

# An Introduction to Transit-Oriented Development

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Debates about transportation and cities almost always generate more heat than light. First, there is the continuing debate about highways and transit. Transit proponents have been guilty of overpromising all sorts of environmental and social benefits from transit investment, without reference to the fact that transit is a specialized tool. Moreover, the sheer dominance of automobiles and highways makes any move toward more compact, transit-oriented land use of necessity gradual. For their part, highway and automobile enthusiasts tend to condemn transit by using national statistics and regional averages, without reference to the fact that transit is largely a tool for urban areas and works best as part of an integrated set of strategies involving transit, development, and other supportive policies.

> Another debate pits libertarians and smart growth advocates against one another over land use. The libertarians argue that today's growth patterns reflect market demands, ignoring decades of government intervention in planning and government subsidization of highways and automobiles. For their part, smart growth advocates tend to overstate the effectiveness of planning remedies and ignore the very real and persistent appeal of the detached single-family home in a suburb with good schools, not to mention the difficulty of changing entrenched lifestyles and habits. Transit-oriented development (TOD) has been touted as a panacea, with some arguing that all metropolitan growth can be accommodated through higher density infill development along transit lines—a physical possibility perhaps, but not viable in a democracy.

> This book tries to take a middle path. We believe that transit and transit-oriented development are essential parts of the toolkit for healthy metropolitan economies and improved quality of life. But we acknowledge that transit and transit-oriented development have their limitations, that autos, highways, and suburbs are also integral parts of the toolkit, and that a return to the era of streetcar suburbs is neither possible nor necessarily desirable. This book attempts to help fill a gap in the marketplace by evaluating the first generation of transit-oriented development, by setting some guideposts for the next generation, and by proposing some standards of practice. With this publication, we are trying to take advantage of three converging trends.

> The first trend is the resurgence of investment in America's downtowns. We are seeing the reinhabitation of our urban centers at a level that has not been experienced since World War II.

Census figures for the year 2000 and research by the Brookings Center on Urban and Metropolitan Policy and the Fannie Mae Foundation show that this urban rebirth is driven by demographic changes, including the rise in immigration, the aging of baby boomers, and the increase in nonfamily households. These changes add up to a growing market for smaller homes, and the increased popularity of cities. Urban centers are once again seen as attractive, lively places in which to live and work, and as hubs of intellectual and creative capacity.

> The second, and equally powerful, trend is the continuing growth and emerging maturity of America's suburbs, many of which are struggling to become cities in their own right. Suburban areas are increasingly diverse in race, ethnicity, and income, and are increasingly experiencing the pangs of rapid growth. Suburbs need to diversify land uses in order to build more solid revenue bases; they need to create urban centers and address the problem of traffic congestion along overtaxed suburban arterials. In addition, they need to respond to the desires of many suburban residents who have chosen not to move back into cities but who nevertheless want some urban amenities in their towns. In short, suburbs are increasingly being challenged to become more than bedroom communities.

> The third trend is a renewed interest in rail travel and rail investment. Virtually every major city in America is planning some form of urban rail or busway system, and states are joining together to plan and build high-speed rail systems linking metropolitan regions in the West, Midwest, Northeast, and South. In fact, the competition for limited federal funds is so intense that the wait for federal mass transit funding for a new project is estimated at almost fifty years. New rail or rapid bus systems have opened in the past ten years in such nontraditional places as Dallas, Denver, San Diego, Sacramento, Los Angeles, and Salt Lake City, with substantial system expansions underway in virtually every traditional rail city.

> At the convergence of these three trends is the potential for a substantial market for a new form of walkable, mixed-use urban development around new and existing rail or rapid bus stations. Changing demographics are resulting in a need for the diversification of real estate products, and the type of development known variously as transit villages or transit-oriented development is beginning to receive serious attention in markets as diverse as the San Francisco Bay Area, suburban New Jersey, Atlanta, Dallas, and Chicago. These transit-oriented developments have the potential to provide residents with improved quality of life and reduced household transportation expenses, while providing the region with stable mixed-income neighborhoods that reduce environmental impacts and provide real alternatives to traffic congestion. New research clearly shows that this kind of development can reduce household transportation costs, thereby making housing more affordable.

> Sadly, our review of the projects that are emerging across the country reveals that many of the first phases of these new "transit towns" fail to meet these important objectives. Somewhere between the conceptualization and opening day, many projects end up becoming fairly

traditional suburban developments that are simply transit-adjacent. Issues include unfriendly zoning codes and parking ordinances. Difficulties in dealing with the institutional complexities are also prevalent, with the chief confusion being the relative roles of local jurisdictions and transit agencies. Financing is difficult as well, with a lack of understanding about how best to finance mixed-use projects, and a lack of intermediary assistance for nonprofits and localities that want to pursue TOD projects that include affordable housing and involve minority-owned businesses.

> The amount of hype around TOD far exceeds the progress to date, with many transit proponents selling new transit investments on the basis of future land-use changes. The result has been that transit opponents have begun to deride TOD as a failure by critiquing the performance of the flawed projects discussed above. This presents a particular challenge for the transit industry, because the long-term success of many projects depends on development trends over which the industry has, at best, only indirect control.

> This book is an attempt to bring clarity to the debate by placing projects in a historical continuum, by creating a performance-oriented definition, and by analyzing and confronting the challenges that have been encountered. The research, which has been sponsored by Reconnecting America through its national Center for Transit-Oriented Development, is an initial step toward bringing TOD to scale as a recognized real estate product in the United States.

> Over the past two years, we have been engaged in a collaborative effort with the Center for Neighborhood Technology, the Congress for the New Urbanism, Strategic Economics, and the Alliance for Transportation Research Institute to answer the question: What will it take to bring TOD to scale in a way that captures its potential economic and environmental advantages? Our work has involved a number of methods of inquiry, including a literature review, practitioner interviews, regional workshops, case studies, geographic information system analysis of travel survey and census data, and the evaluation of existing projects.

> We seek first to understand the challenges faced, then to document the state of the TOD practice, and finally to assemble the resources necessary to assist cities, transit operators, and community groups who wish to undertake these kinds of TOD projects. In particular, we review the first generation of projects, document the progress made in defining the field, and attempt to advance the practice by defining principles to guide the next generation of projects being planned all over the country.

> In our view, successful TOD needs to be mixed-use, walkable, location-efficient development that balances the need for sufficient density to support convenient transit service with the scale of the adjacent community. We intend to develop techniques to help assure that TOD also remains mixed-income in character.

## Viewing TOD in Its Historical Context

Transit-oriented development should be viewed in a historical context. Transit has been around since the advent of the horse-drawn streetcar, and cities have always been at least partially shaped by their transportation modes—whether walking, streetcars, or automobiles. In fact, many of the urban design patterns that we seek to restore were common before the advent of the automobile; they simply arose spontaneously in cities for pedestrians. While TOD may not be a new thing, the challenge of adapting it to the auto-oriented metropolis is.<sup>1</sup>

### THE EARLY TWENTIETH CENTURY: DEVELOPMENT-ORIENTED TRANSIT

The streetcar suburbs that existed before the 1900s evolved in a setting that no longer exists. Often, the streetcar lines and their adjacent residential communities were developed by a single owner who built transit to add value to the residential development by providing a link between jobs in an urban center and housing at the periphery, or by an entrepreneur who worked hand in hand with the developer. Indeed, the phrase “development-oriented transit” more aptly describes these places than does “transit-oriented development,” since private developers built transit to serve their development rather than vice-versa. As part of this formula, streetcar stops often had small retail clusters to serve commuters as well as local residents. These small commercial districts are, to some extent, the precursor of modern TOD and represent a good balance between place and node.

> Urban historian Sam Bass Warner’s classic work, *Streetcar Suburbs*, characterized the way that transit and suburban real estate development worked hand in hand to decentralize the American city. The key to this was what Warner calls “a two part city: a city of work separated from a city of homes.” Warner’s study focused on Boston, but a similar model existed in Los Angeles as well. Planning professor Martin Wachs and others have chronicled the way that streetcar systems made the growth of suburban communities such as Glendale, Santa Monica, and Pasadena possible in Los Angeles between 1870 and 1910.

> However, the interdependence between housing, jobs, and transit inherent in the early streetcar suburbs was broken apart by the automobile and, starting in the 1930s, roads, including highways, became the preferred transportation infrastructure in America. Development was no longer dependent on transit, the link between transit and development was broken, and developers got out of the business of building—or even thinking much about—transit systems.

### THE POSTWAR YEARS: AUTO-ORIENTED TRANSIT

The postwar period saw a precipitous decline in transit use and the dismantling and abandonment of many rail systems. Buses became the primary mode of transit in most regions. Bus systems are subservient to the automobile, because they use the same streets and contend with the same congestion, but don’t perform as well. And in most cases bus service has less influence

on land-use patterns than fixed-rail transit. Transit became the travel mode of last resort and ceased to shape development, except in some of the commuter suburbs around older cities such as Boston, New York, and Chicago, which continued to function reasonably well as transit-based communities.

> As congestion worsened, a new generation of transit systems was planned and built. The San Francisco Bay Area Rapid Transit (BART) system, the Metropolitan Atlanta Rapid Transit Authority (MARTA), and the Washington (D.C.) Metropolitan Area Transit Agency (WMATA) all opened during the 1970s. These systems were built with a different rationale than their predecessors. They were built primarily to relieve congestion, their funding was provided entirely by the public sector, and little or no additional land was purchased by the transit agencies to ensure that there would be a link between these transit investments and future development patterns.

> These systems were also explicitly designed to work with the automobile, under the assumption that most people would drive to suburban stations rather than walk, bike, or ride the bus. What's more, they were viewed as primarily serving a regional purpose, and the individual stations were considered nodes within this larger system, with little concern about making them sensitive to the places in which they were located. Because of this, many stations were surrounded by large amounts of parking rather than being integrated into the neighborhoods they served; these large surface parking lots or structures created barriers between the station and the community.

> While these systems all play an important role—it is difficult to imagine Washington, D.C., without the Metro or the San Francisco Bay Area without BART—they are showing their limitations. Despite some success, they fall short of providing the full range of benefits that transit can stimulate. In general, they fail to contribute to neighborhood revitalization, to reduce automobile dependency significantly, or to encourage more efficient regional land-use patterns. In short, the idea that development should be linked to transit generally was not part of the philosophy of these systems.

#### TODAY: TRANSIT-RELATED DEVELOPMENT

Rail systems usually enhance the value of adjacent land, and transit agencies and the federal government see large-scale real estate development on property owned by transit agencies as a way to “capture” some of that value. While this return is not necessarily sufficient to pay the total cost of the rail investment, it at least partially reimburses public coffers. For this reason, transit agencies and the federal government have an interest in promoting intense development around transit stations. This “joint development” approach has been used with notable success in locations around the country, including downtown San Diego, Washington, D.C., and Portland.

> This form of transit-related development is problematic because it almost inevitably leads to a narrow definition of the relationship between transit and development. The emphasis of most joint development—which until the 1990s was virtually the only form of TOD pursued—

has been on dense, profitable real estate development aimed at generating revenue for the transit agency and the federal government. Projects were predicated on a purely financial rationale rather than a broad vision of how transit could work in tandem with surrounding development. As later sections explain, the goal of maximizing revenue from ground rents often works at cross-purposes with other goals. In other words, the “highest and best use” in financial terms is not always the best for either transit users or the neighborhood.

> There is increasing evidence that TOD can provide many other benefits besides capturing increases in land value. The last decade saw subtle but promising shifts in the landscape of transit and development, with the convergence of a number of trends: growing transit ridership, increased investment in transit (even in auto-dominated cities like Los Angeles and Dallas), frustration with congestion and sprawl, smart growth movements, New Urbanism, and, in general, a greater recognition of the advantages of linking development and transit.

> Architect and urbanist Peter Calthorpe, who brought together the notion of the pedestrian pocket with the idea of planning development around transit stations, largely sparked the new interest in development around transit. In both his design practice and his writing he advanced the concept of mixed-use development and density around transit, and was enormously influential among planners and local officials beginning in the 1990s. Calthorpe's book, *The Next American Metropolis*, written with associate Shelley Poticha, began to articulate the urban design principles associated with TOD:

- Organize growth on a regional level to be compact and transit-supportive.
- Place commercial, housing, jobs parks, and civic uses within walking distance of transit stops.
- Create pedestrian-friendly street networks that directly connect local destinations.
- Provide a mix of housing types, densities, and costs.
- Preserve sensitive habitat, riparian zones, and high-quality open space.
- Make public spaces the focus of building orientation and neighborhood activity.
- Encourage infill and redevelopment along transit corridors within existing neighborhoods.

> Sadly, many of the projects Calthorpe planned were either turned over to different architects or altered during the development phase, leaving much of his early TOD work frustratingly unrealized. Perhaps his efforts have most paid off in Portland, Oregon, where years of collaboration with Poticha and planner John Fregonese on regional and transit-oriented development planning have resulted in an impressive emphasis on walkable mixed-use development focused on the emerging transit and streetcar systems.

> The academic most associated with the concept of TOD is Robert Cervero, professor of planning at the University of California at Berkeley. Cervero's research has centered on the

relationship between transit and metropolitan development, and he has consistently stressed the relationship between urban form and the type of transit best suited to serving a particular urban form. In two books—*Transit Villages in the Twenty-First Century*, written with Michael Bernick, an attorney and former member of the board of directors of BART, and *Transit Metropolis*—Cervero used a case study approach to gather much new evidence about both styles of transit and styles of development.

> Many of the projects in the United States that were studied and written about by Calthorpe and Cervero existed only as plans, or as transit-oriented zoning codes or design guidelines. Now, a decade later, we can look at the first generation of development projects around these new transit corridors to assess how well they lived up to their potential.

> A closer look at TOD projects around the country shows that most still fall short of providing the full range of potential benefits. Projects that clearly could take advantage of being adjacent to transit to reduce parking still use standard parking ratios, indicating an underlying assumption that these projects will primarily be auto-oriented. Projects that contain a variety of uses still lack an “appropriate” mix—that is, the specific uses have not been selected to create an internal synergism but have only responded to more general market conditions. Residential projects rarely include units targeted at a mix of income groups or household sizes, but are focused on one particular market segment, be it subsidized projects targeted to lower-income households or luxury units for young singles and empty nesters.

> Many of the examples examined in this book constitute good projects; most of them are significantly better than traditional development. However, the interviews conducted over the course of our study suggest that there is little understanding of the full range of benefits that can be achieved with TOD. This is reflected in both the physical design of most built projects and their mix of land uses. Many projects are relatively unambitious in what they hope to accomplish, or overly narrow in their view of the potential impacts of TOD. Even when the aims are broader, the fact that modern transit and development are built by several different actors introduces several additional layers of complexity.

> Our goal is to bring TOD up to scale not just in name but in terms of the impact it can have on cities, the environment, communities, and individual lives. For this reason we must set the bar high and describe a vision of TOD that is ambitious without being unrealistic. Most current projects fall short of this vision, and as a result we have chosen to call them transit-related development, a name that acknowledges the connection they have made between transit and development while still recognizing their shortcomings. Not all projects in all places will or even can meet the standard by which true transit-oriented development should be defined, but without a benchmark there will be no way to judge the quality of projects or even to think clearly about the trade-offs that must be made when pursuing a project.

#### TOMORROW: TRANSIT-ORIENTED DEVELOPMENT

Transit-oriented development can realize its full potential only if it is seen as a new paradigm of development rather than as a series of marginal improvements. TOD cannot be and should not be a utopian vision: It must operate within the constraints of the market and realistic expectations of behavior and lifestyle patterns. However, the market and lifestyle patterns can and do change as a result of both policy choices and sociocultural trends. The automobile was not always the dominant form of transportation, and suburban living was not always the lifestyle of choice. These changes in American life have been fostered in part by government policy, such as the mortgage interest tax deduction and the generous subsidies for road infrastructure at the expense of alternative forms of transportation.

> Already there are clear signs that these trends are not permanent. Growth in transit ridership and renewed interest in urban living are two indicators that preferences may be changing. Federal transportation legislation in the 1990s has helped shift government investment priorities away from the automobile and toward alternatives, such as transit, walking, and biking. Transit-oriented development can respond to these changes by offering an alternative that is viable in the marketplace while still yielding social benefits. Transit-oriented development in the twenty-first century can be a central part of the solution to a range of social and environmental problems.

> As the environmental, social, commuting, and land-use trends described above progress, it is likely that the type of neighborhoods we envision will become increasingly attractive. Although defining a vision of transit and development that function complementarily is a crucial first step, it is not enough. The next step is to move that vision—in concept and reality—into the mainstream of real estate development. This requires an understanding of why relatively few projects get built, and why so many of those that do get built fall short of their potential.

#### Defining the Scale of the Market for TOD

One possible reason for the relative lack of success with TOD to date is the lack of definitions, standards, or road maps for developers to follow. However, some critics of the concept have suggested another reason: There is no market for more compact, mixed-use development near transit. After all, argue these critics, if people wanted it, wouldn't the market supply it?

> Our review both of the challenges to implementing TOD projects and of the market tells us that there is a serious mismatch between the potential demand for TOD and the supply, and this in turn informs us that there is a need to provide useful tools and models for practitioners.

> In order to better understand the challenges to implementing TOD, we conducted interviews with practitioners, staged workshops to examine and address site-specific problems, reviewed the literature, conducted economic analyses, and completed case studies. Our conclusions were summed up in a report by urban economists Dena Belzer and Gerald Autler and

published by the Brookings Center on Urban and Metropolitan Policy and the Great American Station Foundation. These conclusions can be summarized as follows:

- There is no clear definition of TOD or agreement on desired outcomes, and hence no way of ensuring that a project delivers these outcomes.
- There are no standards or systems to help the actors involved in the development process bring successful transit-oriented projects into existence. Without standards and systems, successful TOD is the result of clever exceptionalism, and beyond the reach of most communities or developers.
- Transit-oriented development requires the participation of many actors and occurs in a fragmented regulatory environment, adding complexity, time, uncertainty, risk, and cost to projects.
- Although transit adds accessibility and value to a place, transit alone is insufficient to drive real estate markets. When other market forces are not present, special actions are needed to ensure that projects to achieve regional land use or housing goals go forward.

> Without a concerted effort to develop standards and definitions, to create products and delivery systems, and to provide research support, technical assistance, and access to capital, TOD will remain just a promising idea.

#### THE SHIFT IN HOUSING AND NEIGHBORHOOD PREFERENCES

Cities, once stigmatized as crime-ridden repositories of the poor, are now being seen as vital, resource-rich places, in part because urban density creates the opportunity for a more diverse mix of amenities than is available in one-dimensional suburban locations. A larger trend, however, lies just underneath this change in attitude. The demographics of the country are gradually shifting, and these shifts portend a fundamental change in the demand for housing and community. Four interrelated demographic trends are underway, which have been dramatically illuminated in the 2000 Census. Each has the potential to help us move from suburban sprawl and traffic nightmares to reinvigorated urban centers with high quality of life.<sup>2</sup>

##### Immigration

The most notable finding of the 2000 Census was the unequivocal diversity added to our nation as a result of immigration, principally from Latin America and Asia. Cities have traditionally been magnets for immigrants, and at least since World War II, most minorities have lived in cities. Although an increasing percentage of immigrants are choosing to live in the suburbs, and there is a significant trend toward minority migration to the suburbs, demographer William Frey projects that most of the immigrant population will continue to be concentrated in denser urban locations.

> This urban concentration, along with the lower income levels of most immigrant and minority households, has historically meant that these households own fewer automobiles and drive less. According to Catherine Ross and Anne Dunning's analysis of the 1995 National Personal Transportation Survey, African Americans, Asians, and Hispanics are all more likely to use public transit or walk than is population as a whole. For immigrants, this may be due not only to income and poverty level but also to cultural factors, including the fact that they have lived in places where auto use was the exception rather than the rule. Consequently, as immigrants are assimilated into the population and their incomes rise, we can expect to see both higher numbers of drivers and a continued willingness to use public transit, particularly if its availability, quality, and convenience continue to increase.

##### "Empty Nesters" and "Echo Boomers"

The second demographic trend is the aging of the baby boom generation, and its passage from the child-rearing stage of the life cycle to the "empty nest" phase. Families that once demanded the single-family home on a quarter-acre parcel in a suburban location are now finding both the home and the location to be unsuited to this new stage of life. Evidence suggests that baby boomers have fueled much of the downtown population growth over the past decade, as they seek smaller homes in locations with a greater mix of amenities.

> Marketing experts and demographers alike have trumpeted the preferences of Echo Boomers (aged 24–34) for exciting, dense, urban locations. Indeed, the much-publicized growth of new economy cities like San Francisco and Austin has been ascribed to their attractiveness to highly skilled young workers. A recent national study found that 57 percent of this generation preferred small lot housing and that 53 percent felt that an easy walk to stores was an extremely important determinant in housing and neighborhood choice.<sup>3</sup> In his influential book *The Rise of the Creative Class*, economic development expert Richard Florida makes a compelling case that the economically successful regions of the future will be those that attract technology and talent, and that "creative workers" are attracted to cities because they are centers of innovation. Florida notes, however, that this was not just a phenomenon involving young people and baby boomers. He also finds a clear correlation between child-friendly cities and creative hubs.

##### Nonfamily Households

The 2000 Census found that nonfamily households comprise 31.9 percent of all American households, a higher percentage than married couples with children at home, a group that now comprises only 29.5 percent of households. Ross and Dunning found that single adults with no children, and households of two or more adults with no children, were most likely to live in urban locations. These less conventional households are another force for change.

THE SCALE OF THE MARKET

These demographic trends add up to a growing market for smaller homes, town homes, and homes on smaller lots in vibrant walkable neighborhoods—all characteristics of transit-oriented development. In a recent study, Dowell Myers at the University of Southern California estimated that between 30 percent and 55 percent of the demand for new housing would be for residences in dense, walkable neighborhoods. He and his coauthor, Elizabeth Gearin, also found that almost 25 percent of the aging baby boomer demand was for town homes in the city.

The Transit “Boom”

In the past decade, new fixed guideway transit (light-rail, commuter-rail, subway, or busway) lines have opened all over the country, even—and especially—in cities that traditionally have not had much transit service. New light-rail systems have opened in San Diego, San Jose, Sacramento, Portland, Salt Lake City, Denver, St. Louis, and Dallas, often to better than forecasted ridership. At the same time, there has been a resurgence of interest in better performing bus services, with international successes like Ottawa, Canada, and Curitiba, Brazil, accompanied by experiments with dedicated busways in Pittsburgh and rapid bus demonstrations in a number of cities around the country. The result has been a huge increase in interest in transit system construction, with virtually every metropolitan area planning some kind of fixed guideway project.

> These are added to a large number of existing stations around the country. According to the American Public Transit Association, the station inventory includes twenty commuter-rail agencies with 1,153 stations; fourteen heavy-rail agencies with 1,009 stations; twenty-six light-rail transit agencies with 651 stations (with numerous additional street stops that don’t meet the station definition); and fourteen other rail transit agencies with 71 stations (including monorails, cable cars, etc.). This count excludes the intercity bus industry, which serves over 4,000 communities, and Amtrak, which serves about 500 stations. Overall there appear to be about 2,400 transit and intercity rail stations together with a wide variety of intercity bus locations.

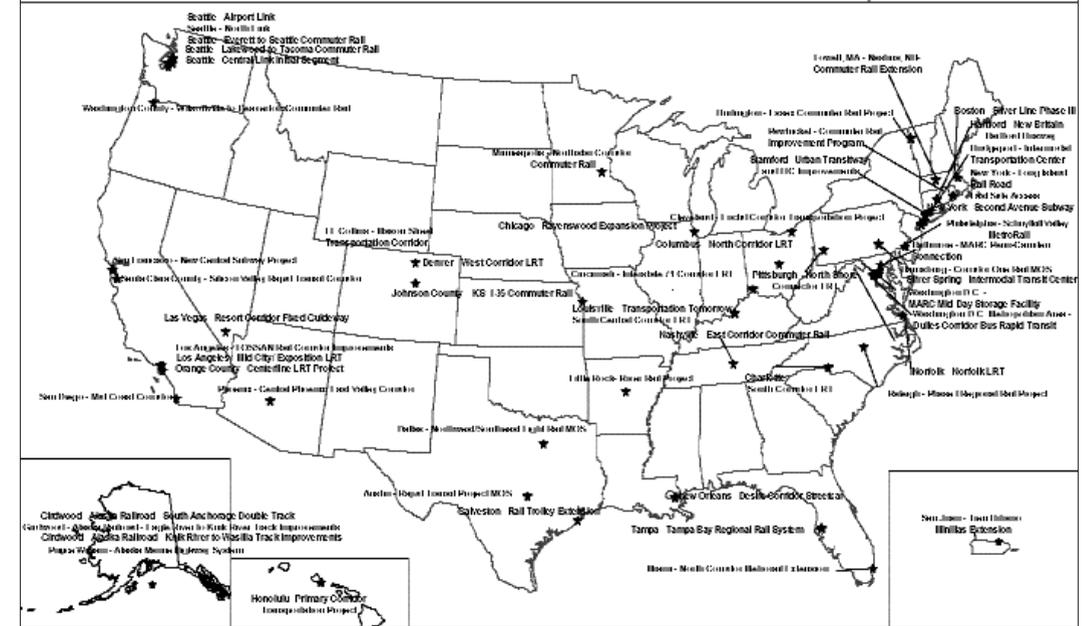
> The future demand for new transit starts projects appears tremendous. In an attempt to gauge the potential supply of transit, we reviewed the Federal Transit Administration’s (FTA) 2003 *Annual Report on New Starts*. This report to Congress lists all pending and proposed projects around the country and makes recommendations about funding allocations for specific projects. As of 2003, twenty-five new start projects have full funding grant agreements with the FTA that commit the agency to a specified amount of federal support. These include projects in Atlanta, Baltimore, Boston, Chicago, Dallas, Denver, Fort Lauderdale, Los Angeles, Memphis, New Jersey, Pittsburgh, Portland, St. Louis, Salt Lake City, San Diego, San Francisco, San Juan, and Washington, D.C. Figure 1.1 depicts these commitments, which will add 131 new stations to the existing inventory.

> In addition to the projects in the full funding grant agreement category, FTA is monitoring an additional fifty-two projects that are in some stage of the federal approval process, either

FIG. 1.1  
New Starts Projects with Full Funding Commitments  
(Source: Federal Transit Administration, 2002.)



FIG. 1.2  
New Starts Projects in Preliminary Stages  
(Source: Federal Transit Administration, 2002.)



pending a grant agreement, in final design, or in preliminary engineering. Figure 1.2 depicts the new transit start projects already in the federal approval and funding process. On top of these projects, there are an additional 151 new starts that were named in the last federal transportation authorization, the so-called TEA-21 legislation, for some level of federal funding.

> Of course many of these projects will never be built, and should never be built, as the demand or local financing capacity may not be there. The FTA has adopted a rigorous screening process to ration the relatively small amount of federal transit funds among the huge number of competitors and, fortunately, one of the key screening criteria is consistency with local land-use plans. As a result, many transit proposals now include some evidence of “transit-supportive existing land use, policies and future patterns.” This provides both evidence of the degree to which ideas about transit-oriented development are taking hold and also evidence of the need for improved practices and standards, without which many of the new systems may fail to meet ridership projections.

### TOD’s Role in Meeting Metropolitan Growth Projections

Clearly, transit-oriented development has the potential to fulfill much of the unmet demand for more compact development that is expected to arise in the next decade. One analyst has attempted to answer a different question: Could TOD accommodate all metropolitan area growth? Writing soon after Peter Calthorpe’s *Next American Metropolis* was published, and looking at actual growth patterns in the 1980s, Anthony Downs of the Brookings Institution used a methodology that assumed a 2,000-foot radius around transit stations, applied Calthorpe’s density guidelines, and assumed the construction of radial transit systems in each metropolitan area. He found that “it might have been feasible to accommodate all of the population growth of the 1980s into combined TODs if large amounts of resources had been devoted to building a rapid transit system linking them together.” Of course he notes that this would have been tremendously expensive, might have engendered resistance due to the higher density development, and hence concludes, “TODs should be viewed as building blocks that could be used to handle some significant part of growth.”

> Many metropolitan planning agencies are now conducting scenario-based regional planning studies, and often one of the scenarios involves some degree of TOD. Salt Lake City’s Envision Utah project and Chicago’s Metropolis 2020 effort are examples of the ways that regions are attempting to get away from using trend-based forecasts and are using new approaches to mobility and development to meet a part of the demand for new housing generated by population growth. Maturing our approach to TOD will help these ambitious regional planning efforts become more than regional visions.

### The Plan for This Book

The plan for this book is to provide the reader with both an orientation into the practice of TOD and an evaluation of the first generation of projects emerging around the country. We seek to learn from the efforts of the pioneers by presenting case studies of noteworthy efforts. At the same time, we have attempted to draw from the literature, from interviews with practitioners,

and from the case studies a set of practical lessons about the pursuit of development around transit in key subject areas.

> Throughout, our goal is to provide a set of tools to allow practitioners to begin to deliver on TOD’s promise of generating outcomes that are of lasting value to both communities and individuals, and of capturing value for the many actors involved in the process, including regions, cities, transit agencies, developers, community groups, and families. We are building toward standards for TOD and toward the creation of a standard real estate product that can be brought to scale. This is very much a work in progress, and our hope is that by suggesting directions for this work to follow we can set the stage for both continuous improvement and a more organized process of documentation and evaluation of the practice of TOD.

> The book is divided into two parts. The first part seeks to define the state of the practice and begins to set standards for key aspects of TOD. It is followed by a series of case studies that evaluate the practice of TOD around the country at both the project and the regional scale.

> We begin in the following chapter by seeking to refine the definition of TOD and to relate it to the structure of metropolitan regions with a typology that addresses issues of scale, transit service standards, land-use mix and density, and urban design characteristics. The goals are to embed TOD within the metropolitan structure that is emerging in this auto-oriented and postmodern era and to relate it to the neighborhoods in which the transit stops are located.

> Chapter 3 discusses the different actors involved in the TOD process—including cities, transit agencies, community groups, for-profit developers and lenders, and nonprofit community developers—and their roles. The chapter also examines some emerging ways of addressing the difficult challenge of delivering a project that meets agency and developer goals in terms of return and value capture while also achieving what may be very different goals for the community.

> Chapter 4 examines the regulatory environment for transit-oriented development and discusses the different approaches that cities have taken toward planning and zoning around transit. It takes a case study approach, analyzing a representative variety of transit-oriented codes in a variety of metropolitan settings.

> Concerned with the financing of TOD, chapter 5 serves both as a primer on the development finance process for TOD and as a guide for people who need to confront the challenges of financing walkable, mixed-use development around transit in a fragmented regulatory and institutional environment. Research for this chapter included exhaustive interviews with developers, city and transit agency staff, and lenders and investors.

> Chapter 6 looks at both traffic and parking issues, documenting the very real need for more work to determine specific parking and trip generation standards for TOD. Key problems are the accommodation of parking and the fact that parking standards for auto-oriented developments are being applied to transit-oriented projects without offsets for reduced auto use. Of course, this drives up the cost of these projects.

CASE STUDIES

Chapters 7 through 11 examine the state of the practice around the country through a series of case studies. Each case study examines in detail one or two projects in a specific region, seeking always to place that project within a regional context. The goal is to document the history of the effort, to report the outcomes, and to draw lessons that are applicable elsewhere. In selecting case studies, we consciously tried for diversity in both geographic spread and maturity of the transit system and the project.

> The case study in chapter 7 looks at a county in the Washington, D.C., region that has doggedly pursued an economic development strategy centered around transit. Thirty years ago, Arlington County, Virginia, was an inner suburb threatened by leapfrog suburban development at the fringes, and declining neighborhoods at the core. The county chose to use the new Metrorail system as a focus for development and density; it has succeeded in growing population, real estate value, and the tax base, as well as achieving dramatic transportation and environmental results. Our case study shows that the progress has not been without its challenges, particularly with respect to urban design, walkability, affordability, and historic preservation; still, the county has continued to confront these challenges, presenting a template for consistent local government action.

> Chapter 8 focuses on two successful projects in Dallas: the Mockingbird Station development near Southern Methodist University, and the Addison Circle development, a striking new downtown for the suburban community of Addison. The popularity of the new rail system in the Dallas/Fort Worth metroplex has generated a huge amount of interest in mixed-use walkable development, from urban neighborhoods like Dallas’s Uptown and West End to suburban projects in Addison and Plano.

> The case study presented in chapter 9 discusses transit-oriented development in Atlanta, a region whose economic success appeared threatened by runaway sprawl, traffic congestion, and air pollution. In an encouraging example of corporate leadership, BellSouth decided to concentrate its many suburban facilities within walking distance of three transit stops on the MARTA system. Our case study looks at the challenges faced by MARTA, the city, BellSouth, the developer, and the project’s neighbors as they attempted to accommodate this huge project at the Lindbergh station.

> Chapter 10, the case study of the Ohlone-Chynoweth project in the heart of California’s Silicon Valley, focuses on transit’s role in siting affordable housing, particularly in a booming regional economy where housing prices are skyrocketing. The case study illuminates the important role that local governments and nonprofit community developers can play in ensuring affordable housing is located near transit, as well as the challenges to ensuring that transit neighborhoods are mixed income in character. The chapter also looks at some of the design challenges faced when integrating transit into a suburban context and attempting to balance the station’s role as both a place and a node.

TABLE 1.1—PROFILE OF CASE STUDY PROJECTS

PROJECT	DEVELOPER	DATE COMPLETED	LAND USES	TRANSIT	FINANCING	PARKING	RESIDENTIAL DENSITY
<b>Arlington County</b> Virginia	County plans Various private	As of 2000	17.9M sq.ft. office 3.0M sq.ft. retail 21,581 housing units	Heavy-rail Bus	Public/Private	(see pg. 142, this volume)	
<b>Mockingbird Station</b> Dallas, TX	Ken Hughes	2000	214,000 sq.ft. residential 183,000 sq.ft. retail	Light-rail Bus	Private	1.0/bedroom 3.23/1,000 gross sq.ft. retail	24 units/acre
<b>Addison Circle</b> Addison, TX	Columbus Realty Trust Post Properties	Phase 3 in 2002	1,800 apts. 86 condos 6 town homes 115,000 sq.ft. retail 342,000 sq.ft. office	Bus Light-rail planned	Public/Private	Phase 1: 1/bedroom Phase 2: 0.3/bedroom Phase 3: 1/bedroom 3.7 spaces/1,000 gross sq.ft. retail 3.2 spaces/1,000 gross sq.ft. office	100 units/acre
<b>Mercado</b> San Diego, CA	MAAC Landgrant Richard Juarez	Apartments in 1993	138,000 sq.ft. residential 144 apts. 118,000 sq.ft. retail	Light-rail Bus	Public/Private Affordable LIHTC	1.5 /unit 3.5/1,000 gross sq.ft. retail	32.7 units/acre
<b>Lindbergh</b> Atlanta, GA	Carter & Assoc.	Phase 1 in 2003	388,000 sq.ft. residential 1M sq.ft. office 330,000 sq.ft. retail	Heavy-rail Bus	Public/Private	2.2/1,000 sq.ft. commercial less than 1 per bedroom	
<b>Ohlone Court</b> Santa Clara County	Bridge Housing	1997	135 units	Light-rail Bus	Public/Private Affordable	1.5/1.8/2.0 spaces for 1/2/3 bedrooms	22.1 units/acre
<b>Ohlone-Chynoweth Commons</b> Santa Clara County	Eden Housing	2001	194 units	Light-rail  Bus	Public/Private  Affordable	same	26.6 units/acre
<b>1 Pearl Avenue</b> Santa Clara County	Cilker Orchards	2003	182 units	Light-rail Bus	Private	same	41.4 units/acre

> Chapter 11 tells the story of Barrio Logan, a bootstraps effort at community revitalization in an inner-city Latino neighborhood near San Diego’s downtown. The case study shows that existing affordable housing tools can be successfully used to create affordable transit-oriented housing, but that the tools for commercial development in lower-income neighborhoods and communities of color are less well developed. In particular, our review finds that attracting commercial developers and retail tenants to lower-income neighborhoods is complicated when the projects incorporate nonstandard features like walkability and transit orientation. This finding supports the need for more standard transit-oriented retail products as well as the importance of sustained community involvement and community capacity.

> Table 1.1 lists each case study and provides key details about development and transit.

> Chapter 12 attempts to draw some conclusions about the potential for transit-oriented development. It calls for a continued effort to set performance standards and argues that the benefits of such an undertaking will be profound and widespread.

NOTES

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- 1 This section is based upon work by Dena Belzer and Gerald Autler for the Center for Transit-Oriented Development, published as “Transit-Oriented Development: Moving from Rhetoric to Reality,” by the Great American Station Foundation and the Brookings Center on Urban and Metropolitan Policy (Washington, D.C.: Brookings Institution, 2002), at <http://www.transittown.org>.
- 2 This section is drawn from a chapter I wrote for *Sustainable Planet*, edited by Juliet Schor and Betsy Taylor (Boston: Beacon Press, 2002).
- 3 Federal Highway Administration. 2001. *Moving Ahead: The American Public Speaks about Roadways and Their Communities*. Washington, D.C.: Federal Highway Administration.

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