

Chapter 9: Putting Mixed-Income TOD into Practice – Lessons from the Five Case Studies

There is no single effective approach to promoting mixed-income housing in neighborhoods near transit. Rather, all stakeholders – federal, state, regional, local and private-sector – are grappling with the challenges of simultaneously removing barriers to building mixed-use neighborhoods where transit is convenient and ensuring that a full range of households can access the lifestyle and affordability benefits of TOD.

The geographic diversity of the case study regions and the differing levels of maturity of their transit systems provide insights regarding the market response to new transit investments, the challenges of preserving and creating mixed-income housing near transit, and the strategies for capturing the value creating by TOD to achieve community benefits. A host of innovative strategies is being tried in these five very different places, with varying degrees of success. And, though this study has generated substantial new and interesting information about the linkages between housing and transit, much more work is needed to refine this methodology and provide practitioners with strong analytic tools and predictive models.

Throughout this report we have distinguished between the different challenges, opportunities and players at the regional, corridor and station area levels. The following discussion of lessons learned from the case studies follows this same format.

Lessons from the Regions

The five case study regions vary in size, extent of transit service and strength of the housing market. This in turn, affects the degree to which transit-oriented development serves as an organizing framework for growth and the extent to which mixed-income housing can be included in new TOD projects.

- **Travel Characteristics in Transit Zones are Unique from the Region**
As shown in **Table 9.1**, next page, residents of transit zones are three times as likely to take transit to work than residents of the region as a whole. Residents of transit zones are also three or more times likely to bike or walk to work than are residents of the region as a whole.

Table 9.1: Transportation Characteristics in Case Studies and Nationally

Case Study Region		Year Regional Rail Service Began	System Size in 2005 (Stations)	Journey To Work, 2000*		
				Car Alone	Transit	Bike/Walk
Boston	Region	1855	Extensive (288)	73.86%	9.03%	4.12%
	Transit zones			49.60%	24.97%	13.08%
Portland	Region	1986	Large (108)	73.12%	5.71%	2.98%
	Transit zones			57.42%	13.75%	11.47%
Denver	Region	1994	Small (24)	75.60%	4.34%	2.38%
	Transit zones			56.61%	12.17%	14.04%
Twin Cities	Region	2004	Small Expanding (17)	N/A	N/A	N/A
	Transit zones					
Charlotte	Region	2007	Small Expanding (10)	N/A	N/A	N/A
	Transit zones					
United States	USA	n/a	3,349	82.42%	9.82%	3.69%
	Transit zones			41.93%	33.91%	10.32%

Sources: Center for Transit Oriented Development and 2000 US Census

- Transit Mode Shares Increase with Transit System Size**
 Denver, Portland and Boston – small, large and extensive transit systems, respectively – show a strong progression of increasing transit mode shares for both the regions as a whole and for areas within walking distance of transit stations. As transit system size increases, providing access to a greater number of people living and working near a transit station, transit ridership also increases.
- The Importance of the Trip Not Taken**
 Nationally, residents of TOD use their cars to get to work at roughly half the rate of regional residents; almost 42 percent in transit zones versus slightly over 82 percent nationally. This implies that TOD can be a significant strategy for reducing vehicle-miles traveled and peak-hour freeway congestion, without having to sacrifice regional growth. This finding can also be instructive for local strategies to reduce parking requirements in TOD to help lower construction costs and create incentives for achieving other community benefits.
- Pedestrian-Oriented Development is Key to Transit-Oriented Development**

In all case study regions, pedestrian and bike mode shares in transit zones are three to seven times higher than regional averages. As transit system size expands, transit modes shares from transit zones exceed walking and biking modes. For instance, whereas Denver has a higher percentage of residents using biking and walking than transit for work trips, both Portland and Boston have higher transit rates.

- **Demographic and Home Ownership Differences Influence Development Opportunities and Impacts**

Just as households living near transit exhibit different travel behavior than their regional counterparts, these same households also possess some important demographic distinctions.

- **Households Living near Transit are Smaller, with Lower Incomes than the Region as a Whole**

However, as transit systems grow in size, household composition and income more closely resemble regional averages. **Table 9.2** on the next page shows the variation among the transit zones in each of the case studies, and nationally, with the larger region in which they reside. Residents in transit zones in Boston, the largest transit system that was studied, have household sizes that are 89 percent of the regional average and household incomes that are 93 percent of the regional average. This compares to Denver, a small transit system in 2000, where household sizes in transit zones are only 82 percent of regional averages and incomes are 62 percent of regional averages.

Table 9.2: Demographic Factors in Case Study Regions and Nationally

Case Study Region		2000 Households	Average Household Size	2000 Median Income	Housing Tenure (Owner Renter)
Boston	Region	1,785,552	2.54	\$51,727	59% 41%
	Transit zones	413,528	2.27	\$48,306	38% 62%
Portland	Region	741,776	2.56	\$47,061	63% 37%
	Transit Zones	73,911	2.13	\$34,899	37% 63%
Denver	Region	939,971	2.53	\$51,760	66% 34%
	Transit Zones	17,373	2.07	\$31,839	36% 64%
Twin Cities	Region	1,136,615	2.56	\$54,317	72% 28%
	Transit Zones	17,870	2.03	\$30,613*	39% 61%
Charlotte	Region	575,293	2.55	\$46,120	68% 32%
	Transit Zones	3,777	1.70	\$40,715	37% 63%
United States	USA	281,421,906	2.57	\$41,994	66% 34%
	TZs	6,188,770	2.44	\$35,000	35% 65%

Sources: U.S. Census 2000, CTOD National TOD Database, Center for Neighborhood Technology.

- **More Transit Households are Renters than Owners**

Households living within a half mile of transit are 54 percent more likely to rent than to own their home. A larger number of multi-family housing opportunities exist near transit, and rental prices are usually more affordable near transit. However, as the value of land near transit increases in response to increased demand for housing near transit, rental households are more vulnerable to displacement. Ensuring preservation and creation of both rental and home ownership opportunities near transit is important to households of all income levels.

- **Desire for TOD Housing Includes a Significant Percentage of Low- and Very Low-Income Households**

Current TOD and affordable housing strategies being implemented in the case study regions are not likely to deliver this amount of supply. A range of affordable housing needs exists – including housing for students, older Americans on fixed incomes, and families – so diversity of affordable housing stock is needed. Most existing affordable housing policies identified for each case study region do not include special consideration or criteria for transit proximity. Most local TOD efforts do not include an affordability component, with the exception of Charlotte’s Housing Locational Policy and Portland’s specific developer agreements.

Table 9.3: TOD Demand

Case Study Region		Projected Transit System Size 2030	Projected Households in 2030	Percent TOD Capture*	Share of 2030 Projected TOD Demand from Households earning less than \$50,000
Boston	Region	Extensive	2,819,609		
	TOD Demand		750,726	27%	56%
Portland	Region	Extensive	1,154,318		
	TOD Demand		279,891	24%	68%
Denver	Region	Large	1,513,746		
	TOD Demand		138,207	9%	68%
Twin Cities	Region	Medium	1,712,316		
	TOD Demand		123,776	7%	55%
Charlotte	Region	Large	848,539		
	TOD Demand		76,931	9%	64%
All Regions with Existing or Planned Transit	Regions Total		65,139,272		
	TOD Demand		15,209,786	23%	63%

Source: Center for Transit Oriented Development, 2006 TOD Capture refers to the share of regional households fitting the “TOD Profile” in terms of demographics including age and household type.

- Regional Demand for TOD is Projected to Increase**
 Demand for housing near transit will more than double as an increasing number of households respond to changing demographics, increased congestion, and a desire for greater housing and mobility choice (see **Table 9.3**, above). Some of this increased demand reflects the success of new TOD projects that incorporate good design, accessibility, and a mixture of uses that are attractive to residents and employees, including those who may not use transit.
- Affordable Housing Funding is Limited**
 State and Federal funding for affordable housing has dwindled dramatically in the past decade. At the same time, escalating building costs and land prices are increasing the cost and challenge of providing and rehabbing affordable units. Whereas there are some successful HOPE VI projects that incorporate access to transit, this funding source no longer exists. Preserving and strengthening existing funding sources is important, as it seizing the opportunity to fully leverage funds. A growing number of housing authorities are acting as community development and redevelopment agencies. The

leadership and creativity demonstrated by the Portland Development Commission and MassHousing illustrate the importance of meeting affordable housing objectives through larger redevelopment strategies. Similarly, prioritizing tax credits and other affordable housing subsidies for locating near transit can help to address TOD affordability challenges and help to ensure stable transit ridership.

Partnership, Leadership and Innovation are Necessary Ingredients

An overarching observation from this study is that better coordination of housing and transportation policies is needed. Transit investments and housing markets are influenced at the corridor level, whereas housing and transportation policies are often made at the State and regional levels. Given the different scales of investment and policy decisions, transportation and housing needs to be more closely aligned. While transit agencies are not responsible for local land use or regional housing policies, transit investments should be closely coordinated with each.

Charlotte and Portland have staff within transit agencies and the city to work with developers to identify key TOD opportunity sites. Hennepin County in the Twin Cities region has developed a TOD program to create incentives for housing in existing and proposed transit corridors. Preservation and creation of new housing is a priority for consideration in allocation of these funds. These are important first steps, but still insufficient to meeting the challenges identified in each region for creating mixed-income housing near transit.

- **Government Leadership is Key**

Government leadership can take many forms. In Massachusetts, the former Governor stepped forward to propose new funding and policies to support TOD. In Portland, the Portland Development Commission took early leadership to redevelop around the streetcar. In Charlotte, the City and transit agency work together to coordinate land use and transit planning. In every instance, leadership by at least one level of government was critical to providing the commitment necessary to provide new funding sources, policies and change existing regulatory barriers.

- **Public-Private Partnerships can Yield Impressive Results**

In Boston, a group of four community development corporations have come together to advocate for improved transit service and affordable housing within the Fairmount/Indigo Line. The CDC collaborative is partnering with the City, MBTA and MassHousing to try and achieve results. In Portland, local for-profit developers were early leaders in creating an urban, infill market located near the proposed streetcar alignment. Their leadership and financial commitment, and willingness to try a new market product yielded substantial benefits to the developer and to the public. Business and community leaders

also were instrumental in getting the Portland streetcar funded and constructed.

Lessons from the Corridors

The five case study corridors represent a mix of urban form, transit technology and maturity. Urban Commuter Corridor, District Circulators, Planned Growth and Destination Corridors are four different types of transit corridors portrayed in the case studies. Each corridor types contains a different mix of land use, densities and transit service that impact the development potential within the corridor. Several key corridor-level observations are discussed below and summarized along with some station area specific observations in **Table 9.4**

Table 9.4: Highlights from Case Studies, Lessons Learned at the Corridor Level

Opportunities that Influence Success	Examples from the Case Studies
TOD potential is directly related to existing parcelization and land use patterns.	Large, underutilized industrial sites in Portland created the framework for redevelopment of an entire neighborhood. Conversely, Boston's Fairmount/Indigo Line contains primarily small, scattered parcels within residential areas making more transformative redevelopment difficult, and limiting the ability to assemble larger parcels that can yield higher profits.
Land speculation and strong market interest drive up housing prices.	The national trend towards urban, downtown living helped to spur market-rate development in Portland's Pearl district, Minneapolis's Warehouse District, and Charlotte's Uptown. Strong market demand has exerted pressure on preservation of affordable housing units. In contrast, Boston's Fairmount/Indigo Line has not been a focal point for significant new development allowing local CDCs to purchase land prior to land escalation.
Market readiness shapes development response.	Denver's West Corridor, still six years from completion, has relatively few new development projects. The Charlotte housing market is beginning to respond to TOD, but still strongly centered around the downtown. The projects in both cities are primarily market rate.
Necessary infrastructure improvements to support TOD can be costly.	Charlotte's South Corridor runs predominately through former industrial areas and residential neighborhoods that are more suburban in form. Significant infrastructure, beyond the light rail line, is needed to improve pedestrian access and increase sewer and water capacity to allow for greater intensity of use. The City has developed an infrastructure funding program to address this challenge.
Comprehensive actions needed to stimulate mixed-income TOD.	Most of the case study regions did not have identified strategies for preserving existing affordable housing or creating new mixed-income housing near transit. Charlotte has adopted some policies, but is working to modify them as to improve their effectiveness. Portland has addressed affordable housing through individual developer agreements. Every region has a number of valuable affordable housing tools, but has yet to focus these tools on transit corridors in a comprehensive fashion.

Source: Center for Transit-Oriented Development, 2007

- **TOD Potential is Directly Related to Existing Parcelization and Land Use Patterns**

Redevelopment opportunities along the case study corridors are shaped by the size and scale of underutilized parcels. In Boston, where the Fairmount line extends through established residential neighborhoods, the amount of underutilized land is very small and the parcels that are available are fragmented and dispersed. However, in Charlotte, where the planned transit line extends through obsolete commercial and industrial properties, the amount of developable land is much more significant. Transit-supportive plans, zoning and implementation mechanisms are needed to ensure TOD-appropriate development.

Table 9.5: Corridor Housing Capacity Estimates

Corridor	City	Underutilized Total Acreage	Adjusted Underutilized Acreage	Current Corridor Density (du/acre)	Low End Capacity	High End Capacity	Regional TOD Demand	% of Regional Demand (Low)	% of Regional Demand (High)
Fairmount	Boston	345	173	18	3,105	6,210	750,726	0.41%	0.83%
South	Charlotte	1,277	639	6.7	4,278	8,556	76,931	5.56%	11.12%
West	Denver	983	492	9.6	4,718	9,437	138,207	3.41%	6.83%
Hiawatha	Minneapolis	504	252	18	4,536	9,072	123,776	3.66%	7.33%

Source: Center for Transit-Oriented Development, 2007

Note: We did not estimate underutilized acres for the Portland streetcar corridor due to inaccuracies with the data and the rapid redevelopment that has already occurred within the Pearl District on formerly underutilized sites.

A number of the identified underutilized parcels may not be suitable for redevelopment. **Table 9.5** summarizes the potential capacity of these corridors, and the percentage of regional TOD demand that could be achieved if aggressive measures were implemented to target housing within each. These estimates range from less than one percent in Boston’s Fairmount/Indigo corridor to over 11 percent in Charlotte’s South Corridor.

- **Land Speculation and Strong Market Interest Can Drive Up Housing Prices**

Investments near new or enhanced transit stations in existing low-income neighborhoods may displace the very residents they are designed to serve because increased accessibility to regional jobs and services tend to drive up land prices and attract a new, more affluent population. Respondents noted that land speculation is beginning to occur in those corridors still in the planning stages. This presents a formidable obstacle to providing housing products at affordable prices, and in particular for preserving affordable rental housing. Proactive actions are necessary to avoid displacement. In Boston, over 2,000 expiring use units have been identified. Denver’s West Corridor

has several distressed public housing properties close to proposed new stations. Improving and preserving housing choices for low-income households can help to ensure that both housing and transportation costs are more affordable to these residents.

- **Market Readiness Shapes Development Response and Impacts Land Values**

The national trend towards urban, downtown living helped to spur market-rate development in Portland's Pearl district, Minneapolis's Warehouse District, and Charlotte's Uptown. Experience along the Hiawatha line shows that once the downtown housing market strengthened and became expensive, developers sought out housing sites at stations further from downtown. Developers say their clients are seeking less expensive housing with easy access to downtown amenities. Boston also displays this trend, particularly as new development is beginning to emerge along the Fairmount/Indigo Corridor as it contains some of the region's last remaining affordable housing. Improved transit service may accelerate the market for housing in the corridor. Both the Denver and Charlotte systems could provide similar experiences once their systems are built.

- **Necessary infrastructure improvements to support TOD can be costly**

The ability to channel market forces to create a vision of change is a very powerful tool that determines the success of a transit-oriented district. Additional new infrastructure, beyond the transit investment, may be needed, particularly for former industrial properties that are being redeveloped as residential or mixed-use. Charlotte developed the South Corridor Infrastructure Program to address this challenge. In Massachusetts, the Commonwealth is taking the unusual step of reimbursing localities for the net cost of educating students in new housing located in smart growth districts, of which include proximity to rail transit.

- **Comprehensive Housing and Transportation Efforts Needed to Stimulate Mixed-Income TOD**

In the Boston's Fairmount corridor there has been quite a bit of affordable housing development, largely led by four Community Development Corporations. In Portland, the City was able to use its entitlements process to leverage affordable housing through a series of development agreements that linked approvals to inclusionary housing. In Minneapolis, State legislation proactively links funding of affordable housing to efficient land use and transportation infrastructure which has had the effect of channeling projects toward the Hiawatha light rail corridor. Each of these examples is instructive, though none of the regions studied possess a comprehensive strategy for creating and preserving housing for a range of incomes within the existing and proposed transit corridors. Such a strategy seems warranted to ensure that a full range of housing choices exist, and that existing low-income residents are not forced into other areas of the region that do not include transit options that can help to reduce their overall household transportation costs.

Lessons from the Station Areas

Summarized in **Table 9.6** and discussed in the remainder of this chapter, are those challenges and opportunities that exist at the station area level within the five case study corridors.

Table 9.6: Highlights from Case Studies, Lessons Learned at the Station Area Level

Opportunities that influence Success	Examples from the Case Studies
Regulatory Barriers exist which can add cost and delay.	Minneapolis and Charlotte are both in the process of creating new overlay districts to support increased densities, pedestrian-oriented improvements, and mixed-use development in transit station areas. Portland was an early leader in reducing parking requirements for projects located in transit corridors. Denver has adopted transit mixed-use zoning.
Capture value to leverage community benefits.	Even before redevelopment of the Pearl District began, the Portland Development Commission negotiated a developer agreement with a large land owner to achieve community benefits in exchange for public infrastructure support. These included affordable housing, creation of a community park, and density bonuses.
Affordable housing developers do not have the capital to land bank.	Both Portland and Charlotte have land-banking funds that help pay for acquisition of sites that can be later sold to non-profit and affordable housing developers.
Community opposition to density and affordable housing create barriers.	In Boston, residents expressed opposition to bringing in more affordable housing feeling that they had too much already. In Charlotte, some are expressing resistance to affordable housing efforts in a corridor that is largely middle income.
Industrial contamination of infill sites creates legal and cost challenges.	Every corridor contains sites that have been identified, or are suspected of having environmental contamination. Minneapolis used regional brownfields funds to clean-up some parcels, and Portland engaged in a significant clean-up effort as a first step for redeveloping the Pearl District.

Source: *Center for Transit-Oriented Development, 2006*

- Regulatory Barriers Exist Which Can Add Cost and Delay**
 TOD sites frequently require rezoning and land assembly. This can lead to lengthy acquisition and permitting processes, which increase development costs. When developers are saddled with these costs, it can be much more difficult to also provide affordable units within projects. Minneapolis and Charlotte both have implemented phased overlay districts around transit stations to address regulatory barriers to TOD and allow increased densities and mixed-use development. Portland was an early leader in reducing parking requirements, which can add significant cost to projects. As one developer there noted, a high percentage of his projects are being sold to couples who either don't own a car or sell their car once they move in and take advantage of the streetcar and car-sharing programs.
- Capture Value to Leverage Community Benefits**
 As evidenced in all of the case studies, market rate development is occurring within transit corridors, even those like Denver's West Corridor that are still in

the planning stage. As the local TOD market becomes more established there are opportunities to provide incentives to developers through density bonuses, reduced parking requirements, and infrastructure improvements that can create value which allow projects to be financially viable. Capturing the value created through these public incentives by requiring developer contributions in return can be an effective tool for achieving transit-supportive land uses and intensities, and also community benefits. Even before redevelopment of the Pearl District began, the Portland Development Commission negotiated a developer agreement with a large land owner to achieve community benefits in exchange for public infrastructure support and incentives.

- **Affordable Housing Developers Do Not Have the Capital to Land Bank**

Acquiring and holding land, also known as land banking, requires considerable capital, especially when it may be 5 to 10 years before a rail station is built. This presents steep holding costs for any developer, particularly nonprofit developers that are most likely to produce below-market-rate housing. Furthermore, many traditional funding sources – including CDBG, HOME and other federal housing funds – cannot be used to purchase land, whereas transit properties are increasingly reluctant to purchase excess land during project construction out of concerns that increased project costs can negatively affect their chances at federal funding. Both Portland and Charlotte have land-banking funds that help pay for acquisition of sites that can be later sold to non-profit and affordable housing developers.

- **Community Opposition to Density and Affordable Housing Create Barriers**

Residents of established communities may be particularly resistant to changes that are perceived as negatively impacting their property values or community character. Initial resistance and development delays can be expected with higher density projects, particularly without an inclusive, community planning process at the outset. Engaging the public is essential in the planning and implementation phases. A number of new planning tools from visual preference surveys to charrettes to design tools that engage, educate and excite the public. Federal transportation planning funds are available for many of these types of new planning tools.

- **Industrial Contamination of Infill Sites Creates Legal and Cost Challenges**

Every corridor contains sites that have been identified, or are suspected of having environmental contamination. Likely a number of the corridor-level underutilized parcels identified in this study are environmentally contaminated. These “brownfields” present a cost hurdle to their redevelopment, and include potential liability issues that need to be assessed. However, most states and regions provide specific funds for brownfields redevelopment that may actually create incentives and make them more desirable properties to developers that can take advantage of these programs. Minneapolis used regional brownfields funds to clean-up some

parcels, and Portland engaged in a significant clean-up effort as a first step for redeveloping the Pearl District.

The final chapter builds off of the key findings from the case studies described here. It suggests a series of recommended actions by the local, regional, State and Federal partners that can help to promote more mixed-income housing near transit.