

# Transit Village Monitoring Research

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## State of the Literature 2004: Transit-Oriented Development

Alan M. Voorhees Transportation Center (VTC)  
Edward J. Bloustein School of Planning and Public Policy  
Rutgers, The State University of New Jersey

Prepared by:  
Peter Lombardi

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Over the past decade, the concept and practice of transit-oriented development (TOD) has proliferated, gaining credibility and acceptance in communities in New Jersey, California, and a growing number of points in between. As the negative economic, environmental, and social impacts of traditional auto-oriented development patterns have become more and more glaring—from worsening traffic congestion and air pollution to the continued decay of inner-city neighborhoods and inner-ring suburbs—the potential for transit-oriented developments to address and mitigate those impacts has become apparent. In response, places as varied as Atlanta, Boston, Los Angeles and Portland, OR, have taken steps to accommodate and even encourage the development of communities in proximity to new and existing transit stations.

With the growing number of TODs being planned and constructed across the country, the knowledge necessary to successfully design and implement TOD has expanded considerably, providing newcomers to TOD with the luxury of learning from past experiences to enhance the likelihood of future success. A growing base of knowledge is clearly evident in recent contributions to the literature on TOD. This literature review, which updates a survey done by Renne and Wells in 2002<sup>1</sup>, is a summary and a synthesis of three reports that provide comprehensive reviews of the topic, including coverage of the impacts of TOD, supportive public policies, financing issues, and a range of case studies. These three sources are:

- *Transit-Oriented Development in the United States: Experiences, Challenges, and Prospects* (TCRP Report 102). By Robert Cervero *et al.* (2004).
- *The New Transit Town: Best Practices in Transit-Oriented Development*. Ed. by Hank Dittmar and Gloria Ohland (2004).
- “Light Rail and the American City: State-of-the-Practice for Transit-Oriented Development.” By G.B. Arrington in *Transportation Research Circular EC508* (2003).

In addition to their comprehensive coverage of TOD, these reports provide unique contributions to the subject literature. Cervero *et al.* present detailed analyses of surveys distributed to transit officials and private developers, as well as seldom seen case studies of TOD in older regions with a history of transit-oriented land-use patterns, including Boston, Chicago, and New Jersey. *The New Transit Town*, which contains chapters by numerous authors, provides recommendations and strategies for successful TOD planning based on evidence from recent attempts. Finally, Arrington offers a perspective on the integration of transit and land-use based on the increasingly popular light rail mode of transit.

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<sup>1</sup> Literature review by Renne and Wells available at <http://policy.rutgers.edu/vtc/tod/>

## Defining TOD

Despite the growing awareness of TOD, or perhaps because of it, a consistent definition of the term is difficult to establish. As noted by Cervero *et al.* (5-8), the general concept of compact, mixed-use, pedestrian friendly environments within walking distance of a transit stop can mean one thing to people in Omaha and another to people in New York. The definition may also vary depending upon the goals of the entities involved. Of the transit agencies surveyed by Cervero *et al.*, some defined TODs as the multi-modal and high-quality urban environments sought after by New Urbanists, while others defined TOD more simply as any development that takes advantage of proximity to transit and has the potential to boost the agency's ridership and revenue figures (according to the survey, increasing ridership and revenue were the primary goals of transit agencies with respect to TOD). The latter definition, argues Dittmar in *The New Transit Town* (6-8) and Arrington (192), could easily describe something that is merely transit-adjacent development (or TAD), with little or no deference for transit users.

A more expansive view of TOD is offered by Dittmar and Poticha in *The New Transit Town*. They describe the goal of TOD as being the creation of a “network of great neighborhoods” (20) in which a wide range of people live, work, and play in well-designed, pedestrian-scaled, transit-oriented environments. Within this network, each place would be characterized by (23-32):

- **Location efficiency:** the use of an automobile is an option, not a necessity
- **A rich mix of choices:** a variety of activities and living environments
- **Value capture:** an adequate return on investments in infrastructure and property, and the reinvestment of tax revenues into the public domain
- **Place making:** an enticing and memorable pedestrian experience
- **Resolution of the tension between node and place:** balancing the requirement that a station serve both a transport and a community function—a point echoed by Arrington (190), who notes that a successful TOD “will reinforce both the community and the transit system.”

Within their “network” framework, Dittmar and Poticha also describe a hierarchy of TOD types with varying densities and functions. These range from very dense, multi-functional urban downtowns and suburban centers, to less dense and more heavily residential urban and suburban neighborhoods and commuter town centers, to even less dense neighborhood transit zones serviced primarily by local buses (33-36).

A concept closely related to TOD is that of *joint development*. Cervero *et al.* (8-9) describe it as a subset of TOD that involves the development of land—or air rights—either above or next to a transit station, often with the direct participation of the transit agency that owns these rights and leases them for a stream of revenue. Another, more recent, addition to TOD terminology is the distinction between *vertical* and *horizontal* TOD. Parzen and Sigal in *The New Transit Town* (96-97) and Cervero *et al.* (107) define vertical TOD as the mixing of uses within a single structure—with uses stacked on top of each other—while horizontal TOD is the grouping of several single-use

structures into a mixed-use neighborhood. It is noted that the choice between vertical and horizontal mixing depends on location and cost: vertical mixing is more expensive and, therefore, is more practical where both land values and densities are high. Where vertical mixing is not practical, horizontal mixing offers a less expensive alternative that is often favored by lenders more accustomed to single-use development.

## **Benefits, Impacts, and Market Potential**

Though the definition of TOD can vary from place to place, there is generally more agreement on the potential benefits that can accrue from TOD. Among the primary benefits listed by Cervero *et al.* (122-125) are the increase of transit ridership and farebox revenues—the number one benefit according to surveyed transit agencies—as well as increases in housing options and the triggering of economic development along transit corridors and in adjacent communities. Collateral benefits, such as reductions in traffic congestion and air pollution, increases in tax revenues, and a rise in the physical activity levels of residents may also materialize, though Cervero *et al.* emphasize that little quantitative evidence of TOD's benefits exist—particularly for collateral benefits. Arrington (190) takes a wider perspective in arguing that TODs can have the domino effect of encouraging compact, pedestrian-friendly development throughout a region once its is deemed successful and marketable, which echoes the claim by Dittmar and Poticha that TOD is truly beneficial when it becomes a regional network of great neighborhoods.

Of the many benefits of TOD, those that are easiest to quantify—and thus, provide the most reliable evidence of benefit—are increases in transit ridership and land values. Research in recent years has suggested that TODs can boost transit ridership to levels that are five to six times higher than ridership levels in comparably-sized developments lacking direct linkage to transit (Cervero *et al.* 139-146). The two factors that contribute most to these relatively high levels of ridership at TODs—proximity to transit and characteristics of the built environment, such as density—have also been found to encourage transit use independently. Beyond merely physical factors, site-selection—or a personal preference for using transit and living or working in walkable, mixed-use environments—has also been found to play a major role in transit ridership levels at TODs. Cervero *et al.* (161-168) also note that research has shown that land values have the tendency to increase with proximity to transit, though a strong local economy with its accompanying traffic congestion and robust real estate market will also influence the land values near transit.

In addition to the perceived and real benefits of TOD, a number of other factors are seen as favoring the TOD trend. Dittmar, Belzer, and Autler argue in *The New Transit Town* (9-14) that a number of demographic factors—such as the increasing numbers of non-family households and empty nesters, and the maturation of the echo-boom generation into young professionals—work in favor of the market for the vibrant, mixed-use environments that TODs can provide. Wider trends such as the surge of interest in downtown redevelopment, the aging of suburban communities, and significant investments in transit infrastructure also favor TOD and its marketability. Arrington (191-195) stresses that federal dollars for transit investment—which are now dispersed

only to projects that show an adequate level of coordination with regional land-use planning<sup>2</sup>—may have a major role in encouraging transit agencies and municipalities to incorporate TODs as part of planning for new or expanded transit systems.

## The Participants and their Roles

In order to take advantage of TOD's benefits and to capitalize on the market conditions that favor it, the literature emphasizes that a number of different parties must coordinate their efforts and resources. Arrington, Cervero *et al.*, and Belzer *et al.* in *The New Transit Town*, note that transit agencies and municipal governments have the largest roles to play in the encouragement of TOD, though they also note that regional, state, and federal policies are becoming increasingly influential.

Transit agencies, which are often the entity with the most to gain from TOD—through increased farebox revenues and revenues from leasing land or air-rights at transit stations, generally take a leading role in promoting the concept to developers and the community at-large (Belzer *et al.* 46-47). As part of their promotional efforts, many transit agencies have focused their energies on educating the public and elected officials through events such as design charrettes that seek public input on station-area designs, and conferences that inform developers and the public about the opportunities offered by TOD (Arrington 195, Cervero *et al.* 39-43). To facilitate these and other activities, Cervero *et al.* note that an increasing number of transit agencies, including Denver's RTD and the Maryland Transit Administration, are initiating formal TOD programs, many of which have staff-members devoted to advocating TOD, as well as reviewing joint development proposals for their adherence to TOD principles, finding grant money to support TOD projects and activities, and working with local governments on site planning. Keeping TOD in mind when planning new transit lines should also be a priority, especially with regard to selecting corridors where TOD can be accommodated and designing stations that can be easily integrated into existing or future neighborhoods (Arrington 194-95). Although transit agencies can have a significant influence on land-use planning around their properties, all sources note that coordination with local governments, which have the real power to codify and enforce TOD-friendly development standards, is crucial.

Local governments have a number of mechanisms at their disposal for promoting and requiring the development of mixed-use, pedestrian-scaled environments near transit. Perhaps the most powerful tool in the hands of municipal officials is zoning. As Cervero *et al.* (63-71) note, most zoning regulations in suburbs, and even many cities, are designed to enforce car-oriented development through the segregation of land-uses and the setting of minimum parking standards. Some cities, such as San Diego, Portland, OR, and Seattle have adjusted their zoning and building codes in areas well-served by transit, usually through the adoption of TOD overlay zones. These overlay zones typically exclude auto-oriented uses, permit mixed-uses at transit-supportive densities, and reduce

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<sup>2</sup> The Federal Transit Administration's New Starts program, the primary source of federal funding for new and expanded transit lines, evaluates potential projects on a number of levels, including the extent to which they are supported by transit-friendly land-use planning. Get further details at <http://www.fta.dot.gov>.

minimum parking requirements by taking the potential for shared parking and the use of alternative modes—transit, biking, walking—into account (Arrington 192-93, Cervero *et al.* 63-64, Greenberg—*New Transit Town* 69-78). Other key roles for local governments is collaboration with transit agencies on station-area plans, investment in infrastructure and amenities in areas earmarked for TOD, and land assembly to speed-up the development process. In a survey of transit agencies on the perceived effectiveness of various policies and planning measures geared toward TOD, Cervero *et al.* (71-74) found that cash—in the form of grants for capital improvements, funding for station-area planning and land assembly, and the issuance of tax-exempt bonds to assist in project financing—is often the most effective tool with which municipalities, in conjunction with transit agencies, can move TOD from concept to reality.

Beyond local governments and transit agencies, Cervero *et al.* (46-51) found that TOD is finding increasing support at higher levels of government. Metropolitan Planning Organizations (MPOs) have offered support for TOD initiatives through technical assistance and planning grants in a number of regions, including Portland, Philadelphia, Dallas, and San Diego. At the state level, TOD has been actively promoted in California (which encourages the adoption of TOD plans near stations), New Jersey (where NJ Transit and the New Jersey Department of Transportation have teamed up with their Transit Village Initiative to offer resources to select communities in developing TOD plans), and Oregon (whose tax-abatement program for infill and high density development near transit may be the most effective state-level TOD inducement program to date). The federal government promotes TOD most directly through the Federal Transit Administration's New Starts program which, as noted earlier, provides funding for new or expanded transit lines after evaluating potential projects by a combination of measures including their coordination with regional land-use planning (Arrington 191, Cervero *et al.* 48).

As critical as the public sector is to advancing TOD, the private developers who eventually build and operate the desired mixed-use, transit-friendly environment have equal importance in the process. In a survey of developers with TOD experience, Cervero *et al.* (86-89) found that certain factors are crucial to developers when they decide whether or not to work with TOD. The top factor is the existence of TOD-supportive land-use designations, which demonstrates a community's willingness to support TOD, decreases the possibility of community opposition to higher densities, and removes the cost and effort of seeking zoning variances. Other factors include the potential for the developer to charge a premium on rent based on a location's high-profile and high accessibility, as well as proximity to the transit station (adjacency preferred), and the presence of tax incentives. While these factors certainly boost TOD's prospects at a given location, assembling the needed financing is another crucial role played by the private sector.

## Financing TOD

Although it may seem that a fairly recent phenomenon like TOD might give pause to conservative lenders, recent findings suggest this is not true. In a survey of developers and lenders, Cervero *et al.* (89-90) found that neither group viewed a TOD label as a significant factor in securing project financing. Instead, traditional factors governing lending decisions, such as the potential market and size of a given project and the credit rating of the developers involved, are evaluated. The survey also found that financing sources commonly used in the development industry, such as mortgage and construction loans and equity financing from pension and insurance funds, are typically used with TOD. Some developers, however, also take advantage of public grants that are geared toward TOD and transportation improvements, as well as funds earmarked for the development of affordable housing (Cervero *et al.* 91-92).

Although securing financing for TOD may be very similar to more traditional forms of development, Parzen and Sigal in *The New Transit Town* (86-100) note that TODs can be complicated to put together—especially given the number of parties often involved—and they offer some strategies to public and private sector parties for ensuring the timely assemblage of financing:

- **Increasing Certainty**
  - establish a vision that has community support
  - have a station-area plan that includes TOD-supportive zoning and building codes
  - assemble a team of experienced developers
  - conduct market studies and create a detailed business plan
  - prime the pump with public investments in infrastructure and amenities
  
- **Structuring the Deal**
  - build a project in phases to produce early cash flows
  - attract equity investors with a special interest in TOD or other smart growth issues
  - if necessary, plan for horizontal mixed-uses in order to attract lenders who may be more familiar with single-use development

These steps are seen as crucial to reducing the perceptions of risk that may dissuade developers or lenders from participating in TOD, or any type of development.

## Case Studies

Arrington, Cervero *et al.* and Dittmar and Ohland each offer detailed case studies of locations where TOD has been implemented to some degree. Two cities are common to all three sources: San Diego, which is renowned for having invested in transit and planned for TOD amidst the car culture of Southern California, and Dallas, which has set its eyes on TOD as a means of capitalizing on its new and highly successful light rail system. Other places mentioned by more than one source are Arlington County, VA

(associated with Washington, D.C.'s Metrorail), Portland, OR, and the San Francisco Bay area, all of which are renowned for their pioneering efforts with TOD.

In addition to the areas well-known for their recent TOD activity, Cervero *et al.* also profiles a few areas that go largely unmentioned elsewhere in the literature, particularly older cities and regions with well-established transit systems and transit-oriented land-use patterns. These unique cases include Boston, where officials have studied TOD as a means of revitalizing or strengthening neighborhoods whose original development was closely linked to transit, as well as New Jersey and Chicago, where attempts are being made to use TOD as a revitalization tool in mature communities along regional commuter railroad lines.

## Conclusions

The sources reviewed here reflect an evolution in the TOD literature. It is clear that TOD has progressed from a concept based on “good ideas” to a practice based on knowledge gained from more than a decade of experimentation in policy and planning throughout the country. These sources summarize and evaluate what *The New Transit Town* calls the “first generation” of TODs, and contribute to a general understanding of how to effectively plan for and implement the next generation of TOD.

The underlying theme in these sources is the importance of coordination between several entities: transit agencies and local governments, the public sector and the private sector, between those that help develop a framework of supportive policies and those that wish to use that framework to build transit-oriented communities. Above all, the sources make it clear that a common vision, developed and shared by community members, public officials, and private interests, must be in place for the necessary coordination to occur.

## Works Cited

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