

Downtowns, Greenfields and Places In Between

Promoting Development Near Transit

May 2013



About This Study

Downtowns, Greenfields and Places In Between was prepared by the Center for Transit-Oriented Development (CTOD). The CTOD is the only national nonprofit effort dedicated to providing best practices, research and tools to support market-based development in pedestrian-friendly communities near public transportation. We are a partnership of two national nonprofit organizations – Reconnecting America and the Center for Neighborhood Technology – and a research and consulting firm, Strategic Economics. Together, we work at the intersection of transportation planning, regional planning, climate change and sustainability, affordability, economic development, real estate and investment. Our goal is to help create neighborhoods where young and old, rich and poor, can live comfortably and prosper, with affordable and healthy lifestyle choices and ample and easy access to opportunity for all.

Report Authors

This report was prepared by Nadine Fogarty, Sujata Srivastava, Amanda Gehrke, Alison Nemirow and Mason Austin, staff of Strategic Economics. Additional support and assistance was provided by Eli Popuch, Tiffany Yang and Tyler Bump.

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I. INTRODUCTION

Transit-oriented development (TOD) – typically defined as compact, mixed-use development within walking distance of a transit station – has emerged in recent years as a key strategy for fostering quality neighborhoods and reducing auto dependence. Despite the emphasis on TOD in many policy discussions, however, only limited information is available to help communities understand the likely development impacts of new transit investments. This report builds on a 2010 study by the Center for Transit-Oriented Development (CTOD), *Rails to Real Estate: Development Patterns along Three Recently Constructed Rail Lines*, to examine the opportunities and challenges involved in promoting TOD in different types of neighborhoods, and the strategies that may be appropriate to catalyze TOD depending on the neighborhood context. By examining development patterns and public investment strategies through the lens of “development context” or “neighborhood type,” this report attempts to represent the actual, on-the-ground conditions within which TOD planning and implementation decisions are made.

Previous Research

Sponsored by the Federal Transit Administration, *Rails to Real Estate* documented real estate development within a half-mile of three new transit lines in the Denver, Charlotte, and Minneapolis-St. Paul regions. The report found that while there had been a significant amount of development along all three lines, development had occurred unevenly within the corridors. New development appeared most likely to locate near downtowns and other employment centers. City-led planning processes, infrastructure investments, and other public sector efforts were found to play an important role in influencing the location of development. One surprising finding, however, was that, at least in the 2-5 years following the introduction of transit, the location of “opportunity sites” for development was not a good indicator of the location of new development. The report concluded that there is a great deal of unmet development opportunity along transit lines. Finding ways to encourage future infill development in these locations will be important for maximizing the value of our transit investments, as well as for meeting greenhouse gas emissions and other goals.

The Importance of Development Context

This report builds on *Rails to Real Estate* by examining development patterns through a more qualitative framework of eight development contexts that are commonly found around transit stations:

- **Downtowns/Urban Business Districts:** City centers, including major regional employment and cultural hubs, as well as sub-regional central business districts located in smaller cities.
- **Major Suburban Employment Areas:** Job centers located outside of central business districts, including major office concentrations along highways, regional retail centers, and master-planned business parks.
- **Legacy Industrial Areas:** Industrial districts built in the late 19th and early 20th centuries, often near the historic urban core of cities.
- **Mixed-Use Neighborhoods/Main Streets:** Neighborhoods that feature a mix of retail and residential uses at a walkable, pedestrian scale.

- **Auto-Oriented Commercial Corridors:** Corridors designed to facilitate automobile access with wide streets, fast-moving traffic, and strip retail.
- **Industrial/Distribution Areas:** Districts characterized by low-density industrial uses and warehouses, usually located near highway interchanges or other major transportation nodes.
- **Low-Density Residential Neighborhoods:** Neighborhoods dominated by single-family residential uses.
- **Major Greenfield/Infill Sites:** Very large parcels of underdeveloped or underutilized land.

Actual neighborhoods, of course, rarely fit neatly within one of these categories, and may move between categories as they change over time. The eight development contexts used in this report are intended to provide a simplified framework for thinking about the typical types of conditions found near transit.

An improved understanding of the context for transit-oriented development is particularly important given two parallel trends that are underway in transit and planning circles. First is the increasing focus on “value capture” as a source to pay for, or in some cases maintain, transit investments. Value capture is a type of public financing where increases in property values generated by public investments are “captured” or recovered by the public sector. The most common forms of value capture include assessment districts, tax-increment financing, developer fees, and joint development.¹ Because most of these mechanisms are dependent upon new development to generate revenue, understanding the likely extent, location and timing of future investment is critical for developing effective value capture strategies.

The second trend is the growing interest in forming innovative partnerships to support TOD. Both the public and private sectors are more interested than ever in partnering to create creative tools – such as infrastructure banks, corridor-wide tax-increment financing districts, and land acquisition funds for affordable housing – to unlock the potential for development near transit, especially given the current weak real estate market. Some efforts are focused on finding ways to fund needed infrastructure, catalyze private investment, and deliver affordable housing, parks, community centers, and food stores. Others are geared toward minimizing displacement of low-income households. Understanding where and when development is likely to occur is critical for developing effective tools and policies and determining how best to deploy limited resources to catalyze TOD. Unrealistic expectations about the development impacts of transit can result in poor planning and policy decisions, lead to the creation of ineffective financing tools, and fuel speculation in property markets.

Structure of the Report

Following this introduction, Chapter 2 revisits the three regions explored in *Rails to Real Estate* to take a closer look at where development did and did not occur in terms of the eight development contexts. Chapter 3 provides a more detailed look at the opportunities and

¹ Center for Transit Oriented Development, *Capturing the Value of Transit*, 2008.

challenges involved in fostering TOD in each type of neighborhood, and discusses strategies that may be appropriate for catalyzing TOD depending on the development context.

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II. THE CONTEXT FOR DEVELOPMENT IN THE THREE CASE STUDY CORRIDORS

This chapter builds on the 2010 CTOD report *Rails to Real Estate* to explore the scale and context of recent development along three light rail lines:

- **Hiawatha Line (Twin Cities Metro Area, Minnesota):** A 12-mile light rail line connects downtown Minneapolis, the Minneapolis-St. Paul airport, and Bloomington's Mall of America, as well as several urban neighborhoods. The Hiawatha Line was completed in 2004.
- **Southeast Corridor (Denver Metro Area, Colorado):** A 19-mile light rail line that connects Central Denver with the Southeast Business District, including the Denver Tech Center, Greenwood Village, Inverness, Meridian, and the City of Centennial. While the Southeast Corridor does not include downtown Denver, riders can continue onto the Central Corridor, which connects to the downtown (without transferring). The Southeast Corridor opened in 2006.
- **Blue Line (Charlotte Metro Area, North Carolina):** A 9.6-mile light rail line that connects the suburb of Pineville to the employment and entertainment centers of South End and downtown Charlotte (commonly referred to as "Uptown"). The Blue Line opened in 2007.

The chapter begins with a discussion of the extent of new development that has occurred along the three lines. We then examine the location of new development by dividing each corridor into eight "development contexts" or "neighborhood types" to illustrate how development patterns have corresponded with local neighborhood characteristics.

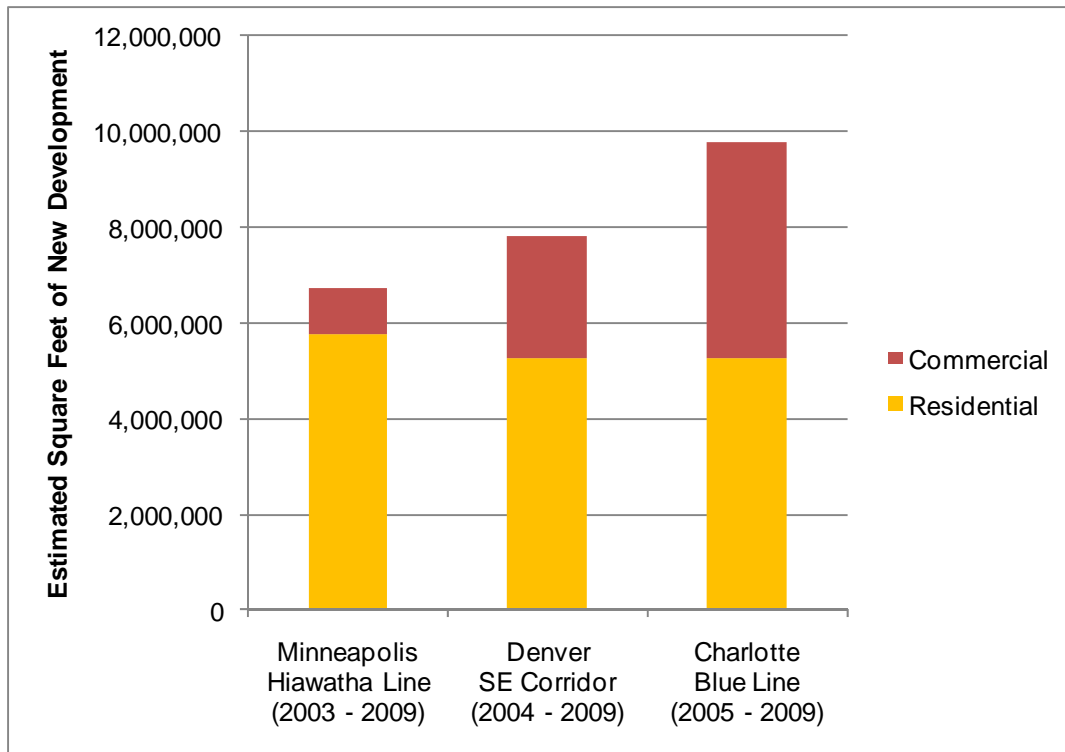
SCALE OF DEVELOPMENT ALONG THE CASE STUDY CORRIDORS

All three case study lines have experienced significant new development (see Figure 1), much of it designed and marketed to take advantage of the new light rail lines. Compared to their share of land within their respective regions, all three corridors managed to capture a relatively high proportion of regional housing development.² Figures 2-4 show the share of regional land area encompassed within a half mile of the new station areas, compared to the share of new housing development captured along each corridor.³ In all three cases, the land directly adjacent to station areas represents only a very small share of regional land supply – in each case, about 0.2 percent – while the corridors captured between 2.6 and 4.6 percent of all new housing development.

² It was only possible to do this analysis for residential uses, because it was possible to estimate the number of new housing units – but not the amount of new commercial or other development – built in the region using Census and other data.

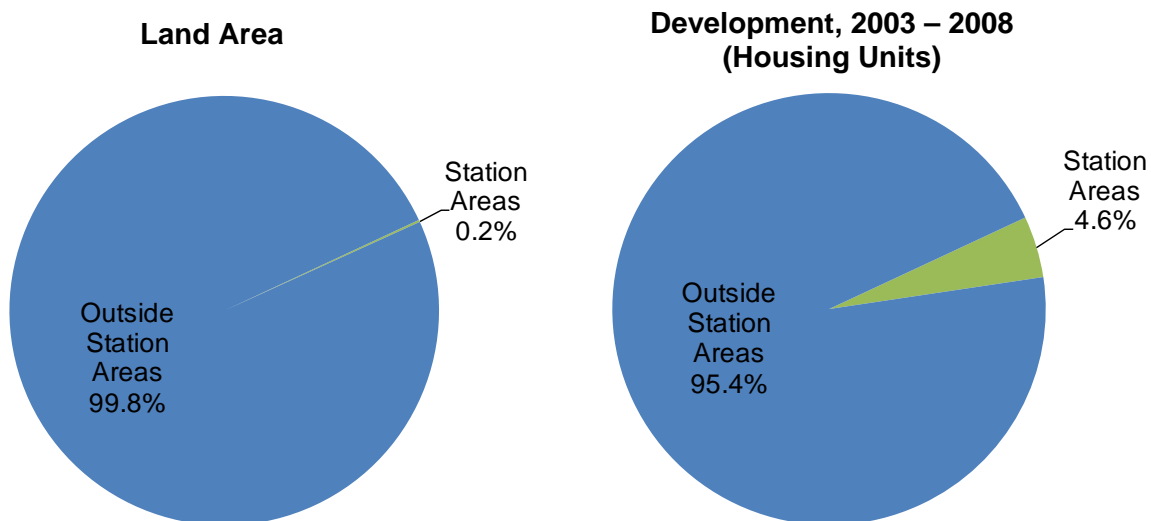
³ The Denver figure (Figure 3) includes transit stations on other lines in the region; in both the Charlotte and Twin Cities regions, the corridors studied were the first and, at the time, the only light rail lines in the regions.

Figure 1. New Development along the Three New Transit Lines



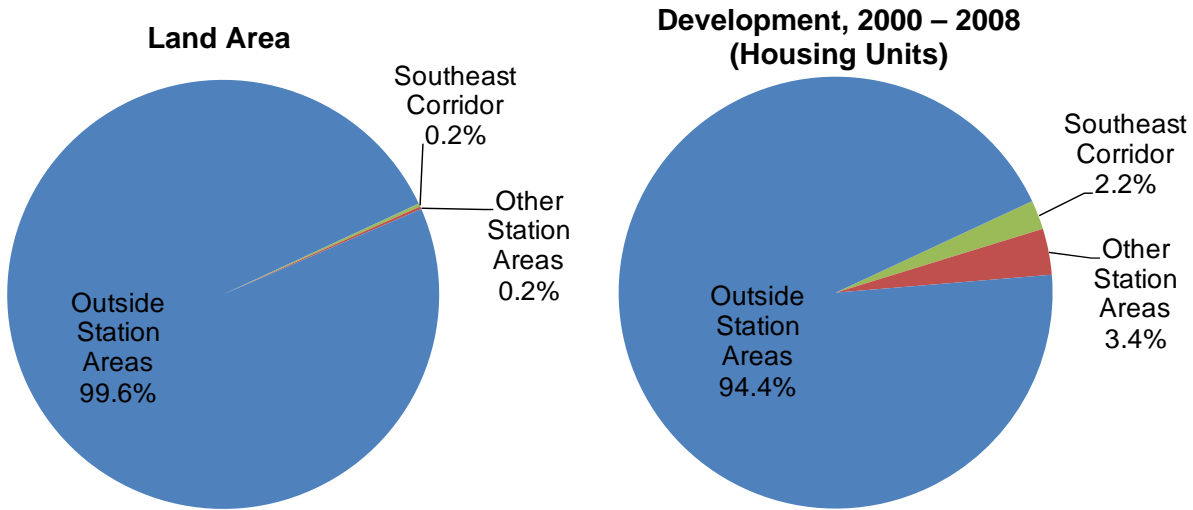
Source: CTOD; Individual Jurisdictions; Denver Regional Transit District. Chart includes all new development that was completed or under construction during the time period given.

Figure 2. Transit Station Areas as a Share of Land Area and Residential Development in the Twin Cities Region, 2003-2008



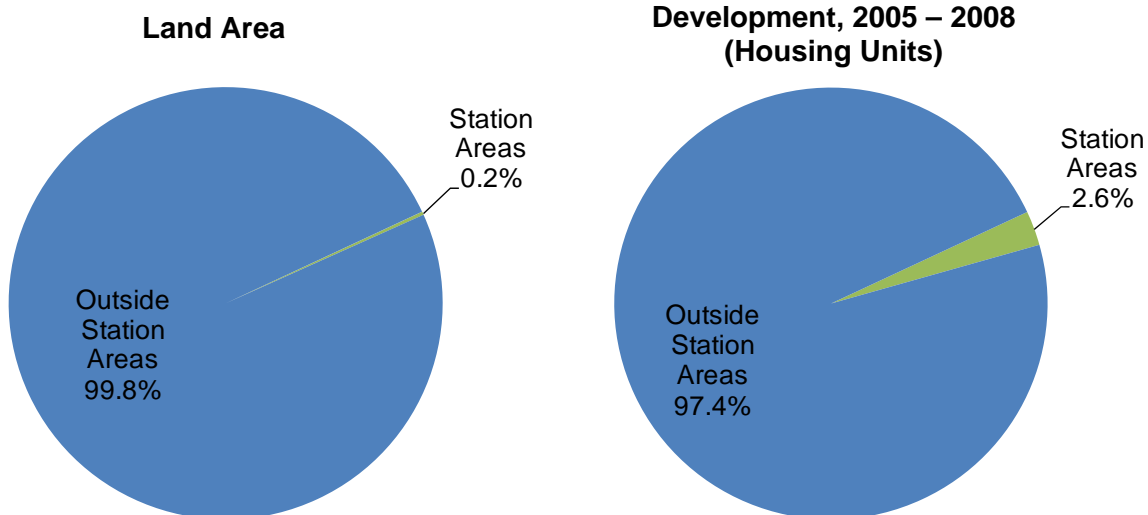
Sources: US Census; City of Bloomington; City of Minneapolis; Strategic Economics/CTOD.

Figure 3. Transit Station Areas as a Share of Land Area and Residential Development in the Denver Region, 2000-2008



Sources: Denver Regional Transportation District; US Census; Strategic Economics/CTOD.

Figure 4: Transit Station Areas as a Share of Land Area and Residential Development in the Charlotte Region, 2005-2008



Source: US Census 2000, Mecklenburg County, Strategic Economics/CTOD

The high concentration of new development in the station areas in part reflects the fact that the three corridors include some of the places with the highest housing densities in their respective regions, including central business districts in the Twin Cities and Charlotte and dense urban neighborhoods near downtown Denver. Table 1 shows the gross population density in 2000 along each line compared to the region as a whole.

Table 1. Population Density in the Three Transit Corridors Compared to Average Regional Population Density

	Minneapolis Hiawatha Line	Denver Southeast Corridor	Charlotte Blue Line
<i>Population (2000)</i>			
Region	2,968,806	2,400,570	1,499,293
Station Areas	43,225	28,331	20,807
<i>Land Area (acres)</i>			
Region	3,880,364	2,881,978	2,161,155
Station Areas	6,299	12,788	5,268
<i>Average Population/Acre</i>			
Region	0.8	0.8	0.7
Station Areas	6.9	2.2	3.9

Source: US Census 2000; CTOD.

DISTRIBUTION OF DEVELOPMENT ALONG THE CORRIDORS

Transit corridors are designed to connect disparate parts of a city or region, and typically run through a diverse set of places, from thriving downtowns to quiet residential neighborhoods. Each of these places represents a different context for development and contains a unique set of challenges and opportunities for TOD. *Rails to Real Estate* identified several key factors related to where development occurred along the three case study lines:

- **Proximity to downtowns or other employment centers.** Within each region, downtowns and other employment-intensive station areas experienced the greatest amount of new development, including 72 percent of the new development along the Hiawatha Line and 64 percent of the development along the Blue Line.
- **Vacant/underutilized land.** The presence of opportunity sites was related to where new development occurred. However, proximity to downtowns or other major employment centers appears to be a more important factor in driving new development.
- **Investments in neighborhood infrastructure and amenities.** To date, most development near transit in the three case study regions has occurred in downtowns, historic districts, and large redevelopment sites that offer neighborhood amenities and interesting, walkable streets. Little development has occurred outside of these central areas, especially in areas where land use patterns were previously oriented toward automobile use. Public realm improvements to improve connectivity and provide necessary infrastructure may help unlock the potential for TOD in these areas.

In this section, we reexamine the development patterns along the three corridors using a more comprehensive framework for characterizing the neighborhoods around transit stations. Based on the physical characteristics of different neighborhoods along the corridors – including the most prevalent land uses, scale of development opportunities, level of “walkability,” availability of retail and other amenities, and typical parking conditions – CTOD developed eight proto-typical “development contexts” or “neighborhood types,” shown below in Figure 5.

Figure 5. The Eight Development Contexts

Existing Downtown/Urban Business District	Major Suburban Employment Area	Legacy Industrial Area	Mixed Use Neighborhood/Main Street
 <p><i>Downtown Boston Boston, Massachusetts</i></p> <p>Most existing downtown and urban business districts contain dense, diverse mix of uses in a walkable and pedestrian-friendly environment.</p>	 <p><i>Tyson's Corner, Virginia</i></p> <p>Major suburban employment centers are typically large, freeway-oriented "campuses" featuring office uses surrounded by surface parking lots that offer potential for intensification.</p>	 <p><i>Arts District Los Angeles, California</i></p> <p>Legacy industrial areas are typically downtown adjacent and often contain a historic building stock that can be converted into residential or commercial uses.</p>	 <p><i>Lincoln Square Chicago, IL</i></p> <p>Mixed use neighborhoods/main streets, which often incorporate former streetcar corridors, feature a mix of retail and residential uses at a walkable, pedestrian scale.</p>
Auto-Oriented Commercial Corridor	Industrial/Distribution Area	Low Density Residential Neighborhood	Major Greenfield/Infill Site
 <p><i>University Avenue Twin Cities, Minnesota</i></p> <p>Auto-oriented commercial corridors feature wide streets with strip or free-standing retail centers, often abutting low density residential neighborhoods.</p>	 <p><i>South Boulevard Charlotte, North Carolina</i></p> <p>Industrial and distribution areas typically feature large format warehouses and/or industrial uses oriented toward highway access.</p>	 <p><i>Bethel Park, Pennsylvania</i></p> <p>Low density residential neighborhoods primarily contain single family homes.</p>	 <p><i>NUMMI Plant Fremont, California</i></p> <p>Greenfield and major infill sites feature very large parcels of undeveloped or underutilized land, often under single ownership.</p>

The following sections characterize each of the three case study corridors in terms of these development contexts, and show how the location of opportunity sites and new development correspond to development context. The station areas were broken out by neighborhood type using a combination of parcel data, Google Earth satellite images, and local knowledge to characterize each station area. In actuality, of course, neighborhoods rarely fit neatly within one development context category, and may move between categories over time. The eight development contexts used in this report are intended to provide a simplified framework for thinking about the typical types of conditions found around transit.

Blue Line (Charlotte Metro Area, North Carolina)

Table 2 and Figures 6-8, below, illustrate the distribution of development contexts along the Blue Line, and show where vacant or underutilized parcels (“opportunity sites”) and recent development projects are located relative to the different development contexts.

What Development Contexts Characterize the Corridor?

The majority of the land in Blue Line station areas is in low-density residential neighborhoods (34 percent), industrial/distribution areas (28 percent), and auto-oriented commercial corridors (23 percent). Together, these three development contexts comprise 85 percent of land area along the Blue Line. Downtown Charlotte (commonly referred to as “Uptown”) represents about 10 percent of land area.

Where Are Development Opportunities Located?

Most development opportunities are located along auto-oriented commercial corridors and in industrial areas. More than a third of vacant or underutilized land is along commercial corridors (35 percent), and another 30 percent is in industrial areas.

Where Has Development Occurred?

Although 85 percent of vacant/underutilized parcels are in commercial corridors and industrial districts, only 24 percent of development occurred in these areas. Supportive investments are often required to bring new development to these typically auto-oriented development contexts. Auto-oriented commercial corridors, for example, account for the second largest share of development along the corridor (9 percent), which reflects Charlotte’s proactive investment strategy, particularly in the South End neighborhood.

The majority of development along the Blue Line (68 percent) took place in the downtown, which is the only major employment center along the line. From 2005 to 2009, the majority of development along the Blue Line took place in Uptown Charlotte, which is categorized as an existing downtown/urban business district. Nearly a quarter (24 percent) of the remaining development took place in relatively low-density areas, including auto-oriented commercial corridors, low-density residential neighborhoods, and industrial/distribution areas.

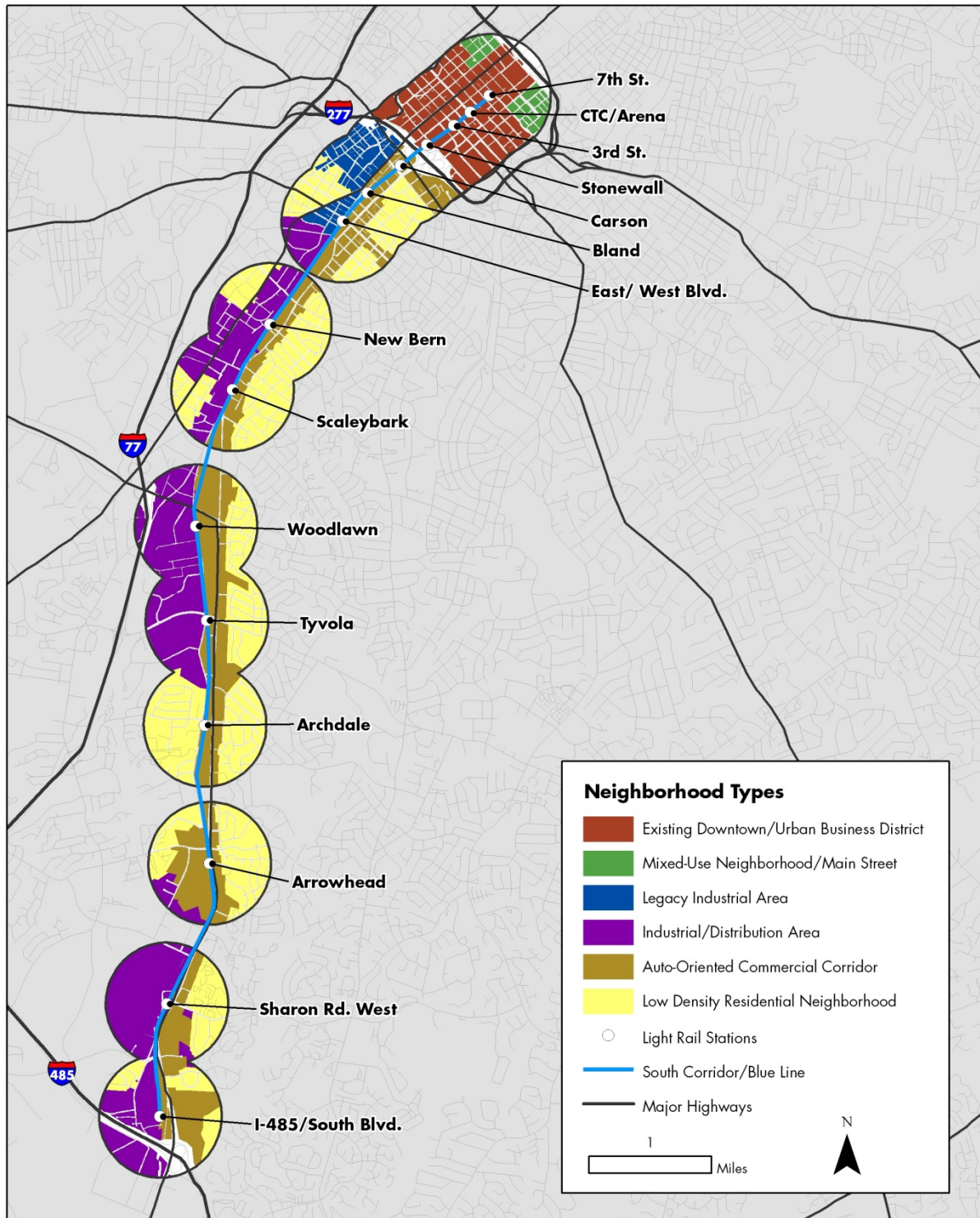
Table 2. Distribution of Land Area, Vacant/Underutilized Parcels, and Development by Development Context: Charlotte Blue Line

Development Context	Share of Total Land Area (2005)	Share of Opportunity Sites* (2005)	Share of New Development (2005-2009)
Existing Downtowns/Urban Business Districts	10%	13%	68%
Major Suburban Employment Areas	0%	0%	0%
Legacy Industrial Areas	3%	4%	3%
Mixed-Use Neighborhoods/Main Streets	2%	1%	5%
Auto-Oriented Commercial Corridors	23%	35%	9%
Industrial/Distribution Areas	28%	30%	7%
Low Density Residential Neighborhoods	34%	18%	8%
Major Greenfield/Infill Sites	0%	0%	0%
Other	0%	0%	0%
Total Corridor	100%	100%	100%

*Vacant or underutilized land; underutilized land is defined as parcels where the county assessor has determined that the value of the improvements are less than the value of the land.

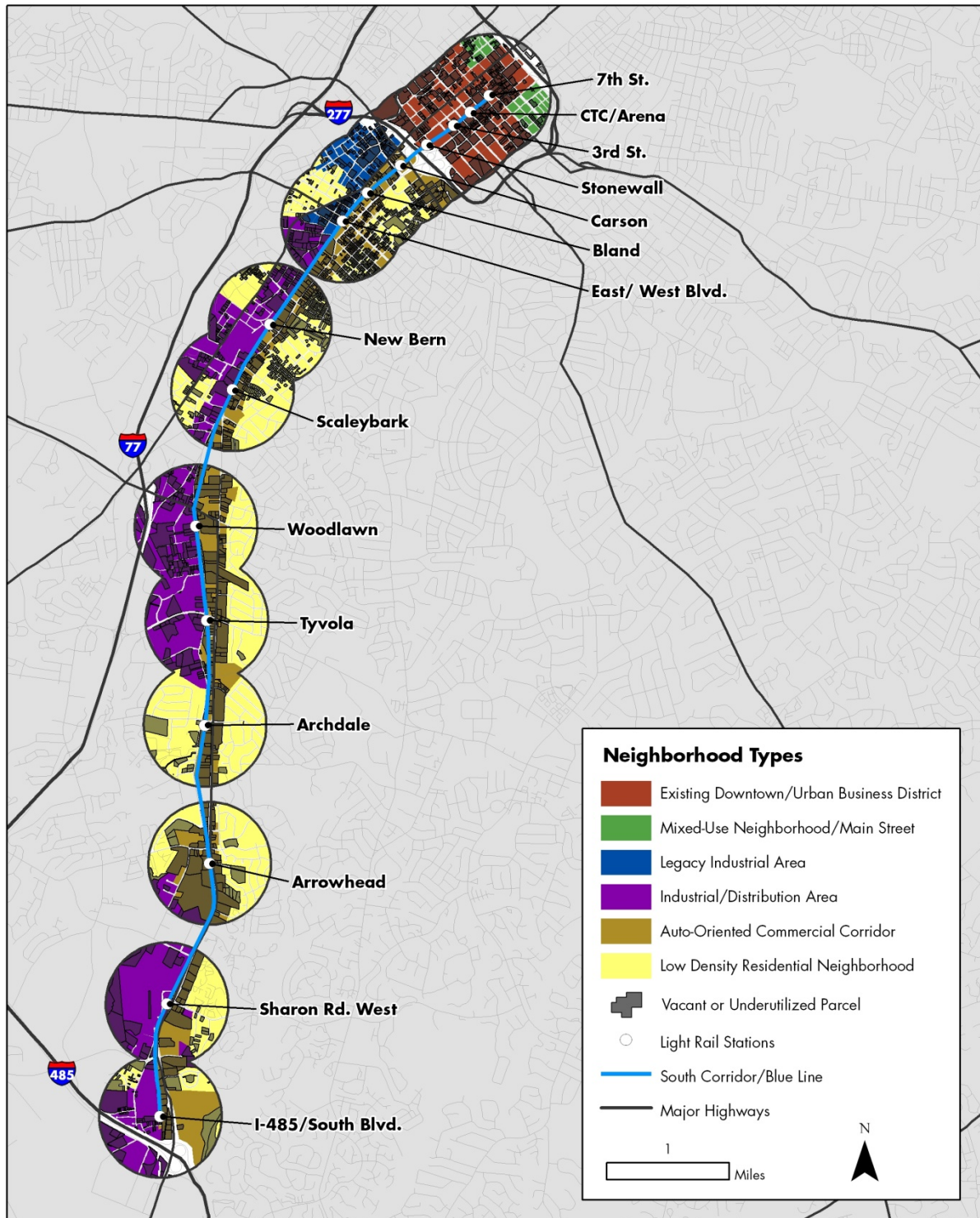
Sources: City of Charlotte, Charlotte Area Transit System, 2008; Mecklenberg County, 2005; CTOD 2009.

Figure 6. Development Contexts within a Half Mile of Blue Line Stations: Charlotte Metro Area, North Carolina, 2005



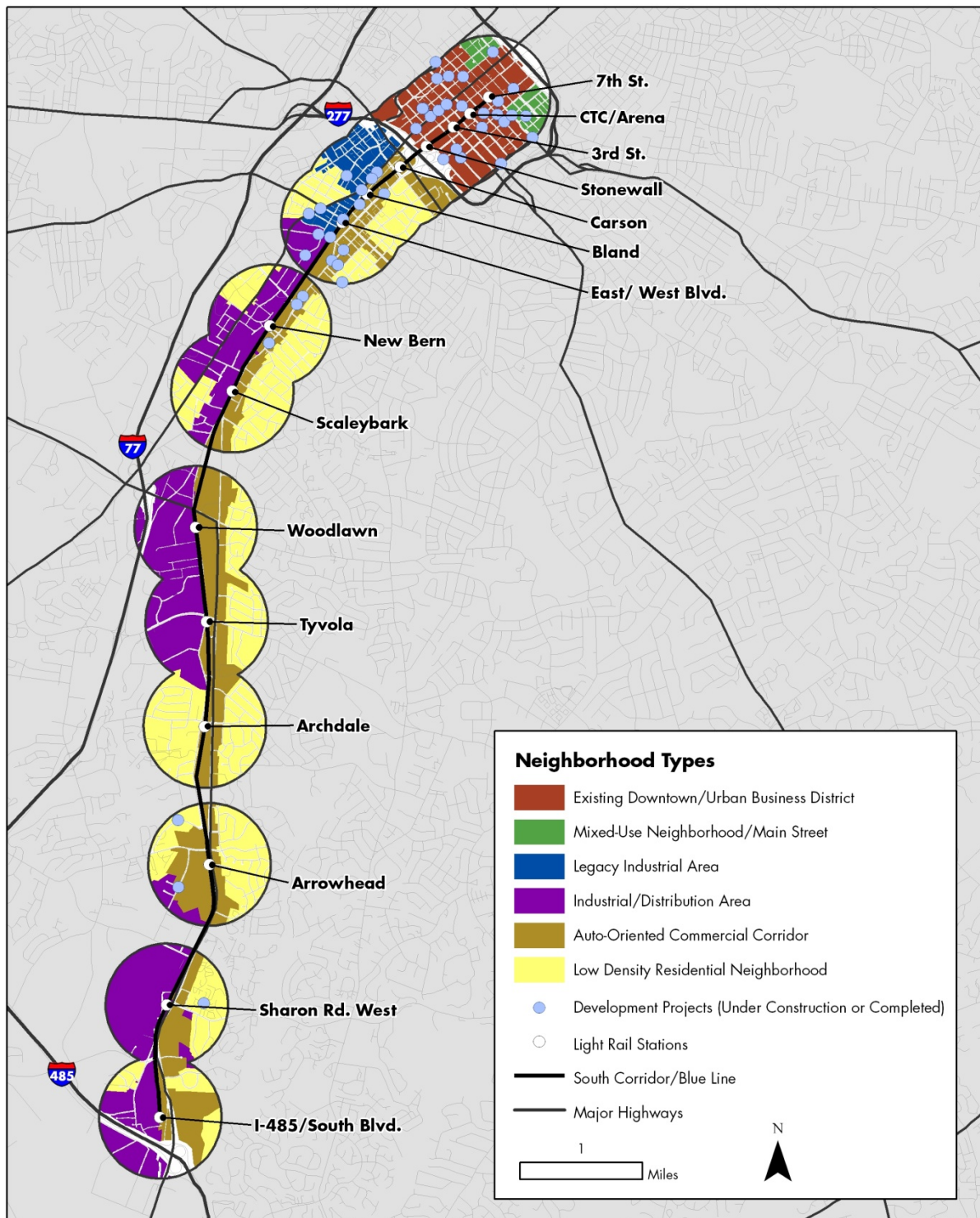
Sources: City of Charlotte/Charlotte Area Transit System, 2008; Mecklenberg County, 2005; CTOD, 2009.

Figure 7. Vacant or Underutilized Parcels by Development Context: Blue Line, Charlotte Metro Area, North Carolina, 2005



Sources: City of Charlotte/Charlotte Area Transit System, 2008; Mecklenberg County, 2005; CTOD, 2009.

Figure 8. Recent Development by Development Context: Blue Line, Charlotte Metro Area, North Carolina, 2005 - 2009



Sources: City of Charlotte/Charlotte Area Transit System, 2008; Mecklenberg County, 2005; CTOD, 2009.

Hiawatha Line (Twin Cities Metro Area, Minnesota)

Table 3 and Figures 9-11, below, illustrate the distribution of development contexts along the Hiawatha Line, and show the location of vacant or underutilized parcels and recent development.

What Development Contexts Characterize the Corridor?

Over 40 percent of land along the Hiawatha line is classified as unlikely to develop or redevelop. This “other” category (Table 9) includes protected green space, military, academic and medical uses, as well as the Minneapolis-St. Paul International Airport, which are considered unlikely to be redeveloped in the foreseeable future.

The remaining area includes a diversity of development contexts, including low-density residential neighborhoods, a major suburban employment area in Bloomington, and downtown Minneapolis. Leaving aside the 40 percent of land that is in long-term use, the greatest share of land area is in residential neighborhoods (18 percent). The suburban employment area in Bloomington represents 11 percent of land area. Downtown Minneapolis accounts for 10 percent of the corridor.

Where Are Development Opportunities Located?

Underutilized and vacant land along the Hiawatha Line is concentrated in the suburban employment area in Bloomington (39 percent), downtown Minneapolis (27 percent), and a major infill site in Bloomington (10 percent).

Where Has Development Occurred?

Despite the high concentration of vacant or underutilized parcels in suburban employment centers (39 percent), most development occurred in or around downtown Minneapolis, in the existing downtown/urban business district, mixed-use neighborhood/main street and legacy industrial area contexts. Although these areas combined account for just 38 percent of vacant or underutilized parcels, they experienced 79 percent of new development. By comparison, major suburban employment centers attracted only 6 percent of new development.

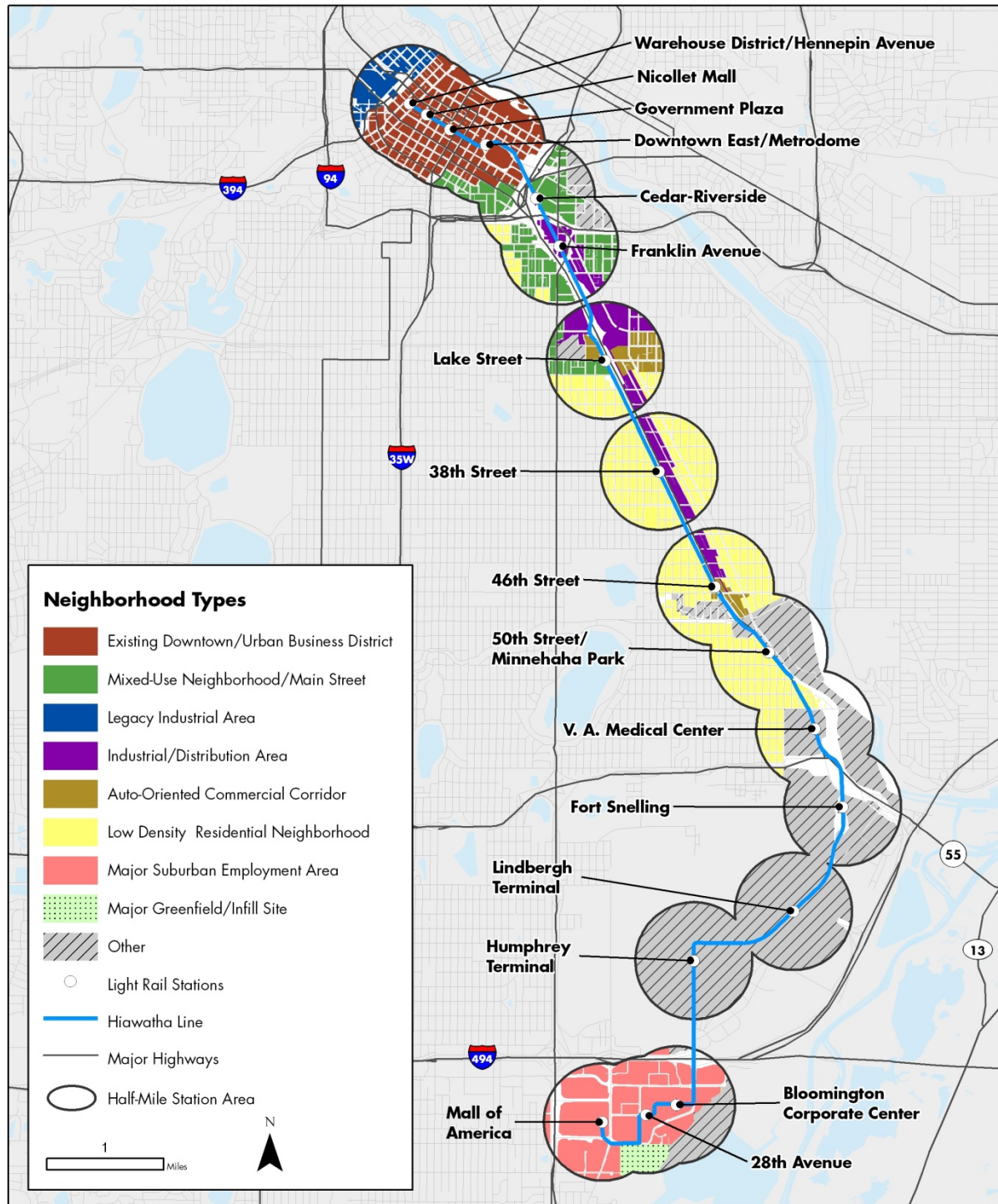
Table 3. Distribution of Land Area, Vacant/Underutilized Parcels, and Development by Development Context: Hiawatha Line, Twin Cities Metro Area

Development Context	Share of Land Area (2005)	Share of Opportunity Sites* (2005)	Share of Development (2003-2009)
Existing Downtown/Urban Business Districts	10%	27%	35%
Major Suburban Employment Areas	11%	39%	6%
Legacy Industrial Areas	2%	6%	24%
Mixed-Use Neighborhoods/Main Streets	6%	5%	20%
Auto-Oriented Commercial Corridors	2%	1%	0%
Industrial/Distribution Areas	5%	8%	6%
Low Density Residential Neighborhoods	18%	2%	9%
Major Greenfield/Infill Sites	4%	12%	0%
Other (Unlikely to Develop)	41%	1%	0%
Total Corridor	100%	100%	100%

*Vacant or underutilized land; underutilized land is defined as parcels where the county assessor has determined that the value of the improvements are less than the value of the land.

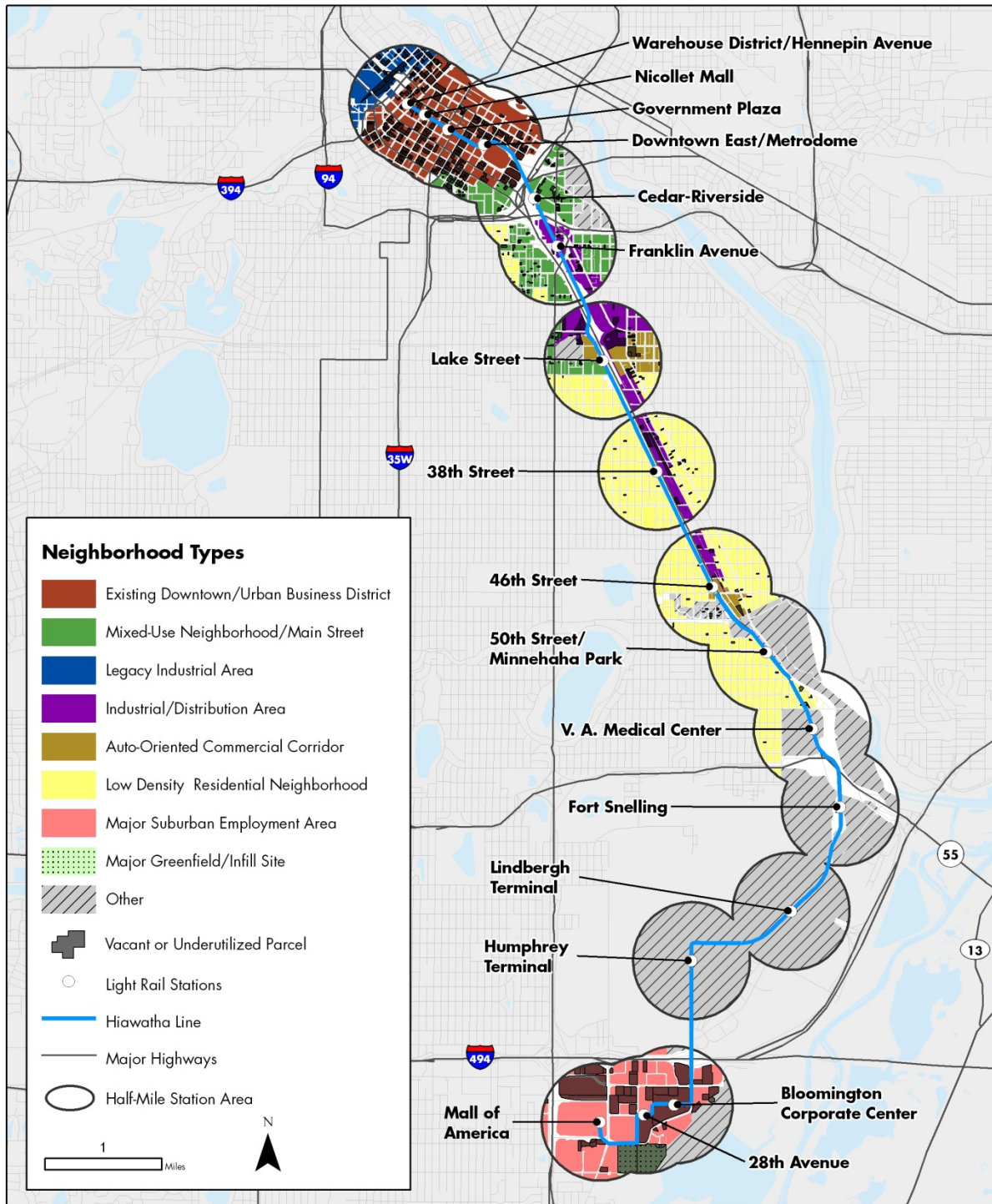
Sources: Metropolitan Council; City of Minneapolis; City of Bloomington; CTOD, 2009

Figure 9. Development Contexts within a Half Mile of Hiawatha Line Stations: Twin Cities Metro Area, Minnesota, 2005



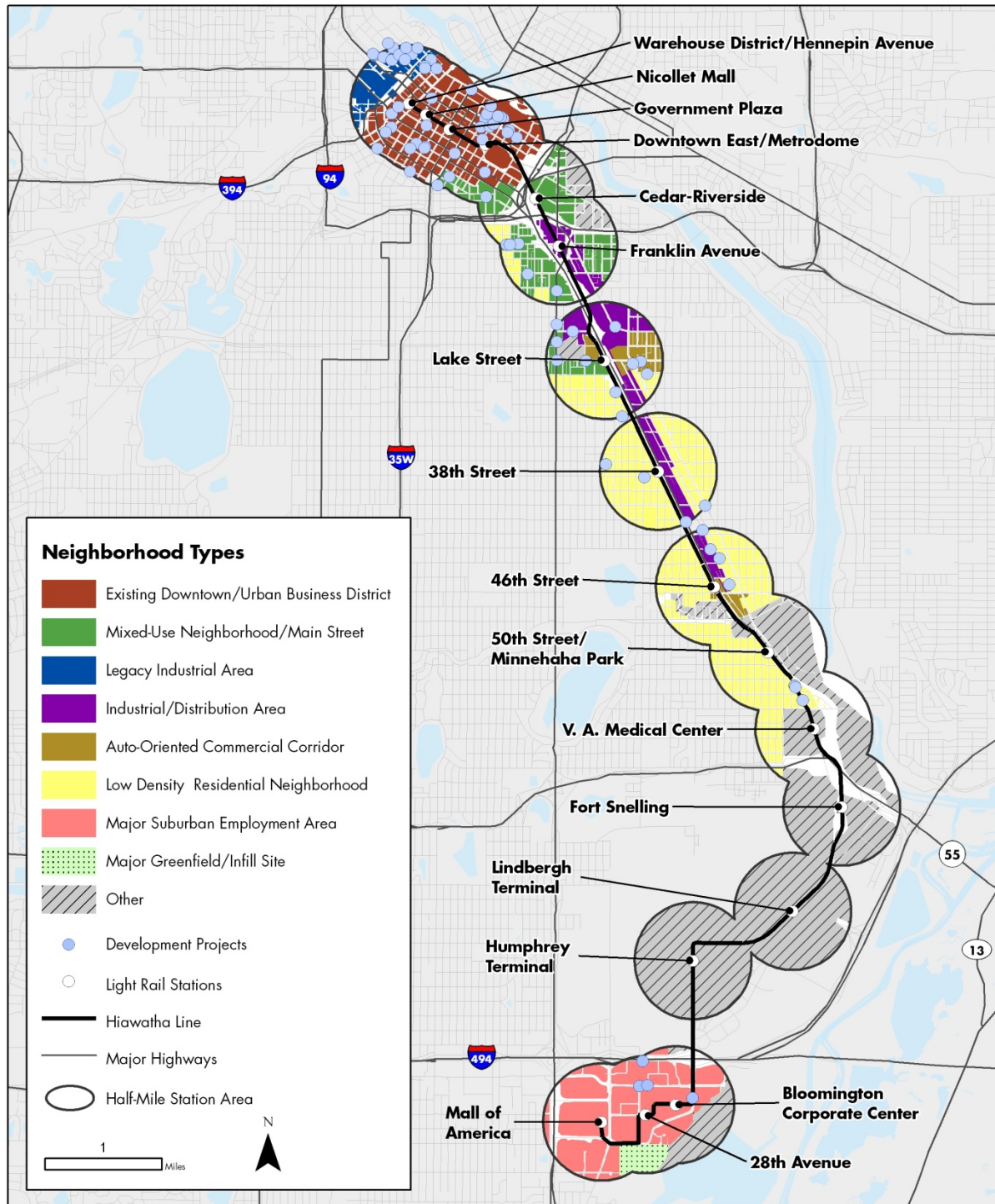
Sources: Metropolitan Council, City of Bloomington, City of Minneapolis, CTOD, 2009.

Figure 10. Vacant or Underutilized Parcels by Development Context: Hiawatha Line, Twin Cities Metro Area, Minnesota, 2005



Sources: Metropolitan Council, City of Bloomington, City of Minneapolis, CTOD, 2009.

Figure 11. Recent Development by Development Context: Hiawatha Line, Twin Cities Metro Area, Minnesota, 2003 - 2009



Sources: Metropolitan Council, City of Bloomington, City of Minneapolis, CTOD, 2009.

Southeast Corridor (Denver Metro Area, Colorado)

Table 4 and Figures 12-14 illustrate the distribution of development contexts along the Southwest Corridor, and the location of vacant or underutilized parcels and recent development.

What Development Contexts Characterize the Corridor?

A primarily suburban line, the majority of land along the Southeast Corridor falls into the low-density residential (36 percent) and suburban employment center (28 percent) development contexts. The remaining land is classified as major greenfield/infill site (14 percent), auto-oriented commercial corridor (9 percent) and other. As with the Hiawatha Line, the “other” category represents land that is considered unlikely to develop or redevelop in the short term.

Where Are Development Opportunities Located?

Development opportunities are concentrated in major greenfield/infill sites (40 percent) and suburban employment centers (39 percent). About 11 percent of opportunities are along commercial corridors, and 9 percent are in low-density residential neighborhoods.

Where Has Development Occurred?

Despite the availability of greenfield opportunity sites along the Southeast Corridor, greenfield sites actually experienced the smallest share of development. Major greenfield/infill sites account for 39 percent of vacant or underutilized parcels yet experienced only 9 percent of development corridor-wide.

Most development occurred around major suburban employment areas. Suburban employment areas account for 34 percent of vacant or underutilized parcels, but experienced 60 percent of development along the Southeast Corridor. Auto-oriented commercial corridors and low-density residential neighborhoods also saw a significant share of development. These relatively low-density development contexts received almost one-third (31 percent) of new development along the Southeast Corridor, in the form of small-scale retail and multifamily infill projects.

Table 4. Distribution of Land Area, Vacant/Underutilized Parcels, and Development by Development Context: Southeast Corridor, Denver Metro Area, Colorado

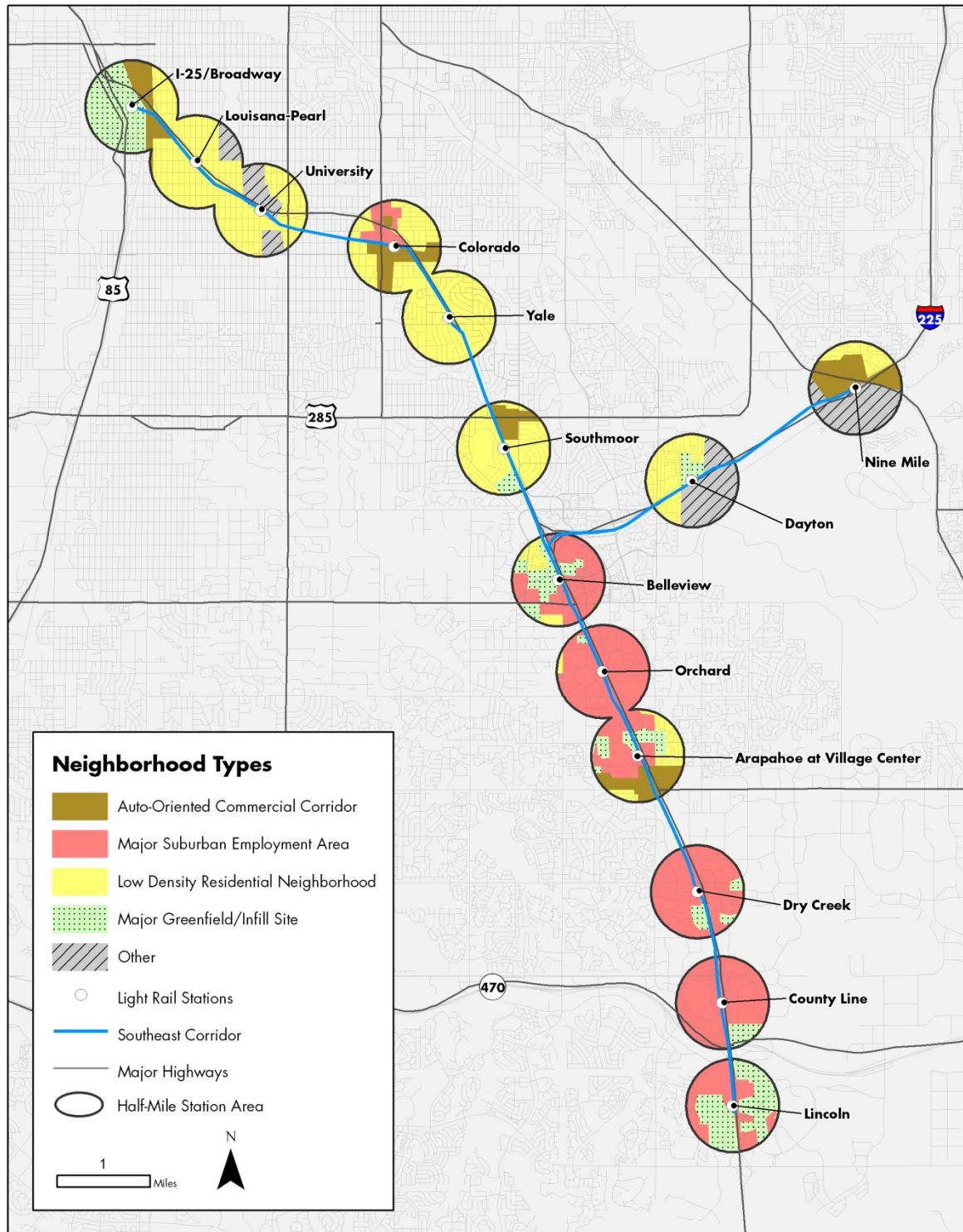
Development Contexts	Share of Land Area (2004^{**})	Share of Opportunity Sites* (2004^{**})	Share of Development (2005-2009)
Existing Downtown/Urban Business Districts	0%	0%	0%
Major Suburban Employment Centers	32%	39%	61%
Legacy Industrial Areas	0%	0%	0%
Mixed-Use Neighborhoods/Main Streets	0%	0%	0%
Auto-Oriented Commercial Corridors	9%	11%	14%
Industrial/Distribution Areas	0%	0%	0%
Low Density Residential Neighborhoods	36%	9%	16%
Major Greenfield/Infill Sites	14%	40%	9%
Other (Unlikely to Develop)	10%	0%	0%
Total Corridor	100%	100%	100%

*Vacant or underutilized land; underutilized land is defined as parcels where the county assessor has determined that the value of the improvements are less than the value of the land.

**Land use data for Denver County are from 2009; data for Arapahoe and Douglas Counties are from 2004.

Sources: Arapahoe County, 2004; Douglas County, 2004; Denver County, 2009; CTOD 2009

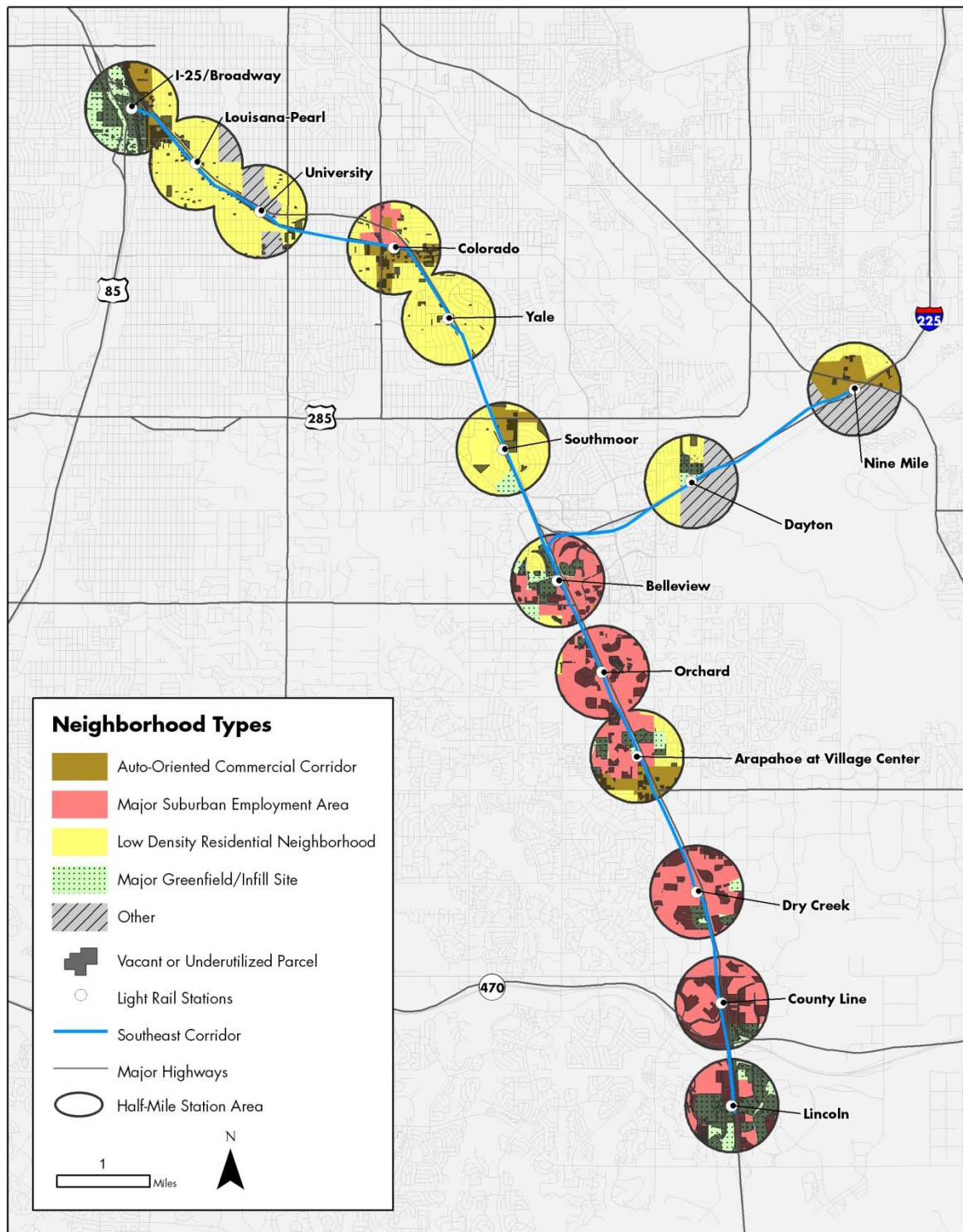
**Figure 12. Development Contexts within a Half Mile of Southeast Corridor Stations:
Denver Metro Area, Colorado, 2004***



Sources: 2000 U.S. Census; Denver Regional Transportation District; Denver County, Arapahoe County; Douglas County; CTOD, 2009.

*Land use data for Denver County are from 2009; data for Arapahoe and Douglas Counties are from 2004.

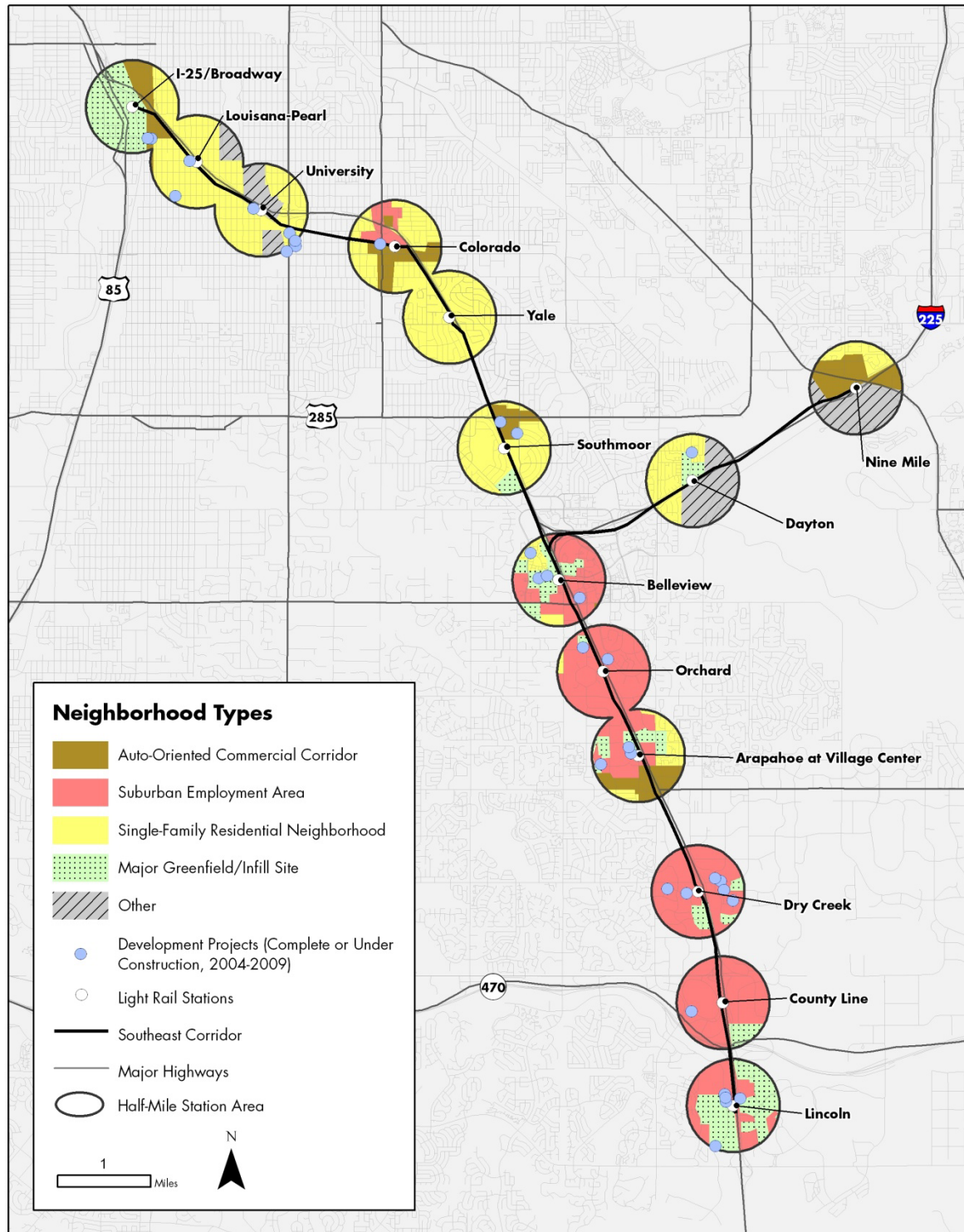
Figure 13. Vacant or Underutilized Parcels by Development Context: Southeast Corridor, Denver Metro Area, Colorado, 2004*



Sources: 2000 U.S. Census; Denver Regional Transportation District; Arapahoe County, Douglas County, 2004; Denver County, 2009; CTOD, 2009.

*Land use data for Denver County are from 2009; data for Arapahoe and Douglas Counties are from 2004.

Figure 14. Recent Development by Development Context, Southeast Corridor: Denver Metro Area, Colorado, 2005 - 2009



Sources: 2000 U.S. Census; Denver Regional Transportation District; Denver County, Arapahoe County; Douglas County; CTOD, 2009.

CONCLUSIONS

In Charlotte and Denver, most development occurred in and around the downtowns, despite the fact that these areas have relatively little underutilized or vacant land. Downtown locations saw the largest shares of development, accounting for 68 percent of development along the Blue Line and 35 percent along the Hiawatha Line – despite the fact that only 13 percent of the vacant/underutilized land in the Blue Line corridor and 27 percent of the vacant/underutilized land in the Hiawatha Line corridor was located in downtown. Overall, areas in and around downtown locations (including legacy industrial and mixed use neighborhood/main streets) accounted for about three-quarters of all the development in the Blue Line and Hiawatha Line corridors.

Along the Southeast Corridor (which does not run through a downtown), suburban employment centers accounted for the highest share of new development (61 percent). In comparison, this development context accounted for 39 percent of both total land area and total vacant/underutilized land in the corridor.

Despite the availability of land in auto-oriented commercial corridors, industrial areas, and greenfield areas, these development contexts experienced little development. Along the Blue Line, for example, 85 percent of vacant/underutilized land was located in auto-oriented commercial corridors and industrial areas, but only 24 percent of development occurred in these areas. In the Southeast Corridor, greenfield sites accounted for 40 percent of all development opportunities, but experienced just 9 percent of the corridor's total development.

Local market conditions, the nature of specific opportunity sites, and the presence of physical barriers help explain why development occurred in development contexts in some regions but not in others. For example, suburban employment centers accounted for 39 percent of total land area and total vacant/underutilized land in Denver's Southeast Corridor, but attracted 61 percent of the development, while in the Hiawatha corridor, suburban employment centers also accounted for a high share of land area and development opportunity – 11 percent and 39 percent, respectively – but attracted just 6 percent of development. As discussed in *Rails to Real Estate*, the suburban employment centers in the Southeast Corridor are part of the Denver Tech Center, the region's most preeminent office market after downtown, and are near some of the metro area's most affluent communities. Strong market demand for residential development in particular has helped make up for the fact that the light rail line runs down the center for a major highway.

In contrast, the suburban employment centers in the Hiawatha corridor are concentrated in areas with weaker demand for new housing and employment. These districts are dominated by retail, medical, and other uses that are less likely to benefit from proximity to transit than are office-based firms, and many of the opportunity sites are relatively isolated and challenging to access from the transit stations.

Significant development opportunities near transit remain. Suburban employment centers and auto-oriented commercial corridors were the development contexts with the largest share of vacant or underutilized land among the three corridors studied, but – with the exception of the Southeast Corridor – these areas have yet to experience significant development. Proactive

investment in neighborhood infrastructure and amenities may help unlock the potential for TOD among the overlooked development contexts. Chapter 3 provides specific strategies for catalyzing TOD in each of the development contexts.

III. DEVELOPMENT CONTEXT AND TOD IMPLEMENTATION

INTRODUCTION

Maximizing the potential for TOD requires different implementation strategies in different kinds of places. This section first discusses barriers and strategies for promoting TOD that are common across many different place types, and then explores the opportunities, challenges, and strategies for attracting TOD that are specific to the eight different development contexts introduced in Chapter 2. Throughout the discussion, strategies are provided for both “warm” and “cool” real estate markets. For example, to catalyze TOD in station areas with little or no existing market activity, the public sector might focus on improving existing conditions and building infrastructure and capacity for future development. On the other hand, an area with strong market activity may not require much active public involvement in order to attract development. Instead, public agencies might focus more on shaping development to support transit use, improve walkability, and provide employment and amenities for residents and visitors.

Barriers to TOD Development

Local governments, transit agencies, and other stakeholders face a number of challenges to focusing new development in infill location near transit:

- **Regulatory Barriers:** In some cases, zoning changes like increased heights, increased floor-to-area ratios (FARs), parking maximums, or reduced parking minimums are required in order to make infill development physically and financially feasible. This is especially true in places with strong real estate markets, where removing regulatory barriers can enable development activity to occur.
- **Cost of high density development:** Even when regulatory barriers are removed, higher densities may not be achievable because of market conditions and the cost structure of development. Higher-density development is usually more expensive to develop on a per-square-foot basis than lower-density development (see Figure 15). As a result, higher-density projects must be able to achieve higher per-square foot rents or sales in order to be financially feasible to develop.
- **Financial resources:** Perhaps the most common challenge to infill development is the lack of funding available at the local level for infrastructure and services to support new development. The funding shortage has become even more acute as many states struggle to close budget deficits.

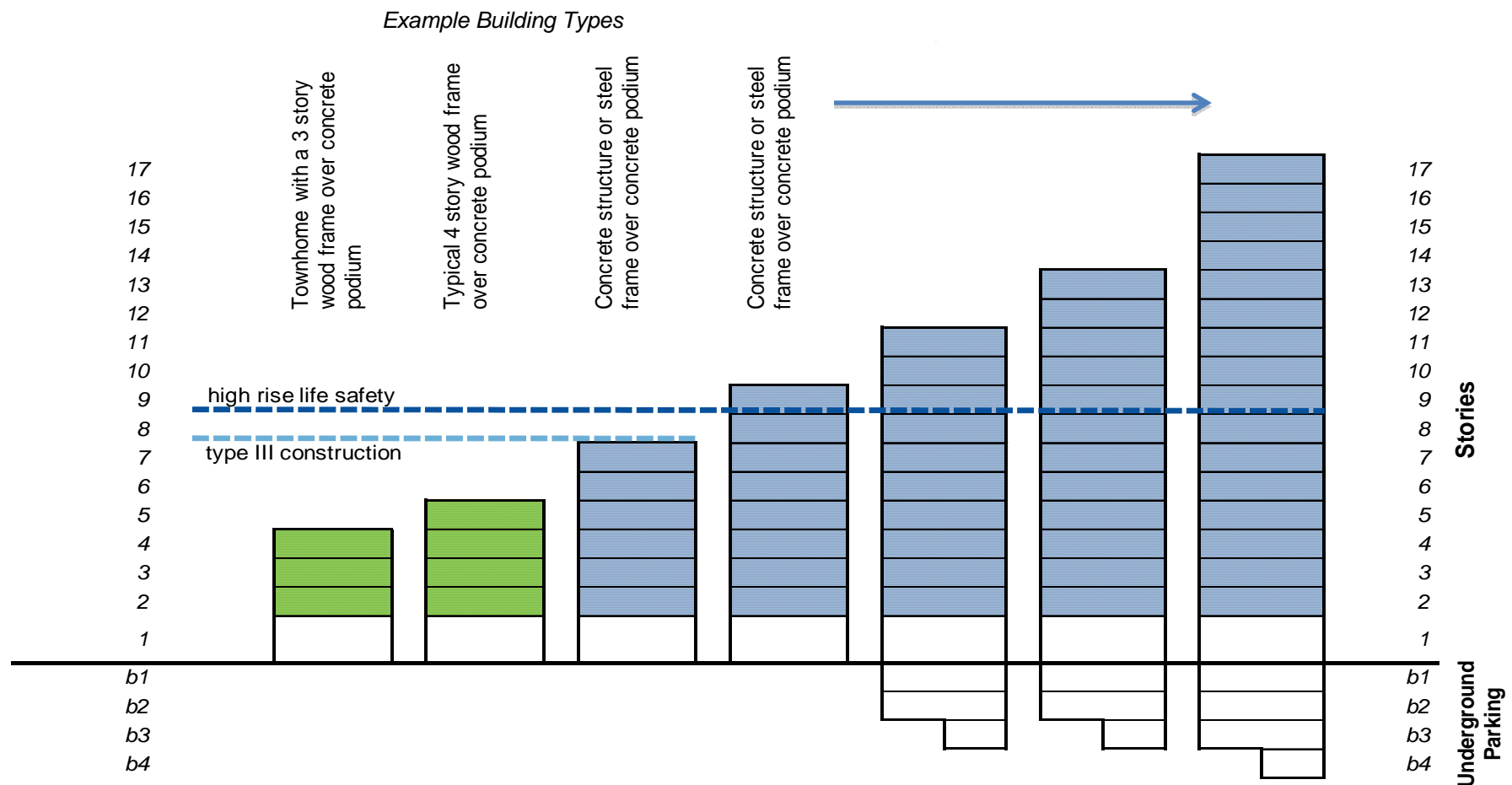


Figure 15. Prototypical Buildings by Number of Stories and Construction Type

Figure 15 shows typical construction types required to build at different densities. Wood-frame construction (often referred to as Type V and Type IV), used primarily in buildings of five stories and less, is the least expensive type of construction. For buildings above six stories, building codes usually necessitate the use of the more costly Type III concrete construction type, which necessitates concrete and/or steel building materials. For buildings of nine stories or more, additional life/safety features, such as sophisticated alarm systems, pressurized exit stairs, and other safety provisions are usually required, which further increase construction cost. Steel frame materials may be required for buildings of 11 stories or higher. These additional construction and life/safety requirements mean that higher-density development is more expensive to build on a per-square-foot basis, and therefore higher per-square-foot revenues are required to make more intensive development financially feasible. For this reason, higher-density building types are more likely to be built in high-value locations such as downtowns.

How Transit Service Can Improve Development Feasibility

Transit can have a positive impact on development feasibility by conferring the following benefits:

Transit access: The enhanced regional access conferred by fixed-guideway rail transit can help to improve the marketability of residential and commercial properties, resulting in higher absorption rates, prices, and occupancy rates – all of which enhance development revenues.

New development opportunities: Transit lines can make it possible to develop or redevelop sites where the expected impact of new development on traffic congestion previously precluded development.

Reduction of project costs: Projects in transit areas can often significantly reduce the amount of parking they provide, thereby bringing down total construction costs and improving the project's bottom line.

Support from local government: Many communities regard TOD in a positive light, and may be willing to establish land use policies supportive of higher density development near transit. In some cases, the desire for TOD can generate the political will to direct public investments in needed infrastructure or amenities to transit areas, or even to directly subsidize TOD projects.

Strategies for Facilitating TOD

Local governments across the country are adjusting land use regulations to facilitate TOD and reduce the cost of higher-density development, and experimenting with innovative strategies for funding and financing TOD and TOD-related infrastructure. Investments in the public realm can also play a major role in enabling TOD. An emerging body of research shows that neighborhood amenities associated with TOD have a direct impact on property values, and therefore, on development feasibility. Examples of public investments that may help catalyze development around a transit station include:

- **Streetscape Improvements:** Streetscape investments have been found to have a considerable impact on home values. For example, a Philadelphia study found that streetscape is associated with a 28 percent gain in property values⁴ relative to similar homes in comparable areas without streetscape improvements, while new tree plantings are associated with a 9 percent increase in property values.⁵ In Cleveland, Ohio, landscaping with good aesthetic value was also shown to increase average commercial office rental rates by 7 percent.⁶ In a national study, business districts with street trees were found to generate 9 to 12 percent more consumer spending than districts without trees.⁷

⁴ Wachter and Gillen, "Public Investment Strategies: How They Matter for Neighborhoods in Philadelphia," The Wharton School, University of Pennsylvania (April 2006).

⁵ Wachter and Gillen, "Public Investment Strategies: How They Matter for Neighborhoods in Philadelphia," The Wharton School, University of Pennsylvania (April 2006).

⁶ Laverne, R.J., and K. Winson-Geideman. 2003. "The Influence of Trees and Landscaping on Rental Rates at Office Buildings." *Journal of Arboriculture* 29, 5: 281-290.

⁷ Wolf, K.L. 2005. "Business District Streetscapes, Trees and Consumer Response." *Journal of Forestry* 103, 8: 396-400.

- **Open Space:** A Greenville, South Carolina study found the presence of neighborhood parks to be correlated with a 7 to 15 percent premium in home values,⁸ while in Bexar County, Texas, homes within close proximity to a neighborhood playground or greenbelt maintained a 3 or 4 percent premium compared to nearby homes.⁹ In Austin, Texas, the presence of a nearby greenbelt was shown to increase property values by 12 percent¹⁰ and homes in the Dallas-Fort Worth region experienced a 22 percent price premium when located less than 2,600 feet from a park.¹¹ Similarly, Portland homes within 1,500 feet of a park increased in sales prices by \$845 to \$2,262 (in 2000 dollars).¹²
- **Walkable Streets:** Public investments which improve walkability and quality of life are also shown to have a significant impact on property values. One recent national study looked at the relationship between property values and walkability as measured by “Walkscore”, an index that ranks communities based on how many businesses, parks, theaters, schools and other destinations are within walking distance.¹³ The study found that office and retail properties command a 54 percent price premium over properties with lower Walkscores.¹⁴ Residential properties experience a \$700 to \$3,000 increase in home value for every one point increase in Walkscore.¹⁵ Another study in South Kingston, Rhode Island, found premiums of \$13,000 to \$18,000 per acre for lots in walkable subdivisions over lots in conventional subdivisions.¹⁶
- **Brownfield Redevelopment:** The redevelopment of brownfield sites leads to an increase in nearby housing prices. A 2009 study in Minneapolis and Milwaukee found that properties near brownfield sites experienced a net increase of 2.7 and 11.4 percent, respectively, in housing prices after the sites were redevelopment.¹⁷

In addition to investing in improved infrastructure, local governments may be able to encourage value appreciation and transit-oriented development with policies that promote good design and

⁸ Molly Espey and Kwame Owusu-Edusei, “Neighborhood Parks and Residential Property Values in Greenville, South Carolina,” *Journal of Agricultural and Applied Economics* 33:3 (2001): 487–492.

⁹ Asabere, Paul, and Forest Huffman. “The Relative Impacts of Trails and Greenbelts on Home Price.” *Journal of Real Estate Finance and Economics*. 38 (2007): 408–419.

¹⁰ Nicholls S., and J. L. Crompton. “The impact of greenways on property values: evidence from Austin, Texas.” *Journal of Leisure Research* 37, no. 3: 321-341. 2005.

¹¹ Miller, A.R. “Valuing Open Space: Land Economics and Neighborhood Parks.” MIT Center for Real Estate (2001)

¹² Bolitzer B and Netusil N. “The Impact of Open Spaces on Property Values in Portland, Oregon.” *Journal of Environmental Management*, 53 (3) 2000: 185-193.

¹³ <http://www.walkscore.com/>

¹⁴ Pivo, Gary, and Fisher Jeff. “Walkability Premium in Commercial Real Estate Investments.” (Working Paper) Responsible Property Investment Center, University of Arizona. Benecki Center for Real Estate Studies, Indiana University. 2010.

¹⁵ Cortright, Joe. CEOs for Cities. “Walking the Walk: How Walkability Raises Home Values in U.S. Cities.” 2009.

¹⁶ Mohamed, R. “The Economics of Conservation Subdivisions: Price Premiums, Improvement Costs, and Absorption Rates” *Urban Affairs Review*, 41(3) 2006

¹⁷ De Sousa, Christopher, Changshan Wu, and Lynne Westphal. “Assessing the Effect of Publicly Assisted Brownfield Redevelopment on Surrounding Property Values.” *Economic Development Quarterly*. 3.2 (2009): 95-110.

a mix of uses, including a range of retail and service options within close proximity to housing and jobs:

- **Good Design:** For example, New Urbanist design features¹⁸ may command a premium in property values. A recent national study of four New Urbanist communities found a 4.1 to 14.9 percent property value premium in communities with New Urbanist design features versus nearby communities without those features.¹⁹
- **Access to Retail and Services:** The presence of local retail and services also contributes to walkability and is shown to have a positive impact on home values. In Portland, Oregon, for example, proximity to a movie theatre commands a price premium of 30 percent while proximity to specialty grocers is associated with a premium of 18 percent.²⁰ A study of Philadelphia, Pennsylvania also determined that locating within a ¼ to ½ mile of a commercial corridor in “excellent condition” correlates to a 23 percent price premium.²¹

¹⁸ According to the Congress of New Urbanism, the characteristics of New Urbanist communities include livable streets arranged in compact, walkable blocks; a range of housing choices to serve people of diverse ages and income levels; schools, stores and other nearby destinations reachable by walking, bicycling or transit service; and an affirming, human-scaled public realm where appropriately designed buildings define and enliven streets and other public spaces. Source: www.cnu.org

¹⁹ Tu, Charles, and Mark Eppli. "An Empirical Examination of Traditional Neighborhood Development." *Real Estate Economics*. 29.3 (2001): 485–501.

²⁰ JohnsonGardner, "An Assessment of the Marginal Impact of Urban Amenities on Residential Pricing." *Portland Metro*. 2007.

²¹ Wachter, Susan, Kevin Gillen, and Carolyn Brown. "Green Investment Strategies." *Communities and Banking*. (2008)

DEVELOPMENT CONTEXTS

This section explores the opportunities and challenges discussed above in the context of eight specific types of places. Of course, actual development conditions in real places rarely fall neatly into any one category. However, by identifying the commonalities across different station areas, the development contexts are intended to provide a framework for thinking about the implementation measures most likely to attract TOD to different types of station areas.

Existing Downtowns/Urban Business Districts

Downtowns typically have a very high intensity of development, are the region's single largest employment area, and contain important cultural, entertainment and civic institutions. Despite these commonalities, downtowns and urban business districts comprise a variety of different kinds of places with varying opportunities for development.

For the purposes of this report, downtowns and urban business districts were defined broadly to include their recent expansion into locations at the edges of the city center, such as legacy industrial areas which have fully transitioned into mid-high density, mixed-use communities.

Opportunities

During the past two decades, many downtowns in the US have experienced significant revitalization, driven in part by changing demographics and consumer preferences that favor central locations with good access to jobs, services, entertainment, and cultural amenities. Downtowns are often attractive to firms seeking regional visibility and the benefits of locating close to competing or complementary businesses and supporting retail and services. Similarly, residents may be drawn to downtown areas to live near their place of work, or to take advantage of urban amenities and regional accessibility.

The existing built form in downtowns is also generally supportive of transit-oriented development. Most downtowns are served by multiple transit options, including rail and regional and local bus routes. Many downtowns are characterized by pedestrian-friendly street grids, which facilitate walking and the use of transit. Existing



Downtown Boston
Boston, Massachusetts

Description

Existing downtown and urban business districts contain dense, diverse mix of uses in a walkable and pedestrian-friendly environment.

Typical Parcels

Typically small to medium parcels, occasionally superlots

Land Use

Office, residential, retail, civic, institutional

Parking

Street parking, parking structures, small lots

Walkability

High

Level of Amenities

Critical mass including cultural and institutional anchors

infrastructure, community and civic institutions, and retail and service businesses are also generally supportive of intensification. Many downtowns also contain a historic building stock well-suited to reuse or redevelopment.

For all of these reasons, downtowns are very strong locations for TOD. As described in Chapter 2, a very high percentage of recent development along new transit corridors in Charlotte and Minneapolis was concentrated in and around downtowns.

Challenges

Compared to other places in their regions, property values are often very high in central city locations. As a result, only high-end, high-density development may be financially feasible; often, only large-scale, regional or national developers have the experience and access to capital required to build these types of projects. Although the historic building stock may present a significant opportunity for rehabilitation, considerable renovation may be required to accommodate contemporary commercial or residential uses.

Given their high employment intensity, many downtowns are primarily “daytime” places, emptying when employees go home at the end of the workday. Without an evening population, downtowns may have difficulty supporting retail and entertainment uses, and deserted streets may appear unwelcoming and unsafe to residents and visitors. Some downtowns also lack urban amenities, like safe, well-designed open spaces, playgrounds or parks, which can also support a residential population.

Key Strategies for TOD

Promote development of residential, retail and entertainment uses.

Policies that promote residential, retail and entertainment uses can help to draw visitors and residents back to downtowns and urban business districts during evening hours, contributing to an active street life and the creation of a “24 hour” place. Residential uses in particular can help to support retail and entertainment businesses outside of standard work hours. The addition of urban amenities like streetscape and safe, well-designed open spaces suitable for community gathering can also help to support a residential population.

Reduce parking requirements and consider district parking strategies where appropriate.

Reducing parking requirements both lessens project costs, making new development more feasible, and helps to support transit by promoting non-automotive forms of transportation. District parking strategies, which centralize parking management within a downtown district, allow parking to be shared among various commercial and transit uses and have the potential to free up surface parking lots for new development.

Adjust zoning and building codes to allow for adaptive reuse of existing buildings.

Zoning and building codes for historic buildings can be adjusted to facilitate adaptive reuse. The City of Los Angeles, for example, enacted the Adaptive Reuse Ordinance in 1999 to promote the reuse and rehabilitation of historically designated buildings. The ordinance removed density restrictions; “grandfathered in” existing heights floor areas and setbacks; removed requirements for any additional parking spaces; and provided increased flexibility in meeting fire and

life/safety requirements. From 1999 to 2006, over 6,500 new residential units were completed under the ordinance, with an additional 4,000 units in the pipeline.²²

²² City of Los Angeles Adaptive Reuse Sourcebook, Second Edition, February 2006:
<http://www.scag.ca.gov/Housing/pdfs/summit/housing/Adaptive-Reuse-Book-LA.pdf>

Major Suburban Employment Areas

Major suburban employment areas are job centers located outside of central city downtowns, including major office concentrations along highways, regional retail centers and master-planned business parks. This kind of development pattern accelerated in the 1960's and 1970's, facilitated by population shifts toward suburban areas, new highway investments, high rates of auto ownership, and the availability of relatively inexpensive land. Typically home to office-based employers who require regional accessibility, virtually all major suburban employment areas are freeway-oriented. Historically, most were designed to have relatively low densities of development, good auto access, and to incorporate a significant amount of landscaping. Despite these historic development patterns, however, many suburban employment areas offer significant potential for intensification.

Opportunities

Many suburban employment areas are comprised of large parcels or have large parking lots that can represent significant opportunity sites for development. Because suburban employment centers often have consolidated property ownership and long-term lease structures, owners and employers may already be accustomed to collaborating through property owners associations or other organizations, making land use redevelopment easier.

Older regional malls can also offer major opportunities for intensification through redevelopment of parking lots or existing underutilized structures.

Challenges

The existing built form in most suburban employment areas – which often features campus-style office buildings, surface parking lots and expansive lawns – is geared toward the automobile, and as such offers constraints for transit-oriented development. Large blocks, lack of a street grid or other pedestrian amenities, and limited retail or services all work to discourage non-auto modes of transportation.

Like downtowns and urban business districts, major suburban employment areas are also often primarily daytime places, which experience a sizable reduction in population when the workday ends. Many face significant traffic and circulation issues at rush hour. This peak hour traffic



Tyson's Corner
Virginia

Description

Major suburban employment centers are typically large, freeway-oriented "campuses" featuring office uses surrounded by surface parking lots.

Typical Parcels

Large parcels, surface parking lots may be opportunity sites

Land Use

Office with small increments of retail or residential

Parking

Surface parking, sometimes parking structures

Walkability

Low

Level of Amenities

Limited

congestion is often a major limiting factor on additional new development, making strategies to promote alternatives to the automobile vital to facilitating infill development.

It is interesting to note that many older regional malls present many of the same opportunities for intensification, but do not face these same challenges related to peak hour traffic. As a result, many have already undergone significant intensification as they are updated to reflect changing consumer preferences, even in the absence of additional transit connections.

Key Strategies for TOD

Key strategies to catalyze TOD in major suburban employment areas include providing circulators or shuttles to improve transit accessibility; implementing parking and transportation demand management strategies to reduce congestion; facilitating public realm improvements; and promoting a mix of land uses and increased density around transit stations.

Encourage non-automotive modes of transportation.

A key component of most strategies to promote transit-oriented development in suburban employment centers is providing the infrastructure necessary to support non-auto modes of transportation, enabling redevelopment of surface parking lots and easing traffic during peak commute times. District or shared parking can help to centralize parking for some or an all of an employment area. This allows parking to be shared between multiple properties and uses, and can free up surface parking lots for new development.

District circulators or shuttles can also be very productive tools to facilitate alternative modes of transportation. Circulators can run on established routes with predictable timing and decreased headways at peak commute times. The Emery-Go-Round in Emeryville, CA, for example, is a free shuttle system designed to connect local places of work and major retail centers to transit. The shuttle provides increased service during commute hours, and is partially funded by the private businesses it serves.

Transportation demand management strategies can also be considered to reduce auto congestion and promote transit uses. Strategies might include employer-sponsored transit passes, bicycle sharing programs, and flextime or telecommuting.

Break up superblocks and enhance connectivity.

To foster pedestrian- and bike-friendly, mixed-use development, many suburban centers require street improvements to improve connectivity, including the narrowing of wide streets and the creation of a finer-grained, walkable street grid. Smaller block sizes are more conducive to walking, and can have the added benefit of dispersing auto traffic instead of confining them to a few major roads. Improvements such as bicycle lanes or paths, active open space, and other public realm improvements can also help promote walking, bicycling, and riding transit. Major property owners can play a critical role in collaborating to help finance and implement these changes over time.

Promote increased density and a mix of uses, including housing.

Many suburban employment areas require significant changes in zoning to allow for increased density and a mix of uses, including residential, retail and mixed-use development. The addition

of residential uses in particular can add evening activity to areas which are typically daytime-oriented, and can help to support local retail and service businesses. A greater diversity of uses can help address peak hour traffic issues, and enhance the ability of employees and residents to meet daily needs without an automobile. Potential zoning changes include increased floor-to-area ratios (FAR)²³, increased height limits, and reduced parking requirements. Local jurisdictions can promote desired uses by employing strategies such as modified fee structures and direct project assistance.

Case Study: Warner Center (Los Angeles, CA)

Warner Center is located in the Western San Fernando Valley region of the City of Los Angeles. A classic suburban employment center, Warner Center is 1.65 square miles in size and consists of large superblocks bounded by wide, high-speed arterial streets. The area was planned in the 1970s as an “edge city” employment center that would draw employees from the surrounding suburban communities. The majority of construction was completed by the early 1990s. Today Warner Center contains approximately 11,000 residents and 44,000 jobs in approximately 16 million square feet of development.



Warner Center was designed for automobile-dependent access via arterial streets and the 101 Freeway to the immediate south. It contains a variety of land uses, including high-rise office towers, mid- and low-rise office buildings, heavy industrial manufacturing, light industry, office flex space, medium-density condominiums and apartments, a hospital, and two regional malls.



In 2005 the new Orange Line bus rapid transit line opened, including three stations within Warner Center. The line's opening created Warner Center's first truly robust and high-speed connection to the region's fixed-guideway transit network. Prior to the opening of the Orange Line, traffic and congestion were considered to be the main inhibitors of growth in the Warner Center. A 1993 Specific Plan had sought to address traffic concerns and allow for new growth by implementing a series of transportation improvement plans, including the creation of employee carpools and vanpools and a DASH bus

route to aid circulation within the Center. A trip-based fee was applied to all commercial uses to generate funding for congestion mitigation.

²³ The floor-to-area ratio is the ratio of total square feet in a building to the area of its parcel. Higher FARs generally translate to increased density.

The opening of the Orange Line in 2005 inspired a “restudy” of the 1993 Specific Plan. The Warner Center Specific Plan Restudy seeks to implement long-term solutions by creating a transit-oriented district with a mix of uses and density that will reduce automobile-dependency, encourage walking and use of new fixed-guideway transit options. Key strategies recommended in the new Plan include:

1. **Implement internal circulator.** An internal circulator with a high level of service – such as a streetcar – would connect Warner Center’s employment and residential uses with amenities and the regional transit stations.
2. **Allow higher-density buildings, especially near transit.** Increased and eliminated floor area ratios and reduced setback requirements are intended to encourage density within walking distance of transit and create a customer base for local-serving retail.
3. **Reduce parking requirements and encourage shared parking arrangements among uses.** Reduced parking requirements and shared parking improve small-lot development feasibility and encourage higher densities by eliminating a major drain on space (if off-site) and reducing construction costs.
4. **Create pedestrian-friendly design standards.** The new design standards encourage buildings with sidewalk-accessible entrances, high-quality materials, human-scale building massing, outdoor dining space, and transparent storefront windows, as well as the elimination of sidewalk barriers and the inclusion of street trees.
5. **Convert the trip fee to an annual assessment for internal TOD improvements:** Compared to a trip-based fee, an annual fee provides more consistent revenue for public improvements, and greater clarity of cost for developers and property owners.
6. **Establish a special tax district for internal TOD improvements.** A special assessment district ensures that new development pays toward necessary improvements.
7. **Convert private streets to public streets.** Walkable development patterns will require smaller blocks than the current superblock system. The plan encourages property owners and developers to dedicate private streets – such as fire lanes and internal access streets – to the City in exchange for City maintenance.
8. **Create demonstration projects on major opportunity sites.** Warner Center contains a large former industrial site ready for redevelopment, plus several enormous and disused parking lots. Redevelopment of these sites could help catalyze additional development.

These strategies demonstrate how a suburban employment center can move toward becoming a transit-oriented district by creating long-term solutions that allow continued residential and employment growth without the threat of gridlock.

Legacy Industrial Areas

Legacy industrial areas date from the late 19th and early 20th centuries, and are usually located near the historic urban core of cities. Built before the Fordist assembly line and the popularization of the motorized truck, legacy industrial areas often include obsolete, multi-story factories and may be oriented toward rail or waterways, rather than road infrastructure. The legacy industrial areas place type covers a wide range of conditions, ranging from districts with high vacancies and dilapidated building stock to places where significant reuse and rehabilitation has already occurred. The size and characteristics of development opportunity sites also varies widely. Some districts are comprised mostly of small parcels and buildings with small floorplates, while others include extremely large structures (e.g., historic textile mill buildings in the northeastern US).

The conversion of industrial lands must be weighed against the need to preserve areas within a region for industrial land uses. Many older industrial areas play an important role in supporting small-scale manufacturing, warehousing, distribution, and wholesaling activities that may provide well-paying jobs. Moreover, industrial uses often generate more tax revenues for cities than residential or commercial uses. Jurisdictions may benefit from strategic thinking about which industrial areas are appropriate for conversion, and which should be preserved.

Opportunities

Proximity to central city employment centers and other desirable urban neighborhoods, along with an interesting building stock, have already fueled significant redevelopment in some legacy industrial areas, and continue to drive demand in these districts. Former warehouses and industrial buildings are often desirable for conversion to residential lofts, live/work spaces, or unconventional retail and service businesses. New development that occurs in these areas frequently mimics the architecture of older buildings. Depending on the character of the building stock, some legacy industrial areas are also characterized by large parcels, often under single ownership, that can represent major opportunities for redevelopment.



Arts District
Los Angeles, California

Description

Legacy industrial areas are typically downtown adjacent and contain a historic, desirable building stock easily converted into lofts and condominiums.

Typical Parcels

Large parcels

Land Use

Industrial, residential, flex space

Parking

Street and lot parking

Walkability

Low to medium

Level of Amenities

Limited

Challenges

Legacy industrial areas often are characterized by rundown or incomplete sidewalks, which inhibit mobility and access to transit. Railroads and highways frequently run through or alongside these districts, limiting connectivity both within the area and to adjacent neighborhoods. These neighborhoods are also sometimes lacking in the amenities and services that are desirable to support residential or office uses.

Another challenge of legacy industrial districts is that in some cases land is contaminated from prior industrial users, which can be a significant barrier to development. Finally, in districts where industrial firms continue to operate, they may produce noise, fumes, and truck traffic undesirable to newer businesses and residents.

Strategies for TOD

Strategies for catalyzing TOD in legacy industrial areas include modifying policies to allow for a mix of uses and promote adaptive reuse; contributing to environmental clean-up efforts; changing parking standards to allow for off-site and district parking; and implementing improvements to the public realm. These strategies are discussed in more detail below.

Promote a greater mix of uses and the adaptive reuse of existing buildings.

Historically single-use districts, many legacy industrial areas lack the retail and service amenities necessary to support a diverse residential population. Industrial uses typically have a low employment density, resulting in a relatively low daytime population. As in existing downtowns and urban business districts, the adoption of flexible building codes can help to facilitate the adaptive reuse of existing buildings into lofts, live-work spaces, and other office and retail uses.

Support environmental cleanup.

The remediation required to redevelop contaminated industrial sites can significantly increase the costs and risks associated with new development. It is often difficult to ascertain the extent of the contamination until remediation has begun, and in many cases the polluting entity may no longer be in existence to cover the cost of the cleanup. However, local governments have access to many state and federal programs designed to aid in the remediation of these “brownfield” sites. By supporting developers in acquiring environmental remediation funds, public agencies can help promote redevelopment in legacy industrial areas. In some cases, a local agency may step in to fund cleanup efforts directly, particularly when the site is of strategic importance to a broader planning area.

Implement district parking and allow for off-site parking.

Many older industrial areas do not have sufficient on-site parking to support higher-intensity residential, retail or office uses. Implementing district parking and adjusting standards to permit off-site parking can significantly reduce project costs and enable redevelopment in legacy industrial areas.

Invest in public realm improvements.

Streetscape and other public improvements are often necessary to transform legacy industrial areas into livable, walkable communities. Basic infrastructure investments like complete sidewalks and street crossings can lay the foundation for a walkable neighborhood, while the

provision of high-quality open spaces can help to establish the character of a new residential neighborhood and provide a venue for farmers markets, fairs, or other community gatherings. Improvements to the pedestrian realm such as street trees and bicycle lanes can facilitate access to transit and further encourage the use of non-automotive forms of transportation.

Mixed-Use Neighborhoods/Main Streets

Mixed-use neighborhoods and main streets mirror smart growth ideals: walkable, mixed-use communities with neighborhood-serving retail businesses along a commercial spine, surrounded by relatively compact single family or multi-family residential uses. Commercial businesses may also be interspersed throughout the residential areas, in the form of ground floor retail spaces or corner stores.

Many of these neighborhoods emerged along historic streetcar routes around the turn of the 19th century and have remained desirable communities long after the streetcars disappeared. Although some historic mixed-use neighborhoods have experienced an economic decline, their pedestrian-friendly street design provides a solid foundation for transit-oriented development.

While most mixed-use neighborhoods are historic in nature, others have been built more recently in “greenfield” locations, including many New Urbanist-style projects (these do not typically offer many short-term redevelopment opportunities).

Opportunities

The existing character of many mixed-use neighborhoods is generally supportive of TOD, with wide sidewalks, a fine-grained street grid, and buildings with continuous street frontage. Mixed-use neighborhoods also typically have the retail and civic amenities, such as shops and restaurants, schools and places of worship, to support new development and intensification. A wide range of residential building types, including single-family houses and small-scale multifamily buildings, supports a diverse residential population, including singles, couples, and larger families. In addition, these neighborhoods often have good regional access, and are often proximate to existing or former downtowns and employment centers.

Challenges

Mixed-use neighborhoods and main streets face a few key development challenges. They often lack opportunity sites, and those that do exist are typically small or shallow, and are not well-suited to infill development. In the case of older main streets or streetcar places, there may be some issues around the appropriate reuse or redevelopment of historic buildings.



Lincoln Park
Chicago, Illinois

Description

Traditional mixed-use neighborhoods, often located along former streetcar corridors, feature a mix of retail and residential uses at a walkable, pedestrian scale.

Typical Parcels

Shallow commercial parcels, smaller infill sites abutting residential uses

Land Use

Neighborhood-serving retail, office, institutional

Parking

Street parking, small, off-street lots, parking structures

Walkability

Medium to high

Level of Amenities

Critical mass

Originally built to serve streetcars and the occasional automobile, traditional mixed-use neighborhoods may also suffer from traffic, circulation and parking issues. While residents and visitors often enjoy the pedestrian-orientation of these neighborhoods, parking availability and traffic congestion may be a challenge to new development. Local residents may be resistant to any development perceived as increasing traffic congestion, reducing parking availability, or introducing designs and densities that are incompatible with existing land uses.

Key Strategies for TOD

Key strategies to catalyze TOD in mixed-use neighborhoods and main streets include identifying and assembling appropriate parcels for development or redevelopment; promoting increased density in appropriate locations; encouraging small-scale commercial revitalization; and implementing parking management strategies. These strategies are discussed in more detail below.

Facilitate land assembly and redevelopment, especially along commercial corridors.

Given the historic nature of mixed-use neighborhoods and main streets, identifying and assembling parcels suitable for today's development standards can be a challenge. In order to maximize design efficiency and benefit from economies of scale, developers typically seek to purchase or assemble larger, regularly shaped parcels of land. The return on investment for small projects is comparatively low, and policies like parking minimums, setback and yard requirements can pose significant barriers to higher-density development on small parcels.

Piecing together a larger opportunity site may require the assembly of several smaller parcels, often under different ownership, which can translate into increased overall project costs. In a hot market, developers may be more likely to take on the additional costs and risks associated with parcel assembly. In some cases, cities and redevelopment agencies can step in to assist, in exchange for the inclusion of public benefits in the project, such as affordable housing, open space or other desired elements.

Promote increased density where appropriate.

Commercial corridors in mixed-use neighborhoods may present opportunities to promote higher-density development, which not only provides more ridership for transit, but can also help to support local retail and services. In some commercial areas, increased height limits, reduced setbacks and lower parking requirements can help to contribute to the feasibility of development feasibility.

In the surrounding residential areas, zoning can also be adjusted to allow for accessory dwelling units (ADUs), which can add density without changing the fundamental character of the residential neighborhood. Zoning for ADUs is extremely flexible, and can include a number of provisions tailored to the individual community. ADUs in Burbank, California, for example, have a maximum unit size of 500 sq. ft. and require one parking space, while those in Pasadena, California have a maximum unit size of 800 sq. ft. and require two additional parking spaces. Zoning in residential areas can also be adjusted to allow for small, multifamily infill opportunities, such as duplex or triplex projects.

Implement small-scale commercial revitalization strategies along underperforming commercial strips.

The commercial health of mixed-use neighborhoods varies by neighborhood, and is an important ingredient for successful TOD. Where businesses are not performing well, a tailored revitalization strategy may be warranted. Revitalization strategies may include increased marketing activities, public events such as farmers markets or art walks, increased signage and wayfinding, and funding to support and attract local businesses. In cases where commercial space is in oversupply relative to demand, it may make sense to encourage retail to concentrate in specific nodes and facilitate the redevelopment of older, low-density commercial uses into multifamily residential.

Implement district parking to accommodate local businesses and transit users.

Parking is a contentious issue in many mixed-use residential neighborhoods, particularly if additional infill development is contemplated. A parking management strategy can help manage demand for parking from local businesses, new residents, and transit riders. In Santa Monica, California, for example, structured parking around the Third Street Promenade is available at a reduced price, funded by a special assessment district and developer parking fee. In relatively strong-market places like Santa Monica, local merchants and property owners may be willing to help to pay for shared parking. In cooler market places, parking structures might be publicly funded to assist local businesses and support additional development.

Auto-Oriented Commercial Corridors

Featuring strip retail, wide streets, and fast-moving traffic, auto-oriented commercial corridors were designed to facilitate automobile access. Although some of these corridors perform well, many are outdated, with vacant or low-value properties and aging retail that cannot compete with contemporary retail formats. Uses typically include those that benefit from automobile access, such as car dealerships and auto repair centers, and formats include strip centers, freestanding commercial, and a variety of other relatively low-intensity uses.

Opportunities

Auto-oriented commercial corridors often contain significant opportunities for intensification, including vacant or underutilized land and surface parking lots. They are frequently located near residential areas that could benefit from greater access to retail – improving pedestrian connections to the corridor and the transit station can help to foster a mixed-use district that makes it possible for households not to drive for all of their daily needs.

In addition, due to high traffic counts and good regional access, auto-oriented commercial corridors are typically well-positioned to attract retail and service businesses, particularly into new or rehabilitated buildings.

Challenges

Irregular parcel sizes and configurations present a significant challenge to transit-oriented development along auto-oriented commercial corridors. New development may require parcel assembly, which can be costly, time-intensive, and risky for a developer to undertake. Opportunity sites along auto-oriented commercial corridors may also be widely dispersed, which can inhibit efforts to transform the corridor in an incremental way. Additionally, some of the low-density, auto-oriented retail centers which may seem to be prime opportunities for redevelopment may actually be performing well from the perspective of their property owners. Unless property values increase significantly, these owners may have little incentive to redevelop their properties.

As mentioned above, the built form and typical land uses located along auto-oriented commercial corridors are not consistent with TOD. Although a mix of uses may be present within the broader



University Avenue
Twin Cities, Minnesota

Description

Auto-oriented commercial corridors feature wide streets with strip or free-standing retail centers abutting low-density residential neighborhoods.

Typical Parcels

Irregular parcel sizes, challenging configurations

Land Use

Neighborhood and regional-serving retail, office, institutional, multi-family residential

Parking

On-site, surface parking

Walkability

Low

Level of Amenities

Dispersed

area, they are generally low-density and designed for automobile, rather than pedestrian, access. Many of the businesses themselves are auto-oriented, such as such as drive-through restaurants and auto repair shops.

The lack of pedestrian connectivity and amenities is also a key barrier to TOD. Auto-oriented commercial corridors – with their wide streets and lack of safe crossings – can be intimidating for bicyclists and pedestrians. Improving pedestrian connections is usually necessary to create a transit-supportive place. In addition, many auto-oriented commercial corridors have existing traffic problems, which may limit the opportunity for new development. In some cases, jurisdictions require costly mitigation efforts if a proposed project is expected to contribute a significant number of new auto-trips to the area.

Strategies for TOD

Most strategies to promote TOD along auto-oriented commercial corridors focus on identifying and assembling opportunity sites, improving the pedestrian realm and rezoning to allow for transit-oriented land uses and densities. These strategies are discussed in more detail below.

Foster mixed-use nodes around transit

Auto-oriented commercial corridors are often good candidates for increased density, particularly around key transit and retail nodes that do not directly abut single-family residential neighborhoods. Concentrating commercial and mixed-use development at high-traffic, high-priority intersections increases the likelihood of attracting high-quality retail and creating a walkable destination for visitors. In order to avoid dilution of the retail nodes, other uses can be considered along lower profile portions of the corridor, such as low- to mid-density residential or office. Mixed-use zoning regulations can also be adjusted to permit horizontal mixed-use development, which allows a mix of uses in multiple single-use buildings on a single parcel, with common design elements and internal pathways. Horizontal is often more financially feasible than vertical mixed-use development, and may be a better fit with existing parcel configurations. Auto-oriented uses such as drive-through restaurants, gas stations and auto-repair shops can be limited, particularly within one-half mile of a transit station.

Facilitate land acquisition and parcel assembly.

Identifying and assembling sizable parcels of land can be a challenge along auto-oriented commercial corridors. As with traditional mixed-use neighborhoods, assistance with parcel assembly and the identification of existing opportunity sites could help to reduce project costs and promote transit-oriented development.

Improve the pedestrian realm.

One of the keys to transitioning an auto-oriented corridor to be more transit supportive is to make improvements that place a greater focus on non-automobile modes of transportation and contribute to the establishment of higher-intensity nodes of activity. Narrowing the roadway along key portions of the corridor, creating bicycle lanes, providing wider sidewalks, and establishing well-marked street crossings improves connections for pedestrians and bicyclists. Streetscape investments such as street trees and furniture can be added, as well as sidewalk or outdoor seating at restaurants and cafes. Plazas and open space located at the retail nodes can

provide spaces for community gatherings. Reducing the land area dedicated to surface parking and mitigating the visual impact of parking facilities can also help activate the public realm.

Case Study: Rockville Pike (Montgomery County, Maryland)

Rockville Pike is one of the main arterial roads linking Washington, D.C. to the surrounding communities. In some places the road is up to nine-lanes wide, characterized by heavy traffic, and surrounded by a mix of mid- to high-rise office buildings, strip malls, and low-density residential. In 2010, the Montgomery County Council approved the “White Flint Sector Plan,” a 20-year plan to transition a major portion of Rockville Pike and the area around the White Flint Metro station, into an urban core with active public spaces, streets, public parks, and mixed-use plazas.



Currently, the plan area – a total of 430 acres – is comprised mostly of commercial and office space and acres of surface parking. The White Flint Sector Plan focuses on redesigning the street grid into walkable urban block patterns, reducing conflicts between drivers and pedestrians, intensifying residential capacity near the transit station, and attracting cultural and retail destinations near the plan area core. The plan recommends reconstructing the main arterial street as an urban boulevard, placing utilities underground, and adding wide medians that can accommodate street trees, buses or light rail. The

County also plans to implement on-street parking, bicycle lanes, and wider sidewalks to improve the pedestrian experience. The plan envisions a hierarchical skyline, clustering the greatest building height maximums in the plan area’s center and decreasing the building height limit near existing single-family residences to maintain compatibility in density and scale.

Over the next 20 years, the city intends to implement the White Flint plan through a mix of public and private investment. Roughly 66 percent of the total cost of improved infrastructure is expected to be borne by the private sector, with the public sector financing the remaining balance. Public funding strategies include transportation impact fees on residential and commercial development, introduction of a special tax, and tax increment financing. The County anticipates that the build-out of the plan will result in roughly \$1.3 billion in increased revenue over 30 years, approximately 10 percent of which will be captured by the District to pay for the Sector Plan.

Industrial/Distribution Areas

Industrial/distribution areas are characterized by low-density industrial uses and warehouses, and are usually located outside of the urban core near highway interchanges or other major transportation nodes. These areas are distinguished from the “Legacy Industrial Areas” described previously in this chapter because they were developed after World War II, and are oriented around highways (as opposed to rail or water). The buildings in these districts are generally large and single-story, with adjacent surface lots for truck parking and loading. Industrial/distribution areas sometimes also include some big-box retail uses.

These building forms and uses are not typically associated with TOD. However, shifts in the economy have caused major vacancies in some industrial/distribution areas. Those districts that have large underutilized tracts and are located in proximity to existing or planned transit stations may be appropriate for TOD.

Opportunities

Industrial/distribution areas often have relatively low property values and are comprised of multi-acre parcels under single ownership, presenting opportunities for large-scale redevelopment.

Challenges

Industrial/distribution areas tend to have low employment densities and are positioned to facilitate distribution of goods by truck. As such, they are not “natural” locations for TOD. These areas typically lack a connective street grid, pedestrian infrastructure, and the retail and urban amenities necessary to support a mixed-use community.

Businesses that rely on large trucks to transport goods require access to high capacity roadways which may not be well-suited to pedestrian or bicycle use.

Industrial and distribution uses may also produce pollution, noise, and other impacts that make them incompatible with residential uses. Like legacy industrial areas, the land in industrial/wholesale areas may also be contaminated from prior industrial users, increasing the cost of redevelopment. Residential or higher-intensity commercial development also often necessitates a wholesale change in land use, as well as significant investment in services and infrastructure.



South Boulevard
Charlotte, North Carolina

Description

Industrial and distribution areas typically feature large format warehouses and/or industrial uses.

Typical Parcels

Large parcels, often under single ownership

Land Use

Industrial, wholesale commercial outlets

Parking

On-site, surface parking

Walkability

Low

Level of Amenities

Limited

Strategies for TOD

Not all industrial/distribution areas are appropriate for conversion to residential and mixed-use communities, regardless of their proximity to transit. Where the focus is on preservation of existing industrial uses, TOD strategies are limited to improving existing users' access to transit through programs such as shuttles or ride sharing. The strategies discussed below are targeted to areas that are expected to transform through new development. In this context, large-scale redevelopment may be required to help offset the infrastructure improvements and other costs associated with transitioning to residential or commercial uses.

Contribute to environmental remediation efforts.

As in legacy industrial areas, environmental remediation of contaminated industrial sites can significantly increase property costs and the risks associated with new development. By supporting developers in acquiring environmental remediation funds or stepping in to clean up contamination, public agencies can help promote redevelopment of industrial and warehouse buildings.

Implement large-scale improvements to the public realm.

Former industrial and warehouse areas are likely to require significant investments in infrastructure, including smaller block sizes, sidewalks, medians and/or narrowed streets, open space and in some cases utilities. Streetscape and other public realm improvements such as public space, street lighting and trees, and safe pedestrian crossings, are critical for improving pedestrian and bicycle access to transit.

Promote density and a wider mix of land uses.

Due to the potential incompatibility associated with maintaining industrial uses alongside residential development, redevelopment of the area is likely to require a major shift to residential and commercial uses, as well as a significant increase in density. For this reason, redevelopment of industrial/distribution areas are akin to major greenfield/infill sites discussed later in this section. Local governments may need to allow higher densities and finance improvements to the public realm in order to make redevelopment feasible.

Low-Density Residential Neighborhoods

Low-density residential neighborhoods near transit range from single-family residential areas in major cities, to suburban neighborhoods in outlying areas served by commuter rail. These neighborhoods are primarily residential, and are often served by nearby auto-oriented commercial corridors and suburban employment centers. In some cases, these neighborhoods share many characteristics with the residential portions of mixed-use urban districts. In other cases, such as in many modern suburban subdivisions, residents are highly dependent on their cars to access retail, services, and jobs.



Bethel Park
Pennsylvania

Opportunities

Opportunities for new development in low-density residential neighborhoods tend to be limited and small in scale. There may be opportunities for development on small commercial parcels around the transit station, or for slightly increased densities in on residential parcels.

Challenges

Low-density residential neighborhoods are typically not well-positioned to accommodate growth. In addition to small parcel sizes, suburban subdivisions often lack pedestrian and bicycle infrastructure and have few jobs or amenities within walking or bicycling distance.

Perhaps the largest challenge for TOD, however, is the historic precedence of single-family homes, and the desire of current residents to maintain existing densities in their neighborhood. Many people move to low-density residential neighborhoods specifically to avoid the small living spaces, noise, and congestion commonly associated with higher-density communities. Increasing densities or allowing a mix of uses in these neighborhoods may not be a realistic goal.

Description

Low-density residential neighborhoods primarily contain single family homes.

Typical Parcels

Small parcels, few opportunity sites

Land Use

Residential

Parking

Street and on-site parking

Walkability

Low to medium

Level of Amenities

Limited

Strategies for TOD

As mentioned above, many low-density residential neighborhoods are not well-suited to accommodate significant growth. As a result, strategies to promote new development are limited. However, communities can allow for incremental increases in density in appropriate areas; promote small-scale development opportunities; and make improvements to the pedestrian realm to facilitate access to transit.

Allow for incremental increases in density in appropriate areas, and the provision of accessory dwelling units in residential areas.

Moderate density and a mix of uses can be facilitated on specific properties, usually close to transit stations, although the intensity and design of new development will need to be responsive to the existing character of the neighborhood. For example, accessory dwelling units (ADUs) – in the form of backyard cottages or converted garages or basements – can add density without changing the fundamental character of the neighborhood.

Promote small infill opportunities.

Given the small parcels and limited opportunity for density, large national or regional developers are unlikely to seek development opportunities in low-density residential neighborhoods. Engaging smaller, local developers is critical to facilitating the development of small infill sites.

Improve the pedestrian realm, with a focus on facilitating pedestrian and bicycle access to transit.

Simple investments in local infrastructure, such as the creation of bike lanes and continuous, well-maintained sidewalks can significantly improve access to transit among pedestrian and bicyclists alike.

Major Greenfield/Infill Sites

Greenfield and major infill sites offer rare opportunities to plan and implement large-scale development around transit. Greenfield sites typically occur when new transit lines extend into previously undeveloped territory. The planned East Corridor in Denver, for example, will pass through acres of undeveloped land to reach the Denver International Airport. Major infill sites, conversely, can be located along new or existing transit corridors, and generally become available through a change in tenancy or ownership. For example, when the NUMMI plant in Fremont, California was shut down, approximately 800 acres of formerly industrial became available for development near a planned San Francisco Bay Area Rapid Transit (BART) station. Other examples include Portland's North Pearl District (profiled later in this section).



NUMMI Plant
Fremont, California

Opportunities

Major greenfield and urban infill sites are characterized by large underutilized or undeveloped parcels of land, usually under single ownership. This provides an opportunity to plan and develop entire new communities around transit. Large opportunity sites offer economies of scale in the planning, design and construction of new development, and can attract major regional or national developers who have the experience and access to capital required to deliver large-scale projects. Master-planned projects can also create greater value based on their ability to orchestrate a mix of uses and amenities in a comprehensive way. Under favorable market conditions, the scale of these opportunity sites may enable development projects to provide public benefits to the community at large, such as parks and open space. Finally, large-scale development opportunities are more likely to be able to obtain funding for infrastructure through the use of special assessments, community facilities districts, or other public finance tools.

Description

Greenfield and major infill sites feature very large parcels of undeveloped or underutilized land, often under single ownership.

Typical Parcels

Large undeveloped or underutilized parcels

Land Use

Varies based on previous use

Parking

Varies based on previous use

Walkability

Low

Level of Amenities

Limited

Challenges

Both major greenfield and infill sites usually require significant infrastructure improvements to serve new development, including utilities, roads, sidewalks, street lights, and other public realm elements. Many major infill sites also have additional costs associated with environmental cleanup. In urban locations in particular, the development may not generate sufficient value to pay for the required infrastructure improvements on its own; additional public subsidy may be required.

Strategies for TOD

This section provides some broad strategies in response to the unique challenges and opportunities associated with major development sites.

Consider broader regional and corridor conditions when determining the most appropriate uses for the site.

Greenfield or major infill sites are in many ways “blank slates” – they can be transformed into many different types of places, all of which can be transit supportive. The most appropriate uses are best determined in the context of regional and corridor-wide goals.

Work with the developer to implement TOD goals.

Major infill or greenfield development sites near transit represent unique opportunities to create new mixed-use neighborhoods that meet key TOD and other community goals, including reduced auto emissions, improved health and quality of life, a range of housing opportunities, and economic vitality. Local governments should proactively engage the developer in order to ensure that city-wide or regional goals for transit-oriented development are met. The participation of the public in planning efforts is also essential. The public sector may also need to participate in financing strategies in order to make the most of development opportunities.

In the case of brownfield development, assist with environmental clean-up efforts.

Many major infill sites are located in formal industrial areas, which may require significant environment remediation to accommodate new development. As with other industrial areas, public support in acquiring environmental remediation funds can help to promote redevelopment of contaminated infill sites.

Case Study: Pearl District (Portland, Oregon)

Over the last 25 years, Portland's Pearl District has transformed from an underutilized warehouse and industrial district into a vibrant mixed-use community. While the Pearl District was originally a Legacy Industrial area, it is considered a major infill site because redevelopment occurred with the district under a single master developer rather than incrementally as individual smaller parcels became available. While rare, this strategy enabled the city and developer to pursue a unique development strategy that incorporated civic amenities, affordability and a long term phasing plan. Located immediately north of Downtown Portland, the Pearl District spans 70 acres and boasts approximately 5,200 new housing units and 3.6 million square feet of new commercial development.²⁴ The success of the Pearl District is due to a series of redevelopment plans, large-scale developer agreements, and a streetcar system that connects a high-density residential area to the City's employment centers.



Source: Center for Transit-Oriented Development

Formerly a bustling railway roundhouse and staging area, the Pearl District began to decline after the Spokane, Portland & Seattle Railway left in 1970. In the early 1980s, the City of Portland began focusing its planning efforts into redeveloping the Pearl District. After an urban design study in the early 1980s, the City Council adopted the 1988 Central City redevelopment plan, including a provision to establish a streetcar-circulator loop connecting both sides of the Willamette River and all of the Central City districts.

In 1997, the City of Portland began construction on a 2.4-mile streetcar line to connect the Pearl District to major employment centers like the Downtown and Portland State University.

Funding for the \$54 million streetcar project came from a variety of federal, state, and local resources. Just over half of the cost was covered by bonds backed by parking revenues.²⁵ The City secured a \$900,000 Federal Housing and Urban Development grant that supplemented local funding. An additional \$9.6 million dollars came from the implementation of a local improvement district that surrounded the route alignment. The streetcar opened for service in 2001.



Source: Hoyt Street Properties

Around the same time, the City of Portland struck a deal with Hoyt Street Properties (HSP) to commence a \$600 million, 34-acre redevelopment project in the Pearl District. As part of the development agreement, the City of Portland agreed to fund important public

improvements, like the streetcar and a neighborhood park, while HSP committed to building higher-density residential and commercial uses (131 units/acre, up from 15 to 87 units/acre).²⁶

²⁴ Iams, Alex and Pearl Kaplan. International Economic Development Council. "Economic Development and Smart Growth: 8 Case Studies on the Connections Between Smart Growth Development and Jobs, Wealth, and Quality of Life in Communities." August 2006.

²⁵ Ibid.

The developer later stated that the higher densities would not have been feasible without the improved access provided by the streetcar²⁷, which exceeded ridership projections by over 300 percent and increased pedestrian and retail activity dramatically.²⁸

By 2001, developers were building projects at an increased residential density of 143 dwelling units per acre, and by 2003, almost all large lot single-family, commercial and industrial parcels had been redeveloped.²⁹ Land values increased 250 percent from 1990 to 2005.³⁰ As of 2008, \$3.5 billion dollars of new development³¹ had occurred adjacent to the streetcar alignment, establishing the Pearl District as a successful, mixed-use urban community.

²⁶ Adams, Sam, and Michelle Powell. City of Portland. Portland Streetcar Development Oriented Transit. 2008.

²⁷ Ibid.

²⁸ Ibid.

²⁹ 2005 Rudy Bruner Award. "Gold Medal Winner: the Portland Streetcar Project." 2005.

³⁰ 2005 Rudy Bruner Award. "Gold Medal Winner: the Portland Streetcar Project." 2005.

³¹ Adams, Sam, and Michelle Powell. City of Portland. Portland Streetcar Development Oriented Transit. 2008.