

Convening on Transit Oriented Development: The Investment/ Finance Perspective

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ALIGNING TRANSIT AND REAL ESTATE: An Integrated Financial Strategy

Introduction

Built Transit-Oriented Development (TOD) has a mixed track record, with most examples realizing neither their planning benefits nor their financial expectations. This paper distinguishes three levels of TOD:

- TOD 1.0, focused on federal funding formulas that are disconnected from real estate market forces;
- TOD 2.0, a more integrated transit and real estate funding strategy that is conceived and coordinated on a corridor scale; and
- TOD 3.0, an emerging model that aligns development districts transit with broader community needs and emerging sustainability initiatives, focusing on “Livability Benefits”.

Lastly, the authors offer suggestions for achieving the transition from TOD 1.0 to TOD 3.0 by implementing a more market focused financing structure.

To date, “**TOD 1.0**” has faltered because TOD projects are typically burdened with higher land and infrastructure costs, mandatory mixed-use programs, and site phasing which make TOD a less attractive investment alternative for private equity and bank debt when compared with suburban or other infill sites. Transit planners are motivated by policy-based funding criteria that promote transit along inexpensive right-of-ways. As inexpensive land is an indicator of poor real estate market conditions, transit planning inherently negatively impacts TOD potential. TOD 1.0 has relied on subsidies to remain a competitive investment option but government can justify only minimal subsidies for a finite number of projects. A new strategy is required. A fundamental flaw of TOD 1.0 has been its focus on overcoming poor real estate markets rather than coordinating transit investments with viable real estate markets. The transit implementation process determines TOD corridor connections,

station locations within existing real estate markets, and station area infrastructure and design.

“**TOD 2.0**” treats transit implementation as the first half of a sequential 6-Step TOD implementation process culminating in vertical real estate development. Early transit implementation steps, like Route Alignment (Step 1), must evaluate the real estate market conditions along the route to determine if vertical development (Step 6) is viable given TOD’s intrinsic cost burdens. The TOD 2.0 process plans development at the corridor level to match real estate markets. TOD 2.0 relies heavily on an implementation advocate for existing and future TOD districts in early stages of the process – addressing the time lag between transit planning and real estate development – and overcome jurisdictional competition for new development and tax dollars.

“**TOD 3.0**” focuses on the positive community impacts of concentrating development and services along a transit system, which we are labeling as “Livability Benefits” -- the ultimate goal of transit and TOD, and adds a new seventh step to the TOD 2.0 six-step process. Livability Benefits include improved access to emerging employment centers, accessible job training and education facilities, affordable and workforce housing, increased open space and watershed areas, and enhanced metropolitan sustainability. This new paradigm orients all of the steps identified in TOD 2.0 towards achieving Livability Benefits. **In TOD 3.0, transit implementation steps emphasize an integrated financial strategy supporting expanded Livability Benefits, rather than separately focused on transit efficiency (as in TOD 1.0) or enhanced revenue through more dense vertical real estate development (as in TOD 2.0).**

This paper points to two evolutionary steps that can promote economically viable and more livable transit-oriented communities – (1) coordinating transit and real estate development in one sequential process and (2) advancing TOD goals beyond vertical real estate development to encompass community “Livability Benefits” that are often required of developers and typically mandated by state and/or local laws. These changes will require empowering a coordinating entity and adjusting policy. The authors are also exploring financing mechanisms – including real estate value capture – that will foster these changes. Building economically viable and more livable transit-oriented communities will entail significant coordination and developing new skills. While this effort will require skilled leadership and savvy negotiators, there is a greater ability to realize TOD that has been envisioned but inconsistently delivered.

TOD 1.0 – “Current Disconnect”

TOD implementation and financing discussions have historically focused on station planning and real estate development processes. Conversations have focused on relatively high TOD real estate costs. Planners have focused on creating zoning and design guidelines, economic development professionals have provided developer

subsidies to spur TOD construction, and developers have balanced government and community desires with real estate markets and their investors' expectations. Little attention has been paid to the transit implementation process that actually determines the real estate market and surroundings in which transit stations are constructed. Transit implementation generates difficulties for TOD and it is a major reason that built TOD is successful only on rare occasions. This section will describe why we think TOD to-date, TOD 1.0, has performed below expectations.

TOD Costs Are Higher Than Comparable Suburban Investment Options

Urban, walkable, and mixed-use TOD projects are overburdened with additional costs when compared to competing real estate investments. TOD has significantly more expense than other suburban or infill real estate product and has difficulty competing for investment dollars.

These additional cost factors include:

- Urban land v. "Greenfield" land
- Upgraded Urban utilities v. "Greenfield" utilities
- Environmental cleanup issues v. Unblemished sites or low-impact prior uses
- Mid and High-rise construction v. Low-rise construction
- Mixed Use buildings v Single Use buildings
- Structured parking v. Surface parking
- Higher level of design finish through design review process v. standard finishes with minimal city review
- Complex street network infrastructure v. Minimal networks
- Diverse pedestrian, auto, and transit accommodations v. Auto-oriented design

Suburban Development Attracts Equity Over Higher-Cost, Lower-Profit TOD

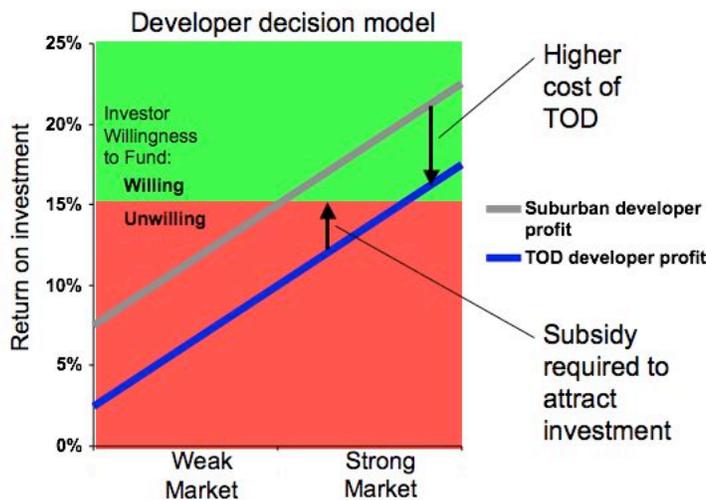


Figure 1 – TOD Investment vs. Suburban/Other Infill

Limited Influence of Zoning

While a necessary local policy step, station area planning and zoning does not overcome the high costs of building TOD projects. In fact, the zoning applied to TOD areas often adds more complexity and cost with master plan requirements, phasing options for future development, and layers of additional standards for landscaping, parks, streets, and buildings. Many proponents of station area development believe that station planning & zoning would produce community-benefiting TOD. However, zoning is just one factor that is taken into account in determining where and how equity is allocated by real estate professionals:

- Zoning / Density / Building Standards
- Available Infrastructure / Utilities
- Auto Access
- Market Rents / Demand
- Pipeline of Planned Projects/ Absorption
- Cost Parameters
- Environmental Issues / Cleanup
- Site Visibility / Adjacent Land Development
- Community Requirements

As shown in Figure 2, zoning that requires idealized TOD may increase costs, dampen profits, and actually decrease the potential that TOD will be implemented.

Idealized Mixed-use Programs Ignore Real Estate Market Realities

Zoning for Ideal TOD Could Stifle Development by Reducing Revenues

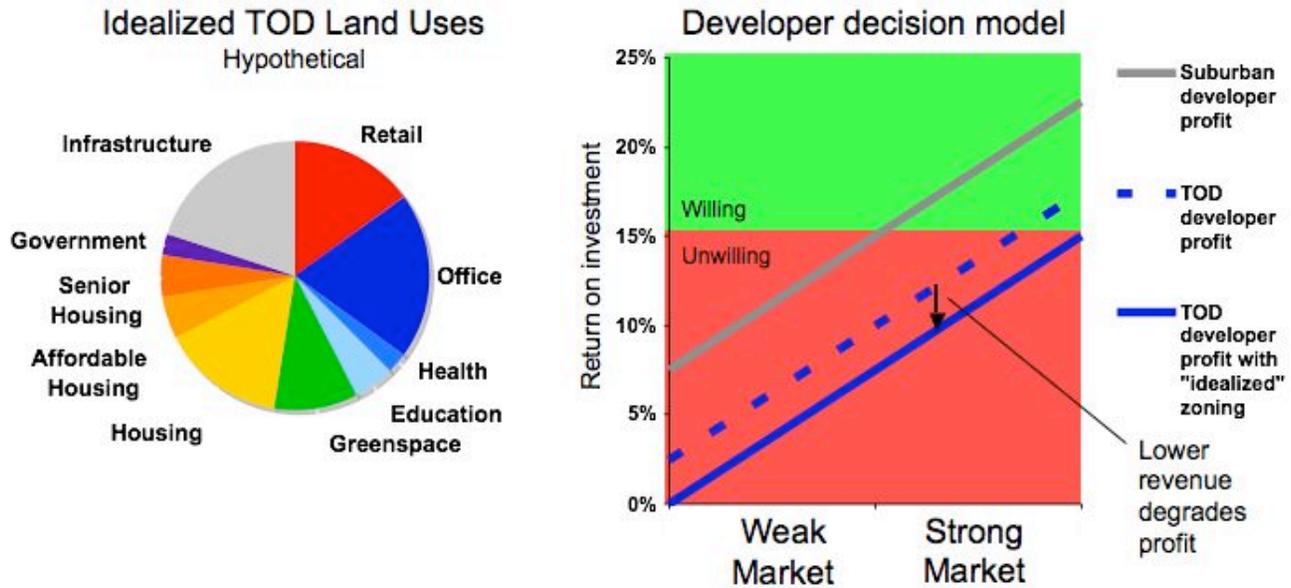


Figure 2 - Idealized TOD Zoning Can Impact TOD Potential

Asynchronous Timing Can Impact Development Potential

People familiar with transit projects are not surprised that it can take anywhere from 10 to 15 years from initial feasibility to opening day. The multiple engineering milestones from early Alternatives Analysis to Record of Decision; the political challenges facing local jurisdictions who must approve planning alternatives, environmental impacts, and revenue measures; the local dynamics among environmentalists, housing advocates, developers, neighborhood and business interests regarding corridor alignments and station locations; and the changing funding decisions made by Congress and the FTA all combine to lengthen the transit building process when using Federal funds. The typical time frame is realistic, yet daunting.

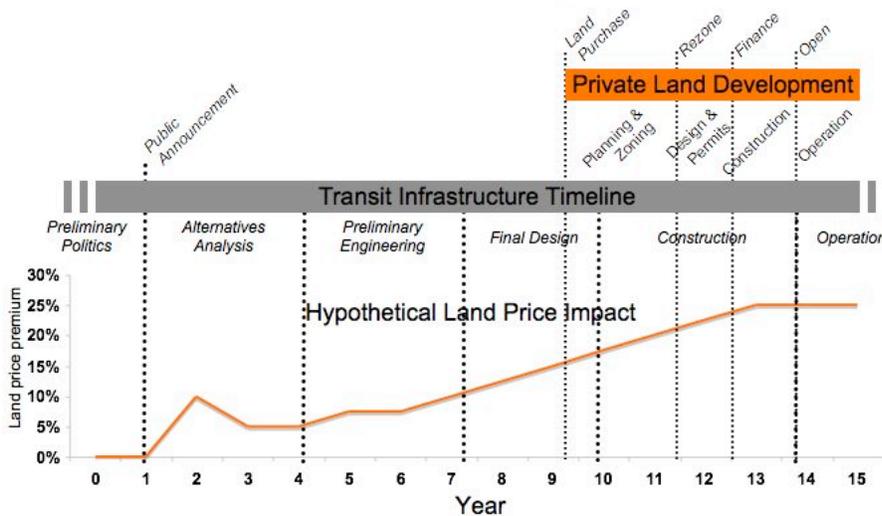
Compare 10–15 years for transit implementation to a typical timeframe for development projects – site acquisition, entitlements, design, construction, and initial leasing takes between 3–5 years. This time differential between transit and development discourages most developers from focusing on future station areas as viable investments. It's difficult to justify spending much time, effort or money on

site acquisition for TOD's when the payoff is so far down the road. Investors can often find more profitable investment vehicles.

Because transit is a decade away, few developers are at the table when transit is initially planned. Without an advocate, TOD real estate objectives can be lost amongst a myriad of other political concerns, funding criteria, and expert opinions. It is no surprise that difficulties arise when developers arrive on the scene just before transit opens and find that transit engineers, urban planners, and other interests spent upwards of a decade building transit systems in areas that are not suitable for real estate development.

In addition, if land markets are viable, land speculators often arrive on the scene soon after transit implementation intentions are revealed. Utilizing debt financing and private equity, speculators buy and sell land on short cycles and drive up prices during early stages of transit planning.

Land Prices Rise Between Transit Announcement and Development Kick-off



Source: Emerson, Donald; "Successfully Navigating the FTA New Starts Process"; PB Consulting, 2006

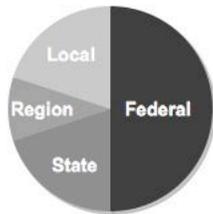
Figure 3 – Transit Infrastructure v. Real Estate Development Timeline

Dominant Transit Financing Source Promotes Station Locations in Poor Real Estate Markets

As seen in Figure 4, government financing for transit infrastructure is dominated by federal funds from the Federal Transit Administration (FTA). The FTA issues funds through a competitive process and transit system designers adjust their proposals to meet the FTA guidelines.

Federal Funds Typically Dominate Transit Infrastructure Financing

Typical Transit Funding Sources



FTA “Cost Effectiveness” Funding Criterion Determines Transit Design

Promotes simple systems along inexpensive right-of-way
cheap land = poor markets

$$\text{Cost Effectiveness} = \frac{\Delta \text{Capital Cost} + \Delta \text{Operations} + \Delta \text{Maintenance}}{\Delta \text{Hours of User Benefit}}$$

Must achieve “medium” rating to overcome FTA hurdle for consideration regardless of other attributes

Promotes attracting more riders in low-cost manner
Park & Ride v. development

Source: Emerson, Donald; “Successfully Navigating the FTA New Starts Process”; PB Consulting, 2006

Figure 4 – Federal “Cost Effectiveness” Criterion Dominates Transit Infrastructure Design

FTA decision makers focus heavily on their “Cost Effectiveness” calculation.¹ Essentially a cost-benefit ratio, the calculation promotes the lowest cost means to attract the greatest ridership. Transit designers are given incentives to build a low-cost park & ride parking spot – assumed to generate one round trip per day – rather than pay a higher land price to construct a station near an existing development. In doing so, federal officials are pushing transit towards low-cost land – low-cost land indicating a poor real estate market – rather than pushing transit towards better real estate markets where land is more expensive and TOD potential is much greater.

Transit Implementation and Real Estate Development Financing Incentives Are Misaligned

The disconnect between transit implementation objectives and real estate development incentives is perpetuated by the distinct financing structure of each. Transit finance is dominated by government sources that are allocated competitively to projects with the lowest risk and lowest cost. On the other end of the spectrum, real estate development finance focuses on balancing risk and costs with rewards.

¹ Emerson, Donald; “Successfully Navigating the FTA New Starts Process”; PB Consulting, 2006; Accessed 2/1/09 online: <http://www.indympo.org/SiteCollectionDocuments/www.indympo.org/PDF/ftanewstartsprocess.pdf>

Transit Funding Incentives are Policy-based While Real Estate Finance is Market-based

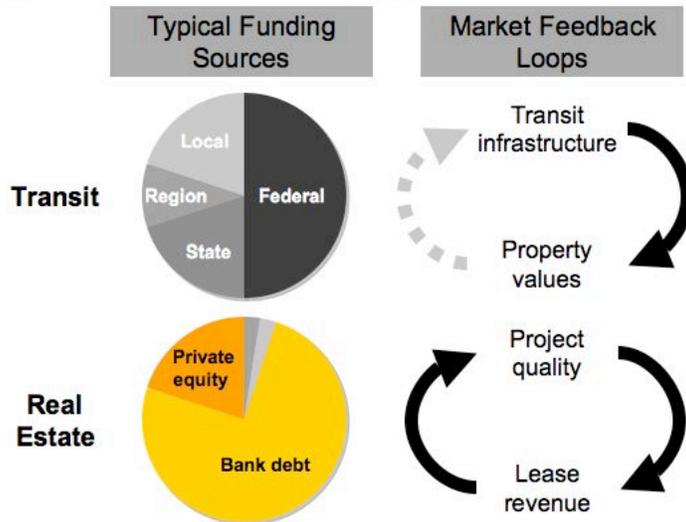


Figure 5 – TOD 1.0 Financing Components and Missing Market Feedback Loop

The outcome of this financing disconnect is exhibited in vacant land and acres of park & ride lots surrounding transit stations throughout the country. Because policy-driven transit finance pushes transit towards low-cost land in poor real estate markets, TOD is often infeasible around these stations.

Transit and Real Estate Implementation Involve a Complex Array of Players

Numerous parties are involved in TOD implementation – both delivering transit and developing real estate. The process includes government entities at the federal, state, regional, and local level. Private players include for-profit and non-profit entities. Special interest groups and advocates are also involved in TOD implementation.

TOD 1.0 Requires Coordination Of Numerous Institutions With Individualized Goals

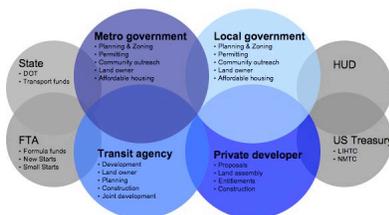


Figure 6 – TOD 1.0 Participants

A growing influence on transportation policy and investment has emerged with greater force – an expanding group of “special issue advocates” who look beyond the goal of increased mobility to advance their particular issue. TOD proponents include

social justice organizations, affordable housing professionals, “good planning” coalitions and open space preservation advocates. Today, these players play a regular role in the process and are often provided a seat at the transit planning table from the outset to help transit plans achieve greater political support.

The demands these various groups place on transit and TOD often degrade real estate revenues, increase project costs, and erode real estate profits. This can make TOD projects relatively unattractive real estate investments. While all parties play an important role in TOD implementation, their number and diversity of interest can create complexity that contributes to unsuccessful TOD outcomes.

Public Sector Cannot Justify Adequate TOD Subsidies

Many developers will tell you that a subsidy could make their project profitable, attract investors, and spur TOD development. And this is probably true. However, all of the sizable hindrances working against TOD require a counterbalancing subsidy of equal or greater magnitude. Still, many jurisdictions have found the means to partially subsidize many TOD sites.

Successful first-generation TOD 1.0 has relied on various public sector subsidy and assistance strategies to help offset costs. Subsidized debt financing has reduced debt burdens for TOD projects. Likewise, community development grants, state grants, and tax increment (TIF) bonds have been successfully incorporated into TOD funding. Government-owned property has also been contributed to help lower land costs.

Several strategies have been suggested to alter this systemic challenge of higher development costs. Chris Leinberger, an urban strategist with the Brookings Institution, has suggested that real estate cultivate a new level of patient private equity with different return and timing expectations.² In this way, TOD projects can prioritize long-term returns, cover greater up-front costs, and attract standard short-term debt financing. This approach offers a strategy to address the timing and infrastructure burden typical for station area development. Given near term lending and market conditions, this approach is not likely to be tested for several years.

Conventional TOD Assistance:

- Direct financial grants for:
 - Housing affordability
 - Infrastructure
 - Land procurement
 - Minority-Owned Business Development
- Publicly funded below-market rate debt financing
- Low-interest municipal/infrastructure bond financing
- Tax increment financing

² Leinberger, Chris: “Back to the Future: The Need for Patient Equity in Real Estate Development Finance”; The Brookings Institution, 2007

- Below-market rate transfer or lease of government owned land
- Expedited building permits and permitting costs

TOD 1.0 Has Lacked The Recipe for Success

As described above, TOD 1.0 suffers from cost, timing, and transit funding issues. Most fundamental, transit is often built in market areas that are not suitable for TOD development. Walkable, sustainable, and equitable TOD has considerable cost burdens relative to other development types and either extensive subsidies or superior market locations can help TOD generate profit levels that make it a relatively attractive investment. Subsidies work – even in the worst markets – but are limited in scope and scale. Ultimately, successful TOD requires good markets, good station areas, and excellent coordination between numerous parties all dedicated to its success.

To reach a new level of execution success, TOD will have to better adapt to the unique adversity it faces. Transit planners and engineers will need to be cognizant of the real estate markets where they propose to build stations and governments will need to work with the private sector to overcome timing and cost related issues. If TOD is to succeed consistently, a new paradigm is required.

TOD 2.0 – “Coordinated Corridors”

In a new TOD 2.0 paradigm, transit implementation is subsumed as the first phase of TOD implementation. Real estate market considerations currently fall outside of the objectives of transit planners because their TOD 1.0 financial incentives promote low-cost, efficient transportation with near disregard of real estate markets. However, when treated as the first phase of a sequential process, transit planners must consider the real estate potential required to successfully implement later steps of their process. Because real estate markets differ along transit corridors, communities will have to plan for TOD at the corridor scale, not just at the project or station area level. Inter-jurisdictional collaboration will have to overcome disproportionate benefits and burdens generated by corridor-wide TOD planning. Finally, a new TOD 2.0 coordinating entity will be required to bring “coordinated TOD corridors” to fruition.

TOD 2.0 Merges Transit and Real Estate Development Processes

Historically, transit implementation and real estate development have been treated as distinct processes. As discussed in greater detail in Appendix 1, this paper boils these two complex processes down to three steps, A through C. In both processes, Steps A through C are sequential and each step is profoundly influenced by the execution of all prior steps.

What has not been given enough credence in TOD conversations is the influence that Transit Steps have on Real Estate Steps. For instance, locating stations (Transit Step B) in undeveloped pasturelands will require significant infrastructure development (Real Estate Step B) before vertical development (Real Estate Step C) can occur. TOD site location choices – and therefore real estate market choices – are actually made by transit planners when they determine transit routes and station locations. TOD 2.0 recognizes these heretofore-distinct processes into a sequential six-step TOD implementation process that focuses on vertical development as the final outcome.

TOD 2.0 Considers Transit and Real Estate Implementation One Contiguous Process

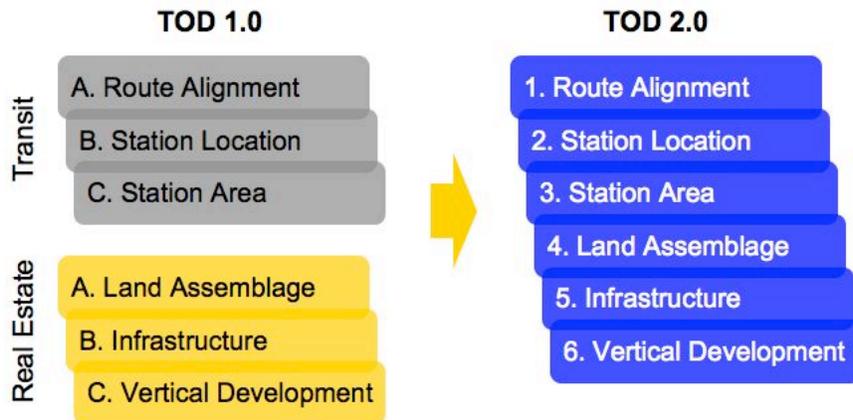


Figure 7 – TOD 1.0 v. TOD 2.0 Implementation Steps

TOD 2.0 Transit Planning Focuses on Real Estate Potential

As an alternative to TOD subsidies, building TOD in better real estate markets can improve real estate profitability and make TOD a competitive real estate investment. Higher revenues achieved in better real estate markets can overcome the higher costs and greater complexity inherent in TOD. Figure 7 illustrates how shifting “up market” improves TOD profitability.

Building Transit in Superior Real Estate Markets Can Spur TOD Development

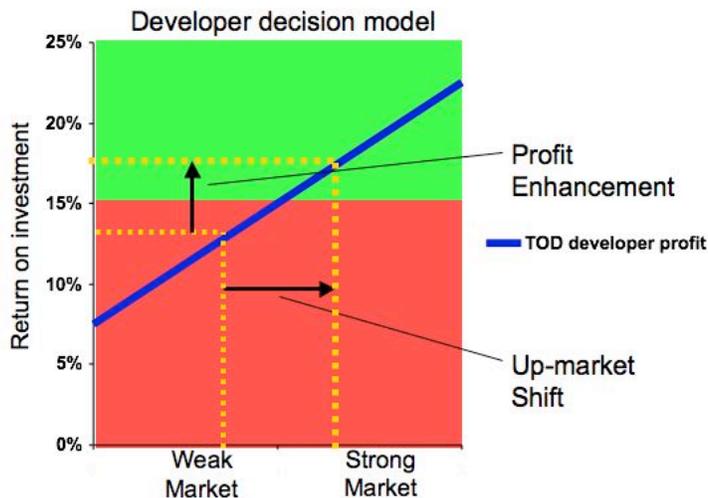


Figure 8 – TOD can become a competitive investment through a market shift

Combining transit and real estate development into a six-step real estate focused TOD implementation process requires extensive adjustment to the following:

- 1) Transit planning guidelines
- 2) Transit financing incentives
- 3) Communication between transit planners, communities, and developers

To work in a sequential and interdependent TOD 2.0 process, transit planning standards will have to be reconsidered and new guidelines implemented. New guidelines will have to consider:

- Real estate market forces in routing decisions
- Local real estate market forces in station location choices
- Real estate project impacts of station area designs.

To achieve this, transit planners will have to gain understanding, and perhaps some skills, of the real estate development sector.

Greater financial integration between transit implementation steps and later steps of TOD 2.0 implementation can take several routes:

- The most influential option is that FTA funding criteria be adapted to focus more on TOD potential. Federal funds represent 50% of transit capital financing and act as de facto transit planning guidelines.
- Also, a new market-based transit funding source, one earmarked for real estate acquisition and development, could alter the incentives of transit planners. Such a funding source could supplement or substitute for FTA funding and might be based on land sales, shared development fees, property tax funds, or other real estate related revenue streams.

Other routes likely exist but are not contemplated in this paper.

Additionally, communication between transit planning and later steps in the TOD 2.0 process will require advancements. TOD players must speak either a common language or all their counterpart's technical "languages." Conversations will also have to occur between planners and developers and the actual TOD developers along a particular transit line may not be identified until a decade after that conversation needs to occur. New forums will have to be developed, perhaps between transit planners and a developer stakeholder group that can help overcome the timing discrepancies inherent in TOD implementation. Most importantly, conversations will have to address the varied interests of all parties involved and may require a process facilitator.

Transit Planners Determine TOD Success By Selecting Routes, Station Locations, and Station Area Designs



Figure 9 – 2x2 Figure of good development

Communities and Land Use Planners Must Consider Development at the Corridor Scale

To maximize TOD in the TOD 2.0 process, communities and land use planners will have to work with transit planners at the corridor scale. Transit infrastructure may pass through several jurisdictions and, without intervention, each would attempt to maximize retail sales taxes, increase park space, or meet other community needs. It is also likely that each municipality would zone for optimal, or "idealized," TOD containing all possible community benefits. However, the real estate markets along a corridor vary substantially and "ideal" TOD can only occur in exceptional market conditions. If station areas are zoned to match real estate markets and considered at the corridor scale, a greater quantity and quality of TOD can be built.

Zoning For “Ideal” TOD at Each Station Ignores Local Market Demand - Yields Minimal TOD

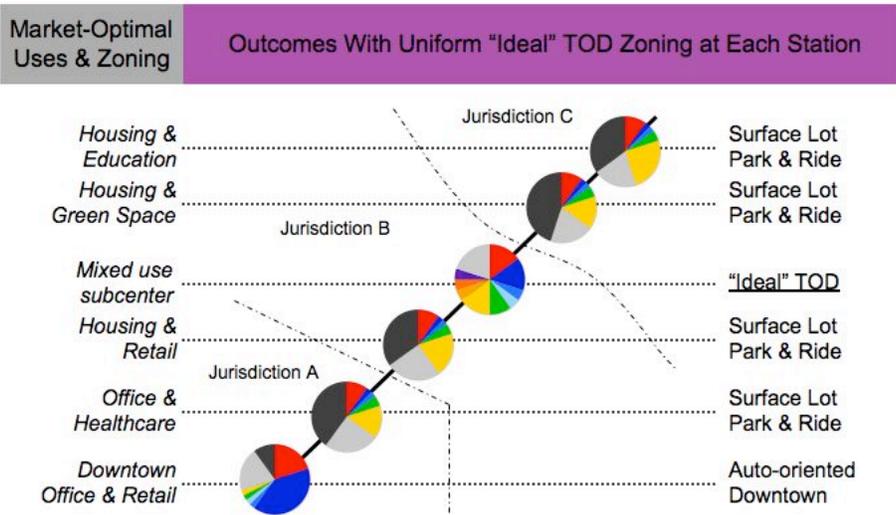


Figure 10 – Locally focused TOD Zoning Yields Limited Successful TOD

Market-based Zoning at Corridor Level Maximizes Development at Each Station

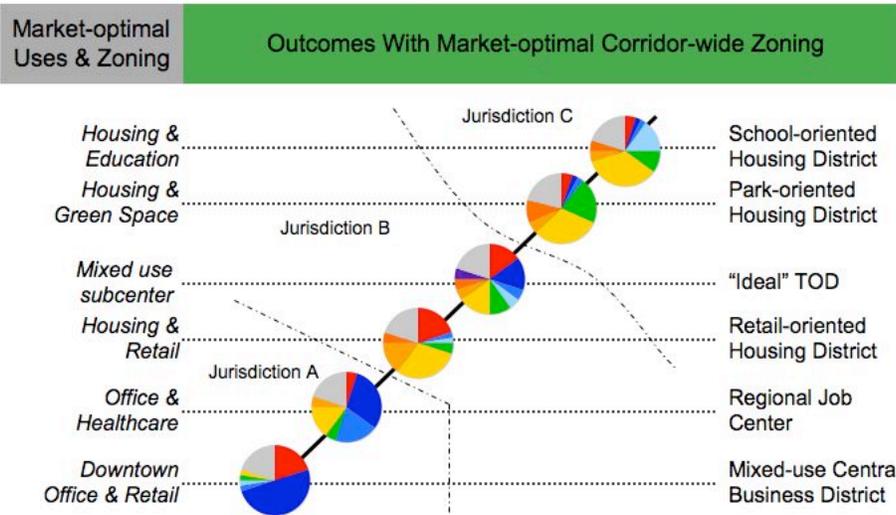


Figure 11 – Zoning corridor-wide for TOD according to station area markets maximizes TOD potential

Aggregate Corridor Outcomes Optimized With Corridor-wide & Market-based TOD Zoning

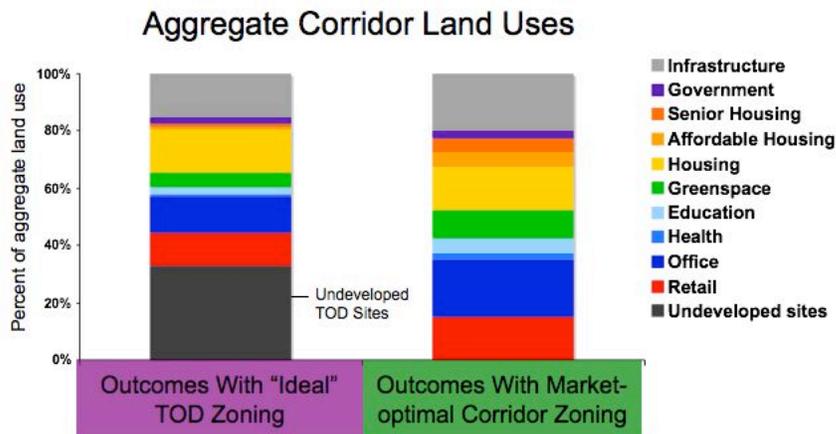


Figure 12 – Aggregate TOD outcomes are optimized with corridor-wide planning

Corridor-wide Planning Will Incorporate Existing Communities in TOD Optimization

Providing existing communities with new transit can have significant corridor-wide real estate impacts:

- Existing office & commercial near a new station makes new housing development more feasible on undeveloped sites at other stations along the corridor
- Existing recreational, open space, and other public facilities near new stations makes all undeveloped sites more valuable along the corridor
- Existing households living along the corridor makes new retail development more feasible near new stations

Providing existing communities with new transit can have significant transit impacts:

- Can provide immediate patronage and farebox revenue
- Can help balance bi-directional passenger flows

Existing communities benefit from new transit service:

- Enhanced transportation options
- Improved access to other communities
- Greater access to new TOD
- Appreciating real estate values

TOD 2.0 Implementation Must Overcome Disparate Station Area Benefits and Burdens

Considering TOD at the corridor level is complicated by the fiscal and social impacts on local jurisdictions. These impacts may disproportionately benefit some jurisdictions or burden other jurisdictions. Inter-governmental agreements will have to be struck to balance benefits and burdens evenly across a new TOD 2.0 corridor so that all jurisdictions are willing to participate in corridor-wide TOD planning.

As an example, an existing community may experience gentrification with rising property taxes that push out original residents. In distributing uses along a corridor, some communities may receive a disproportionate share of affordable housing or park space. Balancing benefits and burdens along the corridor will be necessary to gain community support for TOD 2.0.

Fiscal impacts will need to be balanced carefully as well. Some jurisdictions, for instance those with station areas predominantly zoned for housing, may suffer a disproportionate fiscal burden related to schools. Likewise, a jurisdiction with a station area zoned as open space may be burdened with maintenance and operations costs and no commensurate property tax benefits. These jurisdictions may suffer financially from corridor-wide TOD planning.

Potential cost burdens

- New park operations
- Increased school enrollment
- Additional municipal services

On the flip side, some jurisdictions may have station areas zoned for new retail and commercial development that generate new property and sales tax revenues. These jurisdictions will benefit greatly from corridor-wide TOD planning.

Potential Revenue Improvements

- Enhanced real estate values and property taxes
- Additional sales tax receipts around stations
- Profitable parking charges for limited resource

Because benefits and burdens may be disproportional allocated across jurisdictions when planning for TOD at the corridor level, governments will be reluctant to support plans that benefit other areas more than their own. To achieve TOD 2.0, some form of inter-government agreement (IGA) will have to be produced so that all jurisdictions can fairly share transit and TOD benefits and costs. The TOD 1.0 process does not have an entity that can manage this type of coordination. TOD 2.0 may require the formation of new entity to broker IGA and produce fair fiscal results for the various jurisdictions.

Coordinating Entity Required to Accomplish TOD 2.0

TOD 2.0 merges two historically separate processes that occur along different timelines, involve different parties, require different expertise, and have very different incentive structures. Due to the complexities that TOD 2.0 introduces relative to TOD 1.0, a new entity must be created. A TOD 2.0 coordinator will need to speak all the technical languages of the various parties involved in TOD implementation and carry out a bevy of coordination responsibilities so that TOD can be optimized successfully.

TOD 2.0 Leverages Coordinating Entity to Advocate Market Perspective Throughout Transit Implementation Process

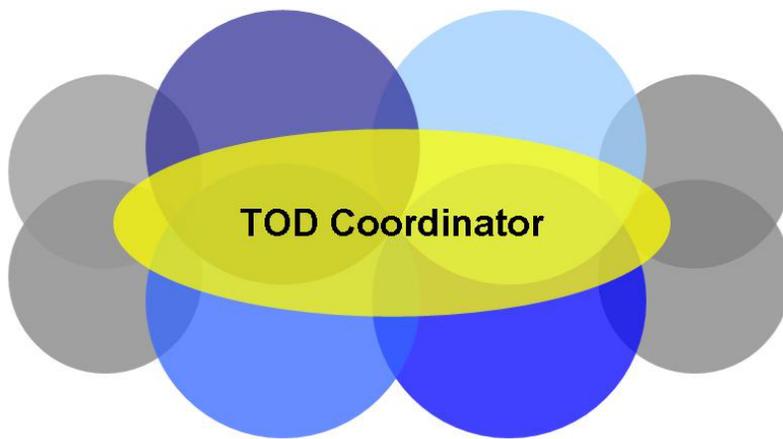


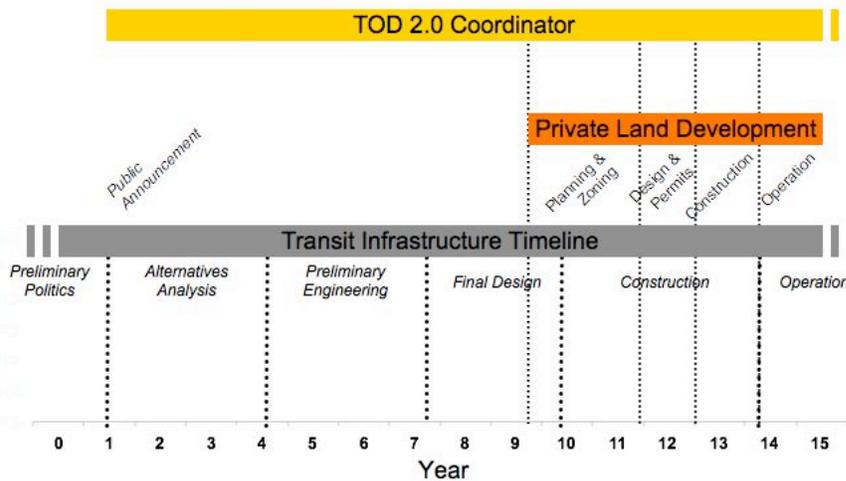
Figure 13 – TOD 2.0 Includes a Coordinator That Fills an Organizational Gap

Implementation Areas Requiring Integrated and Coordinated Decisions

- Align route with existing and future destinations
- Locate stations as part of larger development plan
- Manage integration of planning, engineering, and funding
- Facilitate PPP for Value Capture
- Execute Inter-Governmental Agreements to balance benefits and burdens along corridor
- Acquire key parcels that are essential for TOD implementation
- Allocate uses and entitle station areas across entire length of corridor
- Extend corridor mobility with frequent shuttles (similar to Boulder CO)

Additionally, the TOD Coordinator will help overcome the timing gap between Transit Implementation and Real Estate Development.

TOD 2.0 Coordinator Role Begins When Transit Is Introduced and Bridges TOD Timing Gap



Source: Emerson, Donald; "Successfully Navigating the FTA New Starts Process"; PB Consulting, 2006

Figure 14 – TOD 2.0 Includes a Coordinator That Fills a Timing Gap

TOD 3.0 – “Livability Goal”

A new model, TOD 3.0, will give credence to TOD-related livability goals. Though it has not been explicitly recognized as a component of the TOD implementation process to-date, Livability Benefits have become the de facto TOD end-goal that extends from vertical real estate development. Livability Benefits now promoted by planners, community activists, and local organizations have become key drivers of transport and land use planning, and Livability frames the entitlements discussion for any new development, especially TOD. Affordable housing advocates, open space funds, and social equity organizations have long seen TOD as a means to a greater end but without recognition as the key outcome of TOD, they remain “fiscal burdens” or “policy hoops” that real estate professionals must overcome to achieve vertical development. Rather than perceive them as insertions in, additions to, and burdens on real estate development, TOD 3.0 considers Livability Benefits as the underlying framework for TOD.

Livability Benefits Become Part of TOD 3.0 Transit Planning Calculus

As a foundational step in the TOD implementation process, Livability Benefits become the driver for all prior process steps. Just as a TOD 2.0 paradigm shift forces transit planners to consider real estate development potential, TOD 3.0 requires transit planners and local partners to consider the Livability Benefits they are generating when they propose a new transit plan. As owners of later steps in the TOD implementation process, real estate developers will also need to include Livability Benefits in their planning and proformas. It is fair to say that developers have already

proceeded down this path as the standard TOD entitlement process including certain aspects of community benefits.

TOD 3.0 Focuses the TOD Implementation Process on Livability Benefit Outcomes



Figure 15 – New Step 7: Livability Benefits

Livability Has Been Championed by Communities and Codified in Recent Laws

Transit professionals must look beyond the mobility and access benefits that transit provides as community leaders and state laws have already expanded their expectations of transit.

Examples of Emerging Livability Drivers:

- Sustainability...energy efficiency, green building, minimal footprint, AB32 (CA), SB375 (CA)
- Housing Affordability...fair-share workforce housing, inclusionary zoning, jobs-housing balance
- Social Equity...new green industry jobs, training, transport access, goods & service accessibility
- Habitat...open lands, parks, watershed, conservation
- Local Preferences...density restrictions, historical preservation, limiting housing gentrification, walkability
- Global Warming...reduced Vehicle Miles Traveled

Livability Benefits are community specific, reflecting unique cultural, environmental, economic, and other factors. There is no complete list of Livability Benefits but Table 1 below outlines some potential community improvements that can be feasibly achieved through TOD.

Table 1: Livability Benefits Menu – Each Region to Determine Priorities

Category	Benefit Description
Mobility	<ul style="list-style-type: none"> • Pedestrian/Bicycle improvements • Parking (simple provision/shift to deck from surface parking) • Local shuttles • Car/bike sharing facilities
Equity	<ul style="list-style-type: none"> • Affordable housing • Diversity programs • Gentrification mitigation
Environment	<ul style="list-style-type: none"> • Site remediation • VMT Reductions / Air quality programs • Noise abatement • Water resources • Visual – e.g. façade enhancements • Habitat preservation
Public space	<ul style="list-style-type: none"> • Open/green space • Watershed enhancements • Recreation/active space • Streetscape enhancements • Trails • Historic structure preservation
Economic development	<ul style="list-style-type: none"> • Concentrating Green jobs • Job training • Small and Minority Business assistance
Education	<ul style="list-style-type: none"> • Kindergarten / Daycare / After-school services • Charter Schools • Magnet Schools
Services	<ul style="list-style-type: none"> • Street/Sidewalk cleaning service • Increased police patrols / Ambassador force • Farmers markets • Other social services
Infrastructure	<ul style="list-style-type: none"> • School facility improvements • Community facility construction • Undergrounding utilities • Upgrading infrastructure

TOD 3.0 Relies on the Coordinated Corridors of TOD 2.0

As discussed in TOD 2.0, trying to achieve “ideal TOD” at each station location will hamper vertical real estate development. Likewise, pursuing ideal livability goals at each station area (e.g. one park, one school, one farmers market, and 100 affordable housing units at each station node) could also hamper vertical development. TOD 3.0 will rely on TOD 2.0 coordination strategies to achieve maximum Livability Benefits corridor-wide.

TOD 3.0 Coordinates With Livability Proponents To Maximize Corridor-wide Livability Benefits



Figure 16: Coordinator can optimize Livability Benefits corridor-wide

Using the coordinated TOD 2.0 model, livability components can be achieved across a corridor. A corridor's need for public recreation facilities can be met in one station area that is suitable in location, land cost, and accessibility. The same corridor could have other station areas suitable for major office and retail developments that help reduce Vehicle Miles Traveled (VMT). Another station area may have limited development to help preserve historic structures while yet another has low land prices that can help subsidize a vibrant affordable housing development.

Influential advocates will continue to push for livability and, because TOD is one method of creating livable communities, they will advocate for TOD implementation on a national scale. There will be continued political pressure to increase transit access, frequency and connectivity. There will be local pressure to surround new transit infrastructure with Livable TOD. Transit planners, land use planners, and communities must make Livability Benefits a key driver of their policies, decisions, and actions as they move towards implementing successful TOD.

Conclusions

Current TOD implementation has yielded mixed results due to a number of inherent issues:

- TOD real estate development is burdened by higher costs
- Transit-oriented zoning cannot overcome poor real estate markets
- Transit implementation timing and real estate timing are asynchronous
- Transit funding sources cause stations to be built in poor real estate markets
- Transit and real estate financing drivers are misaligned – government-based v. market-based

- TOD implementation involves numerous players that are not necessarily focused on TOD outcomes
- Governments cannot justify the subsidies required to promote TOD around stations in poor markets

TOD 2.0 would make transit alignment the first step in the TOD implementation process. In a new comprehensive 6-step process, transit planners (early steps) would have to consider real estate markets and TOD potential when choosing transit routes, station locations, and station areas designs. Land use planners and communities would have to consider TOD real estate development at the corridor scale to match varied real estate markets and optimize corridor-wide TOD potential. Existing communities would play a foundational role in new transit corridors and make undeveloped station areas more valuable due to their transit access to existing goods, services, and real estate. An empowered TOD 2.0 coordinator would have to help balance disparate station area benefits and burdens, perhaps implementing Intra-Governmental Agreements to share corridor revenues and costs. The TOD 2.0 coordinator would also represent real estate development early in the transit implementation process and work with all of the players involved in TOD implementation.

TOD 3.0 would transform Livability Benefits – often promoted or demanded by planners, community members, or environmental advocates – into the ultimate goal of the TOD implementation process. Adding Livability Benefits as the 7th step of the process and the framework for all prior decisions transforms Livability Benefits from a cost burden on the real estate proforma into the fundamental design goal of transit planning and real estate development. By considering Livability Benefits early in a TOD 2.0 integrated process, real estate developers should still find profitable vertical development projects because their fiscal needs would be considered in the calculus when transit was initially designed.

There is considerable work to be done to achieve the progress proposed in this paper. In addition to enabling a TOD Coordinating Entity and making significant policy changes, the authors have explored adjustments to the TOD financing models that could foster the TOD 2.0 and TOD 3.0 transition. As discussed in Appendix 2, real estate value capture would likely play an important role in maximizing successful and more livable transit-oriented communities.

Next Steps

- Amplify the rationale for a coordinating TOD sponsor through APTA, CTOD, ULI, APA and other professional organizations.
- Investigate how DOT, FTA, HUD and other federal entities might endorse regional pilot programs.

- Explore conversations with selected transit agencies, MPO's, and local communities to identify candidate corridors to execute the emerging coordination model.
- Continue education with foundations, LISC, Enterprise, Living Cities, etc to flesh out financial models to support TOD 2.0 & TOD 3.0.

Appendix 1: Current (TOD 1.0) Implementation Steps

Implementation Step	Actions	Components Financed	Primary Financing Source	Secondary Financing Sources	Key Finance Criteria	Criteria Influence	Impacts on TOD
Transit Implementation Process							
A. Route Alignment	<ul style="list-style-type: none"> •System plans (transit agency in coordination with FTA, State, MPO, and municipalities) •MPO evaluates plans according to transport and land use funding policies 	<ul style="list-style-type: none"> •Systems planning •Transit/ROW alternatives analysis •Preliminary Engineering / Environmental •Transit design 	Federal grants	Region & Local match	Cost per rider	Cost per rider criteria leads to low-cost route selection in highway median or along freight corridor	Low-cost is economic indicator of low real estate potential
B. Station Location	<ul style="list-style-type: none"> •Land acquired for station areas •Station platforms developed 	<ul style="list-style-type: none"> •Platform location, elevation, & design •Station area land acquisition 	Federal grants	Region & Local match	Land & construction cost	Stations located above ground in low-cost areas away from existing development and markets	Initial TOD project must large enough to “create” new market and must overcome poor station configurations
C. Station Area	<ul style="list-style-type: none"> • Station specific plans created •Implementation of access components, landscaping, public spaces 	<ul style="list-style-type: none"> •Community Process •TOD zoning •Bus drop-off •Commuter parking •Pedestrian ways •Bike facilities •Open space/ Plaza 	Federal grants	Region & Local match	Cost per rider	Focus on bus connections and commuter parking as low-cost ridership generators	Stations become commuter park & ride facilities with limited real estate potential
Real Estate Development Process							
A. Land Assemblage	<ul style="list-style-type: none"> •Master Plan with land use phasing •Private land acquisition •“Joint development” agreements •Housing or redevelopment agency land acquisition 	<ul style="list-style-type: none"> •Land procurement •Development project planning & zoning 	Banks	Private equity	Feasibility of real estate development	Land purchased where government is willing to rezone for density	Some stations have little or no development
B. Infrastructure Development	<ul style="list-style-type: none"> •Municipal improvements (utilities, arterials, etc) •Other improvements funded through privately funded Special Districts 	<ul style="list-style-type: none"> •Roadways •Sidewalks •Bike lanes •Bus stops •Parking •Open space, Trails, Parks 	Public Infrastructure Bonds	Region, Local, Developer, Transit	Level of earmarked revenue from general fund or property assessment districts	Quality of infrastructure determined by real estate tax potential of new development	Development must have high-end component because commercial property values are determined by profitability
C. Vertical Development	<ul style="list-style-type: none"> •Environmental Impact Report •Detailed market analysis •Parking phasing •Community benefits Detailed designs •Project construction 	<ul style="list-style-type: none"> •Design •Entitlements •Sustainability infrastructure •Affordable housing •Local & Social equity goals •Construction 	Banks	Private equity, Foundation grants, State & local programs, LIHTC, NMTC	Net Operating Income (NOI)	Development occurs in profitable locations (high revenue, low cost)	Development may or may not occur because station area may not be as profitable as comparable sites

Appendix 2: Executing TOD 2.0 and TOD 3.0 – The Potential Role of Value Capture

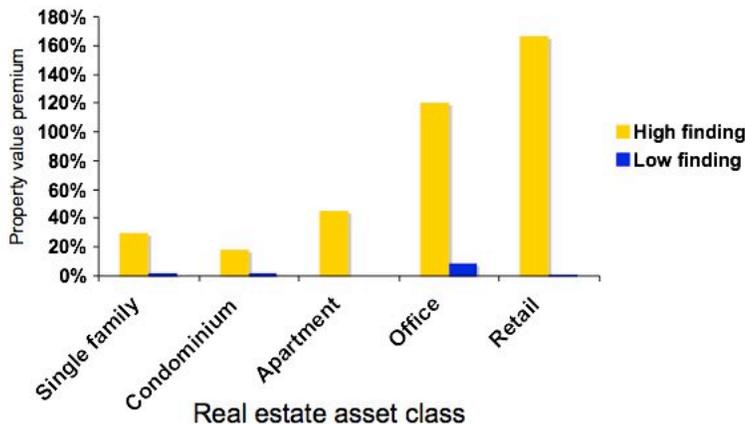
A shift to TOD 2.0 requires a greater integration of early transit implementation steps (Steps 1–3) – typically financed with policy-driven government funds – with real estate implementation steps (Steps 4–6) – primarily financed by market-driven private sector sources. As discussed in the TOD 2.0 section above, this can occur through significant policy changes or it can be spurred by introducing a new market-based financing component within transit implementation. A shift to TOD 3.0 requires greater focus on Step 7 Livability Benefits. Some TOD 3.0 Benefits are direct outcomes of transit or real estate implementation while others require outside financing. This paper posits that utilizing standard real estate based infrastructure finance tools like TIF or Property Tax Assessment Districts to finance transit would provide the market-based finance mechanism to change transit planning incentives while generating revenues for unfunded Livability Benefits.

Transit Infrastructure Generates a Market Response

As seen in Figure 17, Land values around transit infrastructure exhibit a premium price relative to land not served by transit. Capturing some of this value premium to pay for transit infrastructure could provide an incentive for transit infrastructure designers and engineers to consider the TOD potential at station locations.

Transit Infrastructure Investment Induces a Positive Market-Based Response

Study Findings of Land Price Premiums Near Transit



Source: Fogerty, Nadine; "Capturing the Value of Transit"; Center for Transit-Oriented Development; 2008

Figure 17 – Impacts of Transit on Property Values

Value Capture Tools Already Fund Other Infrastructure

The positive land market response generated by transit infrastructure investment is similar to land value responses generated by other infrastructure investments like municipal water, sewerage, and paved road access. The market relationship between infrastructure and land value is well understood by landowners and drives them to approve property tax assessments on their own property to pay for infrastructure implementation. Likewise, the underwriting criteria, risk factors, and performance thresholds are well understood by infrastructure bond markets that are willing to buy and sell bonds that are paid for by incremental tax revenues collected by special district entities/municipalities after they invest in new infrastructure. There are several ways that cities commonly capture the value generated by infrastructure investment.

Typical Value Capture mechanisms:

- Tax Increment Financing (TIF)
- Property–Tax Assessment Districts
- Mello–Roos Districts (CA)
- Sales Tax Districts
- Parking Districts
- Business Improvement Districts

Transit Related Value Capture is Neither New Nor Foreign

In the early 1960’s the City of Berkeley, California requested that the Bay Area Rapid Transit District (BART) build the Berkeley rail segment as a subway. Berkeley agreed to pay any cost difference incurred by the change from a concrete elevated system to a three–mile underground segment.³ Leaders feared that the planned elevated tracks would isolate African American neighborhoods with a “Berlin Wall” like barrier. In addition, property owners along the route preferred a subway alignment to help maintain their property values.

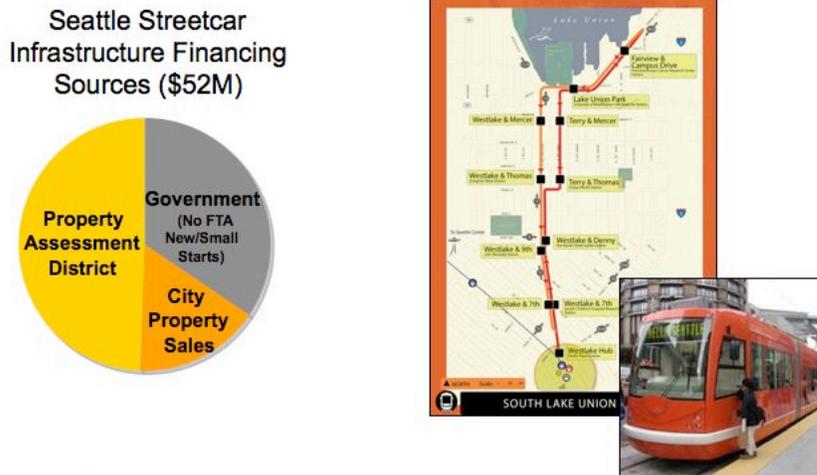
To fund the additional cost of building a subway, 83% of voters approved a “Special Service District” bond in October 1966. The \$21.5 million in bonds, less than 2% of BART’s total cost, were repaid over 30 years through a property tax assessment. It was estimated that the cost to homeowners would be approximately \$20 per year.

More recently, a Property Assessment District was successfully used in Seattle to pay for more than 50% of capital costs associated with their 2.6–mile South Lake Union Streetcar.⁴ In addition, the City of Seattle also owned property in the vicinity that it sold to developers at a premium over the purchase price. Some of this premium paid for part of the streetcar infrastructure.

³ Griffith, John and Dallas Holmes; “BART and the Victoria Line: A Comparison of New Commuter Transport in California and London;” *California Law Review*, Vol. 55, No. 3 (Aug., 1967), pp. 780–812

⁴ Accessed 2/08/09 online: <http://www.seattlestreetcar.org/>

Seattle Streetcar Infrastructure Primarily Funded by Property Value Capture



Source: <http://www.seattlestreetcar.org/> Accessed 2/08/09

Figure 18: Seattle Streetcar Value Capture Components

Seattle is a world-class example of Value Capture and few other transit-related examples of such magnitude exist in the United States. Value Capture funds typically cover only a fraction of the total infrastructure cost.

Even a small amount of Value Capture could align real estate potential with transit infrastructure financing. Aligning these sources will maximize TOD real estate development and real estate land values. Recapturing that incremental value can be targeted to offset both transit infrastructure and community benefit costs.

Value Capture Can Promote TOD 2.0

Value Capture offers opportunities to promote TOD 2.0 by tying site selection of transit infrastructure investments to private real estate market potential. Transit authorities and municipalities can be encouraged to adjust the route alignment and station location choices for a new transit system. The market-based incentive to maximize Value Capture potential, thus TOD potential, could complete the market feedback loop that is missing in transit infrastructure finance.

Value Capture Finance Adds Real Estate Focus to Transit Infrastructure Steps

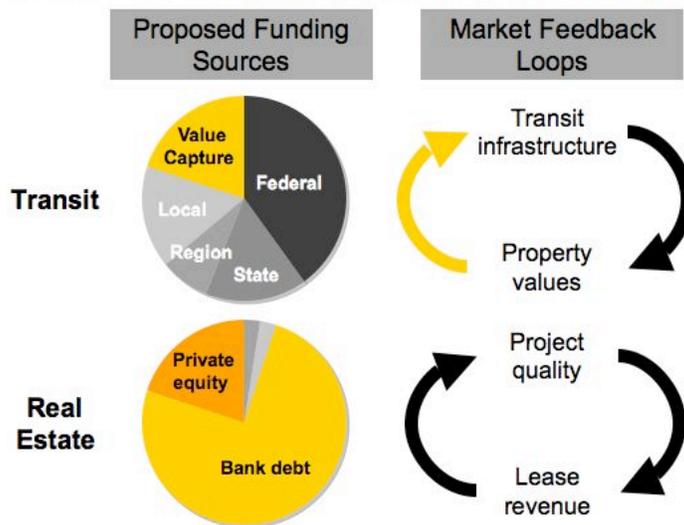


Figure 19 – Value capture adds a market-based feedback loop to transit finance

To maximize Value Capture, TOD implementation processes will:

- Modify route alignment to intersect strong real estate markets
- Optimize station locations to maximize development potential
- Alter station area design to focus on walkable, urban, mixed-use TOD
- Align zoning with real estate market
- Pay for shuttles to maximize Value Capture area

Value Capture shifts the focus of TOD implementation Steps 1–3 from FTA’s “low-cost” maxim to maximizing the Livability Benefits. The market-based feedback loop focuses on TOD potential and aligns financing throughout Steps 1–7.

Value Capture Can Fill Transit Funding Shortfalls

Value capture funds could become a key component of transit finance, especially if they overcome funding shortfalls that often exist on big-ticket transit projects.

Value Capture Can Help Fill The Gap in Local, Regional and State Support

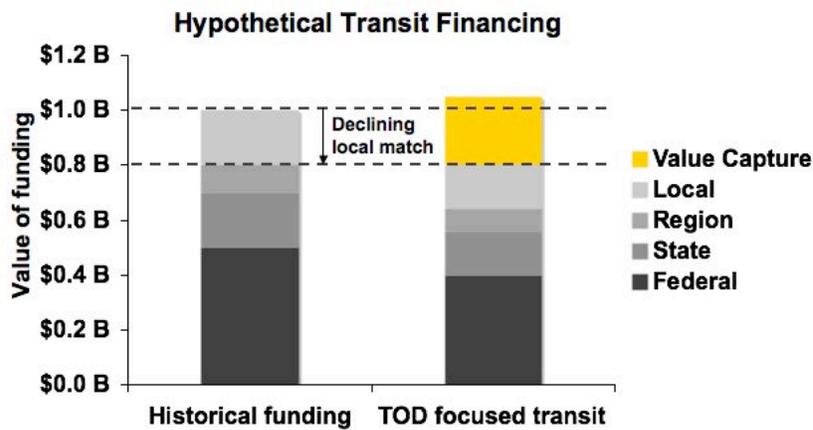


Figure 20 – Value Capture Funding to Fill the Gap

As recently as 2008, Cherokee Investment Partners helped Charlotte, NC evaluate potential TIF districts – a value capture option – to fund a \$76 million dollar funding gap that existed for their planned commuter rail system.⁵

Charlotte, NC’s Challenges:

- Financing \$76 million rail infrastructure funding gap
- Funding local station area infrastructure projects necessary to support commuter rail and transit-oriented development

Cherokee’s Role in Charlotte:

- Coordinating value capture across five municipalities and two counties
- Master develop TOD corridor
- Assess TIF for rail and local infrastructure

Cherokee is a private real estate fund that sought opportunities to invest in industrial or environmentally impacted properties near stations on the Charlotte system. They hoped to procure and reposition the properties to provide competitive market returns for the investors in their \$2 billion private equity fund.

Cherokee Transit-related Investment Principles:⁶

- Utilize a master developer approach versus piecemeal project approach

⁵ Norris, Lee and Mark Briggs; Personal interview with Ian Carlton; 1/9/08

⁶ Norris, Lee; “Sustainable Development Corridors: Role of Master Developer;” Cherokee Investment Partners; Presented 3/2008

- Align public and private sector stakeholder interests
- Acquire land with the end in mind
- Assemble and control land sooner rather than later to avoid speculation driving up prices
- Optimize efficiency in the land plan through shared facilities

Based on Cherokee’s input, several Charlotte area cities are implementing TIF districts to help fund the commuter rail line. The Cherokee experience provides insights into the coordination role that must be present to achieve value capture and fill transit finance gaps.

Value Capture Can Fund TOD 3.0 Livability Benefits

Funds from TIF, Tax Assessments or other real estate related value capture mechanisms can be used to fund community Livability Benefits. Just as Charlotte is using value capture to fund transit infrastructure, Dallas, Texas is using value capture to fund Livability Benefits along one of its Dallas Area Rapid Transit (DART) light rail lines.

Passed in late 2008 and implemented in early 2009, the Dallas TOD TIF Zone funds corridor-wide Livability Benefits.⁷ The Zone follows the DART Blue Line corridor approximately 12 miles from stations in affluent North-Dallas to low-income station areas in South-Dallas. It is estimated that the TIF corridor will generate \$182 million in tax increment that can be spent on public benefits.

“All of these areas have common redevelopment issues, including the need for urban scale/TOD zoning, infrastructure upgrades, and flexible incentives to encourage density that is transit and pedestrian friendly.” – TOD TIF Plan

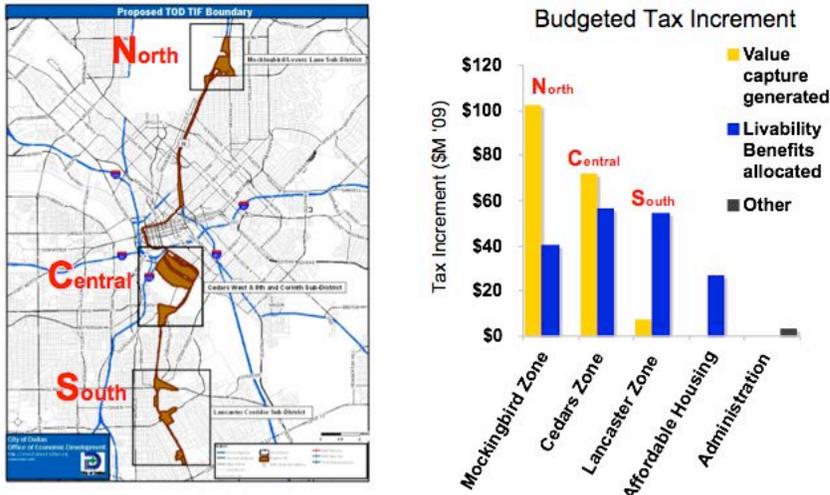
Proposed TOD TIF Zone funding allocations:

- Public infrastructure improvements
- Land acquisition, environmental remediation, and demolition
- Parks, open space, trails and gateways
- School improvements
- Transit-related improvements
- Facade restoration
- Grants for high-density projects
- Affordable housing development

The funds will be allocated almost evenly across the corridor even though the majority of the anticipated funds will be generated in the wealthier northern sector of the TIF district.

⁷ Office of Economic Development; “Dallas TOD TIF Plan;” City of Dallas; 2008

Dallas TOD TIF Zone Slated to Fund \$182M in Corridor-wide Livability Benefits



Office of Economic Development; "Dallas TOD TIF Plan," City of Dallas; 2008

Figure 21 – Dallas TOD TIF designed to fund corridor-wide Livability Benefits

The Dallas TOD TIF was implemented along the transit corridor 12 years after transit service so it did little to influence station location choices. This paper suggests that value capture be initiated before transit design so that it influences transit implementation decisions. However, the Dallas TOD TIF provides a concrete example of value capture’s ability to fund public improvements. That said, imagine the transit implications if Dallas had been focused on value capture from the start.

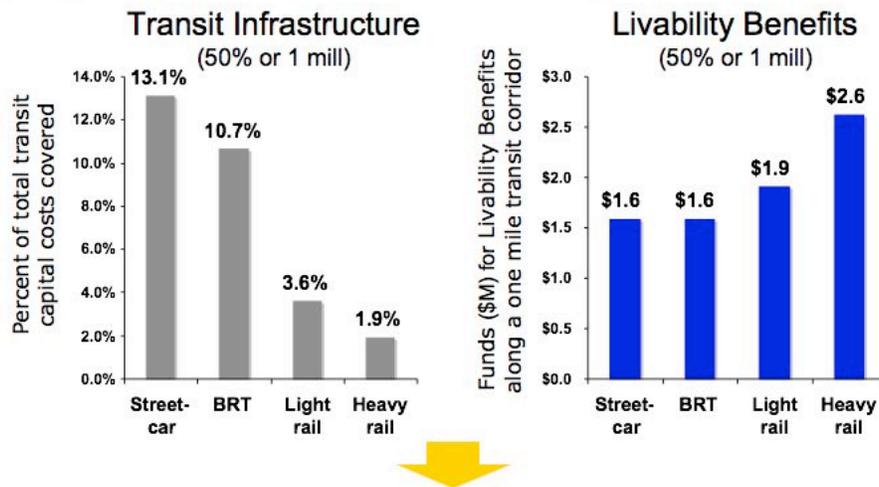
Value Capture Has Significant Potential

As exhibited, value capture funding mechanisms produce revenues that can be used to finance transit or fund Livability Benefits. Value capture mechanisms typically produce long-term revenue streams that can be used to pay bond interest payments. Bonding the revenue can provide funds up-front for capital expenses like transit infrastructure or park construction.

To understand the potential magnitude of value capture funding sources, this paper executes a back-of-the-envelope thought experiment on implementing several transit technologies in Alameda County, California. The county includes the cities of Oakland, Fremont, Berkeley, Livermore, amongst others. In the experiment, the paper assumes that value capture is conducted through a small 2-mill property tax assessment approved by property owners (\$2 tax per \$1000 in assessed value). The hypothetical proposal would raise taxes on the average single-family home by \$76 per year – less than a 2% increase in most municipalities and an even smaller increase when considering combined property tax and parcel tax liabilities. Using conservative assumptions regarding revenue potential, the paper estimated potential bond

proceeds. It then determined how much transit infrastructure could be funded by half (1 mill) and how much would be raised for Livability Benefits using the other half (1 mill). The full calculations can be found in Appendix 3.

A bonded 2-mill transit corridor-focused property tax in Alameda County, CA could fund:



Significant funds could be leveraged to promote TOD 2.0 & 3.0

Figure 22 – Value capture thought experiment

As seen in Figure 22, value capture mechanisms can produce substantial funds for transit infrastructure or Livability Benefits.

TOD 2.0 Coordinator May Also Manage Value Capture

While very successful in European and Asian contexts, there are very few successful transit-related value capture examples in the United States. Due to the funding mechanisms employed in TOD 1.0, there are few entities with incentives aligned with value capture. While transit agencies have the most to gain, they have come to rely on government grants and there is little incentive to push the value capture agenda. However, this is changing as budgets decline and transit capital grants become more competitive.

“It may take longer, but it’s easier to resubmit a Federal [Transit Administration] application five years in a row and delay the start of your [transit] project than it is to complete all the relationship and finance work that’s required [for value capture].”

– Transit Agency Staff, BART Property

Development⁸

⁸ Peguese, Bruno; Public comment at Rail~Volution conference; 10/29/08

Few other entities within the transit implementation process have the authority or scope to manage value capture execution, especially across jurisdictional boundaries. For this reason a coordinator must exist to align diverse players' interests and oversee the implementation of value capture.

As discussed in the TOD 2.0 section above, a TOD coordinator is also needed to maximize corridor-wide TOD potential. As exhibited in the Charlotte and Dallas case studies, third party involvement – Cherokee Investment Partners in those instances – can help encourage value capture implementation and coordinate corridor-wide TOD simultaneously. A coordinator attempting to maximize value capture will have incentives aligned with maximizing corridor-wide TOD 2.0. A third party value capture coordinator will have every incentive to overcome competition between jurisdictions by hosting inter-agency communication sessions and by brokering inter-governmental agreements. A coordinator can also represent the interests of TOD developers that have not yet been identified early in the process, ensuring that value capture mechanisms do not negatively influence development potential and making sure that value capture proceeds are spent on Livability Benefits that assist, rather than deter, TOD.

TOD 2.0 Coordinator Can Execute Value Capture Management Role



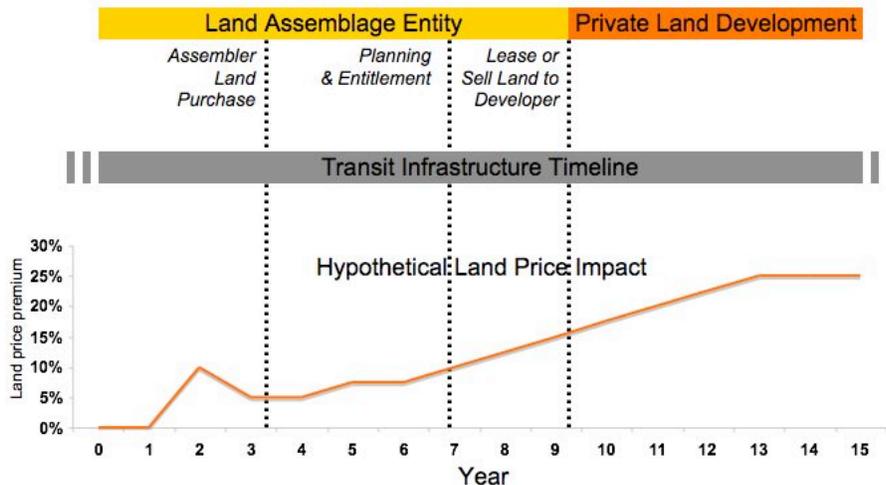
Figure 23: Value Capture Coordinator

Land Banking May Overcome TOD 1.0 Timing Discrepancies

Land banking is another widely used value capture mechanism. A Land Assemblage Entity, as shown in Figure 20, could assemble TOD sites early in the transit planning process to avoid speculation and appreciation that drive TOD site prices upward. The entity would bridge the timing gap that exists between transit implementation and real estate development and could sell land to real estate developers once transit has

reached critical implementation thresholds. Depending on the price sites are sold to developers, part or all of the value created by transit infrastructure investment can be captured and used to finance transit and fund Livability Benefits.

Land Assemblage Entity Can Overcome Asynchronous Transit & Real Estate Timing



Source: Emerson, Donald; "Successfully Navigating the FTA New Starts Process"; PB Consulting, 2006

Figure 24 – Value Capture focused Land assemblage entity fills timing gap

Potential Sources of Acquisition Funds:

- Value capture funds (patient equity) – e.g. Dallas TOD TIF case study
- Local foundations oriented towards livable communities (low cost debt) – e.g. Denver TOD Fund⁹
- Real estate investment fund (private equity)
- Bank Community Reinvestment Act lending (private lower-cost debt)

In any case, capital must be patient equity or low cost debt so that land can be held over the extensive transit implementation timeline. In the case of ongoing debt coverage, some properties will have to produce adequate cash flow.

To dispose of its land holdings and pay back potential equity investors, a land assemblage entity would have to act as a proponent of TOD in transit planning process and consider its exit strategy during the hold period. The land acquisition entity would conduct several steps:

- Contract market studies
- Conduct environmental remediation
- Demolish obsolete structures
- Execute environmental reviews
- Complete land use entitlements

⁹ Denver Office of Economic Development; "\$2.25 Million Investment to Ensure Affordable Housing for Denver Families"; <http://www.milehigh.com/newsdata/news/press-release/209>; Accessed 3/12/09

The land assemblage entity will have significant control over what is built on its parcels in the future and may even include deed restrictions at sale to further ensure TOD and Livability Benefits are produced according to their wishes.

At exit, a TOD land assemblage entity will want to ensure that land sale prices will attract buyers. In an effort to promote developer profit such that TOD will be an attractive real estate investment option, the land assemblage entity will likely sell land to developers at below market rates – essentially subsidizing TOD projects. In addition, the completed entitlement process will also act as a financial subsidy due to avoided costs and risks. Even after achieving these goals, the land assemblage entity may be able to sell land at “profit” to TOD developers. That captured value could be returned to investors (foundations, TIF managers, etc) or could be used to directly fund Livability Benefits.

This entity would also have a land-owners seat at the table when transit and TOD are being contemplated and could be guaranteed votes for implementing other forms of value capture, like property owner approved tax assessment districts. Ultimately, a value capture land assemblage entity would be a key tool in successfully implementing TOD 3.0 and maximizing Livability Benefits.

Value Capture Is Just One Imperfect Option to Help Achieve TOD 2.0 & 3.0

While this paper presents value capture as a potential strategy for achieving TOD 2.0 and TOD 3.0, other means of achieving more successful TOD should be pursued. For instance, policy changes could also advance TOD success. Pursuing value capture myopically is not an effective strategy, as it has inherent limitations and should not be considered a funding or TOD panacea.

Potential Value Capture Issues

- Fund raising – Scale? Scope?
- Enabling legislation – Enacted? Limitations?
- Political viability – Government officials? Constituents?
- Administration – Government/transit agency capability?
- Timing – Funds available pre-transit construction? Value generation timeline?
- Counterproductive effects – Interactions with other funding? Real estate development burdens?

Given these potential issues, TOD advocates should still pursue policy changes that will help promote TOD 2.0 and TOD 3.0. For instance, FTA New Starts policy should be reevaluated so that TOD is not discouraged through the “Cost Effectiveness” criterion. In fact, FTA regulations could be adjusted to require value capture for transit projects and jumpstart the use of value capture mechanisms.

Certainly comprehensive policy changes could yield significant strides towards TOD 2.0 and TOD 3.0. There are likely other means, beyond policy changes and value

capture implementation, that can promote more successful TOD but the authors of this paper have not identified them. Assuming today's policy framework remains in place and in the absence of alternative suggestions, this paper promotes the implementation of value capture to help finance transit infrastructure and fund Livability Benefits towards more successful and more livable transit-oriented communities.

Appendix 3: Alameda County, CA Value Capture Estimates

Bay Area Value Capture Calculations Transit Comparisons for Alameda County (Cities of Oakland, Fremont, Livermore, etc) Ian Carlton

	Inputs		Calculations			Notes/Sources
	Street-car	Bus-Rapid-Transit	Light rail	Heavy rail		
Transit technology						
Cost estimates						
Cost per mile (\$[2008]/mi)	\$ 12,100,000	\$ 14,900,000	\$ 52,300,000	\$ 141,400,000		Henke; Parsons Brinkerhoff Estimates
Stop Spacing (mi)	0.33	0.33	0.33	0.50	1.00	
Property value estimates						
Minimum housing units within a half mi radius of a transit station (units)						Source: MTC; Note: Streetcar density requirement assumed equal to BRT
Land area within MTC defined radius (sq mi)	0.79					Note: City of Berkeley has a housing unit density of 4482 (2000 US Census)
MTC required residential density (units / sq mi)						
Radius of catchment area - for wide station spacing (mi)						
Width of catchment corridor - for close station spacing (mi)						
Station catchment area along one mile of transit (sq mi)						
Residential units in catchment along one mile of transit line (units)						
Average assessed single-family home value 2008-09 (\$)						Source: MTC
Total single family housing value along one mile of transit (\$)	\$ 367,445	\$ 367,445	\$ 367,445	\$ 367,445	\$ 367,445	Source: Thomsen
Value attributable to single-family residential (%)	63.6%	63.6%	63.6%	63.6%	63.6%	Source: Thomsen
Assessed property value along one mile of transit (\$)	\$ 1,349,672,318	\$ 1,349,672,318	\$ 1,619,606,782	\$ 2,226,063,336		

Proposed property tax assessment

Proposed tax assessment district levy (mills, %) 0.02%
 Estimated average Alameda levy - varies by city (mills, %) 1.15%
 Proposed levy increase as percent of existing levy (%) 1.7%
 Proposed annual assessment on the average home in 2008-09 (\$) 73.49

Revenue calculations

Incremental revenue generated along one mile of transit (\$) \$ 269,934 \$ 269,934 \$ 323,921 \$ 445,213
 Estimated administration and contingency set aside (\$) \$ 5,339 \$ 5,339 \$ 6,407 \$ 8,806
 Estimated annual revenue that can be bonded (\$) \$ 264,595 \$ 264,595 \$ 317,514 \$ 436,406
 Bond value using 12x rule & no tax assessment growth (\$) 12 \$ 3,175,141 \$ 3,175,141 \$ 3,810,169 \$ 5,236,875
 Bond funds dedicated to Livability Benefits along one mile of transit (\$) 50% 1,587,571 1,587,571 1,905,085 2,618,438
 Funds dedicated to transit construction costs along one mile of transit (\$) 50% 1,587,571 1,587,571 1,905,085 2,618,438
 Transit capital cost coverage (% of total cost) 13.1% 10.7% 3.6% 1.9%

Sources

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 Henke, Cliff; Senior Analyst, Americas Transit Market, Parsons Brinckerhoff; Personal interview, 3/18/09

