ABSTRACT

Transit-Oriented Development (TOD) has increasingly moved from a planning theory to built projects. Over 100 TODs and an additional 100 joint development projects currently exist in the United States. Over the past two decades an important trend has been occurring with TOD as a growing number of communities have married Light Rail Transit (LRT) and TOD as part of an integrated strategy to revitalize American cities. Along the way LRT has evolved to become both a people moving and a community building strategy. The Federal Transit Administration (FTA) has come to recognize that link in elevating land use as an important consideration for New Starts recommendations. With the competition for federal funding at an all time high, land use can make a difference in which projects are recommended for federal funding. Yet transit-adjacent, not transit-oriented development remains the norm in most communities.

Capturing the opportunities and benefits of TOD has important implications for the planning, design and implementation of LRT systems. The essential elements of a successful integrated LRT and TOD strategy – designing development-oriented transit and achieving supportive public policy – are examined along with the underlying market forces helping to drive a growing demand for transit-friendly compact, urban living. There is a wide diversity of TOD implementation approaches and agencies in a lead role across the country. This paper provides a snapshot of TOD implementation experience in Dallas, TX, Portland, OR, Denver, CO, San Jose and San Diego, CA. Finally, communities interested in pursuing an integrated LRT and TOD strategy are offered five lessons learned and ten steps to success in planning for LRT and TOD.

TOD has increasingly moved from a planning theory to built projects. Over 100 TODs and an additional 100 joint development projects currently exist in the United States.
Over the past two decades a growing number of communities have pursued Light Rail Transit (LRT) and Transit-Oriented Development (TOD) as part of an integrated transportation and land use strategy to help revitalize American cities. TOD around LRT is increasingly becoming a standard for the future of TOD in the United States. This paper looks at the progress and implications of that journey for the planning, design, funding and implementation of new LRT systems.

The first wave of LRT systems was justified largely on conventional measures – ridership, efficiency, and energy savings. Broader community measures such as economic development and land use were not allowed as a consideration in the federal funding. To the consternation of many in the transit industry, UMTA (Urban Mass Transportation Administration) argued that those “secondary benefits” of transit were “captured in the single roll-up measure” of cost effectiveness.

Times have changed. UMTA has become FTA (Federal Transit Administration) and the new starts evaluation process has taken on a new character. Where it was once off the table, FTA now gives special consideration to land use in their New Starts evaluation.

Subsequent generations of cities interested in implementing LRT systems have learned from the experience of early systems like Portland, OR and San Diego, CA. LRT in combination with land use planning can be a powerful tool to help shape growth. Land use is now playing an increasingly important role in local and federal decision-making for new LRT investments.

**What is TOD?**

TOD focuses compact growth around transit stops, thereby capitalizing on transit investments by bringing potential riders closer to transit facilities and increasing ridership. At an individual station TOD can increase ridership by 20 to 40%, and up to five percent overall at the regional level. People who live in a TOD are 5 times more likely to commute by transit than other residents. Locations next to transit can enjoy increases in land values of over 50 percent in comparison to locations away from transit stops.

TOD can also produce a variety of other local and regional benefits by encouraging walkable compact and infill development. Just as importantly TOD is being embraced by a growing
number of communities as part of a strategy for accommodating growth without diminishing livability.

TOD draws on many of the same planning and development principles embraced by New Urbanism, Smart Growth and the Livable Communities Movement:

- Moderate to high density development in relation to the existing pattern of development;
- A mix of land uses, horizontally or vertically;
- Compact pedestrian-oriented design and streetscapes;
- Building design and orientation to which street allows easy pedestrian and transit access;
- A fine-grained connected street pattern without cul-de-sacs;
- A system of parks and open spaces.

By focusing compact growth around transit stops, TOD capitalizes on transit investments by bringing potential riders closer to transit facilities and increasing ridership. TOD can also produce a variety of other local and regional benefits by encouraging walkable compact and infill development. A successful TOD will reinforce both the community and the transit system. TOD has broad potential in both large and small communities using bus and rail transit systems.

New Starts and Land Use

With national interest in transit New Starts projects at an all time high, the demand for federal funding far outstrips the supply. The Federal Transit Administration (FTA) makes capital funding commitments annually for approximately $1 billion in New Starts. While the number is significant the demand for New Starts funding greatly exceeds the supply of available dollars. Based on the latest count there are 184 projects competing for funding in the New Starts pipeline:

- 26 projects with Full Funding Grant Agreements (FFGAs),
- 38 projects in Final Design / Preliminary Engineering (FD/PE), and
- 120 or more projects in Alternatives Analysis (AA).
In the scramble for federal funding land use has become an important differentiator in determining which projects FTA recommends to congress. In FTA’s evaluation of projects, land use is second only to the strength of the local financial commitment. In choosing what projects to fund FTA and congress are interested in projects that demonstrate merit, they want to see projects receiving federal funding succeed. Current and future land use patterns are important indicators of that success.

A review of the fiscal year 2004 New Starts Report reveals that land use is having a material effect – both positive and negative – on how FTA rates the justification of projects. Communities such as Charlotte, NC have seen their rating improve “The Medium project justification rating reflects the strong transit-supportive land use policies in place to support the proposed light rail project … “ Where in communities such as Miami, FL land use has had a different impact “The Medium project justification rating reflects the marginally transit-supportive policies and existing land use along the proposed alignment …”

FTA’s land use criteria have provided additional motivation at the local level to incorporate TOD early in the planning and design of New Starts projects. In evaluating the land use potential for a successful New Start transit project, FTA applies eight transit-supportive land use measurement

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**Table One: FTA NEW STARTS LAND USE RATING**

<table>
<thead>
<tr>
<th>Expected Performance of Plans &amp; Policies for a High Rating</th>
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<tbody>
<tr>
<td>By the end of Preliminary Engineering</td>
</tr>
<tr>
<td>Corridor &amp; station area conceptual plans have been developed</td>
</tr>
<tr>
<td>TOD zoning recommendations prepared for individual stations</td>
</tr>
<tr>
<td>Transit agency is proactively working with local governments &amp; developers</td>
</tr>
<tr>
<td>Transit-supportive development is occurring in corridor</td>
</tr>
<tr>
<td>By the end of Final Design</td>
</tr>
<tr>
<td>Station area plans adopted by local governments</td>
</tr>
<tr>
<td>TOD zoning adopted by local governments</td>
</tr>
<tr>
<td>Joint development program and appropriate financial tools in place</td>
</tr>
<tr>
<td>A number of TOD development proposals in station areas</td>
</tr>
</tbody>
</table>

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TOD IN THE UNITED STATES
factors on a sliding scale. The closer the project is to moving into construction, the higher the standard. The significance for projects chasing federal funding is that the bar for a high rating will literally be a moving target as the project progresses through the project development cycle. Table One summarizes the performance FTA is looking for in order to receive a high rating.

The eight land use factors FTA uses to evaluate local projects are:

1. Existing Land Use;
2. Impact of Proposed New Starts Project on Land Use;
3. Growth-management Policies;
4. Transit-Supportive Corridor Policies;
5. Supportive Zoning Near Transit Stations;
6. Tools to Implement Land Use Policies;
7. The Performance of Land Use Policies;
8. Existing and planned pedestrian facilities, including access for persons with disabilities.

**TOD or TAD: Transit-Oriented or Transit-Adjacent Development?**

To realize the benefits of TOD it is not enough for development to be adjacent to light rail. The development must be shaped by transit. Within the family of TOD you might say there are two “brothers” – TOD and his “evil brother” TAD. Transit-Adjacent Development (TAD) can be defined broadly as development in close proximity to transit, generally within one-quarter mile. The development is close to transit, but not oriented to transit. Unfortunately for LRT in America there are many more TADs than TODs.
Comparatively, in the case of TOD, the projects are also located within a quarter mile of the station but the development has been, through public policy or private initiative, partially molded by transit. The reshaping in relationship to transit might include one or all of the following:

- A compact site design, oriented for the pedestrian;
- Higher density and intensity of uses, in relation to the norm for the community;
- Buildings oriented to transit, (i.e. doors located convenient to a transit stop);
- Limited parking, the parking supply has been “pinched” or placed in multi-level parking structures;
- Pedestrian access and high-quality, safe facilities.

**TOD Overlay Zones**

One of the reasons we have more TADs than TODs is that in most of America TOD is “illegal.” Illegal in the sense that local development codes and zoning don’t allow for the compact, mix of uses, with reduced parking requirements, urban style setback, and side yard requirements typical of TOD style development. An essential first step in planning for TOD is to change local planning codes and ordinances to allow TOD where it is desired.

Transit overlay zones are an approach that has been used in a variety of American cities to further TOD implementation. In 1978, Dade County, FL established a Rapid Transit Zone along the entire length of Miami’s heavy-rail system. In San Diego and Los Angeles, CA their TOD overlay is an option developers can use. San Diego, CA “floating” Urban Village Overlay Zone allows developers to apply TOD principles to any site adjacent to a planned or existing light rail station. Both the cities of Phoenix and Tempe, AZ have developed TOD overlay zones for their proposed Valley Metro LRT line. The City of Mountain View, CA has likewise established a combination floating-overlay zone called the Transit District or “T” Zone. Use of this designation is restricted to properties currently zoned for either industrial or commercial and that lie within 2000 feet of a rail-transit station.

**Station Area Plan, Santa Ana CA.**

Effective station area plans ought to address minimum density, mix of uses, parking maximums, building orientation to facilitate walking, and prohibiting automobile-oriented uses for the areas within a 5-minute walk of the station.
Portland, OR and Seattle, WA have taken a different tactic and used the overlay to replace underlying zoning. In Portland, the city has instituted an overlay zone called the Light Rail Transit Zone. This designation increases permitted densities, restricts auto-oriented uses and encourages pedestrian-oriented development in LRT station areas, including small retail shops, restaurants, outdoor cafes, benches, and kiosks.

Detailed Station Area Plans

LRT communities have come to learn that “build it and they will come” is a theory that has not played out in reality without supportive public policy. For the areas ¼ to ½ mile around proposed LRT stations, detailed station area plans have become a popular way to help leverage the development potential of TOD. Station area plans can offer both the neighborhoods and the development community certainty and predictability. The planning is typically funded as an activity eligible for federal funding as part of the transit investment, just like the engineering of the line.

Communities that have undertaken detailed station area plans for LRT include San Diego and Sacramento CA, Minneapolis MN, Portland OR, and the San Francisco Bay Area. San Jose CA has successfully used the Planned Unit Development (PUD) designation to shape the location and design of several TODs near its light rail system stations such as the Almaden Lake Village. An example of the use of Specific Plans to implement TOD policies comes from Mountain View, CA. Called “Precise Plans” by the city, the Whisman Station Precise Plan introduced land-use and design standards for properties near this Silicon Valley light-rail stop.

A detailed station area-planning program typically involves a detailed assessment of the area ¼ to ½ mile around each station area resulting in:

- The preparation and local adoption of a station area plan including a vision;
- A land use plan map of future land uses;
- A description of zoning to accompany the land use map;
- An urban design plan and a schedule for TOD / economic development projects and programs.

Communities along Portland’s East and Westside Light Rail lines adopted station area plans for each of the areas surrounding the stations well before the lines opened for service. Local
governments along the corridors participated in a coordinated multi-jurisdictional planning program because they saw light rail as a means to implement their comprehensive plans.

The core objectives of station area planning in Portland have remained pretty constant over the years. They include:

- Reinforcing the public’s investment in light rail by assuring that only transit friendly development occurs near the stations;
- Recognizing that station areas are special places, and the balance of the region is available for traditional development;
- Seizing the opportunity afforded by light rail to promote transit-oriented development as part of a broader strategy;
- Rezoning the influence area around stations to allow only transit supportive uses;
- Targeting public agency efforts at stations with the greatest development opportunity;
- Building a broad based core of support for transit-oriented development with elected officials, local government staff, land owners and neighborhoods; and
- Setting up a self-sustaining framework to promote and encourage transit-oriented development once the planning is complete.

**Designing LRT With TOD In Mind**

Successful TOD starts with the earliest decisions on the shape and design of the transit system. It is amazing how many new LRT lines have been designed in a manner that is hostile to TOD – surrounding the stations with parking, locating stations in areas with little or no development potential, and providing for poor pedestrian connections from the station to the community.

Communities that have constructed a second, third or forth LRT line have started the process of planning for TOD earlier than with their previous line. San Diego, Sacramento, San Francisco, Baltimore and Salt Lake are all examples of systems where their interest in TOD manifested itself after their first line opened for service.
Transit agencies have come to realize decisions on alignment, station locations, and station layouts can have a large impact the success of a TOD strategy. By bringing engineers, transit planners, architects and urban planners into the process early, the opportunity to meet multiple community objectives is enhanced.

Portland’s Westside LRT alignment was designed specifically with future development in mind. As Newsweek put it in May 1995, Portland is “building transit first, literally in fields, in the hope development will follow.” All told, in 1994 there were approximately 1,500 acres of vacant developable land in the vicinity of Westside stations. That gamble paid off, before the Westside LRT opened for service in 1998 more than ½ billion in new development consistent with the TOD plans had occurred.

In a similar innovative twist on rail design, the Purple Line, a proposed circumferential light rail line in suburban Washington D.C., is being designed around TOD. Rather than approaching TOD as an after thought, the State of Maryland, sought to identify the opportunities for TOD in advance of the engineering so the rail line could be designed with TOD in mind. Once the best opportunities for stations are located they can be linked with the rail line to create a classic “string of pearls.”

There are a series of design principles to keep in mind in designing a new transit facility with an eye toward enhancing the opportunity for TOD. The principles of “development-oriented transit” include:

- Is the station located in an area with development potential?
- Are transit facilities designed in a compact, pedestrian manner?
- Does the design of station facilities allow for direct pedestrian connections from the transit facility to adjacent communities?
- Has the park-and-ride been designed in a manner that is does not separate the station from the community it is intended to serve?
- Has TOD been appropriately incorporated into the transit facility design?

Designing a new LRT line to be development friendly does not mean that any of the transit requirements will be sacrificed. They’ll be successfully incorporated and the system can be integrated into the community. LRT designers can learn a lot by looking at how older established commuter rail, such as Metra in Chicago, has been well integrated into the communities it serves. For example, the parking tends to be dispersed in a number of small lots.

**Community Building + Moving People**

There is no simple recipe for TOD implementation. The ingredients for successful TOD implementation are part community partnerships, part understanding real estate, part planning for growing smart, part transit system design and part offering the right mix of incentives to make TOD work in a particular station area market.

More times than not, the ‘master chef” for successful TOD implementation has been the local jurisdiction, not the transit agency. This certainly has been the case in Portland, Oregon. Indeed, cities and counties are equipped with the right tools to realize TOD - they have the planning, development and political clout necessary to succeed.
The nature of TODs is that their implementation tends to involve many public and private players. Transit agencies can play an important role in the education, advocacy and planning of TOD. Local governments can play a significant role in promoting TOD through plans, policies, zoning provisions, and incentives for supportive densities, designs, and a mix of land uses.

As the motivation and support for LRT has morphed from simply an alternative way to provide transportation, to being part of a broader transportation, “community building” and “economic development” strategy, new partnerships and skills are essential for success. The communities that have tended to be the most successful with TOD are the ones that use the coming of rail as a means to the end of achieving their community’s vision for growth. Few communities are willing to embrace the notion that their community needs to accommodate more density to make the rail line more successful.

One of the important lessons for transit agencies is that getting the city to the table, as a partner in TOD can be an essential step toward success. The communities that have cities playing a strong role in TOD are the communities that are the most successful with TOD.

The Growing Market for TOD

TOD has evolved from balloon adorned architectural renderings of ‘what could be’, to an increasing inventory of ‘what is’ – built projects. Across America, more and more TODs have been built and are performing well in the marketplace. This indicates that the viability of TOD at many locations in today’s real estate market is not a significant concern. Over the past decade, development trends have demonstrated the growing attractiveness—and market value—of TOD projects.

Successful TOD projects all have one common thread - the development project has to be successful without transit in order to be successful with transit. In other words, these are transit-oriented, not transit-dependant projects. LRT lines do not deliver the volume of customers on their own to make TOD viable.

Underlying the growth of TOD is a fundamental shift in demographics that is helping drive market demand for more compact, urban living. In a recent study for FTA the Center for Transit Oriented Development estimates a significant demand for TOD in the next 25 years. Their market assessment shows that at least a quarter of all new households — 14.6 million households — could be looking for housing near transit. The demand is driven in part by the change in demographics of US households

New Urban News cites the following factors as helping to drive the trend:

- A doubling of the demand for homes within walk of stores;
- An increase in buyers who prefer dense, compact homes. This market segment is expected to account for 31% of homeowner growth between 2000-2010; and
- A decline in the number of US households with children. In 1990 they constituted 33.6% of households, by 2010 they will drop to 29.5% of households.

The country’s most respected real estate investment forecast – *Emerging Trends in Real Estate*, published by Lend Lease Real Estate investments and PricewaterhouseCoopers – gives special attention to TOD market fundamentals in their review of 2002: Markets to Watch. “Markets served with mass-transportation alternatives and attractive close-in neighborhoods should be
positioned to sustain better long-term prospects as people strive to make their lives more convenient.”

“Interviewees (real estate leaders) have come to realize that properties in better-planned, growth-constrained markets hold better value in down markets and appreciate more in up cycles. Areas with sensible zoning (integrating commercial, retail, and residential), parks and street grids with sidewalks will age better than places oriented to disconnected cul-de-sacs subdivisions and shopping strips, navigable on by car.” xvi
That demand is reflected in the rent and sales premiums locations next to rail stations are commanding. These “transit-oriented” premiums for commercial and residential development have been definitively documented for numerous light rail systems. The research shows that for both commercial and residential development values become greater as properties are closer to a light rail station – the closer the higher the value. Moffett Park in Sunnyvale, CA is an illustration of the value of proximity. The developer, Jay Paul Company, approached the transit operator Valley Transportation Authority (VTA) and offered to pay the full cost of constructing a station to serve the site (estimated at $2.5 million). The station opened for service in December 2001.

TOD in America

A TOD renaissance is underway today across the country. TOD implementation has come in all shapes and favors with varying degrees of involvement from the public sector. To provide a better understanding of the range of TOD planning and implementation, this section provides a brief snapshot of TOD at five established LRT systems – Dallas, Denver, Portland, San Jose and San Diego.

San Diego is widely acknowledged as a leader in TOD within the state of California. San Diego opened America’s first modern light rail system in 1981, but did not initiate any TOD planning until several years later. Whereas TOD was not considered in planning the first light rail line, TOD projects and plans are now in place at over 15 of the system’s 49 light rail stations. The transit agency, MTDB, has been active in pursuing TOD.

At a regional level, the San Diego Association of Governments (SANDAG) approved a ‘Regional Growth Management Strategy’ that calls for increased development in “transit focus areas (TFA).” The City of San Diego has been a willing partner in supporting both mass transportation and TOD. In a unique arrangement, the city has had a land use planner working full-time on TOD within the planning staff of MTDB. The City was one of the first in the nation to adopt “Transit-Oriented Development Design Guidelines” in 1992. San Diego has also
Table 3  Portland TOD Toolbox Snapshot

<table>
<thead>
<tr>
<th>Tool</th>
<th>Brief Description</th>
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<tbody>
<tr>
<td><strong>Statewide Tools</strong></td>
<td></td>
</tr>
<tr>
<td>Urban Growth Boundary (UGB), 1979</td>
<td>A central tenant of Oregon’s Land Use Planning Program. Assures a 20-year land supply inside, preserves rural outside the UGB. Portland’s UGB includes 254,000 acres.</td>
</tr>
<tr>
<td>Transportation Planning Rule, 1991</td>
<td>Requires metro areas to set targets and adopt actions to reduce reliance on the auto. Directs metro areas to implement land use changes to promote pedestrian friendly, compact, mixed-use development.</td>
</tr>
<tr>
<td>Transportation &amp; Growth Management Program (TGM), 1993</td>
<td>The TGM program plans quality communities by providing local governments grants, Quick Response Teams and Smart Development Code Assistance. Over $6.7 million in grants from federal transportation funds were provided between 1993 and 2002.</td>
</tr>
<tr>
<td>TOD Tax Exemption, 1995</td>
<td>State legislation allows eligible projects to be exempt from residential property taxation for up to 10-years. The Cities of Portland and Gresham utilize the program.</td>
</tr>
<tr>
<td><strong>Regional Tools</strong></td>
<td></td>
</tr>
<tr>
<td>Regional Growth Management, 1994</td>
<td>The region’s 2040 Growth Concept focuses growth on transit in centers and corridors inside a tight UGB. Local governments must comply with Regional Functional Plan requirements including adopting growth targets, parking maximums, minimum densities and street connectivity standards.</td>
</tr>
<tr>
<td>TOD Implementation Program, 1998</td>
<td>The program uses a combination of local and federal transportation funds to stimulate the construction of TOD. The level of involvement in 12 TODs has ranged from $50,000 to $2,000,000. The primary use of funds has been for site acquisition and TOD easements.</td>
</tr>
<tr>
<td>Metropolitan Transportation Improvement Program</td>
<td>Regionally controlled transportation funds targeted to implement the 2040 Growth Concept. On average since 1996, the region has been flexing $46m annually in federal transportation funds in support of the growth concept.</td>
</tr>
<tr>
<td><strong>Local Tools</strong></td>
<td></td>
</tr>
<tr>
<td>Westside Station Area Planning, 1993 - 1997</td>
<td>TriMet, Metro and ODOT funded the preparation and adoption of plans by local governments for the area half mile around LRT stations. Included prohibiting auto-oriented uses, minimum densities, parking maximums and a design overlay for building orientation to transit.</td>
</tr>
<tr>
<td>Joint Development, 1997</td>
<td>TriMet has written down the value of project land reflecting “highest and best transit use” to leverage three innovative infill projects along the Westside LRT.</td>
</tr>
<tr>
<td>TOD Tax and Fee Exemptions</td>
<td>The City of Gresham provides 10-year TOD Tax exemptions and a 26.9% discount on traffic impact fees as an incentive to locate development in TOD districts.</td>
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</table>

adopted a unique transit overlay zone that requires reduced parking in areas with a high level of transit service.
With the completion of The Promenade at Rio Vista San Diego’s largest TOD will be complete. Developed at 70 units per acre by the Greystone group, the Promenade is the culmination of phased development of a 95-acre site fronting on the San Diego River and the Mission Valley line. According to the promotional literature the 970-unit apartment and retail features “a beautifully landscaped Esplanade of boutiques and retail conveniences surround a majestic fountain. Plus, the Rio Vista Trolley Station is integrated within the south end of the Esplanade, highlighting the stunning urban design plan.”

Rio Vista is an important example of the challenges and opportunities with a phased TOD project. The 1985 Mission Valley Plan designated urban nodes and supports higher density in this area. Early phases of the project included a K-Mart and were criticized by some for being too automobile-oriented. Conversely, the high-density Promenade at Rio Vista holds the promise of being one of the most transit-friendly suburban projects in California. The TOD has pushed densities in the area over 10 fold from 4 to 5 units per acre upwards to 70 units per acre.

The Mission Valley LRT line marked the first-time San Diego took extra steps in rail design to accommodate existing and future development. The rail line crosses back and forth over the San Diego River to better link with development. And with the extension to San Diego State University an underground station will allow the line to penetrate the middle of the campus.

Portland, Oregon has pursued an aggressive policy driven strategy of linking transportation and land use supportive of TOD at a number of levels. Planning and implementation programs for TOD are being actively pursued by TriMet (the transit agency), Metro the regional government and each of the cities along the region’s three LRT lines. Legally binding station area plans were funded by TriMet and adopted by local governments before the East and Westside MAX lines opened for service. Prohibition of auto-oriented uses, minimum densities, parking maximums, and design requirements are features of the plans for areas within walking distance of the stations.

The Portland region arguably has the nation’s most aggressive TOD program, but it has also placed the highest stakes on what it expects from its TOD strategy. The region’s vaulted growth management strategy is built around transit. The 2040 Growth Management Strategy features a tight Urban Growth Boundary, focusing growth in transit centers and corridors, and requires local governments to limit parking, adopt zoning and comprehensive plan changes to be consistent with the plan. Two-thirds of jobs and 40% of households are designated to be in centers and corridors served by buses and LRT.

More than a $3 billion investment in new development has occurred within walking distance of the stations along Portland’s light rail lines. While the vast majority of those TOD projects received no form of public subsidy, the Portland region uses a series of incentives to achieve more density, a greater mix of uses, better design, and lower parking ratios than the market would otherwise provide in TODs. The Oregon legislature enabled 10-year property tax abatement for TOD in 1995. Portland and Gresham currently use abatements. By 2000 Portland had abated 7 projects with a combined value of $79.6 million. Metro operates a TOD revolving fund capitalized with federal clean air CMAQ funds.

The Portland region’s most adventuresome endeavor into TOD has been with the Airport light rail extension. The financing package for the project is built around TOD. Bechtel Enterprises contributed $28.3 million toward the $125 million light rail project. In return Bechtel, in partnership with Trammell Crow, is developing a 120-acre TOD with office, retail, and hotel
uses called **CascadeStation** at the entrance to the airport. The rail line opened in September 2001, but a slow economy has frustrated the realization of any development so far.

The region’s most celebrated TOD is **Orenco Station**, a 199-acre new community being developed by PacTrust and Costa Pacific homes on the Westside Light Rail line. Its pedestrian-oriented master plan provides for a minimum 1,834 dwelling units, including single-family homes, townhouses, accessory units, loft units, and apartments. The project also includes a mixed-use town center with offices and housing above ground-floor retail. Residential sales prices at Orenco Station are running 20 to 30 percent above the local area average. Commercial occupancies have been high, and rents are estimated to be roughly ten percent higher than surrounding properties.\[^{xxv}\] Surveys of residents reveal that 18.2% of work trips are on bus or LRT, nearly 7 in 10 residents report that their transit use has increased since moving to the neighborhood\[^{xxvi}\].

Efforts to achieve TOD in **San Jose** have accelerated with the opening of the Tasman West light rail line in December 1999. According to VTA (the transit operator), the Cities of Mountain View and Sunnyvale have actively pursued policies that promote development in proximity to light rail. Mountain View, for instance, rezoned 40 acres of industrial land for 520 housing units adjacent to the Whisman station.\[^{xxvii}\]

The City of San Jose has taken an important leadership role in providing a framework for TOD. The city’s general plan was revised to provide for high-density development around transit stations\[^{xxviii}\]. The **Housing Initiative Program and Intensification Corridors Special Strategy**, targets station areas for high and very high-density housing\[^{xxix}\]. The construction of San Jose’s largest TOD is now underway.

Spanning two generations of TOD, **Ohlone-Chynoweth** on the Guadalupe Light Rail line in San Jose includes housing and community facilities developed on an under-used light rail park-and-ride lot. The former 1,100-space park-and-ride now includes a variety of uses: 240 park-and-ride spaces, 330 units of affordable housing, 4,400 sq. ft. of retail, and a day care center. At 27 dwelling units per acre, the residential density is relatively high compared to the predominantly
single family neighborhood surrounding it. The housing was developed by Eden Housing and Bridge Housing in two separate projects. Ohlone-Chynoweth is a rare example of where a park and ride has been converted to TOD without replacement of the commuter parking in structures or on another site.

In terms of the sheer number of residential units, San Jose has one of America’s largest LRT TODs under construction next to the light rail line on North First Street in north San Jose. The Irvine Company is constructing the North Park Apartment Village, an upscale rental project with 2,600 units. Under a unique California program the city was able to receive additional transportation funding as an incentive for each new residential unit.

Dallas, Texas stands out as an example of where market factors, rather than supportive public policy, are leading to development next to transit. Since the opening of the DART light rail system in 1996, The Dallas Morning News reports more than $800 million in new commercial and residential investment within walking distance of the DART line has either been constructed or is in process. Arguably, much of this development is transit-adjacent rather than transit-oriented. In the seven years since the start of DART operations the city of Dallas has yet to take any steps to change plans or zoning to encourage TOD. From a policy context TOD remains illegal within the city of Dallas.

DART has staff dedicated to TOD, but has adopted no specific policies supporting TOD. However, the agency’s mission and goal statement refers to economic development and quality of life. DART is working with its member cities and the Council of Governments to determine ways to link its stations with pedestrian networks. Other than the Cedars Project where an old vacant Sears warehouse was transformed into 450 loft apartments with ground-floor retail space, there has been virtually no TOD subsidy or supportive public policies by the regional planning agency, the City of Dallas, or DART along the starter line in Dallas.

Dallas’s best example of TOD is Mockingbird Station, a stunning 10-acre mixed-use TOD. The $145 million 10-acre mixed-use project being developed by UDC Urban features an art house movie theater, 211 loft apartments, upscale retail, a planned new hotel, offices, and restaurants. Mockingbird Station is the first mixed-use project in Texas specifically designed and built for a light rail transit station. With the exception of federal contributions towards local infrastructure, the development has been 100 percent privately financed.

Following a familiar pattern in virtually every LRT city, policy support for TOD has increased after the initial experience. Suburban communities along DART’s extensions have been much more aggressive in pursuing TOD. The suburban cities of Richardson and Plano are a case in point. The City of Plano has been actively working to take advantage of the opening of a new light rail line in July 2002 to create Plano Transit Village in their core. The city took one of the first steps in creating their transit village by working with Amicus Partners to redevelop a block of land for a mix of apartment, retail, restaurant and office uses. Eastside Village is a 239,000-square-foot commercial and residential project immediately adjacent to DART’s light rail station. The $16 million project includes 246 apartments with space for small shops and other commercial development. The project offers a variety of floor plans including efficiencies, lofts, live/work spaces, and one and two-bedroom apartment homes. A five level parking garage is surrounded by the buildings in the interior of the property, providing resident parking as well as public parking on the first level during business hours.
Table Four: Ten Steps to Success in Planning for TOD

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>1. Transit Village Partnerships</td>
<td>Successful TOD planning is done in partnership with local governments, transit agencies, neighborhoods and developers.</td>
</tr>
<tr>
<td>2. Station Area Planning</td>
<td>“Flexible” federal transportation funds have been used in many communities as a source to pay for TOD land use plans up to ½ mile from stations.</td>
</tr>
<tr>
<td>3. Revise Development Codes</td>
<td>In most communities development codes will need to be revised to allow TOD as a clearly permitted use.</td>
</tr>
<tr>
<td>4. Development Ready Transit</td>
<td>Plan and design transit improvements to welcome and encourage TOD by connecting transit to the community.</td>
</tr>
<tr>
<td>5. Plan for a Mix of Uses</td>
<td>Mixing uses in a TOD or along the line (residential, shopping, work, leisure) helps reduce automobile use and increases walking and transit use.</td>
</tr>
<tr>
<td>6. Link TOD to Community Livability</td>
<td>For most communities a successful TOD strategy and a successful community livability strategy are one and the same.</td>
</tr>
<tr>
<td>7. Pedestrian-Friendly Projects</td>
<td>Focus on pedestrian-friendly projects to avoid the complication of sequencing development with new transit facilities.</td>
</tr>
<tr>
<td>8. Put Limits on Parking</td>
<td>Parking is one of the most important land uses in a TOD. Attention needs to be put on controlling the amount and location of parking.</td>
</tr>
<tr>
<td>9. Increase Density</td>
<td>Density makes a difference in travel behavior, establishing minimum densities and raising maximums are effective strategies.</td>
</tr>
<tr>
<td>10. Places to Come Back To</td>
<td>When done best, transit investments can be a powerful place making tool to help create places to come back to, not simply to leave from.</td>
</tr>
</tbody>
</table>

Denver, Colorado is another example of a community that has seen its TOD program grow with the expansion of their system. Both the City of Denver and the Regional Transportation District (RTD) have raised the profile of TOD within each organization. RTD now has a full-time TOD person and has recently forged a partnership with the city and the Denver Urban Renewal Authority to collectively and more efficiently provide TOD incentives. Like other communities, Denver’s TOD approach is evolving as it gains experience.

Denver’s newest LRT line opened in April 2002, the Central Platte Valley Spur was innovatively financed with RTD, City Denver and private contributions. The 1.6-mile line extends from Union Station with stops at Auraria Higher Education Center, Invesco Field at Mile High Stadium, and the Pepsi Center. The 340-unit Central Park Commons apartments are the largest...
of recent developments. The area is planned to grow into a mixed-use neighborhood with 2000+ housing units and more than 3 million square feet of commercial and retail development.xxxiv

The region’s first TOD is the 55-acre *Englewood Town Center*, a mixed-use TOD created on the site of the failed Cinderella City mall. Adjacent to Denver’s Southwest Corridor light rail, the one million square foot $160 million TOD combines a transit hub with a civic and cultural center, as well as retail uses and entertainment. The city and RTD made $21.2 in public improvements to the site. More than 500 residential units have been constructed by Trammel Crow, along park and open space. The City purchased the property, developed a master plan focused on light rail, and sold parcels to developersxxxv. RTD built the track and paid for a 910-space park-and-ride.

RTD is now actively involved in pursuing TOD at the 13 stations on the “T-REX” LRT line now under construction in the Southwest corridor along 1-25 and I-225.

**Five Lessons Learned & Ten Steps to Success**

After nearly two decades of experience a growing list of communities have come to learn that in combination with supportive public policy LRT can be a powerful tool in the regeneration of American cities. Along the way these communities have also come to understand that capturing the development opportunities afforded by LRT has important implications for how they plan, design and implement LRT. If LRT is to be both a community building and a people-moving tool, transit agencies and cities will need to bring a new cast of characters to the table in order to plan, design and implement development-oriented transit.

At the risk of being overly simplistic, there are five lessons and ten steps to success (table 3) communities should keep in mind as they plan for TOD:

1. **The early bird catches the TOD** – the earliest decisions on the planning and design of LRT systems shape the opportunities for TOD. Without exception, transit agencies are undertaking TOD work earlier with each of their subsequent LRT lines.

2. **TOD can enhance LRT project viability** - TOD can add riders to the system, increase property values, enhance the prospects for federal funding, and leverage additional local government support for LRT.

3. **TOD is illegal in most of America** – most of the development near LRT is transit-adjacent, not transit-oriented development. Changes in local land use plans will be necessary to achieve more TOD. Much of this planning can be done with flexible federal transportation funds.

4. **The market for TOD is real and growing** – the market desire for compact, urban residential development is growing significantly. Locations next to LRT demonstrated average land value premiums as great as 39% for residential and 53% for office.

5. **Success means bringing new people to the table** – the communities with cities playing a strong role in TOD have been the most successful with TOD. Designing for TOD needs to involve developers, local planners, architects, transit planners and engineers.
Footnotes


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viii Federal Transit Administration, PowerPoint, APTA Legislative Conference March 9, 2005

ix Parsons Brinckerhoff, *Purple Line Transit-Oriented Development Assessment*, for the Maryland Department of Transportation, December 2002

xii Center For Transit-Oriented Development. 2004. *Hidden in Plain Sight: Capturing The Demand For Housing Near Transit*. September 2004


xv PricewaterhouseCoopers LLP and Lend lease Real Estate Investments, Inc. Emerging Trends in Real Estate 2002, pages 37 and 33

xvi Arrington, GB and Frank, George, *Light Rail Implementation: A Comparison of the Procedures Used to Implement the San Diego Trolley and the Portland, Oregon Banfield Light Rail Project*, for San Diego Association of Governments, San Diego, CA, 1984


xxii Arrington, G.B., At Work in the Field of Dream: Light Rail and Smart Growth in Portland, Tri-Met, September 1998

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xxv Parsons Brinckerhoff, “Orenco Station Profile,” for Urban Land Institute, July 2001


xxvii Valley Transportation Authority, *Tasman West Light Rail Project*, San Jose, CA, June 1997


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xxx, ii


xxxii Parsons Brinckerhoff, “Mockingbird Station Profile,” for the Urban Land Institute, September 2001


http://www.planotx.org/amicus/text.html
