional priority areas, sometimes called priority development areas or priority growth areas, in their LRTPs where future transportation investments and growth are targeted (Transportation for America 2014). Research is lacking on the prevalence of this practice, and on how it impacts growth and the coordination of housing and transportation planning.

Research on equity considerations in the transportation planning process is limited (Frick et al. 2015; Marcantonio et al. 2017; Karner et al. 2020). One recent report examining the inclusion of equity criteria by MPOs in short-term planning processes found that among the 40 largest agencies, just over half deployed at least one equity criterion for allocating transportation funds through their TIP process (Krapp et al. 2021). Transportation proximity to communities of concern, typically defined as areas of concentrated poverty, is the most common equity metric used. Overall, definitions and weighting of equity criteria need more emphasis and clarity (Krapp et al. 2021).

The concept of “regional equity” focuses on understanding unequal access to opportunity within regions, and housing is a specific policy element affecting equitable outcomes (Karner and Niemeier 2013; Marcantonio et al. 2017). Research by academics such as Sanchez (2008) and Karner (2014) identify important equity implications in thinking about the role of public

transportation policies and planning in overcoming or reinforcing economic challenges for low-income individuals. A growing body of research is emerging on equity and accessibility measures (Marcantonio and Karner 2016; Twaddell and Zgoda 2020; Cantilina et al. 2021), and on the equity implications of federal and regional transit decisions and investments (Lowe 2014; Lowe and Hall 2018).

Transit service and coverage are typically better in central city neighborhoods than in suburban neighborhoods or rural communities. The exodus of jobs to the suburbs creates significant barriers especially for those living in subsidized housing, which is historically located in the urban core. Housing locations and transportation modes combine to make it more difficult for underserved households at a variety of income levels to reach broader job opportunities (Blumenberg and Ong 2001; Pendall et al. 2014; Coren and Lowe 2020; Smart and Klein 2020).

In one study of Canadian cities, researchers found nearly 1 million low-income individuals living in urban areas with low transit accessibility (Allen and Farber 2019). In the United States, a 2011 analysis by the Brookings Institution found that only 30% of jobs are reachable within typical metropolitan areas by transit via a 90-minute commute. Further, job access differs considerably based on land use and transit service (Tomer et al. 2011). The lack of job access is especially pronounced for low-income households without good access to transit (Blumenberg and Pierce 2017). In its study of transit and affordable housing in the Houston Metro area, researchers found that only one out of three rental dwellings affordable to moderate income households is near high-quality, affordable transportation options such as sidewalks, bikeways, and frequent public transit (LINK Houston and Kinder Institute 2020).

Several survey respondents noted the challenges of this dynamic and the ways agencies are attempting to respond. For instance, the Maryland Transit Administration reported “we work closely with large employers in our region whose workforces rely on transit service and adjust schedules to match shift times and increase service when possible. We also report on transit access and frequent transit access for low-income and minority communities.”

Outside of the research community, governmental agencies are creating equity tools to better understand impacts of transportation policies and investments. Several of these include a specific focus on aligning transportation and affordable housing. For example, the Location Affordability Index was developed by HUD and U.S. DOT in 2015 to increase public access to data about transportation, housing, and land use (HUD n.d.b). It helps buyers or renters make informed choices about where to live by factoring transportation costs into these decisions. Similarly, the U.S. Environmental Protection Agency developed a Smart Location Database that includes more than 90 attributes summarizing characteristics such as housing density, diversity of land use, neighborhood design, destination accessibility, transit service, employment, and demographics (EPA 2021). Research is lacking, however, on the utilization and effectiveness of these types of tools to influence investment decisions, service, and the coordination of housing and transit.

Transportation and equity advocates are partnering with academics and data entrepreneurs to also provide new tools. For instance, LINK Houston and Rice University’s Kinder Institute for Urban Research created the Quality Affordable Transportation Index to better coordinate transit service, future mobility investments, and housing preservation and construction efforts (LINK Houston and Kinder Institute 2020). In Oakland, California, the advocacy organization Transform joined with private data partner Remix to create the Remix Explore software tool to identify equity outcomes, including in the analysis of potential bus service changes (Jackson 2021).

The numerous federally required transportation and housing plans that can provide a pathway for coordination are shown in Table 6. However, these have competing timelines and are developed by a myriad of actors spread across state, regional, and local agencies, making coordination a challenge.

Table 6. Federally required transportation and housing plans.

Plan	Lead to Develop	Typical Time Horizon	Requirement of Federal Funding	Authority
Long-Range Transportation Plan (LRTP)	State DOTs and Metropolitan Planning Organizations (MPOs)	20 years	U.S. DOT	<i>49 USC 5304 (DOT)</i> <i>49 USC 5303 (MPO)</i>
Transportation Improvement Program (TIP)	State DOTs and MPOs	4 years	U.S. DOT	<i>49 USC 5304 (DOT)</i> <i>49 USC 5303 (MPO)</i>
Coordinated Public Transit - Human Services Plan	State DOTs, MPOs, Transit Agencies, Human Service Providers	4-5 years (Must be included in the STIP/TIP)	FTA	<i>49 USC 5310</i>
Consolidated Plan	Entitlement Community / HUD Grant Recipient	5 years	HUD	<i>24 CFR Part 91, Subpart D</i>
Action Plan	Entitlement Community / HUD Grant Recipient	Annual	HUD	<i>24 CFR Part 91, Subpart D</i>
PHA Plan	PHA	5 years	HUD	<i>42 USC 1437</i>
Qualified Allocation Plan (QAP)	State-authorized tax credit allocating agencies (typically state housing finance agency)	Annual	IRS	<i>Sec 42 IRC</i>

3.4.b How Affordable Housing Planners Are Coordinating with Public Transit

Within the housing sector, there is no federal requirement for regional planning, or a housing equivalent to the MPO. Planning activities and requirements for affordable housing and transportation remain voluntary and largely siloed between government agencies (Dawkins et al. 2010).

Better coordination of affordable housing with areas that have high levels of transit access can enable low-income individuals' greater economic opportunity (Sanchez et al. 2007; Smart and Klein 2020). Transportation provides access to opportunity and serves as a key component in addressing poverty, unemployment, and equal opportunity goals while ensuring access to education, health care, and other public services (Sanchez et al. 2007; Bullard 2013; Pendall et al. 2014; Grengs 2015).

The U.S. Department of Housing and Urban Development (HUD) allocate federal formula and grant funding directly to state housing agencies, eligible local jurisdictions, and public housing authorities. These entitlement communities are required as a condition of funding to develop plans that identify housing needs and strategies to address identified challenges, and that detail how federal HUD funds will be spent. The most common of these is the Consolidated Plan, which covers a 5-year period, and the annual Action Plans that detail how HUD funding will be used to meet needs identified in the Consolidated Plan. While it does not specifically require the coordination of housing with transit, guidance given by HUD encourages

this linkage (Dawkins et al. 2010). In addition, two specific housing linkages for coordination with transit can be found in how jurisdictions approach fair housing and the allocation of low-income housing tax credits and housing choice vouchers (HCVs).

The planning horizon and responsible parties to develop these plans seldom overlaps with the MPO long-range planning process. Further complicating matters, a city's Consolidated Plan is often developed by its housing department or PHA, so coordination with the planning, transportation, or public works departments may be limited. Silos persist and make coordination across bureaucracies challenging, especially when coordination involves issues not perceived as directly within the authority or purview of an agency (Pendall et al. 2013). Many rural communities are not included in consolidated planning efforts or HUD funding programs, creating even fewer venues for local coordination on housing issues or alignment with transportation in those regions.

The Section 8 HCV program is the federal government's major program for assisting very low-income families, the elderly, and the disabled to afford decent, safe, and sanitary housing in the private market. The HCV program is administered by local PHAs who receive voucher allocations and program funding from HUD. Voucher holders can choose housing in any location where the landlord accepts vouchers, with the PHA determining the maximum amount of subsidy allowable with guidance provided by HUD (Garboden et al. 2018). There are various requirements for both the participating tenant and landlord, with the PHA providing oversight. In theory, HCVs enable greater access to opportunity for voucher holders. However, research finds that challenges exist that prevent many very low-income households from achieving this goal. These include access to both vehicles and public transit, willingness of private landlords to accept vouchers, and maximum rent limit constraints (Covington et al. 2011; Pendell et al. 2014; Dawkins et al. 2015; Garboden et al. 2018; Reina et al. 2019; Cossyleon et al. 2020).

Fair Market Rents (FMRs) is a specific barrier related to HCVs that has a transit nexus. HUD created the Small Area Fair Market Rent (SAFMR) demonstration program to address the challenge that within metropolitan areas, those neighborhoods with higher access to opportunity, which can include high-quality transit, often have a rental price premium. This makes it extremely difficult for voucher holders to access housing in private rental units within these higher-opportunity neighborhoods (Garboden et al. 2018). The SAFMR pilot was created to address this challenge and found mixed results in landlords utilizing the program and accepting vouchers even when rents were recalibrated (Garboden et al. 2018).

Federal guidance and data tools are available from HUD to support local and regional planning to implement the 1968 federal Fair Housing Act through the AFFH rule and to develop consolidated plans (HUD 2019). Examination of affordable housing opportunities located near transit and near job centers and other high opportunity areas was a focus of the 2015 Obama AFFH rule.

Fair housing issues present both a challenge and an opportunity for aligning affordable housing with transit, given its focus on access to opportunity. This has included a push by HUD and local affordable housing advocates to locate more affordable housing in suburban locations where schools may be perceived as better, greater job opportunities exist, and health centers are increasingly located. However, the challenge, as one survey respondent noted, is that "The focus of locating affordable housing in our region seems to be moving to opportunity. This often means locating affordable housing in suburban areas of our region away from frequent transit services and often outside of the paratransit service area." Another survey respondent commented, "Car culture is strong in our suburban service area and transit is significantly under-funded. Most (housing) agencies have preferred to give out gas cards or find low-income persons used cars rather than focus on developing good transit." A growing body of research validates these concerns and highlights the challenges for low-income households to realize economic mobility in areas

poorly served by transit (Pendall et al. 2014; Dawkins et al. 2015; Smart and Klein 2020). Despite this linkage, transportation has not been a strong focus of research or technical assistance and capacity building for those involved in the HCV program, or in studying FMRs.

Alternately, some fair housing advocates argue for improving access to opportunity within areas that have concentrations of affordable housing, with new transit investments and increased service a common focus. Several survey respondents provided specific examples of where affordable housing advocates were important partners advocating for increased transit funding, including passing local or regional transit ballot measures. A number noted that applying for grant funding is the primary way they partner with housing agencies, PHAs, and affordable housing non-profit organizations or developers.

The federal LIHTCs, created by the Tax Reform Act of 1986 (Section 42 IRC), is the most utilized tool for building affordable housing in the United States, allocating the equivalent of approximately \$8 billion in annual budget authority to issue tax credits for the acquisition, rehabilitation, or new construction of rental housing affordable to lower-income households (HUD n.d.c). State-authorized tax-credit-allocating agencies annually receive an allocation of 4% and 9% tax credits. They allocate these to projects based on selection criteria outlined in their QAP. Allocating agencies are typically state housing finance authorities. These allocating agencies are not often aligned with city housing departments, except in the cases of New York and Chicago, creating another player and layer in the efforts to coordinate affordable housing and transit within regions and localities.

As of 2014, 27 states provided additional points in their QAP scoring criteria for projects located near transit (HUD n.d.c). Despite this, a 2015 analysis of LIHTC and transit coordination found limited progress in delivering new affordable housing projects near transit, with only 15% of LIHTC-funded projects between 1994–2014 being “located within a ½ mile of transit station, and only 4% within a ¼ mile” (Zuk and Carlton 2015). Each of the case examples provides information on proximity to transit of LIHTC funded projects in the core city and metropolitan area, but the analysis does not include frequency of service.

Explicit coordination within local and regional plans between transit and affordable housing remains sparse. There are a few notable exceptions, including at the federal level. Over the past 10 years, researchers are giving greater attention to the urban dynamics leading to increased gentrification in cities and resulting in the displacement of low-income households, and to the suburbanization of poverty (Covington et al. 2011; Kneebone and Berube 2014; Karner et al. 2016; Chapple and Loukaitou-Sideris 2019). Accessibility to high-capacity transit that provides frequent and reliable service to regional jobs and amenities is one of the features that facilitates this dynamic. A growing number of researchers have highlighted the combined dynamic of urban gentrification and suburbanization of poverty (Hulchanski 2006; Sanchez et al. 2007; Kneebone 2009), the racial inequalities exacerbated by these shifts (Grengs 2005; Howland 2020), and of the nexus between transit and affordable housing (Lownes et al. 2019). The trend of suburbanization creates additional challenges for low-income households given the absence of quality transit and longer distances to traverse for most goods and services (Goetz and Chapple 2010; Kissane and Clampet-Lundquist 2012).

3.5 Future Research Needs

Throughout 2020, the racial disparities and economic inequities of transportation networks and broader social systems were brought to the forefront. Over the course of the project’s investigation, increased attention has been called for in transportation and other institutions and systems where decades of systemic racism have created, reinforced, or hidden the disparities and

inequities created for people of color, and for predominately Black, Latinx, Asian, and Indigenous communities (Goetz et al. 2020; Patterson 2020; Spieler 2020).

Transportation access, costs, and its environmental and safety impacts affect low-income people, and especially low-income racial minorities, in nearly every aspect of their lives. Research from the transportation, housing, and public health fields consistently find, for instance, that Black populations have longer commutes both in time and distance (Gilbert 1998; Giuliano 2003), tend to have significantly lower access to automobiles (Giuliano 2003; Kawabata and Shen 2007; Karner et al. 2016), and are at a greater disadvantage in accessing jobs, goods, and services based on where they live (Grengs 2015; Allard 2017; Smart and Klein 2020). While outside the scope of this research synthesis, the linkage between housing, transportation, and racial segregation must be acknowledged and requires more research.

Identified future research needs include strategies to better expand usage of housing vouchers in high-capacity transit neighborhoods and to examine the linkage between transit gentrification, vouchers, and expiring LIHTCs. Also conducting an assessment of the equity impacts of TIPs and LRTPs along with best practices for coordinating federally required housing and transportation plans at the regional or local scale would be helpful. The role of non-profits and philanthropy in facilitating coordination between housing and transportation and ways to fund these partnerships using federal resources would also be beneficial. As shared mobility services expand, multi-modal strategies that can improve mobility and access for low-income suburban and rural households should also be shared with housing stakeholders to help them better understand mobility options available for low-income residents.

3.6 Equitable Transit-Oriented Development: Consideration and Prioritization of Affordable Housing in TOD Programs

If MARTA didn't have a strong affordable housing goal as part of our joint development policy, I don't think Morgan Stanley would have come to us to create a \$100 million fund.

– Jeffrey Parker, General Manager of MARTA, speaking at APTA Rail Conference (June 9, 2021)

TOD is an urban planning approach that includes “a mix of commercial, residential, office and entertainment centered around or located near a transit station” (FTA 2019b). Different cities and agencies have created distinct TOD definitions that build off this general concept and may further define proximity to transit (typically within ¼ mile or ½ mile of the station), density levels, parking minimums or maximums, and other development criteria that support a walkable, mixed-use and transit lifestyle (Cervero et al. 2004; GAO 2014). TOD is one of the most common ways practitioners think about coordination of transit and housing, and the state of practice and academic literature on it has expanded.

In the last two decades, a growing body of TOD research has been published, assessing its impacts on ridership and other transportation and climate benefits. This research provides case studies and best practices on different regional approaches being taken (Arrington and Cervero 2005; Renne 2009; Haughey and Sherriff 2010; Jacobson and Weinberger 2016; McGraw et al. 2021) and on ways that transit agencies are supporting TOD and value capture through their joint development programs (Raine et al. 2021). The intersections between TOD and affordable housing, whether as a tool to create new housing or as a gentrification factor leading to displacement of low-income households, are being increasingly studied (Rayle 2015; Bardaka and Hersey 2019; Chapple and Loukaitou-Sideris 2019; Zuk and Carlton 2015).

Interest in TOD expands beyond the traditional housing and transportation sectors. For instance, the American Council for an Energy Efficient Economy has created a database of

Table 7. Transit agency examples of specific affordable housing goals or targets.

	Sound Transit	Los Angeles METRO	Boston MBTA	Denver RTD
% Units Restricted	80% (min)	35% (goal)	20%	35% (goal)
% AMI	80%	60%	100%	Varies by state / local definition
Project or Portfolio	Per project	Portfolio	Per project	Portfolio

state and local policies that support low-income populations in TOD areas, and the American Association of Retired Persons (AARP) has created a database and Livable Communities Index that also consider local and regional TOD policy, informed by research it conducted on state, regional, and local TOD policy adoption. AARP’s research found that half of all states (26), 82% of the studied regions, and all but four of the 70 identified localities had TOD-supportive policies in place (Lynott et al. 2017).

TOD has become a focal point for housing policy discussions. Transit real estate assets are seen as potential development sites. Under FTA’s Joint Development Guidance, local transit agencies can use land that was purchased with FTA funds to support TODs through joint development partnerships or transit joint development. With FTA approval, local transit agencies can improve this property through incorporation of private investment, including commercial or residential development that may include affordable housing, if the transit agency can demonstrate that the development supports transit. The current Joint Development Guidance seeks to allow the maximum flexibility to transit agencies under the law when undertaking joint development purposes (FTA 2020). Transit agencies pursuing affordable housing projects through joint development point to its positive impact on transit ridership, including in their justification for discounting land prices.

A sample of agencies with specific affordability goals is provided in Table 7, but it should be noted this is not an exhaustive list. Sound Transit has been a leader in this effort. Washington State Statute RCW 81.112.350 requires the agency to offer 80% of its surplus property that is suitable for housing to qualified entities to develop housing affordable to families who must reserve at least 80% of the units for people at 80% of AMI or less (known as the 80-80-80 rule). Sound Transit’s Equitable TOD Policy, adopted in 2018, includes consideration of the potential displacement impacts on existing businesses and individuals and a commitment to affordable housing. As of early 2021, the Agency is planning to surplus 10 properties for ETOD and under the 80-80-80 rule; 337 affordable housing units have already been built near transit and 963 are in the planning phase (Fesler 2021; Rivera 2020).

Sound Transit is not the only transit agency to specifically set affordable housing targets. As noted in the survey summary, 14 agencies who responded have a TOD or joint development policy that addresses affordable housing to varying degrees. The San Francisco Bay Area and Atlanta case examples also include information on their transit agency commitments, which include specific affordable housing portfolio targets.

3.7 Utilizing Transit Assets to Increase Affordable Housing Production and Preservation

ETOD is a process and a product centered on meeting the needs of existing businesses and residents, especially people of color and vulnerable populations, while enabling future growth near transit. A cornerstone of ETOD is the inclusion of affordable housing achieved through new production, preservation of existing stock, and tenant protection efforts.

Over the past decade housing prices, rents, and construction costs have increased exponentially, rising at rates faster than average household incomes. In many markets, even households at 120% AMI or higher are financially stretched (Aurand et al. 2020). Infill TOD often faces higher development costs than comparable greenfield projects related to land acquisition and clean-up, site preparation, regulatory compliance, and other construction and site preparation costs (Hersey and Spotts 2015). The time and complexity of ETOD projects often requires multiple financing sources and long-time horizons.

Interviews with transit and affordable housing stakeholders conducted for this project found repeated anecdotes of successful ETOD projects that took 10 years or more to come to fruition. Indeed, numerous publications have noted the length of time required to deliver ETOD projects and the barriers they face, especially in financing for projects that provide deep affordability to extremely low-income households (Enterprise et al. 2010; GAO 2014; Hickey and Sturtevant 2015; Thaden and Perman 2015; Zuk and Carlton 2015).

To meet these challenges, transit agencies are not only utilizing their surplus real estate to facilitate ETOD through joint development opportunities but also engaging in partnerships to develop new financing tools. Other public sector partners are also part of this work. Examples include the following:

- In Atlanta, MARTA, frustrated by the slow pace of new construction and recognizing the accelerating loss of existing affordable housing, played a key role in facilitating the creation of an affordable housing preservation fund. The \$100 million Greater Atlanta Transit-Oriented Affordable Housing (TOAH) Preservation Fund was announced in partnership with Morgan Stanley and National Equity Fund in January 2021. It provides acquisition funding to support multi-family housing projects that are at risk of conversion or expiring LIHTCs within a mile of MARTA stations, and to finance acquisition or repositioning of projects in targeted MARTA transit-oriented districts (Sharpe 2021). In June 2021, MARTA announced an additional \$100 million TOD Fund created with Goldman Sachs to finance new affordable housing developments within a mile of MARTA heavy rail stations (MARTA 2021). The Atlanta case example has more details on ETOD funding tools being created in the region.
- In Hartford, Connecticut, the state Responsible Growth Incentive account and the Transit-Oriented Development and Pre-Development account are leveraged with other public and private resources to provide a \$15 million TOD Fund. The state Department of Economic and Community Development (DECD), along with the state housing finance authority and other agencies, helps administer various projects funded under this grant program (Connecticut DECD n.d.).
- In 2010, Denver became the first region to develop a TOD Fund. In this case the City of Denver provided the initial \$2.5 million in first-loss capital that was leveraged with other private and philanthropic resources to create an initial funding pool of \$15 million. The fund serves as a line of credit to the Urban Land Conservancy, a land trust, and is managed by Enterprise Community Partners. ULC purchases and holds properties until sites are ready for development or refinancing, or until permanent financing is secured (Hersey and Spotts 2015).
- In Los Angeles, Metro provided \$9 million in 2017 to help seed the Metro Affordable Transit Connection Housing (MATCH) affordable housing fund, with additional funding provided by regional philanthropic foundations and three national community development financial institutions (CDFIs). The MATCH fund provides an estimated \$75 million in loan capitalization to support long-term affordable housing projects located within a ½ mile of high-frequency transit nodes. It funds new construction, predevelopment, and acquisition to preserve existing unsubsidized units. (MATCH 2017).
- In San Francisco, the Metropolitan Transportation Commission became the first, and so far the only, MPO to invest in a regional TOD fund. The initial \$10 million investment leveraged an additional \$40 million in private and philanthropic capital to create the TOAH fund

(Seifel Consulting and ICF International 2013). The fund and broader TOD financing supportive actions are described in the Bay Area case example.

- In Seattle, Sound Transit is contributing \$4 million per year for 5 years into a revolving loan fund to create affordable housing near its light rail stations. Sound Transit partnered with the Local Initiatives Support Corporation (LISC) to undertake an affordable needs assessment to inform how the revolving loan fund could best facilitate affordable housing opportunities and ETOD. Sound Transit is also partnering with Amazon to provide financing to build up to 1,200 new affordable housing units on Sound Transit surplus properties near light rail stations across the Puget Sound region. Amazon is committing \$100 million in below-market funding to developers to help create and expedite development (Metro 2021).
- In Washington, D.C., Amazon partnered with WMATA to create a \$125 million TOD Fund with a goal of creating more than 1,000 new affordable housing units at Metro stations throughout the region (WMATA 2021). This and the Seattle investment are part of Amazon's Housing Equity Fund, providing over \$2 billion to preserve and create over 20,000 affordable homes through below-market loans and grants to housing partners in the Puget Sound, Washington D.C., and Nashville regions (Amazon 2021). This below-market capital will be available only to developers who have joint development agreements with Metro; and \$25 million of the total is exclusively available for minority-led developers (WMATA 2021).

3.8 Anti-Displacement Policies and Considerations

The potential for TOD to increase ridership is a frequent argument for transit agencies to foster economic development and housing along transit corridors (Reconnecting America 2007). Yet this dynamic can also lead to the displacement of existing low-income residents and small businesses who may already be transit users. Displacement not only changes the character of a community but also creates greater transportation challenges for low-income households that may be pushed out and lack access to an automobile. For transit agencies, it also contributes to the declining ridership many systems experienced before the COVID-19 pandemic. In their studies on transit ridership declines, both Transit Center and APTA noted demographic change as a factor (APTA 2016; Transit Center 2019). “Among respondents who moved, those with household incomes of less than \$75,000 were twice as likely to select ‘wanting cheaper housing’ as a reason for moving. The lowest-income respondents endured the greatest loss in transit quality after moving” (Transit Center 2019).

In its 2009 study on affordable housing in TODs, the U.S. Government and Accountability Office (GAO) found that TOD generally increases nearby land and housing values, but the magnitude of the increase varies greatly depending upon several other characteristics that are discussed in more detail in its 2014 report on TOD (GAO 2009; GAO 2014). Other research around this same time noted the potential for the displacement of low-income and racially diverse populations but did not find conclusive data to confirm that new transit automatically leads to fundamental change in a neighborhood's racial or economic composition (Pollack et al. 2010). Yet the potential to lose existing affordable housing was raised as a warning sign more than a decade ago.

Findings from a 2010 report found that more than 250,000 privately owned, federally subsidized apartments existed within walking distance to quality transit in 20 metropolitan areas, with nearly two-thirds of these apartments covered by federal housing contracts set to expire by 2015 (Enterprise et al. 2010). Prevalent research of that time reinforced the idea that people who lived in TODs were childless couples, empty nesters, and Generation X (later replaced by Millennials). A focus was on attracting new residents rather than on preventing displacement of existing residents in transit-rich neighborhoods (Arrington and Cervero 2005; Reconnecting America 2007).

More recent research on gentrification, displacement, and TOD finds stronger linkages and evidence that early warnings to prioritize preservation of existing affordable units and to include affordable housing within new TOD projects were not sufficiently heeded (Haughey and Sherriff 2010; Zuk and Carlton 2015; Zuk et al. 2018; Chapple and Loukaitou-Sideris 2019; Padeiro et al. 2019). Local governments, affordable housing providers and advocates, regional planners, and transit agencies are beginning to better coordinate in some regions to address this dynamic. For instance, in 2016, voters in Los Angeles County passed a local ballot measure, Measure JJJ, that created inclusionary zoning near transit stations along the expanding Metro rail and BRT network (Bostic and Boarnet 2016). Researchers found that this policy created more affordable housing units than the County's previous density bonus program, producing new units that serve extremely low-income households, which other programs, such as LIHTCs, fail to do (Zhu et al. 2021).

In San Francisco, BART and other transit agencies in the region are also elevating anti-displacement interventions, as noted in survey responses: "BART's draft 10-year work plan prioritizes future sites based (in part) on whether jurisdictions have adopted rent control and just cause eviction policies. BART is currently developing an anti-displacement strategy which is a requirement of AB 2923, state legislation passed in 2018." In Portland, Oregon, "TriMet worked with jurisdictional partners to produce the Southwest Corridor Affordable Housing Memorandum of Understanding. Pledged to deliver roughly 750 affordable housing units to offset the gentrification effects of a proposed new light rail alignment."

Rising housing costs that displace low-income households is a contributing factor to homelessness, a crisis that many cities and transit agencies are working to address. Several agencies reported in the project survey that they have created task forces, are partnering with homelessness service providers, and/or creating homelessness coordinators. Since March 2021, LA Metro has helped to house over 600 people and is exploring a temporary shelter program partnership and other options to better address problematic behaviors without utilizing armed security. In Denver, RTD's Safety and Security Department has hired mental health professionals to help deal directly with homeless individuals at their facilities. In Philadelphia, the Southeastern Pennsylvania Transportation Authority (SEPTA) provides a daytime homeless center in their underground Center City concourse called "Hub of Hope" with a non-profit partner, Project HOME (Housing, Opportunities for Employment, Medical Care, and Education).

3.9 Future Research Needs

Given the breadth of emerging affordable housing policies, commitments, and financing tools that transit agencies are advancing, more research is needed to examine the efficacy of these programs; specifically, to examine the ability of affordable housing or ETOD to increase and stabilize transit ridership. This research can also detail the process by which agencies and their boards developed these policies. The TCRP's 2021 *Guide to Joint Development for Public Transportation Agencies* includes some key findings and recommendations specifically related to affordable housing (Raine et al. 2021). Additional research on this topic would be useful to transit agencies as they make decisions regarding the use of surplus properties to recover agency revenues and ridership.

One specific area of interest is how transit agencies are partnering with private funders, including CDFIs and banks to establish and administer ETOD funds. It is interesting to note that transit agencies themselves need not be funding partners but rather can play a catalyst role in their creation. Greater analysis can shed light on how such funds are capitalized, on their long-term sustainability, and on their potential for stabilizing transit-served neighborhoods and contributing to ridership.

34 Coordination of Public Transit Services and Investments with Affordable Housing Policies

Future research is also needed to provide greater clarity around transit's impact on different types of displacement, and on effective anti-displacement policies that transit agencies and MPOs can support given their extremely limited authorities on local land use and housing decisions. In scholarship on travel patterns and parking needs of TOD projects, greater research is needed to disaggregate information and focus on the specific needs and travel attitudes of affordable housing residents and families. As more transit agencies consider potential redevelopment of park-and-ride lots to support affordable housing, this type of information would be very useful for determining appropriate parking balance and pricing systems.

Case Examples

4.1 Overview of Case Example Characteristics

The five selected case example regions reflect a variety of approaches to coordinating affordable housing and transit, and the barriers that limit coordination. As shown in Table 8, each of the regions responded to the project survey. Together they offer innovative approaches to ETOD, network redesign, affordable fare policies, and planning coordination. All regions but Boise have received at least one FTA TOD pilot planning grant.

Each of the regions, except Chicago, is experiencing growth of jobs and population while all of them are experiencing rising housing costs. Table 9 provides a demographic snapshot of the five regions and their central city to illustrate the variation across the five case examples, but also within each region. While the Bay Area has three major cities, information is only provided for San Francisco.

Among the regions, Boise is the smallest, yet it has the fastest growth rates for population (10.8%) and jobs (11.9%). It is also the least racially diverse. Kansas City has the highest regional percentage (47%) of its population earning below 80% AMI and the second poorest city population, whereas the other regions are all somewhat similar. It is notable that for Chicago, Atlanta, and San Francisco, the central cities have considerably higher low-income populations than the larger metropolitan statistical area (MSA). The Chicago region has the highest percentage of population over 65 years (15.1%), whereas the greater Boise region has the youngest population, with almost 36% under the age of 18.

Each case example includes a transit proximity analysis of affordable housing units funded with low-income housing tax credits to give some sense of general accessibility. Data is not readily available regarding frequency of service, so the full picture of access is limited.

This analysis, shown in Table 10, found that at least half of units are located within a quarter mile of transit service. Chicago and San Francisco (SFO) have the highest percentages. The Atlanta region has the lowest percentage of transit-accessible units. Over one-third are located more than a mile from transit.

4.2 Cross-Cutting Regional Case Example Themes

Several similarities exist across the five case examples, despite their unique geographies, varying housing markets, and different transit networks. These include:

- Regional agencies – including transit providers and MPOs – are increasingly getting involved in affordable housing matters.

Table 8. Overview of transit coordination among the five selected case example regions.

Location	Transit Agency Survey Respondent	Key Regional Partners	ETOD	Network Redesign	Affordable Fare	Planning Coordination	TOD Planning Grant/Fund
Atlanta, Georgia	Metropolitan Atlanta Rapid Transit Authority	Atlanta Regional Commission, Atlanta Beltline, Invest Atlanta, Transformation Alliance	✓	✓	✓	✓	✓
Boise, Idaho	Valley Regional Transit	City of Boise, Ada District Highway Corridor, Boise Planning and Zoning Commission	✓	✓	✓	✓	
Chicago, Illinois	Chicago Transit Authority, PACE	Chicago Metropolitan Agency for Planning, City of Chicago, Elevated Chicago	✓	✓	✓	✓	✓
Kansas City, Missouri	Kansas City Area Transportation Authority	Ride KC, Mid-America Regional Council, City of Kansas City, Johnson County		✓	✓	✓	✓
San Francisco Bay Area, California	San Francisco Municipal Transportation Agency, Bay Area Rapid Transit Authority, AC Transit, Santa Clara Valley Transportation Authority	City of San Jose, City of Oakland, San Francisco Bay Area Metropolitan Transit Commission, CalTrans	✓	✓	✓	✓	✓

- Affordable housing concerns are not just a big city issue, nor limited to low-income households, though the cost burden and challenge of finding affordable housing and transit is especially pronounced for these populations.
- Affordable housing production tools are not meeting the needs of very low-income households, creating strains for transit systems that include rising homelessness and reduced ridership as these individuals are displaced from previously affordable neighborhoods served by transit.
- Regional long-range plans either include or are being drafted to strengthen coordination and alignment between housing and transportation investments, but their implementation is limited.
- Local attitudes toward transit and housing vary across communities and regions, but lack of adequate funding for both is creating challenges for providers and those who rely on each.
- Suburban communities are seeing an increase in poverty and in some cases trying to expand affordable housing options. These communities are a challenge to serve efficiently with transit, leaving many low-income suburban households with limited mobility and higher transportation costs. Employers also face worker accessibility constraints.
- State governmental organizations, funding, and statutory requirements play an important role in facilitating or limiting coordination.

Table 9. Comparative demographic trends across the case example regions and cities (Source: United States Census Bureau 2020).

Population Demographics	Atlanta - Sandy Springs - Alpharetta, GA MSA	City of Atlanta	Boise City - Nampa, ID MSA	City of Boise	Chicago - Naperville - Elgin, IL MSA	City of Chicago	Kansas City, MO - KS MSA	City of Kansas City	San Francisco - Oakland - Berkeley MSA	City of San Francisco
<i>Population (2019)</i>	6,114,361	498,073	749,257	228,959	9,454,282	2,693,976	2,181,139	602,574	4,731,803	885,390
<i>Growth/Decline (2015 - 2019)</i>	7.5%	6.2%	10.8%	9.3%	-1.0%	-1.0%	4.6%	5.9%	2.2%	2.6%
<i>Age Structure</i>										
<i>Persons under 18 years</i>	26.8%	17.0%	35.9%	24.9%	25.0%	27.2%	26.9%	25.2%	22.4%	15.0%
<i>Persons 65 and over</i>	12.6%	12.0%	13.3%	13.0%	15.1%	12.4%	13.8%	13.3%	14.4%	14.3%
<i>Employment (2019)</i>	2,906,883	256,891	357,682	119,121	4,739,341	1,370,000	1,136,136	374,609	2,671,063	827,224
<i>Growth/Decline</i>	6.7%	1.2%	11.9%	9.0%	4.0%	1.3%	1.7%	2.0%	2.6%	4.6%
<i>Median Household Income</i>	\$68,300	\$65,345	\$60,600	\$66,800	\$71,800	\$58,247	\$66,600	\$71,700	\$106,000	\$148,800
<i>Households at < 30% Area Median Income</i>	12%	20%	12%	12%	14%	22%	15%	18%	15%	21%
<i>Households at 30 - <50% Area Median Income</i>	11%	12%	11%	11%	12%	14%	13%	13%	11%	10%
<i>Households at 50 - <80% Area Median Income</i>	17%	14%	19%	17%	16%	16%	19%	19%	13%	14%
<i>Households at 80 - <100% Area Median Income</i>	10%	8%	11%	11%	10%	9%	11%	11%	9%	8%
<i>Households at >100% Area Median Income</i>	50%	46%	47%	49%	48%	39%	42%	39%	52%	47%
<i>Main Races</i>										
<i>White</i>	48.6%	38.0%	88.0%	89.2%	53.6%	33.3%	73.2%	58.9%	40.8%	41.3%
<i>Black</i>	33.3%	50.7%	1.0%	1.9%	16.6%	29.0%	12.4%	25.8%	7.5%	5.2%
<i>Asian</i>	5.6%	4.0%	1.9%	2.8%	6.5%	6.6%	2.8%	2.5%	25.3%	34.3%
<i>Hispanic or Latino (of any race)</i>	10.0%	5.1%	3.7%	9.0%	21.2%	26.9%	8.4%	9.0%	20.5%	1.5%

Table 10. Proximity of low-income housing tax credit projects to transit in case example cities (Source: FTA 2019a; NLIHC 2021a).

Region	Under ¼ mile	¼ to ½ mile	½ to 1 mile	Over 1 mile	Total
Atlanta	58.5%	6.7%	1.6%	33.1%	100%
Boise	56.8%	17.2%	8.2%	17.8%	100%
Chicago	69.9%	10.0%	2.0%	18.1%	100%
Kansas City	51.4%	17.6%	11.2%	19.8%	100%
SFO Bay Area	78.2%	8.7%	4.0%	9.1%	100%

- Cross-sector collaboration is a key ingredient to successful coordination. Non-profit partners, philanthropic organizations, and academic institutions play important roles in advocating, planning, designing, and implementing solutions for improved alignment of housing, transit and equity goals, funding, and policy adoption. These organizations often provide the glue that sustains coordination.

The following case example discussion provides place-specific examples of these themes and commonalities across approaches. While commonalities exist, each is written to focus on how one or two of these themes is particularly relevant for that region. For instance, in Chicago, cross-sector collaboration is resulting in deeper coordination between regional players and within the city to implement ETOD policies and address persistent racial inequalities that have created a highly segregated region. In Kansas City, suburban counties and workforce job access are emerging as an impetus for the transit agency and MPO to deepen its engagement in housing issues and mobility strategies that better connect low-income riders to job opportunities. In Atlanta, the backdrop of a housing affordability crisis has resulted in calls to action for increased preservation and construction of affordable housing, particularly at MARTA stations, where there is considerable development potential.

New financing tools and regional policies are being crafted to leverage private sector partnerships and improve coordination against the backdrop of racial inequality and low-density development. In Boise, the smallest of the case example regions but with the fastest growth rates, housing pressures are straining household budgets particularly for low-income residents. New alliances are forming to advocate for more transit and greater housing production. Finally, the Bay Area is experiencing some of the nation's worst housing unaffordability, but a flurry of state legislation is providing funding and regulatory requirements to align housing and transit investments, with a prioritization for transit agencies and MPOs to address the needs of low- and very low-income residents.

4.3 Atlanta Case Example

The Atlanta metropolitan area consists of almost 8,700 square miles from the Alabama border to the west, north to the mountains, and comprises the bulk of central Georgia. Representing a diverse landscape in terms of geography, density, housing typologies, incomes, and ethnicities, the Atlanta region is home to more than 6 million people and has been growing rapidly for more than three decades (see Table 9). Conversely, the city of Atlanta's growth, slow since 1990, has accelerated in the past decade, with just under 500,000 residents, according to the 2019 American Communities Survey. While the city is currently 50% Black, this share has shrunk over the past decades as white residents have led the recent increase in Atlanta's population.

While the Atlanta has seen significant strides in densifying its urban core, the region faces significant structural barriers to affordable housing and transit connectivity. The mid-20th century annexation of suburban communities in an effort to maintain white political power, exclusionary zoning and lending practices, and destructive highway and urban renewal projects that contained Black communities to areas west of the Interstate 75/85 corridor and south of Interstate 20 had lasting impacts (Stone 1989; Kruse 2007; Drake-Rodriguez 2021). Approximately 60% of all land – and 40% within a ½ mile of transit – in the city is zoned exclusively single-family.

For years, minority neighborhoods, specifically Black neighborhoods, received little to no investment, making them ripe for speculative investment with the advent of incentives for development in the core (Atlanta Department of City Planning 2021). Ongoing “Not In My Back Yard” resistance to both expanded transit and increased density throughout the region has exacerbated issues of transit and affordable housing access. While Atlanta has heavy rail, light rail, and buses primarily provided by MARTA, the limited density outside the urban core makes providing rapid and reliable transit a challenge.

MARTA in both its creation and in its modest 1996 Summer Olympic expansion was not designed to serve low- and moderate-income households, but focused on supporting business and commuter interests, both for downtown preservation and economic expansion (Stone 1989). While significant push-back from Black elected and community leaders in the early 1970s meant that the east-west (Blue) line opened 2 years before the north-south line (now the Red Line), the system was powered by the desire to create a “high-status” transportation system for the region’s white commuters, rather than to improve the transportation needs of low- and moderate-income Black Atlantans (Partnership for Southern Equity 2017).

The region’s rapid growth and low density has decreased the supply of unsubsidized affordable housing. The percentage of low- and moderate-income residents who are housing-cost-burdened, meaning they pay more than 30% of their incomes for housing costs, make up the bulk of Atlanta-area renters, with the highest concentration in the city of Atlanta with households earning less than half of the AMI (Lance Bottoms 2019; HUD 2020). Almost half of all renters and a quarter of the City’s homeowners, regardless of income level, are housing cost burdened (see Table 11; data from Comprehensive Housing Affordability Strategy Data).

Land costs make land acquisition and construction in transit-connected communities challenging. Roughly a third of affordable units funded through the LIHTC are located more than a mile from a transit stop (see Figure 6). Further, while more than half of LIHTC units are located within a quarter mile of a transit stop, transit lines outside the urban core face infrequent headways that make their utility questionable for working families (FTA 2019a; NLIHC 2021a).

Planning Coordination

Despite the challenges to building improved access to transit for low- and moderate-income households, Atlanta agencies are being creative. There are three primary government or

Table 11. Cost-burdened households in Atlanta and broader MSA (Source: HUD 2020).

	Owner				Renter			
	≤30%	>30% to ≤50%	>50%	Not available	≤30%	>30% to ≤50%	>50%	Not available
City of Atlanta	75%	13%	11%	1%	51%	22%	23%	4%
Atlanta (MSA)	77%	13%	9%	1%	52%	23%	22%	2%

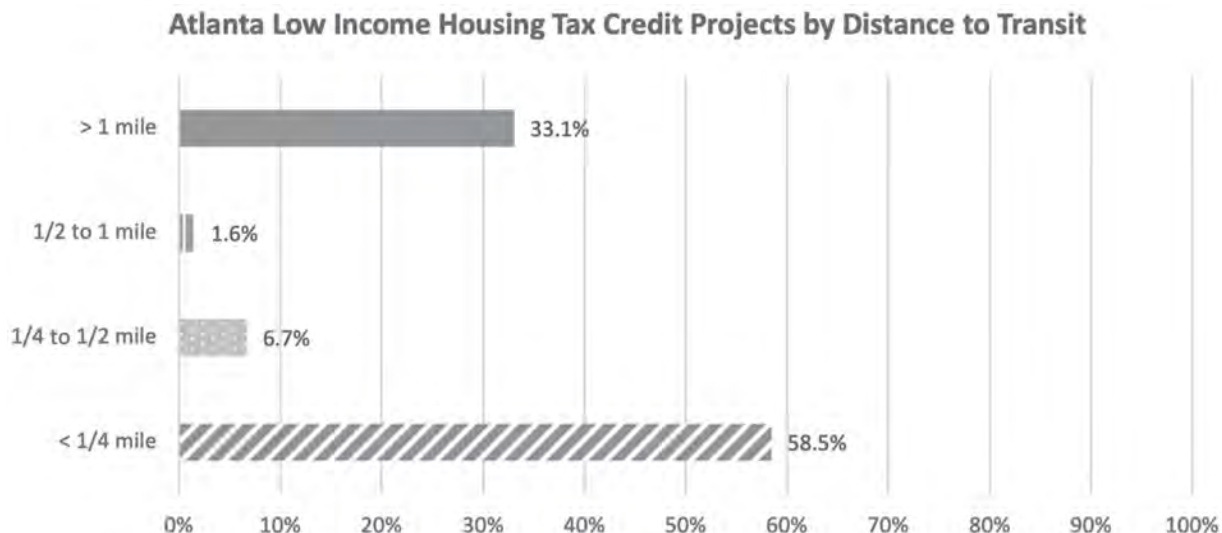


Figure 6. Atlanta LIHTC units by distance to transit (Source: FTA 2019a; NLIHC 2021a).

quasi-governmental agencies tasked with long-range transportation planning and housing coordination: the Atlanta Department of City Planning and its Office of Housing and Community Development; MARTA; and the Atlanta Regional Commission (ARC), which acts as the regional metropolitan planning organization. These groups coordinate with numerous state agencies, non-profit organizations, and for-profit companies to fund, build, and manage opportunities to connect low- and moderate-income households with affordable housing and transit.

For example, MARTA cooperates with several entities to boost its affordable housing TOD program. In January 2021, MARTA announced it led the creation of a \$100 million private fund through Morgan Stanley Community Development Finance. The fund is managed by the National Equity Fund (a subsidiary of LISC) to support the preservation of affordable housing within a half mile of transit stations to provide gap funding for owners and landlords of affordable units (Peters 2021). At the same time, the City of Atlanta authorized \$50 million in bonds for affordable housing (City of Atlanta 2021). In 2020, Invest Atlanta, the city’s development authority, along with Enterprise Community Loan Fund and the Low-Income Investment Fund created a \$15 million Transit-Oriented Development Fund focused on acquisition and pre-development of affordable housing near transit (Invest Atlanta n.d.).

The ARC is also a strong partner in recent efforts to improve coordination of housing and transit. ARC, through its Livable Centers Initiative (LCI), funded local and station area plans that help guide the type of mixed uses MARTA incorporates into its TODs. Through its long-range planning and MPO efforts, ARC is engaging regional partners and localities to address long-standing racial segregation, affordable housing, and transit needs (Ghani and Lombard 2021).

Aligning Transit to Better Serve Low-Income Riders

ARC supports TOD and broader connections between transit and housing through its LCI program, a program that provides grants for planning and transportation projects that promote the creation of more walkable communities with better access to jobs, services, and transit (ARC 2021a). ARC grant funding has helped fund MARTA parking and bus loop replacement costs with two TODs. ARC, MARTA, and the cities of Atlanta and Decatur funded the creation of the East Lake TOD Master Plan (Vallo and Frank 2021). In 2019, ARC released its updated

transportation project evaluation framework for the region, which includes a range of metrics for projects, including traditional considerations about infrastructure and policy, as well as clear equity goals related to health impacts, community engagement, and access to transportation (ARC 2019).

ARC helps to staff the Atlanta Transformation Alliance (TFA), a cross-sector collaborative originally formed to advance TOD efforts, but which has since evolved to address broader issues of racial equity, affordable housing, ETOD, and environmental justice (ARC 2021b). The commission continues to expand its approach to ETOD through planning grants to local jurisdictions in the region and the LRTP, which sets priorities for transportation funding across the region (ARC 2021a; ARC 2021c). The work of ARC through both the TFA and the LCI program has resulted in the growth in transportation coalitions, the shift of priorities at both MARTA and the City of Atlanta, and an infusion of resources to the region's suburban communities to rethink transportation connectivity. Recent calls for projects to fund in the TIP, and criteria in its LCI solicitation, emphasize social equity and transit access, with each accounting for 15% of project scoring (ARC 2019).

Atlanta has established creative transportation programs to fill last-mile transportation gaps and support individuals who are often marginalized. The Relay Bikeshare system offers a discounted monthly pass option for students and people who receive Supplemental Nutrition Assistance Program benefits (\$5.00/month) (CycleHop, LLC n.d.). MARTA offers discounted tickets to senior citizens, disabled riders, Medicare recipients, children, K-12 students, and university students and staff (MARTA 2020). Additionally, Lyft partners with the City of Atlanta to provide subsidized \$2 rides to farmer's markets and grocery stores to residents living in food desert areas (Lyft 2019). The City has also developed a pilot program in partnership with the Department of Corrections to provide free ride-hailing services from detention centers to property centers, which otherwise are not transit accessible.

Aligning Housing to Better Serve Transit Riders

MARTA has more than 20,000 parking spaces at its station stops, including those in downtown locations, yet only 50% of these spaces are utilized by MARTA patrons (Green 2018). In 2010, the agency adopted TOD guidelines outlining transportation-demand management policies that reduce development costs and illustrate TOD's benefits to community stakeholders (MARTA 2010). At the same time, MARTA's board adopted implementation policies for these guidelines that address affordable housing and station area development, notably requiring all residential development in MARTA TODs to set aside 20% of the units as affordable to households between 60% and 80% of AMI and for-sale units affordable to those earning 80–100% of AMI (Vallo 2021). The policy stated that this would be a baseline of affordable housing, and the agency would encourage developers to propose reserving more units or deeper affordability. With that foundation, the agency set a policy to encourage local governments to permit zoning relief for greater density (MARTA 2010).

In 2018, the City of Atlanta implemented an inclusionary zoning ordinance meant to address the impacts of city investment in transit, greenspace, and housing in all rental developments greater than 10 units, specifically requiring affordable housing between 60% and 80% of AMI with an option to pay into a fund instead of proving on-site housing (Atlanta Department of City Planning 2020). In 2019, Mayor Lance Bottoms released her plan to create 20,000 affordable units by 2026 through a combination of changes to zoning, the use of unused public land, new local funding, and the development of philanthropic funding (Lance Bottoms 2019).

The mayor's goals aligned with MARTA's for rethinking unused parking for TOD. In November 2019, the MARTA Board approved the release of seven mixed-income housing TODs

for stations MARTA owns in federal Opportunity Zones (Vallo and Frank 2021). The development potential includes the possibility of 900 affordable units for persons earning 80–120% of the median household income by zip code, which allowed MARTA to deliver the housing affordability desired by the communities in which its stations reside. Also in 2019, a developer broke ground on a mixed-use development that includes 208 multifamily apartments, 53 of which will be affordable at 80% AMI at the Edgewood-Candler Park MARTA Station. There are currently 267 affordable units completed or under construction near MARTA stations and more than 1,400 additional affordable units are in the negotiation or financing stage, including units for households at 50–60% AMI (Vallo 2021).

The region continues to face challenges in connecting transit to housing need. One challenge is addressing “deep affordability” of housing with existing tools for families earning less than 50% AMI, which equates to less than \$35,000. As shown in Table 9, almost one-third of Atlanta’s population and a quarter of the metro’s households fall into this income category. While this group of households is the most cost-burdened, there are few funding tools or subsidies available to developers to build housing for households at 50% AMI. While the region has 97 affordable and available units for every 100 households between 60% and 80% of AMI who need them, there are only 51 and 29 for every 100 households below 50% and 30% AMI respectively (NLIHC 2021b). Second, the region faces ongoing resistance to both increases in density and transit expansion into the suburban communities. In 2019, suburban Gwinnett County rejected an expansion of rail into the county for the third time, which parallels rejections from voters in Cobb County throughout the past 30 years (Estep and Coyne 2020). Gwinnett also rejected a referendum for transit in 2020.

Conclusion

Atlanta’s history of deep racial inequality can be seen in its development patterns and transit network. Both affordable housing and transit funding have not been adequate to meet the needs of low-income communities. Cross-sector partners are taking steps to repair and find other critical pathways to improve both and coordinate affordable housing and transit. This is a slow and politically challenging process.

While MARTA’s Board approved a TOD policy in 2010, it has taken over a decade to see development happen. In that time, it has gone from one successful ETOD project with 28 affordable units to 18 projects currently in development, of which 14 include affordable housing (Vallo and Frank 2021). Given the slow pace of construction and permitting for new TOD projects, coupled with the current need for affordable housing, MARTA has developed parallel partnerships to fund preservation of existing affordable units.

The intertwined and circular challenges of increasing density requiring better transit service and the lack of incentives for housing development and transit provision may stymie meaningful change. If there is limited density, the provision of transit is difficult to maintain politically. Yet, resistance to increases in zoning in Atlanta’s single-family neighborhoods is politically powerful. As a result, incentives such as reduced parking requirements that might allow developers to reduce costs per apartment are hollow if transit cannot support the connections for the households living in the buildings, or if transit service is not sufficient for households to access regional opportunities without a car. Developers need parking in their projects to remain competitive, access financing, and ensure they receive a return on their investment, in a market where single-occupant vehicle trips are how the vast majority of the citizenry travels. Despite these challenges, Atlanta is starting to move the needle and put in place the policy and planning steps needed to make critical changes. Furthermore, agencies across the region are taking stock of existing assets and asking how best to make use of them in the moment.

4.4 Boise Case Example

Despite having the smallest population of all the case examples, the Boise region is experiencing the fastest population and employment growth. In the years between 2015 and 2019, the city grew by 9% and the region by almost 11% (see Table 9). In 2020 alone, the region grew by 1.79%, creating housing and transportation challenges for regional planners and for households across a range of income levels looking for affordable housing. During 2020–2021, rents jumped more in the region than anywhere else in the country, according to market research (Salviatti et al. 2021).

In stark contrast to the other regional case examples, Boise does not have a robust transit network. State funding support for transit is extremely limited. Continued growth pressures are generating stronger public support for new transit investments. A recent survey conducted by the Community Planning Association of Southwest Idaho (COMPASS) revealed strong public support for a high-capacity transit system. Yet Idaho is one of two states without dedicated funding for transit, which in turn presents a challenge to providing the system that the community needs and wants.

Introduced in 1999, VRT provides bus service primarily to the central city as well as para-transit and community transit services (Valley Regional Transit, n.d.). Service is contracted to ValleyRide, which operates and manages the bus system that functions within the Boise city limits and the greater Treasure Valley, which includes Ada and Canyon Counties, with less than 100 vehicles during maximum service. Surrounding neighborhoods are home to workforce housing and older residents who benefit from VRT’s last-mile services. Several services and partnerships have been created specifically to support low-income riders.

The conversation of affordable housing is beginning to spread through the community as the lack of housing that is affordable to moderate-income families is become a growing concern. For most residents in the region, public transportation is not a viable option due to limited service and the degree of urban sprawl across the Boise MSA (Stoll, Miller, and Luft 2021). Given the limitations of the current transit network, affordable housing providers seek to coordinate projects near activity centers.

For the population, housing prices are a greater concern than transportation. In 2020, the median single-family residential home sale price was \$392,133, a 13.6% price increase from the previous year. There is an estimated 10,000-unit housing shortage in Boise and a 5,000-unit shortage in the larger region (Gamboa 2021). The City of Boise is considering creating an informational dashboard, similar to that developed in other Idaho communities, to illustrate housing trends such as available units, average rents, and home values, including changes over time (Dashboard, n.d.).

Currently, over half of all renters in the city and in the region are paying more than 30% of their annual household income on housing. As shown in Table 12 (Comprehensive Housing Affordability Strategy Data) shows that over three-quarters of owners are cost burdened, whether located in the city or within the MSA.

Table 12. Housing-cost-burdened households in Boise and the broader MSA (Source: HUD 2020).

	Owner				Renter			
	≤30%	>30% to ≤50%	>50%	Not available	≤30%	>30% to ≤50%	>50%	Not available
City of Boise	80%	11%	7%	1%	53%	21%	23%	4%
Boise (MSA)	78%	13%	7%	2%	54%	22%	20%	5%

Planning Coordination

VRT and the City of Boise have established a memorandum of understanding (MOU) to conduct an annual public hearing centered around big picture system issues. VRT's Valley Connect 2.0 6-year service plan has multiple new network alternatives, some revenue-neutral and one that would require \$30 million annually in new revenues (Transit Center 2018). The design principles underpinning the work are to serve areas of strong demand with frequent service, to have strong anchors on both ends of routes, to be as direct and simple as possible, and to have even distribution of ridership throughout the day. VRT hopes the planning effort will stimulate public discussion of transit's role in the region and reverse declining ridership and public support (Clegg 2021). Municipalities that wish to see improved transit have played a key role in pushing VRT to be more responsive to changing ridership/development patterns and municipal planning efforts.

COMPASS is a coalition of local governments planning for the future of the Treasure Valley. The association is a voluntary, member-based organization that serves as the regional MPO for a two-county area in southwest Idaho. As such, COMPASS is responsible for transportation planning and distribution of federal transportation funds for designated urban areas within the two counties. The organization created a LRTP, *Communities in Motion*, first adopted in 2014, which includes goals for providing "first and last mile" bicycle and pedestrian infrastructure to ensure individuals can complete their trip when using public transportation (COMPASS 2014).

Similarly, the City of Boise developed a Transportation Action Plan (TAP) that identifies mobility choices for walking, biking, driving, and taking transit. To realize this vision, the TAP identifies a set of actions or "moves" that describe strategic objectives and provide a framework for prioritizing transportation projects within the City of Boise. The plan recognizes that all citizens deserve a transportation system that allows them to reach places they want to go, including the 30% of Boise residents who do not have a driver's license (City of Boise et al. 2016). This emphasis requires planners to think about the mobility needs of people who cannot drive because they are too young, too old, or because they cannot afford it.

Boise has made many attempts at regional plans but lacks local implementation. The transit agency has updated its 6-year plan to include metrics and cost measures, including housing, to build the case for more transit investment. The lack of dedicated transit funding precludes transit projects being included in the LRTP.

COMPASS completed several rounds of surveys when gauging residents' opinions on a possible future transit system in the Treasure Valley to help inform the regional LRTP update (COMPASS 2021b). The surveys demonstrated strong support for a public transportation system, with a record 11,700 responses. Survey results from 2019 and 2020 also revealed affordable housing as an important issue, and found broad general support for rail investment.

The long-range plan is set to be updated by December 2022. COMPASS is expanding its advisory groups to include housing representatives to inform the *Communities in Motion 2040* plan, harnessing connections with United Way and others to help ensure all populations in the valley have opportunities to be heard through COMPASS surveys and other public involvement processes (Stoll, Miller, and Luft 2021). Additionally, a development review protocol is used to review proposed developments in context of COMPASS's *Communities in Motion* goals (COMPASS 2021a). COMPASS staff also track regional housing and transportation metrics. Over the past decade, COMPASS has advocated for more multi-family housing to be produced; however, affordable rents are not being considered.

Aligning Transit to Better Serve Low-Income Riders

VRT is responsible for the management of a variety of transportation solutions, including public bus transit, specialized van services, paratransit, and park and ride. VRT works with other organizations and government agencies to create options that are accessible, affordable, and consistent for residents.

Their multitude of services include City Go, a commuting membership program designed to offer incentives and perks for smarter travel in and out of downtown Boise, along with The Rides2Wellness Program, a free transportation service for patients of St. Luke's, Saint Alphonsus, and designated clinics and Safe Routes to School, a program designed to encourage students to walk and bike to school to promote a healthy lifestyle, reduce traffic congestion, improve air quality, and enhance quality of life in communities (Valley Regional Transit 2020). For low-income individuals looking to use public transit for job access, The Village Van Program provides job access services for low-income and refugee job access. Additionally, VRT Late Night offers transportation assistance for low-income job access. In partnership with Lyft, VRT offers \$3 Lyft rides to and from work for qualified riders (Valley Regional Transit 2020). This program for low-income workers operates during the hours VRT buses are not running.

VRT began reviewing their convoluted fare structure 3 years ago with an aim to simplify the system and be more transparent. Some board representatives recognized that while many recommendations said fares were not high enough, many riders are low-income. This led to the development of an equitable fare proposal prior to the COVID-19 pandemic (Clegg 2021).

VRT reduced transit fares during COVID-19 and are reviewing the use of park and ride lots as a transportation demand management (TDM) strategy for project prioritization. VRT is reviewing park and ride lots to determine how to better incorporate TDM into project prioritization. This was identified in the last certification review as something for the agency to improve upon. State legislature will not allow for a local option tax to fund transit, therefore, limited options in terms of fare policy and transit are available.

A particular challenge to note is the fact that the City of Boise does not own its own roadways, but instead they are owned and managed by the Ada County Highway District. To develop a BRT system on the State Street Corridor there is an MOU between the State Street partners that requires the Ada County Highway District to do roadway work, VRT to be responsible for transit design and funding with the City Boise, and Boise to be responsible for design standards and land use/zoning standards for increased housing along the corridor. To help resolve any future questions, the City of Boise has created a form-based guide to aid actions. An MOU has been both helpful and challenging, as some agencies interpret it in broader terms and some narrow (Head 2017).

Energize Our Neighborhoods is a community collaboration to make all Boise neighborhoods unique and desirable by aligning resources to improve livability and make measurable change. This includes working to simplify connections to city programs and services and helping neighborhoods build capacity through workshops, training, and a toolkit of neighborhood resources (City of Boise 2021).

Aligning Housing to Better Serve Transit Riders

In 2020, Boise's Planning and Zoning Commission held the first public hearing on a proposed Housing Bonus Ordinance. This new program proposes incentivizing developers building in certain zones to designate a small percentage of rental units in their projects for affordable

housing or build along public transit corridors by giving added bonuses, like a parking reduction, a public approval process without a public hearing on projects less than 50 units, and allowing taller buildings (APA 2017).

Over half (56.8%) of Boise residents living in LIHTC-funded housing have relatively good access to public transportation based on proximity (see Figure 7). Yet over 43% of units are more than a quarter mile from transit. Considering the growing urban sprawl and housing prices, these low-income residents face large hurdles to using public transportation and may benefit from last-mile transit services.

The City of Boise coordinates with agencies to address transit needs for affordable housing residents such as providing transit passes or route and service information to residents of affordable housing, informing local and regional transportation plans and transit investments, and ensuring transit access when making decisions about where to locate affordable housing projects. They have partnered with local agencies and governments to provide supportive housing first and additional units targeted to 60% of AMI and below. They have a goal of over 350 units of new affordable housing per year, and each development must show how its location provides for transit access.

Boise is targeting two locations on State Street, one of the most widely traveled east-west routes in the Treasure Valley, for affordable housing (Shallat et al. 2011). Consultants hired by the city are exploring key sites where they could work with developers or the Boise City/Ada County Housing Authority to build affordable housing and help catalyze development along the State Street corridor. Together, the City of Boise, VRT, the Ada County Highway District, and other partners have since decided to widen the street to seven lanes, and design it for faster bus transit on the outer lanes (Clegg 2021).

Developing new units is a huge lift in the City of Boise. For many years, the City of Boise was the only individual recipient of federal Community Development Block Grant funding in Idaho; however, this source of federal funding has been declining over the past decades. There is state legislation for creating a housing trust fund, but no funding has ever been appropriated to the fund. Non-profit partners and intermediaries play an important role in supplementing affordable housing resources and strategies. For instance, the Treasure Valley Community Land Trust, run by local non-profit LEAP Housing Solutions, aids in purchasing land (Carmel 2021).

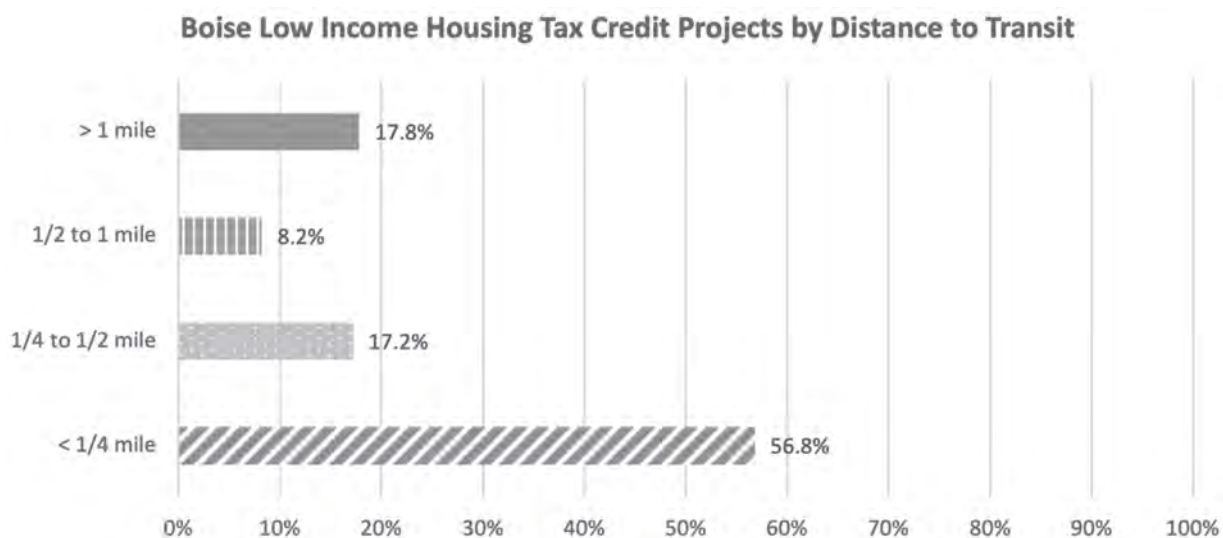


Figure 7. Boise LIHTC units by distance to transit (Source: FTA 2019a; NLIHC 2021a).

Additionally, Neighborworks, a national organization that creates opportunities for people to live in affordable homes, is also actively involved through its local chapter in supporting the land trust and other affordable housing efforts. For the developer, the margins are very thin; thus, cities must leverage assets or provide subsidies to enable projects to pencil out. While transit access does not have the price premium in Boise as seen in other markets, it does provide essential service to many low-income residents living along transit corridors.

Conclusion

Public transit is limited in Boise, and housing affordability challenges are increasing. Of the transit that is provided, several options are offered to ensure low-income and disabled individuals have access and that fares are affordable. Coordination between affordable housing and transit providers and advocates is in its beginning stages. Many plans have outlined on paper promising strategies and mechanisms, but implementation is slow, complex, and requires a lot of additional work to develop the complex funding stacks and transit funding to expand affordable housing and transit transportation in this region.

Funding challenges are daunting and real, but partnerships with non-profit partners can provide important new resources and capacity. Bureaucratic barriers often impede on the progress that occurs. Transportation does not have dedicated funding streams, nor has it seen large amounts of grant money for years. Therefore, creative processes, such as the development of land trusts and neighborhood collaborations to improve liability measures, must be put in place.

4.5 Chicago Case Example

The greater Chicago metropolitan area includes 284 municipalities and is home to almost 9.5 million residents. In contrast to the other case examples, it lost population between 2015 and 2019. The region has a strong transit network consisting of fixed guideway and local bus service provided by the CTA, suburban bus service primarily provided by Pace, and Metra commuter rail. The Regional Transportation Authority (RTA) coordinates the regional transit system, allocating state and federal funds to agencies operating within the six counties of Northeastern Illinois.

A variety of efforts are underway across a range of public and non-profit organizations working in the greater Chicago area to coordinate transit and affordable housing more intentionally. Like many other regions, Chicago transit providers are also engaged in efforts to better understand ridership trends and demographics, including those specific to the COVID-19 pandemic, when a large share of riders stopped using transit, and commuter-serving systems have been slow to recover (RTA 2021).

Patterns of discrimination in housing and development have left a region that is highly sorted by race and income. As shown in Table 9, median household incomes in the city of Chicago are almost 20% less than for the MSA as a whole. Greater racial population diversity and lower-income households are located in the city than in the extended region.

In 2013, Chicago began to formally encourage TOD by adopting a TOD ordinance that was amended in 2015 and again in 2019. The recent amendment adds key bus corridors and strengthens the city's commitment to equitable development. In June 2021, the city finalized its ETOD policy plan, which outlines a comprehensive set of actions that city agencies and other partners such as CTA will implement over the next several years (City of Chicago 2021a).

The CTA is one of the nation's oldest rail transit systems. It has significant maintenance needs and like other transit providers is experiencing declining ridership and revenues that predated

the COVID-19 pandemic (Morell and Puente 2020). In 2019, CTA initiated a detailed review of its bus service and routes with a goal to identify local design issues and network improvements to support ridership, but also racial and social equity goals. A limited number of reduced fare programs exist across the different transit providers, which RTA coordinates, primarily for lower-income seniors and people with disabilities (RTA n.d.).

Over the last 5 years, several TOD planning efforts have been funded by the FTA's TOD Pilot Planning program and other philanthropic resources. The CTA is an active partner in these and works with local and regional agencies and non-profits that contribute to the conversation on affordable housing and transit projects, such as the City of Chicago Department of Planning and Development (DPD), Chicago Metropolitan Agency for Planning (CMAP), Chicago Department of Transportation, Metropolitan Planning Council (MPC), Preservation of Affordable Housing, and Elevated Chicago.

CMAP, the regional planning agency and MPO, and RTA each offer local technical assistance grant programs that provide planning assistance to communities. MPC, a non-profit regional planning organization, has a long history of engaging on housing and transportation issues, including sponsoring a variety of TOD and community outreach programs. Elevated Chicago is a cross-sector collaborative formed in 2017 and funded by the national Strong, Prosperous, and Resilient Communities Challenge to specifically support affordable housing and transit connections and broader issues of equity and economic opportunity around several CTA stations that serve predominately low-income communities of color in the south and west sides of Chicago.

Planning Coordination

CMAP is the primary regional planning authority and MPO. Its *ON TO 2050* regional long-range plan includes a strong focus on land use policies aligned with transportation goals to counter recent population loss and decades of urban sprawl, and growing transportation challenges. This includes an emphasis on planning for a range of housing options and promoting housing near transit. For over a decade, CMAP has supported several different planning activities to advance these goals (CMAP n.d.b).

Together with the Metropolitan Mayors Caucus, CMAP has assisted more than 30 communities with assessing local housing supply and demand through the Homes for a Changing Region program (CMAP n.d.a). Most recently, CMAP and its partners created a toolkit that local governments can use to perform their own analysis. The agency has a 20-member housing and land use committee that meets bi-monthly to guide its work and provide housing expertise and input into its decisions. CMAP helps to staff the Regional Housing Initiative, which pools project-based vouchers from PHAs and makes them broadly available to developments region-wide. CMAP's role is primarily to analyze the spatial context of each development and make recommendations concerning how well it meets regional goals. CMAP developed the Local Technical Assistance Program to help municipalities plan locally while advancing regional goals, including affordable housing. Most suburban municipalities lack the resources to do deep work on housing. CMAP intervenes to provide this support through its research and technical assistance and has created several fair housing resources.

Somewhat unique to the region, the RTA was created to provide regional financial and planning oversight to help coordinate service across transit providers serving the six-county region. RTA works closely with CMAP and provide formula and other transit funding. In its allocation of federal American Recovery Act funds in 2020–21, RTA adjusted its formulas to prioritize those areas serving low-income and other high-need neighborhoods (Horsting 2021). RTA also administers a community planning program that provides technical assistance and funding for

planning projects that support TOD and corridor studies. This past year the RTA partnered with CMAP on a call for projects limited to places of high need, and reduced match requirements for these communities to make it easier to access funding.

CMAP also administers a Local Technical Assistance program funded from a variety of public and philanthropic sources, but primarily with federal Unified Work Program transportation planning funds. The program was initiated through a HUD Sustainable Communities Regional Planning grant, and since 2011, the program has committed approximately \$20 million to over 200 local plans.

Added to these regional partners, non-profit organizations that include MPC, the Center for Neighborhood Technology (CNT), Enterprise Community Partners, and Elevated Chicago are actively engaged to advocate for and facilitate better coordination of affordable housing and transit by elevating community voices, particularly those of Black and Brown residents, employers, and community-based organizations. The Elevated Chicago collaborative supported the creation of an ETOD work group in 2019 that currently includes almost 90 members and works closely with city agencies, the CTA, CMAP, and a variety of cross-sector organizations. The work group facilitated the creation of the City's first ETOD Policy Plan in 2021. Current implementation efforts include public engagement and outreach efforts, with a focus on engaging those communities experiencing displacement and historic disinvestment, to center transit discussions on the needs of vulnerable populations, including those living in affordable housing. A set of *Elevated Community Engagement Principles* informed this process and were developed collaboratively between public and non-profit aligned organizations (Elevated Chicago 2019).

Aligning Transit to Better Serve Low-Income Riders

The focus of the city's ETOD efforts is on fixed rail and high frequency bus routes. Much of the city of Chicago is served by a legacy network of well-established routes along a grid-based system with very frequent stops of a ¼-mile or less. Early analysis of ridership trends across CTA, Pace, and Metra systems during the COVID-19 pandemic found that riders who continued using transit reported household incomes below \$50,000 and, particularly, below \$25,000, or were essential workers in on-site jobs that did not allow for telecommuting (RTA 2021). None of the regional transit providers currently offer a reduced fare program specifically for low-income riders. CTA offers free rides for military, low-income seniors, and low-income disabled riders, and reduced fares to students, seniors, and disabled riders. RTA sets the policy and manages the reduced fare program. The income levels for eligibility range from \$33,562 or less for an individual, \$44,533 for a two-person household, and \$55,500 for a household of three or more people. Pace does not have a reduced fare program.

Cook County initiated a 3-year pilot program in January 2021 to offer reduced Metra fares and expand Pace bus service in the south suburbs and South Side Chicago along two of its lines. The pilot reduces fares 50% on the two Metra lines serving the area, creating parity with CTA fares. The county won an FTA Accelerating Innovative Mobility grant to subsidize any loss of revenue by the impacted agencies, and to support community outreach around the program (Greenfield 2020).

The Chicago Department of Health currently runs a program with the CTA to provide assistance to unsheltered customers who have been using CTA trains and stations for shelter. Under the program, a team of health and social workers from The Night Ministry provide services 1–2 nights per week at 95th Street Station on the Red Line and the Forest Park Terminal on the Blue Line. These are the two CTA lines that operate 24/7. The team can provide immediate supportive services to unsheltered individuals, including health care, housing, and social services.

With funding in 2018 from FTA’s TOD Pilot Planning grant program, CTA is also working to align housing with future transit expansion of the Red Line. This includes a Red Line Extension Transit Supportive Development Plan currently underway that incorporates a strong public engagement element (CTA n.d.). The planning is being done in close coordination with the city’s Department of Planning and Development to coordinate on zoning and other needed changes to help this predominately single-family zoned area evolve into more TOD supportive land use and help stem persistent population loss. CTA is using a portion of the grant funding to pay for a part-time staff person at DPD (Dawson-Mooney 2021). In 2015, an FTA TOD Planning grant funded the Red-Purple Modernization (RPM) TOD plan to gather community input on redevelopment of parcels acquired for the construction project, including an implementation plan and request for proposal (RFP) scoring criteria that included an emphasis on affordable housing.

Aligning Housing to Better Serve Transit Riders

Housing costs are increasing in the Chicago region, and many households pay more than 30% of their income on housing. As shown in Table 13 (Comprehensive Housing Affordability Strategy Data), many renters and homeowners are cost burdened both in the city and within the larger region. Renters are particularly stretched. Within Chicago renters and homeowners, equal percentages of homeowners and renters are severely cost burdened, whereas in the region, 24% of renters versus 11% of homeowners pay more than 50% of their income on housing.

Since 2015, CMAP has helped to coordinate and provide technical assistance to the region’s PHAs, with a focus on supporting the allocation of HCVs and performing evaluation of access to transit (Scott 2021). The Regional Housing Initiative was incubated at MPC before CMAP took over responsibility. Both Chicago Housing Authority and Cook County participate. In analyzing proposed new developments, HCVs, and use of low-income housing tax credits, CMAP helps the PHAs evaluate housing and location efficiency elements, including transit access.

Figure 8 shows the percentage of LIHTC-funded affordable housing units located near transit. Roughly 80% of units are within a half-mile of transit, indicating both the prevalence of the regional transit network, historic patterns of racial and economic segregation, and policies by housing agencies to consider transit.

The City of Chicago’s Department of Housing, which is a member of the ETOD Work Group, is also focused on access to transit in its recent work, including calling out TOD in 2021 revisions to the Affordable Requirements Ordinance (ARO), which serves as the Chicago’s inclusionary zoning policy (City of Chicago 2021b). Among other things, the revised ARO policy will incorporate the following actions:

- Extending the 20% set-aside into downtown and in high-cost community areas and/or displacement vulnerabilities.
- Increasing the proportion of affordable units that must be built from 25% to 50% of set-aside.

Table 13. Cost-burdened households in Chicago and broader MSA (Source: HUD 2020).

	Owner				Renter			
	≤30%	>30% to ≤50%	>50%	Not available	≤30%	>30% to ≤50%	>50%	Not available
City of Chicago	68%	21%	25%	1%	51%	21%	25%	4%
Chicago (MSA)	72%	15%	11%	1%	52%	21%	24%	3%

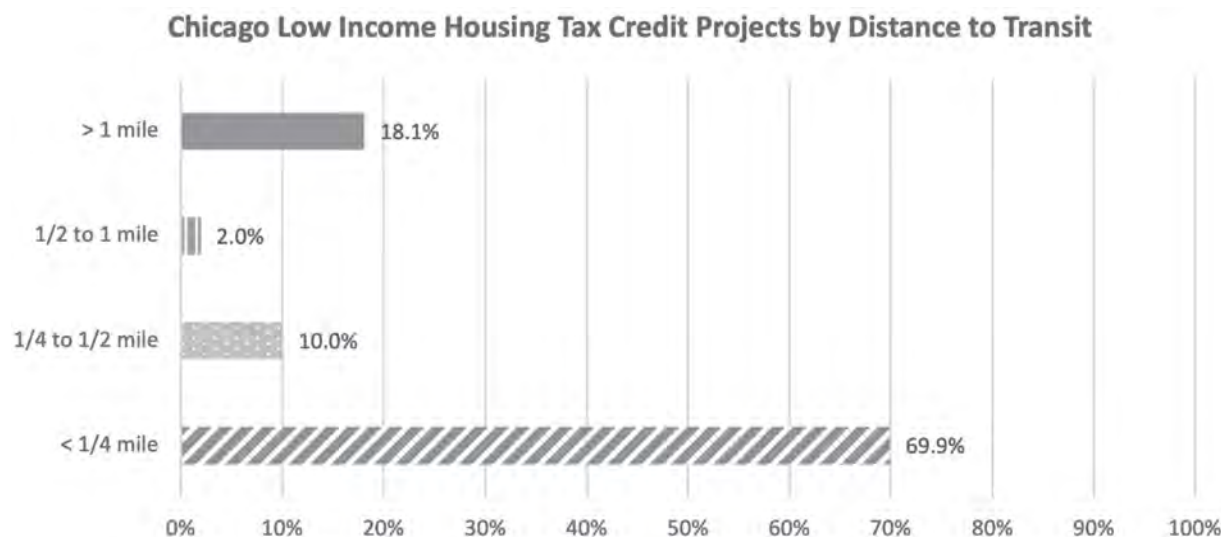


Figure 8. Chicago LIHTC units by distance to transit (Source: FTA 2019a; NLIHC 2021a).

- Allowing off-site units to be built in any part of the city lacking in affordable housing or threatened with displacement.
- Requiring that if the triggering development is in a TOD zone, the off-site units must also be in a TOD zone.
- Adding mandates and incentives for developers to create deeply affordable and family-sized affordable units.

Prior to these changes, the ARO included a limited TOD density bonus and could be applied off-site. In rewriting the ordinance, the Department of Housing convened numerous stakeholders, including those who live in affordable housing. Transit access was a frequent issue raised as being important to residents. So too, was the need for a variety of housing types, including two- to six-unit flats, which are prevalent across Chicago, and which offer families an affordable, larger housing option. Preserving these in transit-served locations is an important city goal (Soto 2021).

The revised ARO is one of the City’s tools in the creation and preservation of affordable housing throughout Chicago. In March 2021, the Department of Housing also released the country’s first Racial Equity Impact Assessment (REIA) on its QAP, which sets criteria for the distribution of LIHTCs. The REIA will inform how, where, and to whom the department allocates tax credits, and how the Department of Housing incorporates a racial equity lens to garner opportunities for community wealth building (City of Chicago n.d.).

The City’s 2019 ETOD ordinance required an analysis of TOD projects approved since the 2015 ordinance. The ETOD Policy Plan includes the results of this analysis, which found that fewer than 10% of recent TODs occurred in lower-income Southside and Far West neighborhoods, but instead were concentrated in more affluent Blue Line neighborhoods, the inner loop and downtown, and in near-Westside neighborhoods such as Logan Square, where gentrification pressures have pushed out many low-income Black and Brown households (City of Chicago 2021a). Few of these projects included affordable units.

With the greater focus on ETOD by the city, including targeting housing and finance resources like tax increment financing and LIHTCs, this dynamic is starting to change. The Emmet Street project in Logan Square, directly adjacent to the Blue Line Logan Square station,

is 100% affordable and funded with a mix of incentives. The project is built on a city-owned parking lot, which was donated to help reduce land costs (Dawson-Mooney 2021).

The CTA is also engaged with ETOD projects despite the limited available surplus property it has, given that the system was developed over a century ago by private operators who did not have eminent domain and did not construct park and ride lots. The agency does not have a formal joint development or TOD policy. CTA is pursuing redevelopment of a parcel at 2525 N. Kedzie in the Logan Square neighborhood. CTA used the criteria developed in the RPM TOD Project described earlier in the RFP for this site (Dawson-Mooney 2021). It includes an emphasis on affordable housing, with city agencies providing information on various incentive programs that could be tapped to support financing affordable housing units.

Conclusion

The Chicago region demonstrates the opportunities and challenges that many large, older metropolitan areas face in coordinating housing and transit. On the one hand, the region has an extensive transit network and numerous cross-sector partners that can bring resources, technical expertise, and coalition building necessary for coordination.

On the other hand, this is a sprawling region with transit and affordable housing funding needs that far surpass existing resources. Much of the region's suburban land use is not conducive to efficient local transit service, and the multiple layers of government make coordination, even within a defined geography, difficult.

Administrative burdens, even between non-profit partners, make it a challenge to work cooperatively, especially with philanthropic partners, and government funding is often siloed, so that working across issues or addressing deeper systemic changes needed to address persistent racial disparities in transit service, housing, and economic development is sporadic at best.

Within government, silos between agencies also create barriers to coordination. The Lightfoot administration is working to tackle this, with a staff person located within the mayor's office to specifically coordinate ETOD efforts between housing, transportation, public health, and planning departments, and sister agencies like CTA, RTA, and CMAP. Advocating outside one's lane can be daunting, especially when the reasons and interventions for coordination are not clear and specific. Opportunities for deeper transformation have benefited in Chicago from the involvement of non-profit and community partners like MPC and Elevated Chicago, which work closely with government partners to engage community members directly impacted by policies and projects so that interventions happen with communities, not to communities.

4.6 Kansas City Case Example

In recent years, recognition of the need to better coordinate transportation and affordable housing has taken root across the Kansas City metropolitan area, with the regional planning agency playing an important role in fostering discussions. Like other growing regions of the country, increasing costs of housing are making it a challenge for many to find an affordable place to live and for employers to attract and retain workers. Sprawling density in the region has made transit service challenging and expensive. Suburban communities that previously opposed affordable projects are now engaging in regional discussions to identify tools and resources to develop projects that are aligned with community goals and character.

Introduced in 1969, KCATA provides transit service for the Kansas City region under its unified regional transit brand, RideKC, developed in 2015 for all public transit service providers in the Kansas City metropolitan area, including KCATA, KC Streetcar (Kansas City Streetcar

Authority), Johnson County Transit, IndeBus (Independence, MO) and Unified Government Transit (Kansas City, KS).

The majority of transit central city and suburban service is provided by bus. In May 2016, streetcar service was reintroduced in central Kansas City. Other essential services provided by KCATA include paratransit, rail, and rapid bus transit. The region has also been piloting new micro-transit services to connect low-income households to suburban destinations. KCATA operates using less than 250 buses in its fleet during maximum operation. The neighborhoods with a significant number of affordable housing units are primarily served by at least hourly service.

The Mid-America Regional Council (MARC) serves the nine-county Kansas City metropolitan area and provides a forum for the region to work together to advance social, economic, and environmental progress. In 2016, in conjunction with the cities of Kansas City, Independence, and Blue Springs in Missouri, the city of Leavenworth, Kansas, and the Unified Government of Wyandotte County/Kansas City, Kansas, MARC developed a regional housing plan required by HUD (MARC 2020c). The plan incorporated multiple data sources, including America Consumer Survey data, CoStar multifamily data, and other sources to assess the existing state of affordable housing and to inform the formulation of the goals and strategies that guide MARC's work. The regional agency is currently working on several different initiatives designed to better coordinate housing and transportation, including the creation of an Equity Index, comparable to Portland, Oregon's Economic Value Atlas, with support of the Brookings Institution (Tomer et al. 2019).

Johnson County, one of the largest and most prosperous counties in the metropolitan region, has become more active in both transit and affordable housing partnerships convened by MARC and other regional partners. It is also undertaking its own initiatives.

Planning Coordination

Affordable housing is highly prioritized in MARC's LRTP activities (MARC 2020a). These focus on centers and corridors to improve the diversity of land uses and make multi-modal transportation possible. MARC manages a regional "Sustaining Places Program" that provides planning grants to localities to support improved coordination of land use, housing, and transportation (MARC 2020b). The Creating Sustainable Places program, funded by a HUD Sustainable Communities Regional Planning Grant, began in 2011 and addressed multiple aspects of sustainability, including the development of six corridor plans in the region (APA 2017). Since then, all of the funding rounds of the program have applied for and received Surface Transportation Block Grant Program funds, which require a minimum 20% local match.

Local match funds have come from a variety of sources, including Community Improvement Districts, partnerships between multiple agencies, transportation sales tax, and Community Development Block Grant funding, to name a few. The program's scoring process specifically examines placemaking, housing, environmental characteristics, equity, redevelopment, transit access, existing infrastructure, property owner/developer involvement, and commitment to implementation (MARC 2020b).

The First Suburbs coalition, a group of close-in suburbs that formed during post-World War II development, undertook an analysis of housing options for each of the communities to better understand the breakdown in housing types (e.g., single family, duplex, and triplex), when they were built, and the price points of their housing. Each community received a report of the breakdown along with geodemographic information detailing the dominant lifestyles within each community. The group has focused much of its recent work on cultivating Communities for All

Ages, where individuals can age in place. In 2019, MARC organized suburban jurisdictions into housing cohorts for planning and design coordination (MARC 2020c; Palmer 2021).

Aligning Transit to Better Serve Low-Income Riders

Transit providers are prioritizing efforts to inform and engage residents of public housing when fare policy or service changes are being considered. Survey responses included simple collection measures such as outreach at bus stops. Recent engagement by RideKC on improving transit access for low-income riders is in response to requests by social service providers.

Public housing organizations and city governments coordinate with KCATA to provide route and service information to residents of affordable housing. Transit access is also being considered when making decisions about where to locate affordable housing projects. Coordination also occurs to provide transit passes and to inform local and regional transportation plans and transit investments. Prior to KCATA's zero fare program, the Opportunity Pass was created in partnership with social service agencies to provide discounted passes to low-income residents.

Regional access to jobs has also become a critical regional issue. Kansas City is a major logistics hub for the nation, and the majority of jobs in the sector are located in areas of the region that are not historically served or efficient to serve by transit. RideKC Development Corporation (RKCDC) is working to change this dynamic, recognizing that while transit won't serve the entire region, future employment centers should not continue to be built without any eye to treating and accessing transit for workforce as both infrastructure and service (Starner 2021).

Workforce access creates an important leverage point for coordinating housing and transit. Kansas City officials are exploring the concept of requiring a transit access evaluation for major developments, just as it currently requires traffic studies for new employment centers. Such a requirement would enable transit planners to be proactive rather than reactive in responding to development, with proposed projects reporting on existing transit infrastructure service, proximity to service, and what new infrastructure is required to support the project (Starner 2021).

RKCDC is a 501c3 wholly owned subsidiary of KCATA, and was created specifically to play an economic development bridge between public policy, workforce access, transit, and housing. This has evolved to also include a focus on childcare access and efforts to ensure all residents have reasonable access to regional job opportunities. Since 2018, RKCDC has been involved in a number of planning and project development efforts, including issuing requests for proposals to redevelop key sites near transit. This has included several mixed-income projects utilizing LIHTCs. RKCDC can act as an equity-based developer, potential financing source, or a partner with a private developer to secure project financing (Starner 2021).

The location of Urban Outfitters's \$420 million new logistics center on land sold by and near the Kansas Speedway in Kansas City, Kansas, closely fits this model of workforce access as a priority during the site location and incentive process (Hardy and Kite 2020; Starner 2021). RKCDC deferred sale of the land for 3 to 5 years. Both RKCDC and KCATA were actively included in the company's months-long regional site search. Public transportation access was among Urban Outfitter's top five site location requirements (Starner 2021). The Unified Government of Wyandotte County/Kansas City, Kansas, negotiated incentives, including the first-of-its-kind agreement to build and provide new transit services. Urban Outfitters imposed a tax on the organization via a community improvement district to contribute funding to improve transit access (Hardy and Kite 2020; Starner 2021).

KCATA partnered with Transdev (operator of KCATA's fixed-route and paratransit services) to provide RideKC Freedom On-Demand, a 1-year pilot program that provides demand-response service for other individuals with disabilities and, in parts of the service area, older

adults (Roberts 2017). RideKC, in partnership with the Kansas City Veterans Administration and the Veterans Community Project, is honoring veterans through a free fare program.

Kansas City's transit agency began to implement a Zero-Fare Transit plan in 2019 (Casale and Sanderson 2020). The city is incrementally rolling out zero-free transit. In the 2020 budget, the city dedicated \$4.8 million to support a zero-free transit system (Sanderson 2020). To make up the other \$4 million, private funding was intended to be used in the form of additional business tax and/or parking or transportation fees, a similar tactic done with the RideKC Streetcar (Casale 2020).

Fares have been eliminated for 25% of Kansas City's ridership, including students and veterans, on one fixed-route bus along the east side of the city (Casale 2020). But Kansas City's size, budgetary issues, geographic constraints, and historical sprawl present challenges for a full-scale rollout.

Johnson County officials have been less supportive of zero-fares to build ridership. Prior to 2020, ridership was up 10%, therefore indicating prices are not what is stopping residents from taking public transportation. Other issues, such as increased consistency and frequency of service, are higher priorities for the county's public transit funding. For example, if a rider were to take a bus from Kansas City to Johnson County, the transition back would not be free, including transfer stops.

In 2019, one of the first micro transit services in the nation was adopted specifically to improve job access for low-income residents. KCATA and private companies, Bridge and Ford, began exploring micro transit service in the region in 2015, but implementation did not occur until 4 years later. Johnson County government has played a lead role in the recent micro transit pilot, using its procurement processes to implement a program in less than 6 months' time to purchase three Ford Transit vehicles bought and licensed under a TransLOC partnership (Powers 2021).

Micro transit may be an important tool for providing vulnerable populations with jobs access and other basic destinations (Powers 2021). It is a tool for first- and last-mile issues but not a replacement for fixed service. Johnson County is currently in the middle of a visioning process with the board to re-envision what the future can hold.

In 2021, transportation was a major barrier for some residents when it came to getting vaccinated. A new Cares Connect partnership between Truman Medical Center (TMC) and KCATA made sure underserved communities had equal access (Holwick 2021). The organizations worked with the city's housing authority to identify people eligible for the vaccine and take them from their homes to TMC's vaccination site.

Aligning Housing to Better Serve Transit Riders

The rising cost of housing has generated new conversations and alliances across the region. Both homeowners and renters are feeling the weight of housing costs, but to a lesser extent than seen in the other case example regions. Yet interestingly, in contrast to the other regions, a higher percentage of extremely cost-burdened households resides within the larger metropolitan area than within the central city. As shown in Table 14 (Comprehensive Housing Affordability Strategy Data), 20% of homeowners in the region are paying more than 50% of annual household income on housing versus 8% within the city, with similar trends among renters.

Research on the proximity of LIHTC buildings to transit services revealed that over half of Kansas City residents living in affordable housing units (51.4%) have relatively good access to public transportation, living less than a quarter mile away from transit services (see Figure 9). The remaining residential units (48.6%) require traveling more than a quarter mile to access transit, with 19.8% of residents located over a mile away from transit services. The lack of coordination

Table 14. Housing-cost-burdened households in Kansas City and broader MSA (Source: HUD 2020).

	Owner				Renter			
	≤30%	>30% to ≤50%	>50%	Not available	≤30%	>30% to ≤50%	>50%	Not available
Kansas City	79%	12%	8%	1%	81%	11%	7%	1%
Kansas City (MSA)	57%	21%	20%	2%	55%	21%	21%	2%

between affordable housing and access to transit leaves a significant number of low-income residents challenged with navigating last-mile options when looking to take public transportation.

Affordable housing resources have been harder to generate in the region than perceived (Palmer 2021). There have been challenges articulating the value of working regionally to spur development of more projects on the ground (Palmer 2021). Yet funders are eager to invest in affordable housing projects. The process was altered to provide an alternative to investing in the MARC housing partnership. Instead, funders can choose from a menu of options to support housing goals.

The recognition of housing affordability is a new concept in Johnson County. Known as the most populous and densest county in Kansas, it is responsible for 30% of the state’s GDP and 25% of employment (EMSI 2021). One challenge that is present in Kansas City, MO, is the historical racism and institutionalized biases that have long contributed to stereotypes of who public transportation is for, especially for elected officials whose political headwinds hinder coordination efforts (Hopkins 2021; Powers 2021).

Kansas City does not have any requirements or incentives in place to encourage the development or preservation of affordable housing in transit-served areas. The Kansas City Transit Oriented Development Policy was adopted as a guide for future development and public investments near transit stations and along transit corridors by the City Council in May 2017 (City of Kansas 2017). In 2018, KCATA received an FTA TOD planning grant to plan for TOD along

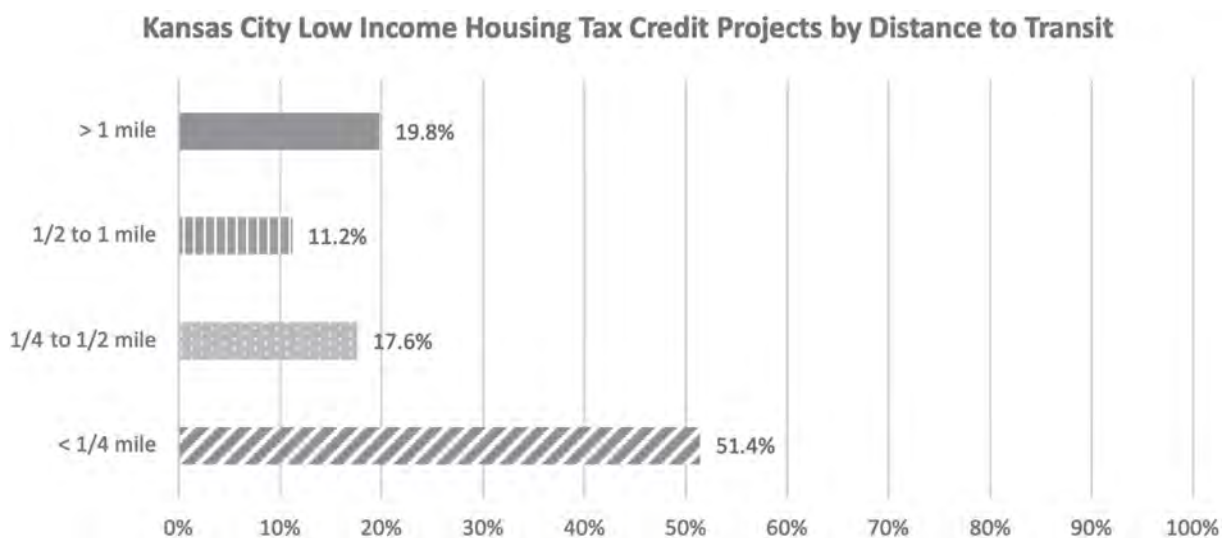


Figure 9. Kansas City LIHTC units by distance to transit (Source: FTA 2019a; NLIHC 2021a).

the Rock Island Railroad Corridor, a 17.7-mile corridor where a fixed guideway project is being planned to connect three major cities in the Kansas City region, and a second grant was awarded in 2019 to the City of Kansas City to plan for TOD along the 32-station Prospect MAX BRT project (FTA 2018).

In January 2021, Kansas City passed an ordinance requiring that residential development projects with 12 or more units include affordable housing components as a condition for seeking public economic incentives (Wine 2021). The developer is required to designate a minimum of 10% of new residential units to households at or below 70% AMI and 10% of the residential units to households at or below 30% AMI. The ordinance does not include a focus or priority on transit corridors. Developers have the option to make a payment to the City in lieu of building the units (Wilson 2017).

Conclusion

Transit and affordable housing coordination efforts are in the early stages across the region. Initial coordination is still primarily at the grass-tops levels. There is a need to better align grants, incentives, and regulations. Kansas City housing advocates note that if affordable housing is only addressed in the urban core, too many families are cut out of the prosperity picture.

Over the last couple of years, coordination is emerging through regional discussions among communities hungry for tools and resources to develop projects that are aligned with individual community goals and character. The unique bi-state dynamic creates a benefit and a challenge. Community demographics, political dynamics, and funding opportunities must be examined for both Missouri and Kansas.

The work of the RideKC Development Corporation offers some unique insights into how transit agencies may evolve to take on larger economic development and housing roles. Beyond project financing, this new agency is tackling pre-development barriers and policy changes to de-risk development and density. Recent transportation initiatives created to aid low-income areas in getting access to jobs and the necessary public services will be important to watch and analyze.

4.7 San Francisco Bay Area Case Example

The San Francisco Bay Area is a complex region with three core cities: Oakland, San Francisco, and San Jose, spanning across a geography separated by water and mountains. It is home to some of the nation's largest technology firms, which have fueled growth and escalated home prices. Its complexity is also reflected by the large number of transit agencies that operate there, with over 20 in the nine-county region. The San Francisco Municipal Transportation Agency (SFMTA), BART, AC Transit in Oakland, the VTA in San Jose, and Caltrain commuter service are the largest providers.

Among the five case examples, the Bay Area is the most racially diverse, has the highest median household income, and has some of the greatest income disparities (see Table 9). Years of under-production in housing have led to an extreme shortage of affordable housing across the Bay Area, and some of the highest home prices in the nation. Between 2010 and 2015, the San Francisco and San Jose metro areas had the largest jobs-to-housing gap in the nation (Salviati 2017).

Recent state legislation has spurred a flurry of action by local and regional agencies. It is the result of advocacy by non-profit and private sector partners to accelerate coordination of transit and affordable housing policies, programs, and investments. Bay Area transit agencies were early leaders in establishing TOD guidelines with specific affordable housing goals.

In 2005, the Metropolitan Transportation Commission (MTC) became the first regional planning agency and MPO to establish a TOD policy (MTC 2005). It requires transit-supportive land use as a condition for transit funding, predating similar changes made to FTA's Capital Investment Grant Program guidance. MTC has long supported linkages between transportation and land use through a variety of its planning and grant programs. It also helped to create a regional TOAH fund in 2011, with a \$10 million commitment to seed a \$50 million revolving loan fund in support of affordable housing at TOD projects throughout the region (Seifel Consulting and ICF International 2013). Since then, MTC has also helped to pilot other housing incentive programs supporting compliance of state affordable housing and climate legislation.

Regional transit agencies began exploring reduced fare programs before the COVID-19 pandemic. The Clipper START pilot program initiated by MTC and Bay Area transit agencies in 2018 uses the Clipper transit fare payment system to reduce the cost of transportation for adults whose household incomes are no more than twice the federal poverty level, for example, \$52,400 for a family of four (MTC 2020). Homelessness is a major social challenge transit agencies and regional agencies are working to address. BART is one of a few transit agencies in the country with an established homelessness outreach program (BART 2019).

The region benefits from a deep bench of high-capacity non-profit housing and transportation organizations, such as Enterprise Community Partners, the Low-Income Investment Fund, TransForm, SPUR, and Urban Habitat, to name just a few. Many of these groups are directly engaged in efforts to coordinate transit and affordable housing with an explicit focus on racial equity and meeting the needs of very low-income households. Philanthropy is also an important partner. For instance, the Great Communities Collaborative, created by the San Francisco Foundation and other regional and national funders more than 10 years ago, fosters cross-sector collaboration and has funded local station area planning and equitable development initiatives (Wampler 2021).

Planning Coordination

The statewide context for required coordination of affordable housing and transit is particularly robust in California. The Affordable Housing and Sustainable Communities (AHSC) program created by the legislature in 2014 is funded by state cap and trade auction proceeds to reduce greenhouse gas (GHG) emissions and tackle affordable housing challenges (California Strategic Growth Council n.d.). To date, AHSC has invested \$1.66 billion in 127 catalytic developments across California that integrate housing and transportation with community infrastructure (Marcus and Rosenfeld 2021). AHSC funds affordable location-efficient housing and transportation investments that facilitate walking, biking, and taking public transit, with prioritization for low-income and disadvantaged communities.

This legislation builds upon SB 375 adopted in 2008 to reduce GHG emissions by requiring MPOs to develop Sustainable Communities Strategies/Regional Transportation Plans every 4 years that integrate transportation investments, land use growth, and regional housing allocations as part of their long-range plans. Plan Bay Area meets this requirement and is currently being updated by MTC as Plan Bay Area 2050 (PBA 2050), scheduled for adoption in late 2021. PBA 2050 establishes major transportation investments and key growth geographies to accommodate future jobs and population through 2050.

California's Department of Housing and Community Development (HCD) determines the total number and level of affordability of new homes the Bay Area needs to build to meet the housing needs at all income levels through the RHNA process. HCD also tracks surplus publicly owned land available and suitable for housing and facilitates connections between local governments and affordable housing developers through Assembly Bill 1486, the Surplus Local Land Act. This new law aims to help overcome a major barrier to building new affordable housing,

which is acquiring suitable and affordable land. MTC is helping to implement the program within the Bay Area (Smith et al. 2018). Yet for localities and transit agencies, there are important tensions and trade-offs in thinking about future use of surplus lands. While some in the community prioritize these lands as a chance to build 100% affordable housing, local governments and transit agencies face revenue shortages especially in the face of property tax caps. Honest dialogue is needed around expectations, goals, tensions, and financial priorities for the best public use of these lands (Greenspan 2021; Rabalais 2021).

The California State Transportation Agency's (CalSTA) Climate Action Plan for Transportation Infrastructure released in March 2021 includes a strategy focused on leveraging transportation investments to incentivize infill housing production (CalSTA 2021). This strategy builds on other administrative efforts. For instance, new housing criteria added to the Transit and Intercity Rail Capital Program guidelines in 2020 encourages housing to be located near existing transit and encourages housing as an equal consideration in corridor planning (Strategic Economics et al. 2021).

To implement Plan Bay Area, and subsequent updates, MTC created the Priority Development Area (PDA) and One Bay Area Grant (OBAG) programs. PDAs are locally nominated areas near public transit with different tiers reflecting the frequency and type of transit service and are included in Plan Bay Area as one of the primary growth geographies. PDAs are meant to support more compact and mixed-use growth patterns near transit throughout the region. The PDA Program is one of the major avenues through which MTC facilitates coordination of housing and transit at the local level (MTC n.d.a). MTC's PDA Planning Program and PDA Technical Assistance Grant Program provide funding and technical assistance to help jurisdictions conduct planning and zoning work. MTC developed the Housing Element Estimation Tool that enables local jurisdictions to visualize available sites that can be redeveloped to help them meet their RHNA housing requirements (Trivedi and Vuicich 2021). To date, there have been approximately 103,000 housing units, 75 million square feet of commercial space, and 130,000 jobs planned as a result of the PDA program. (Strategic Economics et al. 2021).

The OBAG Program was adopted in 2012 to better integrate federal transportation funding with Plan Bay Area transportation and land-use goals (MTC n.d.b). It includes funding criteria that reward places for planning for TOD and for meeting RHNA goals. OBAG requires jurisdictions to meet specific state requirements, such as having a certified housing element and a Complete Streets policy in place, as an eligibility condition for receiving funding. The program is being revised to align with PBA 2050, and will include a stronger focus on aligning with affordable housing investments, incentives, and AB 1486 (Trivedi and Vuicich 2021).

MTC's 2005 TOD policy applied to a selected set of new transit investments. MTC applied corridor-level housing performance targets to encourage cities to work jointly on planning for housing growth in station areas (MTC 2005). The numeric housing targets varied by transit type (rail, BRT, or ferry) and by planned growth capacity (Strategic Economics et al. 2021). The policy did not include specific affordable housing targets, but cities could count each affordable unit as two market rate units. According to a 2014 status report, the TOD Policy resulted in communities planning for 26,000 housing units and influenced local planning, especially in more suburban communities (CTOD et al. 2014).

Aligning Transit to Better Serve Low-Income Riders

Approximately half of Bay Area transit riders have a household income under \$25,000, and three-quarters have a household income under \$50,000 (CH2M 2017). While the region is exploring reduced fare programs through the integrated Clipper START program, several of its systems, such as BART, have distance-based fares that create challenges for low-income households to utilize rail and lead to an income dynamic between rail and bus ridership. This

dynamic was seen during the COVID-19 pandemic as well in terms of ridership and service cuts (Thorne-Lyman 2021).

BART, AC Transit, VTA, and SFMTA all responded to the project survey. With the exception of BART, which is only a heavy rail operator, the agencies provide a mix of bus, paratransit, and rail transit. All offer discounted fares for low-income riders, though BART's participation is limited to the Clipper pilot mentioned earlier. SFMTA is notable in the variety of discounted fare programs it provides, and the availability of information on these programs. They include Free Muni for youth, seniors, and people with disabilities, and "Lifeline." Lifeline is a Muni-only monthly pass for low-income customers offered at half the price of a standard monthly pass to those riders with a gross annual income at or below 200% of the federal poverty level (Dunn 2020). VTA and AC Transit also offer reduced fares to low-income riders using this same poverty threshold.

Each of the agencies responding to the survey report considering equity in making service decisions, including compliance with Title VI requirements. SFMTA considers "equity neighborhoods" in its service planning, focusing on neighborhoods with lower incomes that rely heavily on transit as part of its larger Equity Strategy (SFMTA 2018). BART is currently updating its expansion policy to support the LINK-21 long-range rail program and is exploring income, housing affordability, and anti-displacement metrics. BART makes a special effort to inform and engage low-income and minority riders when fare policy and service changes are being considered, as defined in its Public Participation Plan (BART 2011).

BART convenes two advisory committees: the Title VI/Environmental Justice Committee and the Limited English Proficiency Committee, comprised of members of community-based organizations that represent minority, low-income, and limited-English-proficiency riders (Thorne-Lyman 2021). This engagement does not explicitly target residents of affordable or public housing, but committee members represent neighborhood development corporations and other providers of affordable or senior housing and services as well as populations understood to overlap with minority and low-income designations.

Bay Area transit agencies are also committing to affordable housing as a cornerstone of their TOD efforts. BART owns over 250 acres of developable land at 27 stations. Assembly Bill 2923, passed in 2018, required BART to update its joint development policies and set higher zoning standards for BART-owned properties in Alameda, Contra Costa, and San Francisco counties to increase housing (Strategic Economics et al. 2021). In 2020, BART prepared a Draft TOD Work Plan that identifies its priorities for development over the next 10 years and establishes a set of performance targets. BART's Affordable Housing Policy, adopted in 2016, includes a 35% overall target for income-restricted units, prioritizing units affordable to households at or below 50% of AMI. The policy allows BART to discount the value of their land up to 60% to achieve these goals (BART 2020).

Caltrain, a commuter rail service operator, adopted a TOD policy by its Peninsula Corridor Joint Powers Board in February 2020 with a goal of generating revenue and increasing ridership. The policy requires at least 30% of units be provided at below-market rents, with at least 10% below 120% AMI, at least 10% targeted to households with incomes of no more than 80% AMI, and at least 10% affordable to households with incomes at or below 50% AMI (Caltrain 2020).

VTA has an extensive property portfolio with 25 sites identified as joint development opportunities, totaling approximately 183 acres. The agency periodically conducts a portfolio analysis to identify priority sites for development. It considers the ability to increase transit ridership, the ability to obtain entitlements for TOD-supportive development, the ability to meet affordable housing goals and catalyze TOCs in station areas, and other factors (Strategic Economics et al. 2021).

VTA's TOD Policy was developed in 2009 and revised in 2019 (VTA 2019). Goals include increasing ridership and revenues for the system, but also creating equitable and complete TOCs around transit stations. The 2019 update includes specific policies on parking and affordable housing. Key elements of the affordable housing policy include the following:

- An overall target of 35% of new units targeted to households earning no more than 60% of AMI has been set.
- At least 20% of individual projects must be provided as affordable housing, with at least one-half targeted to households earning less than 50% of AMI.
- The policy also outlines a variety of strategies to increase affordable housing in joint-development projects and implementation actions that VTA will undertake to achieve the affordable housing goals.

With funding from an FTA TOD Pilot planning grant, VTA worked closely with the cities of San Jose and Santa Clara and other stakeholders to create TOC playbooks that provide a set of strategies, policies, and actions for city staff, elected officials, and developers to advance a series of “big moves” that help to build TOCs along VTA rail stations (O'Malley-Solis 2021). The TOC Playbooks offer corridor-level and station-specific strategies for creating affordable and workforce housing, enhancing commercial areas, increasing mobility, and supporting neighborhoods that strengthen community identity. With additional funding from FTA, VTA and its partners are now working to advance these implementation efforts. The results are impressive. In April 2021, Google and the City of San Jose announced a historic \$200 million community-benefit agreement for development around the Diridon VTA station, a focus of one of the playbooks, that includes the creation of 1,000 new affordable housing units (Angst 2021).

Aligning Housing to Better Serve Transit Riders

A growing housing affordability crisis has been at play for more than a decade in the Bay Area. The cap on property tax rates created by California Proposition 13 continues to make it challenging for most cities to raise revenues to support housing production. In early 2012, Governor Brown dissolved the approximately 400 redevelopment agencies that had provided critical funding and technical expertise on affordable housing production (Hood and Rao 2018).

From 2007 to 2014, while the region met 99% of RHNA goals for above moderate-income households, most jurisdictions permitted less than a quarter of the total housing units needed for low- and very low-income households (Bromfield and Moore 2017). Displacement pressures have been extreme. Over half of low-income households are at-risk or already displaced (Urban Displacement Project 2015). Transit is one factor, but not the only, contributing to displacement of low-income residents (Chapple and Loukaitou-Sideris 2019).

Despite having one of the highest household median incomes (see Table 9), households at almost all income levels are cost burdened. Bay Area renters are more likely than homeowners to be extremely cost burdened, with nearly a quarter in the region paying more than 50% for housing versus 12% of regional home owners (see Table 15). The Bay Area has the third-highest homeless population in the nation (Kirkey 2021). Across sectors and at all levels of government, action is being taken to increase and preserve affordable housing near transit.

In addition to the state and regional transit agency efforts previously described, the City of San Jose and Oakland have strong commitments to ensure that all residents have decent, safe, and affordable housing. The San Jose Housing Department's Policy and Planning Team and Oakland Housing support their departments' programs by conducting a range of community engagement and data collection responsibilities, which have created a variety of plans and annual reports. One example is the San Jose Affordable Housing Investment Plan, a strategic document

Table 15. Cost-burdened households in the City of San Francisco and MSA (Source: HUD 2020).

	Owner				Renter			
	≤30%	>30% to ≤50%	>50%	Not available	≤30%	>30% to ≤50%	>50%	Not available
City of San Francisco	70%	16%	13%	1%	61%	19%	18%	2%
San Francisco (MSA)	71%	17%	12%	1%	53%	22%	22%	1%

that prioritizes how the city will use its resources to implement its programs and policies in the current planning period to meet its housing objectives (Morales-Ferrand 2020).

California Assembly Bill 1487, passed in 2019, created a new Bay Area Housing Finance Authority (BAHFA) as a shared initiative between MTC and the Association of Bay Area Governments (ABAG) to expand regional housing tools and financial resources. BAHFA and ABAG’s new Housing Committee will also coordinate on homelessness initiatives with the Regional Impact Council and All Home, a newly created regional non-profit organization focused on reducing unsheltered homelessness by 75% over the next 3 years (Kirkey 2021). These efforts are the result of work led by the Committee to House the Bay Area (also known as CASA), which convened between 2017–2018 and was staffed by MTC specifically to address the regional housing crisis.

Among the 10 priority recommendations developed by CASA, whose membership included elected officials, major employers, philanthropy, and housing non-profits and developers, is the goal of establishing minimum zoning near transit and unlocking public lands for housing (CASA 2019). Given the expansive work by affordable housing providers, state housing agencies, and regional and local leaders, including prioritization of transit access in the allocation of federal low-income housing tax credits, it is not surprising that the region has the highest percentage (78.2%) of LIHTC projects located within ¼ mile of transit among the five case examples (see Figure 10).

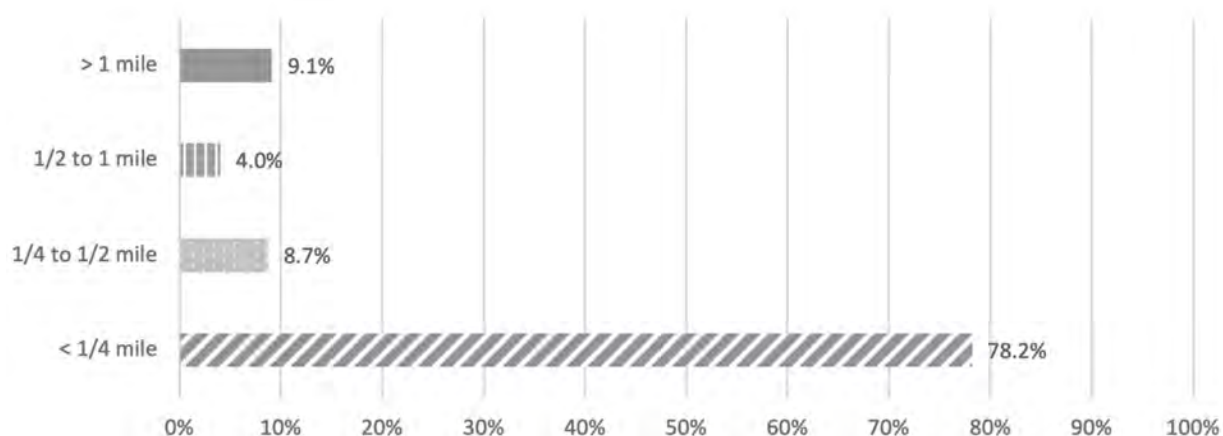


Figure 10. San Francisco Bay Area Percentage of LIHTC projects by distance to transit (Sources: FTA 2019a; NLIHC 2021a).

Conclusion

The San Francisco Bay Area was especially hard hit by the economic impacts of the COVID-19 pandemic. Ridership on its transit systems, especially rail, plummeted and it was among the regions nationally that lost population. The precipitous drop in transit fare revenue has presented a significant financial burden on operators, many of whom have reduced service. Given the shift in demographics of transit riders, affordable housing and jobs near transit may be even more of an imperative.

Although planning for increased development capacity near transit is a necessary step for enabling TOD, it has not always translated to development moving forward. Indeed, housing production has fallen well below the planned capacity. This reflects a broader range of barriers to delivering TOD, including the lack of financial feasibility, particularly as land and construction costs have skyrocketed. The high cost of infrastructure improvements needed to accommodate transit-supportive land uses creates additional barriers. Most often, the type of infrastructure improvements required include for first- and last-mile connections and utilities upgrades (such as water, sewer, and stormwater) are challenging for jurisdictions and developers to provide.

It has taken years for the current housing crisis to emerge. The diversity, consistency, and innovation of recent state housing, climate, and transportation legislative initiatives stand in stark contrast to other transit regions, where funding or legal barriers may exist at the state level that limit coordination between housing and transit. Transit agencies are playing a leading role in the Bay Area, utilizing their real estate assets, engaging in inclusive planning, and piloting reduced fare and homelessness prevention/intervention programs.



CHAPTER 5

Toward a Research Agenda on Transit and Affordable Housing Coordination

Transit and affordable housing coordination is a complex story to tell. While the federal transit program began as part of the U.S. Department of Housing and Urban Development, today housing and transit issues are often siloed, including at the federal level. Yet, transit is essential to providing mobility for vulnerable and disadvantaged populations. It has the potential to serve riders across income levels and occupations, and for a variety of trips beyond accessing jobs. However, the ability of transit to effectively meet these goals requires alignment and coordination with land-use and housing policies, especially at the local level. Survey results and existing literature on transit job access indicate that there is still considerable work needed to be done to better serve transit areas with high concentrations of affordable housing.

Research and housing data also show that communities are losing affordable housing stock as housing markets continue to increase faster than incomes in almost every major metropolitan area of the country. Rural areas also face transit access and housing affordability challenges. Racial justice uprisings of 2020 elevated issues of transportation equity. The long history of intersectional housing and transportation racial segregation continues to result in communities of color often not being well-served by transit, or by affordable, quality housing.

5.1 Key Findings

In synthesizing the survey responses, literature review, and case examples, several key findings emerge. Overall, coordination of transit with affordable housing is limited. The growing housing affordability crisis impacts households across a range of income levels. Regional planning and transit agencies are engaging to better coordinate housing with transportation, both to reduce the combined costs of each and to leverage underutilized transit real estate assets to develop new housing. However, challenges remain. Transit service and fare considerations that explicitly focus on the travel needs and affordability concerns of low-income households are less frequent.

Only 41% of survey respondents report offering reduced fares. Of these, most are targeted to vulnerable populations not based upon economic need. Neighborhoods with high levels of affordable housing are not prioritized by all transit agencies when making service decisions. Even more challenging, only one-third of those surveyed report transit service frequencies of 30 minutes or less. Residents of affordable housing are often limited in their mobility options and often face disproportionate cost burdens. Limited transit access to regional jobs and other essential destinations can limit their ability to thrive and move out of poverty. Likewise, this population is core to building and sustaining transit ridership.

Suburban communities and rural areas are seeing an increase in poverty and in some cases trying to expand affordable housing options. These communities are a challenge to serve efficiently,

with transit leaving many low-income suburban households with limited mobility and higher transportation costs. Beyond housing alignment, coordination and engagement with regional employers, especially those located in suburban areas where transit service is challenging to provide, is a critical factor.

Improving engagement with affordable housing tenants and providers can help transit agencies better understand service needs and can build relationships that may also prove beneficial to transit. Case examples and survey responses show a spectrum of ways that this engagement is happening, with coordination between public agencies and with affordable housing developers being the most common. Far less common is engagement with affordable housing residents themselves. Few agencies report disaggregating transportation data to better understand travel patterns, cost burdens, or needs of low-income riders. This may correlate to the survey responses that found a lack of prioritization in regional L RTPs of serving areas with higher levels of affordable housing, or in coordinating transit with housing policies more broadly.

Affordable housing production and preservation tools are not always meeting the needs of very low-income households. Transit systems are feeling the effects, whether in addressing homelessness and related safety concerns, or through reduced ridership as residents are displaced from previously affordable neighborhoods served by transit.

TOD is one area where coordination and alignment is strongly occurring; however, this is mostly limited to those agencies with high-capacity fixed transit service. An emerging trend by these agencies is to include specific affordable housing goals within their TOD and/or joint development policies. Issues of gentrification and displacement are a growing concern. Transit agencies are struggling to respond, given that housing policy, investment, and tenant protection issues are largely a local matter. Guidance and best practices specifically targeted to transit agencies are lacking.

Cross-sector collaboration is a key ingredient to successful coordination. Non-profit partners, philanthropic organizations, and academic institutions play important roles in advocating, planning, designing, and implementing solutions for improved alignment of housing, transit, and equity goals, funding, and policy adoption. These organizations often provide the glue that sustains coordination.

5.2 Future Research Needs

This synthesis, with its comprehensive framework for considering coordination that cuts across service, affordability, planning, and TOD, covered a lot of ground. Yet more study is needed to better inform practitioners and decision makers. This includes developing a set of recommendations or best practices around coordination strategies, especially for transportation agencies that typically lack any authority over land use and housing issues. The following questions and issues are worthy of further study and guidance:

- *How can transit ridership recovery better support low-income riders?* Additional research is needed to evaluate and identify the impact of residential displacement of low-income households on decreasing transit ridership. This trend predated the COVID-19 pandemic and may be key to transit recovery plans. Increased analysis of the impact of affordable housing or ETOD to increase and stabilize transit ridership would be useful to the field, rather than research focused primarily on the potential for displacement near transit to occur.
- *How do transit network redesigns and affordable fare policies impact low-income riders?* Research questions exist around the equitable ways to redesign transit networks and affordable fare policies that include successful engagement and analysis of low-income rider needs.

Similarly, more information is needed on the parking needs and trends of residents living in affordable housing developments near transit, and any disparate impacts that parking pricing or transportation demand management strategies may have on low-income residents who do rely on a car.

- *How can transit agencies better partner with housing providers on transit issues?* New technologies may enable transit agencies to offer reduced fares, but more research is needed on the feasibility and cost of adopting these types of approaches relative to their value. Partnerships with affordable housing and service providers appear to also be critical to their use, yet limited guidance exists on how to establish and maintain these relationships by transit agencies with non-profit and community-based organization and with other public agencies.
- *How can agencies best engage low-income households, and what strategies yield optimal transit and equity results for them?* As more transit agencies are engaging directly in affordable housing, whether through joint development, disposal of surplus properties, and ETOD policies, additional research is needed to inform the types of anti-displacement tools that have the greatest impact on helping existing residents and businesses remain and maintain affordable rents and home values. Best practices on how to partner and fund community-based organizations and non-profits to assist in this type of work are also needed.
- *How can regional coordination improve to address the suburbanization of jobs and poverty?* The changing dynamics of suburban communities and how best to coordinate and provide transit or other types of mobility service for low-income residents and neighborhoods with higher levels of affordable housing are challenges that many transit agencies and regions face. Developing partnerships and rethinking economic development approaches to include intentional transit and affordable housing strategies as part of regional and local business location and expansion efforts remain critical and largely unmet needs. Efforts in Kansas City, for example, show innovative ways to specifically coordinate transit with suburban job access and affordable housing. Large employers are stepping forward to provide affordable housing funding, yet transit access is not always sufficiently valued by employers, especially in considering the cost and access challenges low-income workers may face.
- *How can transportation considerations be elevated in regional and local housing plans and investments?* On average, transportation and housing are the two largest annual household costs for American households. Yet consideration of each remains largely siloed. More can be done to align local housing and regional transportation plans to comply with federal fair housing requirements, increase suburban support for HCVs, and remove regulatory barriers to new housing construction. Research is needed to illustrate successful strategies for doing this type of coordination, and to show the impact of improved coordination with transit on housing goals.
- *How are housing stakeholders helping to fund coordinated approaches?* The survey and case examples uncovered an emerging trend whereby transit agencies are partnering with private funders, including CDFIs and banks, and major national employers to establish and administer ETOD funds. Analysis of these pooled funds is needed to better understand how they can be structured, the role of transit agencies or other transportation partners like MPOs, their financial sustainability, and impacts on stabilizing transit-served neighborhoods and contributing to ridership.
- *What role can state agencies play?* Ways that state departments of transportation or state housing agencies are engaging to facilitate or impede coordination was not specifically explored in this research synthesis beyond cursory discussion in the case examples. State governmental organizations, funding, and statutory requirements play an important role in facilitating or limiting coordination. Areas for improved coordination between state housing agencies and departments of transportation remain unaddressed. This is particularly important for understanding opportunities and challenges that exist in rural communities where state agencies play a critical funding role.

5.3 Conclusion

Significant silos exist within and between government that make the coordination of affordable housing and transit challenging. Coordination that is emerging often results from the growing housing affordability crisis playing out in regions large and small. Yet transit is also in crisis as agencies rebuild ridership and revenues.

Stronger consideration and prioritization of the needs of low-income riders who live in affordable neighborhoods and public housing can be seen as a transit strategy. Yet this requires new tools, mindsets, and partnerships. Tensions may exist between using transit real estate assets to generate revenue to support transit operations, versus to build affordable housing. Likewise, trade-offs exist between subsidizing affordable transit fares versus expanding transit service or increasing frequency and reliability.

Future research is needed to examine these areas of potential conflict and provide empirical evidence and best practices that can help transit agencies, local communities, and elected officials make more informed decisions that balance transit and equity needs. This research synthesis focused specifically on affordable housing and low-income households, yet housing affordability and improved coordination between transit and housing more broadly remains an unmet need.

The COVID-19 pandemic has highlighted and shifted the role of mobility in people's lives. While much of the population was able to shift to remote work, many low-income workers are not employed in these jobs but instead continued to rely on transit. The work trip may become a less targeted focus for transportation planners; however, it is likely to remain a critical destination for many who rely on transit. Yet travel needs of low-income riders go beyond accessing regional jobs. How well these households can access regional education, health care, civic institutions, and other essential destinations is critical. Better understanding these linkages is not just a role for transportation practitioners. Those involved in housing must also engage to recognize the importance of location and transit access linkages.



References

- Adhikari, S., F. Fasulo, and R. Jordan. (2018). Impact of the GRTC 2018 Reroute on Richmond's Disadvantaged Population. Center for Urban and Regional Analysis, Richmond, VA.
- Allard, S. W. (2017). *Places in Need: The Changing Geography of Poverty*. Russell Sage Foundation, New York, NY.
- Allen, J., and S. Farber. (2019). Sizing up Transport Poverty: A National Scale Accounting of Low-Income Households Suffering from Inaccessibility in Canada, and What to Do about It. *Transport Policy*, Vol. 74.
- Amazon. (2021). Amazon Launches \$2 Billion Housing Equity Fund to Preserve and Create over 20,000 Affordable Homes. <https://www.aboutamazon.com/news/community/amazons-housing-equity-fund/>.
- American Public Transportation Association (APTA). (2016). Understanding Recent Ridership Changes: Trends and Adaptations. National Center for Sustainable Transportation, CA. <https://escholarship.org/uc/item/9zp565xr>.
- Arrington, G. B., and R. Cervero. (2005). *TCRP Report 128: Effects of TOD on Housing, Parking, and Travel*. Transportation Research Board of the National Academies, Washington, DC.
- Aurand, A., D. Emmanuel, D. Threet, I. Rafi, and D. Yentel. (2020). *Out of Reach 2020: The High Cost of Housing*. National Low Income Housing Coalition, Washington, DC.
- Banjee, A. (2018). Travel Patterns of Low-Income Households. *Transportation Research Circular E-C238: 2018 National Household Travel Survey Workshop*. Transportation Research Board, Washington, DC.
- Bardaka, E., and J. Hersey. (2019). Comparing the Travel Behavior of Affordable and Market-Rate Housing Residents in the Transit-Rich Neighborhoods of Denver, CO. *Travel Behaviour and Society*, Vol. 15: 74–87.
- Blumenberg E., and P. Ong. (2001). Cars, Buses, and Jobs: Welfare Participants and Employment Access in Los Angeles. *Transportation Research Record: Journal of the Transportation Research Board*, Vol. 1756, No. 1.
- Blumenberg, E., and G. Pierce. (2017). The Drive to Work: The Relationship between Transportation Access, Housing Assistance, and Employment among Participants in the Welfare to Work Voucher Program. *Journal of Planning Education and Research*, Vol. 37, No. 1.
- Bostic, R., and M. Boarnet. (2016). Developing Affordable Housing Guidelines Near Rail Transit in Los Angeles. Department of Transportation, Sacramento, CA.
- Bullard, R. D. (2013). Addressing Urban Transportation Equity in the United States. *Fordham Urban Law Journal*, Vol. 31, No. 5: 1183.
- Bullard, R. D., and G. S. Johnson (Editors). (1997). *Just Transportation: Dismantling Race and Class Barriers to Mobility*. New Society Publishers. Gabriola Island, British Columbia.
- Byala, L., et al. (2021). *TCRP Research Report 221: Redesigning Transit Networks for the New Mobility Future*. Transportation Research Board, Washington, DC.
- Byala, L. B., K. Filardo, O. Hirsch, M. J. Walk, J. P. Cardenas, and J. Hwang. (2019). *TCRP Synthesis 140: Comprehensive Bus Network Redesigns*. Transportation Research Board, Washington, DC.
- Cantilina, K., S. R. Daly, M. P. Reed, and R. C. Hampshire. (2021). Approaches and Barriers to Addressing Equity in Transportation: Experiences of Transportation Practitioners. *Transportation Research Record: Journal of the Transportation Research Board*, Vol. 2675, No. 10: 972–985.
- Center for Transit Oriented Development (CTOD), and Center for Neighborhood Technology (CNT). (2006). *The Affordability Index: A New Tool for Measuring the True Affordability of a Housing Choice*. Brookings Institution Metropolitan Policy Program, Washington, DC.
- Cervero, R., et al. (2004). *TCRP Report 102: Transit-Oriented Development in the United States: Experiences, Challenges and Prospects*, Transportation Research Board of the National Academies, Washington, DC.
- Connecticut Department of Economic and Community Development (DECD). (n.d.). Transit-Oriented Development Fund. https://portal.ct.gov/DECD/Content/Community-Development/03_Funding_Opportunities/Transit-Oriented-Development-Fund.

- Coren, C., and K. Lowe. (2020). *Commuting in Context: A Qualitative Study of Transportation Challenges for Disadvantaged Job Seekers in Chicago, Illinois*. University of Illinois at Chicago.
- Cossyleon, J. E., P. M. Garboden, and S. DeLuca. (2020). *Recruiting Opportunity Landlords: Lessons from Landlords in Maryland*. Poverty & Race Research Action Council and Mobility Works.
- Covington, K., L. Freeman, and M. A. Stoll. (2011). *The Suburbanization of Housing-Choice Voucher Recipients*. Brookings Metropolitan Institution Metropolitan Policy Program, Washington, DC.
- Criden, M. (2008). *The Stranded Poor: Recognizing the Importance of Public Transportation for Low-Income Households*. National Association for State Community Services Programs, Washington, DC.
- Cudahy, B. J. (1995). *Cash, Tokens, and Transfers: A History of Urban Mass Transit in North America*. Fordham University Press, New York City, NY.
- Darling, W., E. Carpenter, T. Johnson-Praino, C. Brakewood, and C. T. Voulgaris. (2021). Comparison of Reduced-Fare Programs for Low-Income Transit Riders. *Transportation Research Record: Journal of the Transportation Research Board*, Vol. 2675, No. 7: 335–349.
- Dawkins, C. J., R. Buehler, C. Lintz, and J. Sewell. (2010). *Promoting Affordable Housing Near Public Transit: The Role of Planning*. Metropolitan Institute at Virginia Tech, Blacksburg, VA.
- Dawkins, C. J., J. S. Jeon, and R. Pendall. (2015). Transportation Access, Rental Vouchers, and Neighborhood Satisfaction: Evidence from the Moving to Opportunity Experiment. *Housing Policy Debate*, Vol. 25, No. 3: 497–530.
- Derby, A. (2019). *Fare Capping: How It Works in Portland*. Mass Transit. <https://www.masstransitmag.com/technology/passenger-info/article/21087563/fare-capping-how-it-works-in-portland>.
- Enterprise, The National Housing Trust, and Reconnecting America. (2010). *Preserving Affordable Housing Near Transit*. Enterprise Community Partners, Washington, DC.
- Federal Transit Administration (FTA). (2021). *FAQ from FTA Grantees Regarding Coronavirus Disease 2019 (COVID-19)*. United States Department of Transportation. <https://www.transit.dot.gov/frequently-asked-questions-fta-grantees-regarding-coronavirus-disease-2019-covid-19>.
- Federal Transit Administration (FTA). (2020). *Joint Development Circular: FTA C 7050.1*. U.S. Department of Transportation, Washington, DC.
- Federal Transit Administration (FTA). (2019b). *Transit Oriented Development*. <https://www.transit.dot.gov/TOD>.
- Fesler, S. (2021). *Sound Transit Puts Equitable TOD and Bathroom Policy Reform Front and Center*. The Urbanist. <https://www.theurbanist.org/2021/02/05/sound-transit-puts-equitable-tod-and-bathroom-policy-reform-front-and-center/>.
- Fleisher, A. (2017). *How Clipper Masks the Bay Area's Transit Fare Policy Problems*. SPUR, San Francisco, CA. <https://www.spur.org/news/2017-08-31/how-clipper-masks-bay-area-s-transit-fare-policy-problems>.
- Frick, K., K. Chapple, E. Mattiuzzi, and M. Zuk. (2015). Collaboration and Equity in Regional Sustainability Planning in the U.S. and California: Challenges in Implementation. *California Journal of Politics and Policy*, Vol. 7, No. 4:1–25.
- Garboden, P., E. Rosen, M. Greif, S. DeLuca, and K. Edin. (2018). *Urban Landlords and the Housing Choice Voucher Program: A Research Report*. U.S. Department of Housing and Urban Development, Office of Policy Development and Research, Washington, DC.
- Gilbert, M. R. (1998). "Race," Space, and Power: The Survival Strategies of Working Poor Women. *Annals of the Association of American Geographers*, Vol. 88, No. 4: 595–621.
- Giuliano, G. (2003). Travel, Location and Race/Ethnicity. *Transportation Research Part A: Policy and Practice*, Vol. 37, No. 4: 351–372.
- Goetz, E. G., and K. Chapple. (2010). *Dispersal as Anti-poverty Policy*. *Critical Urban Studies: New Directions*. State University Press of New York Press.
- Goetz, E. G., R. A. Williams, and A. Damiano. (2020). Whiteness and Urban Planning. *Journal of the American Planning Association*, Vol. 86, No. 2: 142–156.
- Grengs, J. (2015). Nonwork Accessibility as a Social Equity Indicator. *International Journal of Sustainable Transportation*, Vol. 9, No. 1: 1–14.
- Grengs, J. (2005). The Abandoned Social Goals of Public Transit in the Neoliberal City of the USA. *City*, Vol. 9, No. 1: 51–56.
- Harmony, X. (2018). Fare Policy and Vertical Equity: The Trade-Off between Affordability and Cost Recovery. *Journal of Public Transportation*, Vol. 21, No. 2: 41–59.
- Haughey, R., and R. Sherriff. (2010). *Challenges and Policy Options for Creating and Preserving Affordable Housing near Transit and in Other Location-Efficient Areas*. Urban Institute, Washington, DC.
- Hersey, J. K., and M. A. Spotts. (2015). *Promoting Opportunity through Equitable Transit-Oriented Development (eTOD): Barriers and Best Practices for Implementation*. Enterprise Community Partners, Washington, DC.
- Hickey, R., and L. Sturtevant. (2015). *Public Land and Affordable Housing in the Washington DC Region: Best Practices and Recommendations*. Urban Land Institute and National Housing Conference, Washington, DC.
- Higashide, S. (2019). *Better Buses, Better Cities*. Island Press, Washington, DC.

- Howland, S. (2020). "I Should Have Moved Somewhere Else": The Impacts of Gentrification on Transportation and Social Support for Black Working-Poor Families in Portland, Oregon. Final Report 1079. Portland State University, National Institute for Transportation and Communities, Portland, OR.
- Hulchanski, J. D. (2006). The Suburbanization of the "Non-Gentry": Toronto's Inner Suburbs. Presented at the Urban Affairs Conference, Montreal, Quebec, Canada, April 2006. http://www.urbancentre.Utoronto.ca/pdfs/researchassociates/2006_Hulchanski_Suburbaniza.pdf.
- Jackson, J. (2021). *Remixing Innovation for Mobility Justice: Guidance for Planners Using REMIX Explore*. TransForm, Oakland, CA.
- Jacobson, L., and R. R. Weinberger. (2016). *TCRP Research Synthesis 122: Transit Supportive Parking Policies and Programs: A Synthesis of Transit Practice*. Transportation Research Board, Washington, DC.
- Karner, A. (2014). Bypassing Equity? Transit Investment and Regional Planning. *Journal of Planning Education and Research*, Vol 34, No. 1: 30–44.
- Karner, A., and D. Niemeier. (2013). Civil Rights Guidance and Equity Analysis Methods for Regional Transportation Plans: A Critical Review of Literature and Practice. *Journal of Transport Geography*, Vol. 33: 126–134.
- Karner, A., J. London, D. Rowangould, and K. Manaugh. (2020). From Transportation Equity to Transportation Justice: Within, Through, and Beyond the State. *Journal of Planning Literature*, Vol. 35, No. 4.
- Karner, A., D. Rowangould, and J. London. (2016). We Can Get There From Here: New Perspectives on Transportation Equity. National Center for Sustainable Transportation, California.
- Kawabata, M., and Q. Shen. (2007). Commuting Inequality between Cars and Public Transit: The Case of the San Francisco Bay Area, 1990–2000. *Urban Studies*, Vol. 44, No. 9.
- King County Metro. (2017). Low-Income Fare Options Advisory Committee. King County. <https://kingcounty.gov/depts/transportation/low-income-options.aspx>.
- Kissane, R. J., and S. Clampet-Lundquist. (2012). Social Ties, Social Support, and Collective Efficacy among Families from Public Housing in Chicago and Baltimore. *The Journal of Sociology & Social Welfare*, Vol. 39, No. 4: 157–181.
- Kneebone, E. (2017). The Changing Geography of U.S. Poverty. Brookings Institution. <https://www.brookings.edu/testimonies/the-changing-geography-of-us-poverty/>.
- Kneebone, E. (2009). The Suburbanization of American Poverty. Brookings Institution Metropolitan Opportunity Series, Washington, DC. <https://www.brookings.edu/opinions/the-suburbanization-of-american-poverty/>.
- Kneebone, E., and A. Berube. (2014). *Confronting Suburban Poverty in America*. Brookings Institution Press, Washington, DC.
- Krapp, A., J. Barajas, and A. Wennik. (2021). Equity-Oriented Criteria for Project Prioritization in Regional Transportation Planning. *Transportation Research Record: Journal of the Transportation Research Board*, Vol. 2675, No. 9.
- LINK Houston, and Rice University: Kinder Institute for Urban Research. (2020). Where Affordable Housing and Transportation Meet in Houston. Rice University, Houston, TX.
- Litman, T. (2021). Evaluating Transportation Equity Guidance for Incorporating Distributional Impacts in Transportation Planning. Victoria Transport Policy Institute, Victoria, B.C.
- Lotshaw, S., and K. Hovenkotter. (2019). A Fare Framework: How Transit Agencies Can Set Fare Policy Based on Strategic Goals. TransitCenter, New York City, NY.
- Lowe, K. (2014). Bypassing Equity? Transit Investment and Regional Transportation Planning. *Journal of Planning Education and Research*, Vol. 30, No. 1: 30–44.
- Lowe, K., and E. Hall. (2018). New Starts, Growing Inequities: Federal and Local Public Transit Funding. *Public Works Management & Policy*, Vol. 24, No. 1.
- Lownes, N., K. Bertolaccini, and R. Smith. (2019). Investigating the Linkage Between Transit Access to Services and Affordable Housing Availability. Center for Advanced Multimodal Mobility Solutions and Education. Charlotte, NC.
- Lynott, J., M. Zimmerman, and P. Happ. (2017). *Communities are Embracing Development Near Transit: A Snapshot of Transit-Oriented Development Support across the United States*. AARP Public Policy Institute, Washington, DC.
- Mader, S. (2021a). Public Transportation's Response to the COVID-19 Pandemic and How It Shapes Transit's Future. Community Transportation Association of America, Washington, DC.
- Mader, S. (2021b). VaxTransit: 450+ Agencies in 41 States Provide Free Rides for Vaccines. *MassTransit Magazine*. <https://www.masstransitmag.com/safety-security/article/21216186/vaxtransit-450-agencies-in-41-states-provide-free-rides-for-vaccines>.
- Manaugh, K., and A. El-Geneidy. (2013). Who Benefits from New Transportation Infrastructure? Using Accessibility Measures to Evaluate Social Equity in Public Transport Provision, Accessibility Analysis and Transport Planning. In: *Accessibility Analysis and Transport Planning: Challenges for Europe and North America* (K. T. Geurs, K. J. Krizek, and A. Reggiani, ed.). Edward Elgar Publishing Limited, Northampton, MA.
- Marcantonio, R. A., A. Golub, A. Karner, and L. Nelson. (2017). Confronting Inequality in Metropolitan Regions: Realizing the Promise of Civil Rights and Environmental Justice in Metropolitan Transportation Planning. *Fordham Urban Law Journal*, Vol. 44, No. 4: 1017–1077.

- Marcantonio, R. A., and A. Karner. (2016). Social Equity in Transportation Planning: A Community-Based Framework. *Progressive Planning Magazine*, No. 206: 38–41.
- Marcus, J., and L. Rosenfeld. (2021). California's Affordable Housing and Sustainable Communities Program Five Years of Investments. Enterprise Community Partners, California.
- MATCH. (2017). Metro Partners with Community Development Organizations to Launch Innovative \$75 Million Affordable Housing Loan Program. Los Angeles County Metropolitan Transportation Authority, Los Angeles, CA.
- Mattiuzzi, E. (2017). Impacts of the Sustainable Communities Initiative on Regional Collaboration, Equity, and Planning: Results of a Survey of Grantee Regions. *Cityscape: A Journal of Policy Development and Research*: Vol. 19, No. 3: 39–62.
- McGraw, J., P. Haas, R. Ewing, and S. Sabouri. (2021). *TCRP Research Report 226: An Update on Public Transportation's Impacts on Greenhouse Gas Emissions*. Transportation Research Board, Washington, DC.
- Mehndiratta, S., C. Rodriguez, and C. Ochoa. (2014). Targeted Subsidies in Public Transport: Combining Affordability with Financial Sustainability. Discussion Paper 16-16. Work Bank Group, Washington, DC.
- Metro. (2021). Amazon, Sound Transit Partner to Accelerate Affordable Housing Units Near Light Rail Stations. Metro Magazine. https://www.metro-magazine.com/10145666/amazon-sound-transit-partner-to-accelerate-affordable-housing-units-near-light-r?utm_source=email&utm_medium=newsletter&utm_campaign=20210617-NL-MET-Express-BOBCD210611002&omdt=NL-MET-Express&omid=1004710178&utm_content=01&oly_enc_id=9564I1119845B8T.
- Metropolitan Atlanta Regional Transportation Authority (MARTA). (2021). MARTA and Goldman Sachs Asset Management Announce \$100 Million Atlanta Affordable Housing and Transit-Oriented Development Initiative: The Initiative Will Support Affordable Housing, Transit Access, and Minority Developers. MARTA press release. <https://itsmarta.com/marta-and-goldman-sachs-tod-initiative.aspx>.
- Newmark, G. (2014). Reduced Fare Programs for Older Adults and Persons with Disabilities: A Peer Review of Policies. *Journal of Public Transportation*, Vol. 17, No. 2: 165–185.
- Padeiro, M., A. Louro, and N. M. Costa. (2019). Transit-Oriented Development and Gentrification: A Systematic Review. *Transport Reviews*, Vol. 39, No. 6: 733–754.
- Patskanick, T., and L. D'Ambrosio. (2019). Transit Fare Discount Processing Improvements for Disadvantaged Populations. New England University Transportation Center, Cambridge, MA.
- Patterson, R. F. (2020). New Routes to Equity: The Future of Transportation in the Black Community. Congressional Black Caucus Foundation, Washington, DC.
- Pendall, R., C. R. Hayes, T. George, Z. J. McDade, C. J. Dawkins, J. Sik Jeon, E. Knaap, E. Blumenberg, G. Pierce, and M. Smart. (2014). Driving to Opportunity: Understanding the Links among Transportation Access, Residential Outcomes, and Economic Opportunity for Housing Voucher Recipients. Urban Institute, Washington DC.
- Pendall, R., S. Rosenbloom, D. Levy, E. Oo, G. Knaap, J. Sartori, and A. Chakraborty. (2013). Can Federal Efforts Advance Federal and Local De-Siloing? Lessons from the HUD-EPA-DOT Partnership for Sustainable Communities. UI No. 08752-000-00. Urban Land Institute, Washington, DC.
- Pollack, S., B. Bluestone, and C. Billingham. (2010). Maintaining Diversity in America's Transit-Rich Neighborhoods: Tools for Equitable Neighborhood Change: Tools for Equitable Neighborhood Change. Dukakis Center for Urban and Regional Policy, Northeastern University, Boston, MA.
- Puentes, R. (2020). COVID's Differing Impacts on Transit Ridership. Eno Foundation, Washington, DC. <https://www.enotrans.org/article/covids-differing-impact-on-transit-ridership/>.
- Pushkarev, B. S., and J. M. Zupan. (1977). Public Transportation and Land Use Policy. A Regional Plan Association Book. Indiana University Press, Bloomington, IN.
- Raine, A. S., J. Gast, R. Cevero, D. Belzer, and T. J. Poole. (2021). *TCRP Research Report 224: Guide to Joint Development for Public Transportation Agencies*. Transportation Research Board, Washington, DC.
- Rayle, L. (2015). Investigating the Connection between Transit-Oriented Development and Displacement: Four Hypotheses. *Housing Policy Debate*, Vol. 25, No. 3: 531–548.
- Reconnecting America. (2007). Realizing the Potential: Expanding Housing Opportunities Near Transit. Center for Transit-Oriented Development, Oakland, CA.
- Reed, D. (2019). Affordable Housing on Transit Land. Shelterforce. <https://shelterforce.org/2019/09/27/affordable-housing-on-transit-land/>.
- Reina, V., A. Acolin, and R. W. Bostic. (2019). Section 8 Vouchers and Rent Limits: Do Small-Area Fair-Market Rent Limits Increase Access to Opportunity Neighborhoods? An Early Evaluation. *Housing Policy Debate*, Vol. 29, No. 1: 44–61.
- Renne, J. L. (2009). From Transit Adjacent to Transit-Oriented Development. *Local Environment*, Vol. 14, No. 1: 1–15.
- Rivera, N. (2020). The Pandemic Hasn't Stopped These Agencies From Moving Ahead with Affordable Housing Development. Transit Center. <https://transitcenter.org/despite-pandemic-agencies-move-ahead-with-affordable-housing-development/>.

- Rosepace, C. (2018). Your New GRTC Transit System: New Routes. New Connections. Greater Richmond Transit Company. <http://ridegrtc.com/statistics-reports/projects-plans/your-new-grtc-transit-system>.
- Sanchez, T. W. (2008). Poverty, Policy, and Public Transportation. *Transportation Research Part A: Policy and Practice*, Vol. 42, No. 5: 833–841.
- Sanchez, T. W., M. Brenman, J. S. Ma, and R. H. Stolz. (2007). *The Right to Transportation: Moving to Equity*. American Planners Press, Chicago, IL.
- Saphores, J., D. Dhah, and F. Khatun. (2020). A Review of Reduced and Free Transit Fare Programs in California. The University of California Institute of Transportation Studies. <https://escholarship.org/content/qt74m7f3rx/qt74m7f3rx.pdf>.
- Selinger, P., A. Murphy, and M. S. Morley. (2019). *Making History: 50 Years of TriMet and Transit in the Portland Region*. TriMet, Portland, Oregon.
- Sharpe, M. (2021). MARTA Announces \$100 million Fund Preserve Affordable Housing Near Rail Stations. *Atlanta Voice*. <https://www.theatlantavoices.com/articles/marta-announces-100-million-fund-preserve-affordable-housing-near-rail-stations/>.
- Smart, M. J., and N. J. Klein. (2020). Disentangling the Role of Cars and Transit in Employment and Labor Earnings. *Transportation*, Vol. 47, No. 3: 1275–1309.
- Smerk, G. M. (1991). *The Federal Role in Urban Mass Transportation*. Indiana University Press, Bloomington, IN.
- Spieler, C. (2020). Racism has Shaped Public Transit, and It's Riddled with Inequities. Kinder Institute, Houston, TX. <https://kinder.rice.edu/urbanedge/2020/08/24/transportation-racism-has-shaped-public-transit-america-inequalities>.
- Thaden E., and M. Perlman. (2015). *Creating and Preserving Reasonably-Priced Housing near Public Transportation*. National Community Land Trust Network, Washington, DC.
- Tomer, A. (2011). *Transit Access and Zero-Car Households*. Brookings Institution Metropolitan Policy Program, Washington, DC.
- Tomer, A., E. Kneebone, R. Puentes, and A. Berube. (2011). *Missed Opportunity: Transit and Jobs in Metropolitan America*. Brookings Institution Metropolitan Policy Program, Washington, DC.
- Transit Center. (2021). *Tracking Transit Equity in U.S. Cities: TransitCenter Equity Dashboard*. Transit Center, New York, NY. <https://dashboard.transitcenter.org/>.
- Transit Center. (2020). *Transit Is Essential: 2.8 Million U.S. Essential Workers Ride Transit to Their Jobs*. Transit Center, New York, NY. <https://transitcenter.org/2-8-million-u-s-essential-workers-ride-transit-to-their-jobs/>.
- Transit Center. (2019). *Who's On Board? How to Win Back America's Transit Riders*. TransitCenter, New York, NY.
- Transportation for America. (2014). *The Innovative MPO Guidebook*. Transportation for America, Washington, DC.
- Twaddell, H., and B. Zgoda. (2020). *TCRP Research Report 214: Equity Analysis in Regional Transportation Planning Processes. Volume 1: Guide. Volume 2: Research Overview*. Transportation Research Board, Washington, DC.
- United States Census Bureau. (2020). *American Community Survey 2019, Select Data*, Washington, DC.
- United States Department of Housing and Urban Development (HUD). (n.d.a). *Consolidated Planning, Comprehensive Housing Affordability Strategy (CHAS) Data*. https://www.huduser.gov/portal/datasets/cp.html#2006-2017_data.
- United States Department of Housing and Urban Development (HUD) Exchange. (n.d.b). *About the Location Affordability Index*. <https://www.hudexchange.info/programs/location-affordability-index/about/>.
- United States Department of Housing and Urban Development (HUD) Exchange. (n.d.c). *Low-Income Housing Tax Credit program*. <https://www.huduser.gov/portal/datasets/lihtc.html>.
- United States Department of Housing and Urban Development (HUD). (2019). *Using IDIS to Prepare the Consolidated Plan, Annual Action Plan, and CAPER/PER*. Community Planning and Development. <https://files.hudexchange.info/resources/documents/eCon-Planning-Suite-Desk-Guide-IDIS-Conplan-Action-Plan-Caper-Per.pdf>.
- United States Department of Housing and Urban Development (HUD). (2010). *HUD and DOT Award \$68 Million to Create Sustainable, Livable Communities*. HUD Press Release No. 10-242. <https://archives.hud.gov/news/2010/pr10-242.cfm>.
- United States Department of Transportation (U.S. DOT). (2018). *Household Spending on Transportation, Chapter Six*. Bureau of Transportation Statistics, Washington DC.
- United States Environmental Protection Agency (EPA). (2021). *Smart Location Database, Version 3.0*. <https://www.epa.gov/smartgrowth/smart-location-mapping#SLD>.
- United States Environmental Protection Agency (EPA), Department of Housing and Urban Development (HUD), and Department of Transportation (U.S. DOT). (2010). *Partnership for Sustainable Communities: A Year of Progress for American Communities*. EPA 231-K-10-002. Environmental Protection Agency, United States Department of Housing and Urban Development, and Department of Transportation, Washington, DC.
- United States Government Accountability Office (GAO). (2014). *Public Transportation: Multiple Factors Influence Extent of Transit-Oriented Development*. GAO-15-70, United States Government Accountability Office, Washington, DC.

- United States Government Accounting Office (GAO). (2009). *Affordable Housing in Transit-Oriented Development: Key Practices Could Enhance Recent Collaboration Efforts between DOT-FTA and HUD*. GAO-09-871. United States Government Accountability Office, Washington, DC.
- Virginia Department of Rail and Public Transportation (DRPT). (2021). *TRIP Transit Ridership Incentive Program: Overview and Guidance*. DRPT. <http://www.drpt.virginia.gov/transit/trip-transit-ridership-incentive-program/>.
- Walker, J. (2014). *Houston: Transit, Reimagined*. Human Transit. <https://humantransit.org/2014/05/houston-a-transit-network-reimagined.html>.
- Walker, J. (2012). *Human Transit: How Clearer Thinking about Public Transit Can Enrich Our Communities and Our Lives*. Island Press, Washington, DC.
- Washington Metropolitan Area Transit Authority (WMATA). (2021). *Amazon and Metro Announce a \$125 Million Commitment to Create 1,000 Affordable Housing Units at Metro Stations in the Washington, DC Metropolitan Area*. WMATA Press Release. <https://www.wmata.com/about/news/Amazon-Metro-Affordable-Housing-Initiative.cfm>.
- Weiner, E. (1987). *Urban Transportation Planning in the United States: An Historical Overview*. Praeger Publishing, New York City, NY.
- Zhao, F., and T. Gustafson. (2020). *Transportation Needs of Disadvantaged Populations: Where, When, and How?* Federal Transit Administration Report No. 0030. U.S. Department of Transportation, Washington DC.
- Zhu, L., E. Burinskiy, J. De la Roca, R. K. Green, and M. G. Boarnet. (2021). *Los Angeles' Housing Crisis and Local Planning Responses: An Evaluation of Inclusionary Zoning and the Transit-Oriented Communities Plan as Policy Solutions in Los Angeles*. U.S. Department of Housing and Urban Development, Office of Policy Development and Research, Washington, DC.
- Zuk, M., and I. Carlton. (2015). *Equitable Transit Oriented Development*. Poverty and Race Research Action Council.
- Zuk M., A. H. Bierbaum, K. Chapple, K. Gorska, A. Loukaitou-Sideris. (2018). *Gentrification, Displacement, and the Role of Public Investment*. *Journal of Planning Literature*, Vol. 33, No. 1: 31–44.



Case Example References

Atlanta

- Atlanta Department of City Planning. (2021). Atlanta City Design Housing A Look into How Housing Policy Shaped Atlanta's Design, How That Design Impacts the City's Residents, and Ways to Design It for Everyone. Storymaps. City of Atlanta.
- Atlanta Department of City Planning. (2020). Inclusionary Zoning. City of Atlanta. <https://www.atlantaga.gov/government/departments/city-planning/office-of-housing-community-development/inclusionary-zoning-policy>.
- Atlanta Regional Commission (ARC). (2021a). Livable Centers Initiative 2021 Application Guidebook. Atlanta Regional Commission, Atlanta, GA. <https://cdn.atlantaregional.org/wp-content/uploads/lci-guidebook-2021.pdf>.
- Atlanta Regional Commission (ARC). (2021b). Regional Transportation Plan. Atlanta Regional Commission. <https://atlantaregional.org/transportation-mobility/transportation-planning/regional-transportation-plan/>.
- Atlanta Regional Commission (ARC). (2021c). ARC Awards LCI Planning Grants to 11 Metro Atlanta Communities. Atlanta Regional Commission, Atlanta, GA. <https://atlantaregional.org/news/community-development/arc-awards-lci-planning-grants-to-11-metro-atlanta-communities/>.
- Atlanta Regional Commission. (2019). The ARC TIP Evaluation Framework. Atlanta Regional Commission, Atlanta, GA. <https://cdn.atlantaregional.org/wp-content/uploads/project-eval-documentation-2019.pdf>.
- City of Atlanta. (2021). Mayor Keisha Lance Bottoms Signs \$50 Million Housing Bond Legislation. City of Atlanta. <https://www.atlantaga.gov/Home/Components/News/News/13559/>.
- CycleHop, LLC. (n.d.). Relay Bike Share Is Back. HOPR. <https://gohopr.com/atlanta/>.
- Drake-Rodriguez, A. (2021). Diverging Space for Deviants: The Politics of Atlanta's Public Housing. University of Georgia Press, Athens, GA.
- Estep, T., and A. Coyne. (2020). Gwinnett's MARTA Referendum Has Failed. Atlanta Journal Constitution. <https://www.ajc.com/news/local-govt--politics/gwinnett-marta-referendum-has-failed/fzmvZ0KPZAOzGw7rL9NPJ/>.
- Federal Transit Administration (FTA). (2019a). National Transit Database. Federal Transit Administration, Washington, DC. <https://www.transit.dot.gov/ntd>.
- Ghani, M., and J. Lombard. (2021). Project Interview with Atlanta Regional Council Staff, April 21, 2021.
- Green, J. (2018). Touring Spoke, MARTA's First Foray into Transit-Connected Development: In MARTA's Quest to Erase Half-Empty Parking Lots, Apartment Move-Ins Have Begun. Curbed. <https://atlanta.curbed.com/2018/4/13/17233516/marta-atlanta-apartment-transit-development>.
- Invest Atlanta. (n.d.). Transit-Oriented Development Fund Assistance to Get Your Affordable Housing Development near Transit up and Going. Invest Atlanta, Atlanta, GA. <https://www.investatlanta.com/developers/opportunities-incentives/transit-oriented-development-fund>.
- Kruse, K. M. (2007). White Flight: Atlanta and the Making of Modern Conservatism. Princeton University Press, Princeton, NJ.
- Lance Bottoms, K. (2019). One Atlanta: Housing Affordability Action Plan. Atlanta Mayor's Office. <https://www.atlantaga.gov/home/showdocument?id=42220>.
- Lyft. (2019). Lyftup Grocery Access Program Making Healthy Food Accessible in Atlanta. Lyft. <https://www.lyft.com/lyftup/grocery-access/atlanta-ga>.
- Metro Atlanta Regional Transit Authority. (2020). Fare Programs. Metro Atlanta Regional Transit Authority, Atlanta, GA. <https://www.itsmarta.com/fare-programs.aspx>.
- Metro Atlanta Regional Transit Authority (MARTA). (2010). Policies for Implementing MARTA's TOD Guidelines. Metro Atlanta Regional Transit Authority, Atlanta, Georgia.

- National Low Income Housing Coalition (NLIHC). (2021a). National Housing Preservation Database. National Low Income Housing Coalition, Washington, DC. <https://preservationdatabase.org>.
- National Low Income Housing Coalition (NLIHC). (2021b). The Gap: A Shortage of Affordable Rental Homes. National Low Income Housing Coalition, Washington, DC. <https://reports.nlihc.org/gap>.
- Partnership for Southern Equity. (2017). Opportunity Deferred: Race, Transportation, and the Future of Metropolitan Atlanta. Partnership for Southern Equity, Atlanta, GA.
- Peters, A. (2021). \$100 million Aimed at Affordable Housing at MARTA Rail Stops. Atlanta Journal Constitution. <https://www.ajc.com/news/100-million-aimed-at-affordable-housing-at-marta-rail-stops/UK2AYJVBZME2FKHYFJPSEFVZHY/>.
- Stone, C. (1989). Regime Politics Governing Atlanta, 1946-1988. University of Kansas Press, Lawrence, KS.
- United States Department of Housing and Urban Development (HUD). (2020). Comprehensive Housing Affordability Strategy Data, 2013-2017. U.S. Department of Housing and Urban Development, Washington, DC. <https://www.huduser.gov/portal/datasets/cp.html>.
- Vallo, J. (2021). MARTA TOD + Affordable Housing Capital Strategies. Presented at the Atlanta Regional Commission: Community Resources Committee, Atlanta, GA.
- Vallo, J., and D. Frank. (2021). Project Interview with MARTA Staff, April 16, 2021.

Boise

- American Planning Association, Regional and Intergovernmental Planning Division (APA). (2017). Summary of Regional Livable Communities Program. American Planning Association and Lincoln Institute of Land Policy. <http://mzstrategies.com/may-5-2017-regional-livable-communities-forum>.
- Carmel, M. (2021). Explain This to Me: Boise's Affordable Housing Land Trust. Boise Dev. <https://boisedev.com/news/2021/02/16/boise-affordable-housing-trust/>.
- City of Boise. (2021). Energize Our Neighborhoods. City of Boise, Boise, ID. <https://www.cityofboise.org/programs/energize/>.
- City of Boise, Gehl Studio, and Sam Schwartz Engineering. (2016). Transportation Action Plan. City of Boise, Boise, ID. <https://www.cityofboise.org/departments/planning-and-development-services/planning-and-zoning/comprehensive-planning/transportation-planning/transportation-action-plan/>.
- Clegg, E. (2021). Project Interview with City of Boise Staff, April 23, 2021.
- COMPASS Community Planning Association (COMPASS). (2021a). 2021 Development Checklist. Compass Community Planning Association, Boise, ID. <https://www.compassidaho.org/dashboard/checklists2021.htm>.
- COMPASS Community Planning Association (COMPASS). (2021b). All Aboard! Exploring High-Capacity Transit for the Treasure Valley Quantitative Survey Results. Compass Community Planning Association, Boise, ID. <https://www.compassidaho.org/documents/prodserve/CIM2050/Input/AllAboardResults.pdf>.
- COMPASS Community Planning Association (COMPASS). (2014). Communities in Motion 2040 Regional Long-Range Transportation Plan for Ada and Canyon Counties, Idaho. Resolution Mo. 10-2014. Boise, ID. https://www.compassidaho.org/documents/prodserve/CIM2040/CIM2040_Printer_Friendly.pdf.
- Dashboard. (n.d.). Downtown Idaho Falls. Dashboard. <https://dashboards.mysidewalk.com/downtownidahofalls/affordability>.
- Federal Transit Administration (FTA). (2019a). National Transit Database. Federal Transit Administration, Washington, DC. <https://www.transit.dot.gov/ntd>.
- Gamboa, A. D. (2021). Boise Rent Prices Continue to Increase Faster than Anywhere Else in the United States. BoiseDev. <https://boisedev.com/news/2021/07/28/boise-rent-prices-up-39-percent-since-last-march/>.
- Head, R. (2017). State Street Memorandum of Understanding, 2017-2021. City of Boise, Boise, ID. <https://www.cityofboise.org/media/3159/state-street-memorandum-achdpd.pdf>.
- National Low Income Housing Coalition (NLIHC). (2021a). National Housing Preservation Database. National Low Income Housing Coalition, Washington, DC. <https://preservationdatabase.org>.
- Salviati, C., I. Popov, and R. Warnock. (2021). Apartment List National Rent Report. Apartment List. <https://www.apartmentlist.com/research/national-rent-data>.
- Shallat, T., B. Burns, and L. Burke. (2011). Growing Closer: Density and Sprawl in the Boise Valley. Boise State University, Boise, ID.
- Stoll, M., C. Miller, and A. Luft. (2021). Project interview with Community Planning Association of Southwest Idaho.
- Transit Center. (2018). Untangling Transit: Bus Network Redesign Workshop Proceedings. TransitCenter, New York, NY.
- United States Department of the Census. (2020). 2020 American Community Survey.
- United States Department of Housing and Urban Development (HUD). (2020). Comprehensive Housing Affordability Strategy Data, 2013-2017. U.S. Department of Housing and Urban Development, Washington, DC. <https://www.huduser.gov/portal/datasets/cp.html>.
- Valley Regional Transit. (2020). Services. Valley Regional Transit. <https://www.valleyregionaltransit.org/services/>.
- Valley Regional Transit. (n.d.). About Valley Regional Transit. <https://www.valleyregionaltransit.org/about-us/>.

Chicago

- Chicago Metropolitan Agency for Planning (CMAP). (n.d.a). Homes for a Changing Region. CMAP, Chicago, Illinois. <https://www.cmap.illinois.gov/programs/housing/homes>.
- Chicago Metropolitan Agency for Planning (CMAP). (n.d.b). Housing Programs. CMAP, Chicago, IL. <https://www.cmap.illinois.gov/programs/housing>.
- Chicago Transit Authority (CTA). (n.d.). Red-Purple Modernization Transit-Oriented Development Plan. CTA, Chicago, IL. <https://www.transitchicago.com/rpm/todplan/>.
- City of Chicago. (2021a). The City of Chicago Equitable Transit-Oriented Development (ETOD) Plan. Office of Mayor Lightfoot, Chicago, IL. <https://www.chicago.gov/content/dam/city/sites/etod/Pdfs/ETOD-Full-Policy-Plan-with-Appendices-6-15-21.pdf>.
- City of Chicago. (2021b). Mayor Lightfoot and Department of Housing Introduce Revised Affordable Requirements Ordinance. Mayor Lightfoot Press Office, Chicago, IL. <https://www.chicago.gov/content/dam/city/depts/mayor/Press%20Room/Press%20Releases/2021/March/RevisedAffordableRequirementsOrdinance.pdf>.
- City of Chicago. (n.d.). Department of Housing Qualified Allocation Plan. www.chicago.gov/qap.
- Dawson-Mooney, L. (2021). Project Interview with CTA Staff, April 16, 2021.
- Elevated Chicago. (n.d). Elevated Chicago. Elevated Chicago, Chicago, IL. <http://www.elevatedchicago.org/>.
- Elevated Chicago. (2019). Community Engagement Principles and Recommendations. Elevated Chicago, Chicago, IL. <https://www.elevatedchicago.org/Elevated%20Community%20Engagement%20Principles-Digital.pdf>.
- Federal Transit Administration (FTA). (2019a). National Transit Database. Federal Transit Administration, Washington, DC. <https://www.transit.dot.gov/ntd>.
- Greenfield, J. (2020). What's Going on with South Cook Fair Transit Pilot? Streetsblog Chicago, Chicago, IL. <https://chi.streetsblog.org/2020/10/28/whats-going-on-with-the-south-cook-fair-transit-pilot/#:~:text=Cook%20County%20is%20currently%20working%20with%20the%20transit,approve%20intergovernmental%20agreements%20with%20Cook%20County%20this%20fall>.
- Horsting, M. (2021). Project Interview with Regional Transit Authority Staff, April 22, 2021.
- Morrell, C., and M. Puente. (2020). Chicago-Area Transit Agencies Face “Drastic” Service Cuts as Pandemic Ridership Plummet. WBEZ Chicago. <https://www.rtachicago.org/rider-resources/rta-fare-programs/reduced-fare-permits>.
- National Low Income Housing Coalition (NLIHC). (2021a). National Housing Preservation Database. National Low Income Housing Coalition, Washington, DC. <https://preservationdatabase.org>.
- Regional Transportation Authority (RTA). (2021). RTA COVID-19 Lapsed Rider Survey. RTA, Chicago, IL.
- Regional Transportation Authority (RTA). (n.d.). Reduced Fare Permits. RTA, Chicago, IL. <https://www.rtachicago.org/rider-resources/rta-fare-programs/reduced-fare-permits>.
- Scott, E. (2021). Project Interview with Chicago Metropolitan Area Planning Staff, April 27, 2021.
- Soto, S. (2021). Project Interview with City of Chicago Department of Housing Staff, April 27, 2021.
- United States Department of Housing and Urban Development (HUD). (2020). Comprehensive Housing Affordability Strategy Data, 2013-2017. U.S. Department of Housing and Urban Development, Washington, DC. <https://www.huduser.gov/portal/datasets/cp.html>.

Kansas City

- American Planning Association, Regional and Intergovernmental Planning Division (APA). (2017). Summary of Regional Livable Communities Program. American Planning Association and Lincoln Institute of Land Policy. <http://mzstrategies.com/may-5-2017-regional-livable-communities-forum>.
- Casale, M., and B. Sanderson. (2020). Zero-Fare Transit Kansas City: A Case Study in Free Public Transportation. U.S. Public Interest Research Group. <https://uspirg.org/blogs/blog/usp/zero-fare-transit-kansas-city-case-study-free-public-transportation>.
- City of Kansas. (2017). Kansas City, Missouri Transit-Oriented Development Policy. City of Kansas City. <https://www.kcmo.gov/home/showdocument?id=781>.
- EMSI. (2021). Kansas Economic Overview. EMSI Datarun 2021.1. <https://www.economicmodeling.com/>.
- Federal Transit Administration (FTA). (2018). Fiscal Year 2018 Transit-Oriented Development (TOD) Planning Projects. United States Department of Transportation. [https://www.transit.dot.gov/funding/grants/grant-programs/fiscal-year-2018-transit-oriented-developmenttodplanningprojects#:~:text=Kansas%20City%20Area%20Transportation%20Authority%20\(KCATA\)%20in%20Missouri%20will%20receive,in%20the%20Kansas%20City%20region](https://www.transit.dot.gov/funding/grants/grant-programs/fiscal-year-2018-transit-oriented-developmenttodplanningprojects#:~:text=Kansas%20City%20Area%20Transportation%20Authority%20(KCATA)%20in%20Missouri%20will%20receive,in%20the%20Kansas%20City%20region).
- Federal Transit Administration (FTA). (2019a). National Transit Database. Federal Transit Administration, Washington, DC. <https://www.transit.dot.gov/ntd>.
- Hardy, K., and A. Kite. (2020). Missouri Offered Double the Incentives, but Urban Outfitters Chose to Build in Kansas. Kansas City Star. <https://www.kansascity.com/news/politics-government/article248017080.html>.

- Holwick, E. (2021). Partnership Makes Vaccine More Accessible with Free, Direct Transportation. KMBC News. <https://www.kmbc.com/article/partnership-makes-vaccine-more-accessible-with-free-direct-transportation/35731047>.
- Hopkins, J. S. (2021). Kansas City Businesses Haunted by Redlining Legacy Amid The Pandemic. The Center for Public Integrity. <https://publicintegrity.org/health/coronavirus-and-inequality/kansas-city-redlining-businesses-pandemic-ppp>.
- Mid-America Regional Council (MARC). (2020a). ConnectedKC 2050. Mid-America Regional Council, Kansas City, MO. <https://connectedkc.org/about-the-plan/>.
- Mid-America Regional Council (MARC). (2020b). Planning Sustainable Places Overview. Mid-America Regional Council, Kansas City, MO. <https://www.marc.org/Regional-Planning/Creating-Sustainable-Places/Planning-sustainable-Places/Background>.
- Mid-America Regional Council (MARC). (2020c). Regional Housing Plans. Mid-America Regional Council, Kansas City, MO. <https://www.marc.org/Regional-Planning/Housing/Data-and-Reports/Regional-Housing-Plan>.
- National Low Income Housing Coalition (NLIHC). (2021a). National Housing Preservation Database. National Low Income Housing Coalition, Washington, DC. <https://preservationdatabase.org>.
- Palmer, L. (2021). Project Interview with MARC Staff, April 22, 2021.
- Powers, J. (2021). Project Interview with Johnson County Staff, May 17, 2021.
- Roberts, R. (2017). There's an App for That: Revolutionary Public Transit Service Starts May 1. Biz Journals. <https://www.bizjournals.com/kansascity/news/2017/04/21/kcata-on-demand-transit-service-transdev.html>.
- Starner, B. (2021). Project Interview with RideKC Development Corporation Staff, April 27, 2021.
- Tomer A., R. Shivaram, and A. Rice. (2019). Announcing the Economic Value Atlas: A New Approach to Regional Transportation and Land Use Planning. Brookings Institution Metropolitan Policy Program, Washington, DC. <https://www.brookings.edu/research/announcing-the-economic-value-atlas-a-new-approach-to-regional-transportation-and-land-use-planning/>.
- United States Department of Housing and Urban Development (HUD). (2020). Comprehensive Housing Affordability Strategy Data, 2013–2017. U.S. Department of Housing and Urban Development, Washington, DC. <https://www.huduser.gov/portal/datasets/cp.html>.
- Wilson, A. (2021). Project Interview with Local Initiatives Support Corporation – Kansas City Staff, April 22, 2021.
- Wine, M. (2021). New Kansas City, Missouri Affordable Housing Ordinance Goes into Effect. Spencer Fane LLP, Kansas City, MO. <https://www.lexology.com/library/detail.aspx?g=b983103e-660d-4375-b76b-40399faa84ff>.

San Francisco Bay Area

- Angst, M. (2021). The Real Gold Standard: San Jose Approves Google's Downtown Village and Campus in Historic Vote. The Mercury News. <https://www.mercurynews.com/2021/05/25/at-long-last-google-has-the-green-light-for-its-80-acre-mega-campus-in-downtown-san-jose/>.
- Bay Area Rapid Transit (BART). (2020). Transit-Oriented Development Policy. BART, Oakland, CA. https://www.bart.gov/sites/default/files/docs/BART%20Transit-Oriented%20Development%20Policy_Amended2020-04-23.pdf.
- Bay Area Rapid Transit (BART). (2019). A Night Shift with New Homeless Outreach Team for Contra Costa County. BART. <https://www.bart.gov/news/articles/2019/news20190110>.
- Bay Area Rapid Transit (BART). (2011). Public Participation Plan. BART.
- Bromfield, H., and E. Moore. (2017). Unfair Shares: Racial Disparities and the Regional Housing Needs Allocation Process in the Bay Area. The Haas Institute for a Fair and Inclusive Society. http://haasinstitute.berkeley.edu/sites/default/files/haasinstitute_unfairshares_rhnabayarea_publish.pdf.
- California Strategic Growth Council. (n.d.). Affordable Housing and Sustainable Communities (AHSC) Resources. <https://sgc.ca.gov/programs/ahsc/resources/>.
- California State Transportation Agency (CalSTA). (2021). CAPTI: California Action Plan for Transportation Infrastructure. Public Discussion Draft. CalSTA, Sacramento, CA. <https://calsta.ca.gov/-/media/calsta-media/documents/capti-2021-calsta.pdf>.
- Caltrain. (2020). Transit-Oriented Development Policy. Caltrain, San Carlos, CA. https://www.caltrain.com/Assets/__Agendas+and+Minutes/JPB/2020/Tod+Policy.pdf.
- Center for Transit Oriented Development (CTOD), CD&A, and Nelson Nygaard. (2014). TOD Policy Status Report. Prepared for the Metropolitan Transportation Commission. MTC, Oakland, CA. http://files.mtc.ca.gov/pdf/Final-MTC-TOD-Policy-Update_2014.pdf.
- CH2M. (2017). Regional Means-Based Transit Fare Pricing Study. Project Overview Report. Draft Final. Metropolitan Transportation Commission, San Francisco, CA. https://mtc.ca.gov/sites/default/files/Summary_MTC_Mean_Based_Overview_DRAFT_FINAL.pdf.
- Chapple, K., and A. Loukaitou-Sideris. (2019). Transit-Oriented Displacement or Community Dividends? Understanding the Effects of Smarter Growth on Communities. MIT Press, Cambridge, MA.

- Committee to House the Bay Area (CASA). (2019). *CASA Compact: A 15-Year Emergency Policy Package to Confront the Housing Crisis in the San Francisco Bay Area*. Metropolitan Transportation Commission, Oakland, CA. https://mtc.ca.gov/sites/default/files/CASA_Compact.pdf.
- Dunn, B. (2020). *Can't Pay Your Fare? We Can Help*. SFMTA Reduced Fare Programs. SFMTA, San Francisco, CA. <https://www.sfmta.com/blog/cant-pay-your-fare-we-can-help>.
- Federal Transit Administration (FTA). (2019a). *National Transit Database*. Federal Transit Administration, Washington, DC. <https://www.transit.dot.gov/ntd>.
- Greenspan, S. (2021). Project Interview with Enterprise – Northern California Staff, May 17, 2021.
- Hood, H., and G. Rao. (2018). *The Elephant in the Region: Charting a Path for Bay Area Metro to Lead a Bold Regional Housing Agenda*. Enterprise Community Partners, San Francisco, CA. <https://www.enterprisecommunity.org/download?fid=8728&nid=6072>.
- Kirkey, K. (2021). Project Interview with All Home Staff, May 14, 2021.
- Marcus, J., and L. Rosenfeld. (2021). *California's Affordable Housing and Sustainable Communities Program Five Years of Investments*. Enterprise Community Partners, California.
- Metropolitan Transportation Commission (MTC). (n.d.a) *Priority Development Area Program*. <https://mtc.ca.gov/planning/land-use/priority-development-areas-pdas>.
- Metropolitan Transportation Commission (MTC). (n.d.b) *One Bay Area Grant (OBAG) Program*. <https://mtc.ca.gov/funding/federal-funding/federal-highway-administration-grants/one-bay-area-grant-obag-2>.
- Metropolitan Transportation Commission (MTC). (2020). *Clipper Card: Sonoma County Transit*. Clipper Card. <https://www.clippercard.com/ClipperWeb/sonoma-county-transit.html>.
- Metropolitan Transportation Commission (MTC). (2005). *MTC Resolution 3434 Transit-Oriented Development (TOD) Policy for Regional Transit Expansion Projects*. MTC, Oakland, CA. https://mtc.ca.gov/sites/default/files/Resolution%203434%20TOD_policy.pdf.
- Morales-Ferrand, J. (2020). *FY2020-21 Affordable Housing Investment Plan*. Memorandum to Mayor and City Council, City of San Jose, CA. <https://www.sanjoseca.gov/home/showpublisheddocument/66577/637401733437070000>.
- National Low Income Housing Coalition (NLIHC). (2021a). *National Housing Preservation Database*. National Low Income Housing Coalition, Washington, DC. <https://preservationdatabase.org>.
- O'Malley-Solis, J. (2021). Project Interview with VTA Staff, May 5, 2021.
- Rabalais, R. (2021). Project Interview with SFMTA Staff, April 19, 2021.
- Salviati, C. (2017). *Housing Shortage: Where Is the Undersupply of New Construction Worst?* Apartment List Rentonomics. <https://www.apartmentlist.com/rentonomics/housing-shortage-undersupply-of-new-construction/>.
- San Francisco Municipal Transit Authority (SFMTA). (2018). *Muni Service Equity Strategy*. SFMTA, San Francisco, CA. <https://www.sfmta.com/projects/muni-service-equity-strategy>.
- Santa Clara Valley Transportation Authority (VTA). (2019). *Transit-Oriented Development Policy*, Document no. 400.009. VTA, San Jose, CA, November 14, 2019, 15 pp. <https://www.vta.org/sites/default/files/2020-03/Transit-Oriented%20Development%20Policy%20-%20VTA%20Board%20Adopted%2012.05.2019%20Accessible%20%281%29.pdf>.
- Seifel Consulting, and ICF International. (2013). *Bay Area Transit-Oriented Affordable Housing Fund: Assessment and Lessons Learned*. Prepared for Bay Area TOAH Fund, Great Communities Collaborative, San Francisco, CA. http://www.greatcommunities.org/wp-content/uploads/pdf/TOAH_report.pdf.
- Smith, D., M. Nimon, and W. Keiser. (2018). *MTC Workforce Housing Action Plan*. MTC: EPS #151079, Metropolitan Transportation Commission, Oakland, CA. <https://mtc.ca.gov/our-work/plans-projects/focused-growth-livable-communities/workforce-and-affordable-housing>.
- Strategic Economics, ARUP, CD&A, and MZ Strategies, LLC. (2021). *Transit-Oriented Development (TOD) Policy Update: Existing Policy Context and Case Studies (Task 2 & 3) Draft Report*. Prepared for: Metropolitan Transportation Commission, Oakland, CA.
- Thorne-Lyman, A. (2021). Project Interview with BART Staff, April 19, 2021.
- Trivedi, T., and K. Vuicich. (2021). Project Interview with MTC Staff, May 6, 2021.
- Urban Displacement Project. (2015). *Rising Housing Costs and Resegregation in the San Francisco Bay Area*. University California – Berkeley, Urban Displacement Project.
- United States Department of Housing and Urban Development (HUD). (2020). *Comprehensive Housing Affordability Strategy Data, 2013-2017*. U.S. Department of Housing and Urban Development, Washington, DC. <https://www.huduser.gov/portal/datasets/cp.html>.
- Wampler, E. (2021). Project Interview with LISC-California Staff.



APPENDIX A

TCRP Project J-07/SB-34 Survey Questionnaire

Questionnaire

Project purpose: The goal of this synthesis is to identify the potential mechanisms (both policies and programs) to coordinate public transit (both services and capital investments) with construction, operation, protection, and preservation of affordable housing. The study will synthesize the state of the practice of transit system coordination with affordable housing initiatives in the broader sense [including but not limited to transit-oriented development (TOD)].

The survey questions try to address different potential ways that transit agencies may coordinate with affordable housing providers, local jurisdictions, housing advocates, and regional planning agencies and MPOs on fare, service, planning, and TOD actions and policies that foster coordination between public transit and affordable housing. Given the variety of circumstances and transit systems, not all questions may be appropriate for all agencies. We encourage you to obtain input from others in your agency as needed. For those answers for which you are uncertain, simply answer “Unknown.”

We also ask for recommendations for other agencies to be included in our sample and for your willingness to participate in a telephone interview if your agency is selected for a more detailed case example.

The final report, to be published by the Transportation Research Board, will document the current state of the practice, and provide an overview to help transit agencies address the challenges presented. This report will be extremely useful to transit agencies, regional planning, and affordable housing practitioners who increasingly are seeking coordinated strategies to address the lack of affordable housing options and mobility challenges for very low-income households. All survey responses will be confidential and will be edited to remove information regarding individual agencies.

Thank you for taking the time to participate. Instructions on returning the survey are included on the last page.

Respondent Information

1. Date:
2. Name of Respondent:
3. Agency Name:
4. Title of Respondent:
5. City/State:
6. Respondent e-mail address:
7. Respondent Telephone Number:

8. System Size:

- Less than 100 vehicles
- Less than 250 peak vehicles operated in maximum service
- 250 to 999 peak vehicles operated in maximum service
- 1,000+ peak vehicles operated in maximum service

9. Modal service (check all that apply):

- Paratransit / demand response
- Bus
- Rail (heavy, light rail, streetcar)
- Bus rapid transit or arterial bus transit
- Ferry
- Commuter transit

Transit Service and Fare Policy Coordination with Affordable Housing

10. Does your agency offer discounted fares for very low-income riders? Yes/No/Unknown

11. If yes, what type of discounted fare policies are offered?

12. If yes, how does your agency define low-income [for instance, 30% area median income, Temporary Assistance for Needy Families (TANF) recipient, etc.]?

13. Does your agency prioritize serving neighborhoods with high levels of affordable housing when making transit service and route decisions?

Yes/No/Unknown

14. If yes, how does your agency define affordable housing (e.g., **units that are affordable at XX% or gross median rent in x geography**)?

15. Does your agency prioritize or make special effort to inform and engage residents of affordable housing or riders living in public housing when fare policy or service changes are being considered? Yes/No/Unknown

16. Please share any targeted outreach strategies you have used to engage or inform residents of affordable housing or riders living in public housing _____

17. In what ways does your transit agency ensure that low-income riders are represented in advisory or decision-making roles to ensure their mobility needs are met and prioritized?

Multiple Choice (check all that apply)

- Through specific positions on the transit board for low-income riders
- Through specific positions on advisory or riders committee for low-income riders
- Through the agency's equity committee
- No specific process
- Other: Please describe _____

18. How well are neighborhoods with a significant number affordable housing units currently served by your transit system?

Multiple Choice (choose one):

- All are served by at least hourly transit service
- Most are served by at least hourly service
- Some are served by hourly transit service
- All are served by transit service with 30-minute headways or less
- Most are served by transit service with 30-minute headways or less
- Some are served by transit service with 30-minute headways or less
- Do not know

19. Have or do public housing authorities or other affordable housing organizations coordinate with your agency on the following: *(check all that apply)*
Multiple Choice (check all that apply)
- To provide transit passes to residents of affordable housing
 - To provide route and service information to residents of affordable housing
 - To help consider and plan for increased service or mobility improvement discussions
 - To ensure transit access when making decisions about where to locate affordable housing projects
 - To address other issues of transportation coordination or concern
 - Public housing agencies do not coordinate with my agency
20. Have or do public housing authorities or other affordable housing organizations coordinate with your regional or city planning agencies on the following: *(check all that apply)*
Multiple Choice (check all that apply)
- To provide transit passes, or route and service information to residents of affordable housing
 - To inform local and regional transportation plans and transit investments
 - To ensure transit access when making decisions about where to locate affordable housing projects
 - Do not know
21. Does your agency engage in targeted hiring or recruitment to residents of public housing or affordable housing for employment, training, apprenticeship, transit ambassador, or mentoring programs?
 Yes/No/Unknown

22. **If yes, how and what forms? What is the rate of hire?**

Planning Coordination between Transit and Housing

23. Beyond fare or service policies, has your agency partnered or built a relationship with affordable housing agencies or advocates around transit?
 Yes/No/Unknown
24. If so, please describe these types of partnerships:
25. Do local or regional planners in your region report on and track metrics on the combined costs of transportation and housing?
 Yes/No/Unknown
26. If yes, is this information further disaggregated to report and track on the combined costs of transportation and housing for low-income residents? Yes/No/Unknown
27. Do the MPO-produced regional long-range transportation plan(s) include a prioritization for transit investments or service expansion to serve areas with low-income neighborhoods or census tracts? Yes/No/Unknown

82 Coordination of Public Transit Services and Investments with Affordable Housing Policies

28. Do regional housing or growth plans for your community or metropolitan area include specific targets for increasing affordable housing?
Yes/No/Unknown
29. If yes, do these plans prioritize or call out affordable housing near transit as a policy priority?
30. Do your regional long-range transportation plan(s) include a prioritization for transit investments or service expansion to specifically serve areas with higher concentrations of affordable housing?
Yes/No/Unknown
31. Is homelessness an issue that your agency is struggling to address? Yes/No/Unknown
32. If yes, please elaborate on the impacts of homelessness to your transit system:
33. Does your agency have any programs in place to address riders who are homeless? Yes/No/Unsure
34. **If yes, please elaborate on what programs you have established, including who your agency may partner with on these programs:**
35. How well do the following entities consider transit in making decisions about where to locate affordable housing in your city or region?
 - Public housing authorities Not at all / Somewhat / Most of the time / Always
 - Affordable housing developers Not at all / Somewhat / Most of the time / Always
 - Affordable housing non-profits Not at all / Somewhat / Most of the time / Always
 - Community development organizations Not at all / Somewhat / Most of the time / Always
 - Local governments Not at all / Somewhat / Most of the time / Always
 - Regional planning agencies Not at all / Somewhat / Most of the time / Always
 - State housing finance agencies Not at all / Somewhat / Most of the time / Always
 - Do not know
36. In some cities, transit and affordable housing advocates often work together on shared policy objectives, including ballot measures to increase transit funding. Does or has your agency engaged with affordable housing advocates on efforts to coordinate transit planning or increase support for transit funding, or on other transit advocacy efforts?
Yes/No/Unknown
37. Please elaborate or provide examples of how your agency engages with or has worked with affordable housing advocates _____

Coordinating Affordable Housing with Transit-Oriented Development

38. Does your agency engage in transit-oriented development? Yes/No/Unknown
If yes, please answer the following questions:
39. Does your agency have a TOD or joint development policy that addresses affordable housing? Multiple Choice (select one)
 - Yes, our agency TOD and/or Joint Development policy specifically prioritizes affordable housing
 - No, our agency TOD and/or Joint Development policy does not include specific prioritization for affordable housing, but does encourage greater density, multi-family housing, and more compact residential housing development
 - Our agency does not have a TOD or Joint Development Policy
 - Do not know

40. Does your agency give any prioritization for affordable housing in its process to dispose of surplus properties for redevelopment?
Yes/No/Unknown
41. If so, please describe:
42. Has your agency participated in joint development projects that included affordable housing? Yes/No/Unknown
43. Do station area plans or TOD plans, developed by your agency or other local jurisdictions, include specific goals or regulatory measures to support or allow for affordable housing near transit? Yes/No/Unknown
44. Does your agency have specific production or preservation targets or goals for affordable housing (e.g. to create an additional 1,000 units of affordable housing on transit-adjacent properties over the next 10 years, or to preserve at least 50% of currently affordable housing units within a quarter-mile of light rail stations)?
Yes/No/Unknown
45. If yes, please describe the specific affordable housing production and/or preservation targets your agency has established:
46. Does your agency consider impacts of gentrification or displacement of low-income, affordable housing residents as part of its TOD and/or joint development policy?
Multiple Choice (Select One)
- No, we do not
- Yes, we have specific policies or resolutions to address
- Yes, but nothing formally adopted
- Do not know
47. Please elaborate on how your agency considers gentrification or displacement impacts of low-income affordable housing residents:

Case Examples/Other Agencies

48. Would you be willing to participate further as a case example, involving a telephone interview going into further detail on your agency's experience, if selected by the TCRP panel for this project?
 Yes
 No
49. Is there another transit system that you suggest we include in this synthesis project? Please provide the agency name and a contact.
50. Please share other ways that your organization has partnered on affordable housing issues in your community that have not been discussed in the previous survey questions. _____

END: Thank you for participating in this survey.

We encourage you to complete the survey via the web (GOOGLE LINK). If you have any questions on the survey or the project, feel free to contact Mariia Zimmerman by email (Mariia@MZStrategies.com) or by phone (703-582-7355).



APPENDIX B

Transit Agencies That Received the Project Survey

City	State	Agency Name
Akron	Ohio	Akron METRO Regional Transit Authority
Albuquerque	New Mexico	City of Albuquerque Transit Department (ABQ Ride)
Ann Arbor	Michigan	Ann Arbor Area Transportation Authority (AAATA)
Arlington	Virginia	Arlington Transit (ART)
Atlanta	Georgia	Metropolitan Atlanta Rapid Transit Authority (MARTA)
Austin	Texas	Capital Metropolitan Transportation Authority (CMTA)
Baltimore	Maryland	Maryland Transportation Authority (MTA)
Beloit	Wisconsin	Beloit Transit System
Birmingham	Alabama	Birmingham-Jefferson County Transit Authority (MAX)
Boise	Idaho	Valley Regional Transit (VRT)
Boston	Massachusetts	Massachusetts Bay Transportation Authority (MBTA)
Charleston	South Carolina	Charleston Area Regional Transportation Authority
Charlotte	North Carolina	Charlotte Area Transit System (CATS)
Charlottesville	Virginia	Charlottesville Area Transit
Chattanooga	Tennessee	Chattanooga Area Regional Transportation Authority
Chicago	Illinois	Chicago Transit Authority (CTA)
Clarksburg	West Virginia	Central West Virginia Transit Authority
Cleveland	Ohio	Greater Cleveland Regional Transit Authority
Columbus	Ohio	Central Ohio Transit Authority
Columbia	South Carolina	Central Midlands Regional Transportation Authority
Dallas	Texas	Dallas Area Rapid Transit
Dayton	Ohio	Greater Dayton Regional Transit Authority
Denver	Colorado	Denver Regional Transportation District
Des Moines	Iowa	Des Moines Area Regional Transit Authority (DART)
Durham	North Carolina	Triangle Transit Authority
Eugene	Oregon	Lane Transit
Fort Worth	Texas	Trinity Metro
Fredericksburg	Virginia	Fredericksburg Regional Transit (FRED)
Grand Bay	Michigan	Bay Metropolitan Transit Authority (Bay Metro)
Grand Rapids	Michigan	The Rapid

City	State	Agency Name
Greenville	South Carolina	Greenville Transit Authority
Hartford	Connecticut	Greater Hartford Transit District
Houston	Texas	The Metropolitan Transit Authority of Harris County
Indianapolis	Indiana	IndyGo
Kansas City	Kansas	Kansas City Area Transportation Authority
Knoxville	Tennessee	Knoxville Transportation Authority
Las Vegas	Nevada	Regional Transportation Commission of Southern Nevada (RTC)
Los Angeles	California	Los Angeles County Metropolitan Transportation Authority (LA Metro)
Louisville	Kentucky	Transit Authority of River City (TARC)
Memphis	Tennessee	The Memphis Area Transit Authority (MATA)
Miami	Florida	Miami-Dade Transit
Milwaukee	Wisconsin	Milwaukee County Transit System
Minneapolis	Minnesota	Metro Transit
Nashville	Tennessee	Nashville Metropolitan Transit Authority (MTA)
Newark	New Jersey	New Jersey Transit
New Orleans	Louisiana	New Orleans Regional Transit Authority
Norfolk	Virginia	Hampton Roads Transit
Oakland	California	AC Transit
Oklahoma City	Oklahoma	Embark
Orlando	Florida	Central Florida Regional Transportation Authority (Lynx)
Philadelphia	Pennsylvania	Southeastern Pennsylvania Transportation Authority (SEPTA)
Phoenix	Arizona	Phoenix Public Transit
Phoenix	Arizona	Valley Metro Transit System
Portland	Maine	Greater Portland Transit District (METRO)
Portland	Oregon	Tri-County Metropolitan Transportation District of Oregon (TriMet)
Raleigh	North Carolina	Raleigh Transit Authority (RTA)
Reno	Nevada	Regional Transportation Commission of Washoe County
Richmond	Virginia	Greater Richmond Transit Company (GRTC)
Sacramento	California	Sacramento Regional Transit District
San Antonio	Texas	VIA Metropolitan Transit
San Diego	California	San Diego Metropolitan Transit System
San Francisco	California	Bay Area Rapid Transit (BART)
San Francisco	California	San Francisco MTA (SFMTA)
San Joaquin	California	San Joaquin Regional Transit District (RTD)
San Jose	California	The Santa Clara Valley Transportation Authority (VTA)
Savannah	Georgia	Chatham Area Transit Authority
Seattle	Washington	Central Puget Sound Regional Transit Authority (Sound Transit)
Seattle	Washington	King County Metro
Spokane	Washington	Spokane Transit Authority
Syracuse	New York	Central New York Regional Transportation Authority
Tahoe	Nevada	Tahoe Transportation District
Tampa	Florida	Tampa Bay Area Regional Transit Authority
Traverse City	Michigan	The Bay Area Transportation Authority
Washington, DC		Washington Metropolitan Area Transit Authority (WMATA)
York	Pennsylvania	Central Pennsylvania Transportation Authority



APPENDIX C

Outreach and Engagement Strategies – Survey Responses

Survey Question	Sample Transit Agency Responses
<p>Please share any targeted outreach strategies you have used to engage or inform residents of affordable housing or riders living in public housing.</p>	<p>CTA has worked closely with the Chicago Department of Housing to engage local communities, elected officials, and regional stakeholders to share information and gather feedback and input on various initiatives, including the Red Line Extension project.</p>
	<p>LA Metro assembled a group of engaged residents called the "Equity Cabinet" they have helped shape a framework to update policies to be equity-centric. The group, while not specific to public housing, includes both residents, providers and policy-makers who advocate for low-income people and those in public housing.</p>
	<p>MDOT MTA conducted a survey of public housing residents use of and priorities for transit in 2019.</p>
	<p>Metropolitan Transit Authority of Harris County (METRO) attends community/neighborhood meetings, engages people while riding on the bus for routes serving low income communities, attends meetings of community based organizations representing low income communities, and conducts online surveys.</p>
	<p>LYNX partnered with the Orlando Housing Authority several years ago for a grant application to increase fixed route service to public housing properties throughout Orlando. Staff joined existing or held new meetings with residents at each of the properties to hear about what types of service enhancements would be the most beneficial to residents.</p>
<p>Beyond fare or service policies, has your agency partnered or built a relationship with affordable housing agencies or advocates around transit?</p>	<p>King County Metro sits on committees and has regular coordinating meetings with housing policy staff at the county, local affordable housing funders and regional affordable housing advocates and other transit agencies to align funding with affordable housing opportunities in TOD projects and to work towards a strategic approach to aligning transit and affordable housing investments.</p>
	<p>MDOT MTA meets quarterly with City Housing, Planning and Transportation Departments to discuss development opportunities and priorities. This has helped ensure affordable housing sites incorporate well-sited transit stops.</p>
	<p>Denver RTD partnered with affordable housing agencies, developers and city staff to develop an equitable TOD policy meant to incentivize affordable housing as part of joint developments on RTD owned land.</p>
	<p>As a division of City government, the SFMTA works closely with the Mayor's Office of Housing and Community Development (MOHCD) on policy matters and also supports the development of affordable housing in partnership with MOHCD on SFMTA properties.</p>
	<p>METRO has relationships with the City of Houston and Harris County as well as property managers at housing developments. Community liaisons regularly respond to specific transit-related requests such as service and shelter amenities/maintenance and to identify opportunities for community engagement.</p>
	<p>VTA's TOD program has established key partnerships with local Housing Departments, the County Office of Supportive Housing, and local Housing Advocacy groups. Partnerships include entitlement goals, cooperative funding sources, and coordinated policy analysis.</p>
	<p>Capital Metro worked with Mobile Loaves and Fishes and Travis County to bring fixed route service to Community First. Regular meetings with Foundation Communities, non-profit affordable housing developer, to discuss service to their developments.</p>
	<p>Reno Housing Authority participated in the RTC Affordable Housing Study. RTC has a seat on the HOME Consortium, which allocates funding for affordable housing projects.</p>
	<p>DART has partnered with our county housing trust fund (a non-profit that helps to fund affordable housing units in the region) on advocacy efforts and the importance of locating affordable housing near transit. DART has also maintained a seat on their board for the past several years to further emphasize the connection between affordable housing and public transportation.</p>
	<p>WeGo Public Transit participates in Homelessness Impact Division with local social services agency. Worked with schools on ways to increase and improve use of transit services for low-income students. Provide travel training to low-income housing residents in coordination with housing authority.</p>

Note: This is a sample, but not an exhaustive, set of responses from transit agencies to these survey questions.

Abbreviations and acronyms used without definitions in TRB publications:

A4A	Airlines for America
AAAAE	American Association of Airport Executives
AASHO	American Association of State Highway Officials
AASHTO	American Association of State Highway and Transportation Officials
ACI-NA	Airports Council International-North America
ACRP	Airport Cooperative Research Program
ADA	Americans with Disabilities Act
APTA	American Public Transportation Association
ASCE	American Society of Civil Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
ATA	American Trucking Associations
CTAA	Community Transportation Association of America
CTBSSP	Commercial Truck and Bus Safety Synthesis Program
DHS	Department of Homeland Security
DOE	Department of Energy
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration
FAST	Fixing America's Surface Transportation Act (2015)
FHWA	Federal Highway Administration
FMCSA	Federal Motor Carrier Safety Administration
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
GHSA	Governors Highway Safety Association
HMCRP	Hazardous Materials Cooperative Research Program
IEEE	Institute of Electrical and Electronics Engineers
ISTEA	Intermodal Surface Transportation Efficiency Act of 1991
ITE	Institute of Transportation Engineers
MAP-21	Moving Ahead for Progress in the 21st Century Act (2012)
NASA	National Aeronautics and Space Administration
NASAO	National Association of State Aviation Officials
NCFRP	National Cooperative Freight Research Program
NCHRP	National Cooperative Highway Research Program
NHTSA	National Highway Traffic Safety Administration
NTSB	National Transportation Safety Board
PHMSA	Pipeline and Hazardous Materials Safety Administration
RITA	Research and Innovative Technology Administration
SAE	Society of Automotive Engineers
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (2005)
TCRP	Transit Cooperative Research Program
TDC	Transit Development Corporation
TEA-21	Transportation Equity Act for the 21st Century (1998)
TRB	Transportation Research Board
TSA	Transportation Security Administration
U.S. DOT	United States Department of Transportation

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