

# Capturing the Value of Transit

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## **ABOUT THIS REPORT**

**Capturing the Value of Transit** was written by Reconnecting America's Center for Transit-Oriented Development. The Center for TOD is the only national nonprofit effort dedicated to providing best practices, research and tools to support market-based transit-oriented development. We partner with both the public and private market sectors to strategize about ways to encourage the development of high-performing TOD projects around transit stations and to build transit systems that maximize the development potential. The Center for TOD is a partnership of the national nonprofit Reconnecting America, the Center for Neighborhood Technology, and Strategic Economics, an urban economics firm in Berkeley, CA.

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## I. INTRODUCTION

Over the past decade, it has become increasingly clear that the presence of transit can increase property values and result in valuable development opportunities. In this era of constrained transit funding and widespread demand for new and expanded transit systems, policy makers, transit planners and elected officials are increasingly interested in harnessing a portion of the value that transit confers to surrounding properties to fund transit infrastructure or related improvements in station areas. This idea, known as “value capture,” is much discussed in planning, transit, and local government circles. However, confusion abounds. Where does the value come from? What is the best way to measure it? And, most importantly, what is the best way to capture this value? This purpose of this report is to offer a more nuanced and meaningful understanding of value capture strategies, focusing specifically on the potential to capture increased property values for the purpose of funding transit.

There is a growing awareness in the United States that public transit offers numerous economic, social, and environmental benefits, and the perceived value of these benefits is, to a certain extent, reflected in increased property values near transit stations. Americans are increasingly prioritizing the advantages provided by neighborhoods near transit, including economic savings to households, reduced carbon emissions, healthier lifestyles, fewer traffic accidents, and reduced suburban sprawl. At the same time, demographic and cultural changes are resulting in a growing interest in cities and urban lifestyles, which means that there is increased demand for the kind of neighborhoods that are most likely to be served by transit. These trends are only reinforced by recent spikes in oil and gas prices. Numerous studies have measured and documented a value “premium” for properties near transit, and many agencies and individuals are interested in tapping into this value.

It is no wonder that transit agencies are intrigued by value capture. Rising construction costs and competition for scarce federal dollars make it increasingly difficult to fund new transit systems and or system expansions. Value capture is seen as a way to pay for capital projects as well as a potential source of income for paying ongoing operating costs. However, transit agencies are not the only ones hoping to capitalize on the value created by transit. Local jurisdictions hope to tap into rising property values to encourage transit-oriented development (TOD) and help pay for neighborhood improvements such as local infrastructure, improved pedestrian linkages, and affordable housing. Meanwhile, property owners and developers see transit as a highly desirable amenity that has the potential to increase the value of surrounding properties and create lucrative development opportunities.

As various stakeholders attempt to capture the value created by transit, however, they are meeting with difficulties in measuring the extent of the potential value and finding the best ways to capture it. This paper attempts to address some of these challenges by:

- Summarizing the findings of previous studies that measure the impact of transit on nearby property values;
- Providing a detailed discussion of the role of property owners and developers in value capture strategies;
- Offering examples of tools currently used by transit agencies to capture the value of transit to help defray capital costs; and
- Providing a framework for thinking about what kinds of value capture strategies are possible in a given situation.

Section 2 offers some context to explain why transit agencies are interested in capturing the value of properties near transit, including a summary of results from previous studies that assess the impact of transit on property values. Section 3 takes an in-depth look at the motivations of property owners and developers, and how these motivations influence the potential for value capture strategies. Section 4 describes the most common value capture strategies used by transit agencies, and key findings are summarized in Section 5.

## II. MEASURING VALUE

Numerous studies have evaluated the impact of transit on surrounding real estate, and found that transit can generate a significant amount of value for nearby property owners. This section provides a summary of literature on the topic, beginning with some context about the history of transit in the US and other factors that have influenced interest in the topic of value capture over time.

### HISTORICAL CONTEXT

The idea of using transportation to open up new land for development, thereby increasing its value, is hardly new: after all, this was the basic motivation behind most of the privately developed streetcar systems in the early 20<sup>th</sup> century, which were built for the express purpose of maximizing the value of surrounding real estate. The rich history of the street-railway companies that operated in U.S. cities from the late 19<sup>th</sup> century to the mid-20<sup>th</sup> century has been documented by Scott Bernstein in *Street Smart: Streetcars and Cities in the Twenty-First Century*, along with an overview of the innovative financing mechanisms that they employed.<sup>1</sup>

Beginning in the late 1970s, a new wave of transit was built in the US, to provide rail transit in growing metropolitan areas that previously did not have urban rail systems, such as Washington DC, San Francisco and Atlanta.<sup>2</sup> These systems were built with the purpose of relieving congestion, and were funded entirely by the public sector. In contrast with the systems built before World War II, the new systems were built with the expectation that most transit riders would reach the station by car, and as a result there were few attempts to integrate new stations with surrounding land uses.<sup>3</sup>

The concept of value capture as a means to fund or recover the cost of public infrastructure investments became the subject of increased interest during this same period, particularly after the publication of *Windfalls For Wipeouts: Land Value Capture and Compensation* (Hagman and Misczynski, 1978). In this extensive study of the impact of public policy on land values, Hagman and Misczynski examined how windfalls to property owners that result from public infrastructure investment could be captured by cities (or other public agencies) through taxes or fees that are tied to the increase in land value.<sup>4</sup>

Another major wave of new transit was built beginning in the 1980's, consisting mainly of new light rail systems, most in existing freight rail corridors and on abandoned freight right-of-ways. Examples include San Diego (1981), Portland (1986), Los Angeles (1990), St. Louis (1993), Denver (1994), and Dallas (1996).<sup>5</sup>

This period also saw growing interest in transit-oriented development (TOD) as a way to promote sustainable, transit-supportive land use patterns near transit. Transit agencies such as the Bay Area Rapid Transit District (BART) and Washington Metropolitan Area

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<sup>1</sup> Bernstein, Scott. "How Streetcars Helped Build American Cities," in *Street Smart: Streetcars and Cities in the Twenty-First Century*, eds. Gloria Ohland and Shelley Poticha, (Reconnecting America, 2006).

<sup>2</sup> Schneider, Joachim. *Public Private partnerships for Urban Rail Transit*, Deutscher Universitäts-Verlag/GWV Fachverlage GmbH, Wiesbaden, 2004, p. 40.

<sup>3</sup> Belzer, Dena and Gerald Autler, *Transit Oriented Development: Moving from Rhetoric to Reality*, discussion paper prepared for the Brookings Institution and the Great American Station Foundation, June 2002.

<sup>4</sup> Hagman, Donald and Dean Misczynski. *Windfalls for Wipeouts: Land Value Capture and Compensation*, (American Society of Planning Officials, 1978).

<sup>5</sup> Schneider, p. 40.

Transportation Authority (WMATA) began to look for ways to promote the right kind of development near existing transit stations.

During the 1990's and 2000's the transit boom has continued. Cities such as Portland, Seattle, Little Rock, Tacoma, Tampa and Memphis are building new streetcar systems. And beginning in 2003, a new generation of transit systems are being planned, and in some cases financed, on a more extensive scale. While most of the previous wave of transit was planned one segment or corridor at a time, systems such as Denver, Houston and Salt Lake City are being planned and implemented at the system level. As these systems are planned and built, transit agencies are exploring new financing methods such as public private partnerships, and questions are arising about how these value capture strategies might be implemented on a broader scale.

## DEFINING VALUE

Clearly, the value of transit is not limited to increased property values. Transit has the potential to offer a multitude of environmental, social, and fiscal benefits, summarized in the table below:<sup>6</sup>

**TABLE 2.1: BENEFITS OF TRANSIT**

<u>Environmental Benefits</u>	<u>Social Benefits</u>
<ul style="list-style-type: none"> <li>▪ Reduced traffic congestion</li> <li>▪ Reduced fuel consumption</li> <li>▪ Better air quality</li> <li>▪ Reduced sprawl</li> <li>▪ Conservation of open space</li> </ul>	<ul style="list-style-type: none"> <li>▪ Improved social cohesion through positive interactions among people in a community</li> <li>▪ Improved fitness and health as a result of increased walking and biking</li> <li>▪ Reduced traffic accidents</li> <li>▪ Improved transportation options, particularly for non-drivers</li> </ul>
<p><u>Fiscal Benefits</u></p> <ul style="list-style-type: none"> <li>▪ Reduced road and parking facility costs</li> <li>▪ Economic development benefits through agglomeration efficiencies and increased productivity</li> <li>▪ Increased property values</li> <li>▪ Increased property tax revenues</li> </ul>	<ul style="list-style-type: none"> <li>▪ Reduced consumer transportation costs</li> <li>▪ Expanded labor market shed for employers</li> <li>▪ Improved access to job opportunities for workers (and increased labor market shed for employers)</li> <li>▪ Neighborhood revitalization</li> </ul>

To attempt to quantify the benefits listed above for any transit system or single transit station presents many challenges. Some of these benefits accrue to society as a whole, some to private interests alone, and several accrue to both the private and the public sectors. Furthermore, because many of these benefits are intersecting or are otherwise hard to disaggregate - such as the relationship between reduced sprawl and open space conservation - it can be very difficult to avoid double counting.

In spite of these challenges, many academic studies have attempted to quantify the benefits of transit in dollar terms. Depending on the researcher's area of interest, they have taken a different approach to the question of how to measure value, and not all of the studies relate specifically to real estate. For example, a 1986 value capture study of heavy rail examined the commute cost

<sup>6</sup> Cervero, Robert et al. *Transit-Oriented Development in the United States: Experiences, Challenges, and Prospects*, Report 102, Transit Cooperative Research Program, 2004; Litman, Todd, *Comprehensive Evaluation of Rail Transit Benefits*, Victoria Transport Policy Institute, June 2006.

savings in annual dollars for households within two miles of the Lindenwold Station in southern New Jersey (Allen, 1987).<sup>7</sup> Another study concluded that the total benefits of reduced wait times as a result of transit in the New York metropolitan area equaled \$3.7 billion per year (Anas, 1993).<sup>8</sup> Dunphy's study of residential prices in Southern California concluded that buyers would have to add 15 to 30 minutes to a daily commute in order to reduce a home purchase price by \$10 to \$15 per square foot (Dunphy, 1998).<sup>9</sup>

Looking at the benefits of mobility, reduced congestion, and higher property values for the U.S. overall, Lewis concluded that for each \$1 invested in transit services, the public realizes \$5 in cash savings (Lewis, 1999).<sup>10</sup> In Portland, the IBI Group determined that there has been \$1.9 billion in property development in the vicinity of the Portland Metropolitan Express system (Hack, 2002).<sup>11</sup> A study by the University of North Texas, which also focused on total investment like IBI Group's study in Portland, found that between 1999 and 2007, \$4.26 billion in development projects along rail lines were attributable to the presence of DART (Dallas Area Rapid Transit).<sup>12</sup>

As this list of studies implies, there is no standard measure of value for transit. Nonetheless, the majority of value capture researchers have selected the yield on property as the measure of value on which to focus. One reason for this is because in theory, most of the benefits of transit will be reflected in land value differences. Another reason is because an assessment on the incremental yield on property is a potential source of revenue that can be harnessed by the public sector to fund transit infrastructure or related improvements.

## **YIELDS ON PROPERTY AS A MEASURE OF VALUE**

Location theory, which is the study of the connection between spatial variation and economic rents, dates back to the work of German economist and geographer Johann Heinrich von Thünen. In 1826, von Thünen was the first to propose an association between improved transportation and higher property values. Within the context of modern urban transit systems, many studies have focused on the relationship between transit and yields on property in an effort to quantify the property value premiums that can be attributed to transit, and to test the theory that the accessibility benefits resulting from improved transit are capitalized into property values.

Throughout the U.S., evidence from the research literature has demonstrated that access to transit increases the value of nearby property. Data in Tables 2.2 and 2.3 show a summary of studies from the San Francisco Bay Area, San Diego, Portland, Sacramento, Chicago, St. Louis, Washington, D.C., Atlanta, and Dallas. Fifteen of these studies reported that properties that were located near a transit station experienced a premium effect in terms of obtaining a higher value than comparable properties without transit access. The studies listed in the attached tables also confirm that increased value has been realized for both commercial and residential properties.

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<sup>7</sup> Allen, W. et al. "Value Capture in Transit: The Case of the Lindenwold High Speed Line," *Journal of the Transportation Research Forum*, Vol. 28, no. 1, 1987.

<sup>8</sup> Anas, A. et al. "Land Values and Transit Access: Modeling the Relationship in the New York Metropolitan Area, An Implementation Handbook, U.S. Federal Transit Administration, 1993.

<sup>9</sup> Dunphy, R. "The Cost of Being Close," ULI Working Paper 660, Urban Land Institute, October 1998.

<sup>10</sup> Lewis, D. et al. *Policy and Planning as Public Choice: Mass Transit in the United States*, 1999.

<sup>11</sup> Hack J. "Regeneration and Spatial Development: A Review of Research and Current Practice," IBI Group, 2002.

<sup>12</sup> Clower, Terry L. et al. *Assessment of the Potential Fiscal Impacts of Existing and Proposed Transit-Oriented Development in the Dallas Rapid Transit Service Area*, Center for Economic Development and Research, University of North Texas, November 2007.

**TABLE 2-2: TRANSIT INVESTMENT IMPACTS ON RESIDENTIAL REAL ESTATE VALUES**

Variable/Location	Premium Effect	Transit Type	Year	Source
Single-family home sales price:				
San Francisco Bay Area BART System	+17% w/in 500 ft of station	Rapid Transit	1979	Blayney-Dyett Associates/David M. Dornbusch & Co., Inc. "Land Use and Urban Development Impacts of BART," San Francisco: Metropolitan Transportation Commission, 1979.
San Diego San Diego Trolley System	+2% w/in 200 ft of station	Light Rail	1992	VNI Rainbow Appraisal Service. "Analysis of the Impact of Light Rail Transit on Real Estate Values," San Diego Metropolitan Transit Development Board, 1992.
Portland MAX Light Rail System	+10.6% w/in 1,500 ft of station	Light Rail	1993	Al-Mosaind, M. et al. "Light Rail Transit Stations and Property Values: A Hedonic Price Approach," <i>Transportation Research Record</i> , 1400:90-94, 1993.
Sacramento Sacramento Light Rail System	+6.2% w/in 900 ft of station	Light Rail	1995	Landis, J. et al. "Rail Transit Investments, Real Estate Values, and Land Use Change: A Comparative Analysis of Five California Rail Systems," Institute of Urban and Regional Development, UC Berkeley, 1995.
Santa Clara County VTA Light Rail	-10.8% w/in 900 ft of station	Light Rail	1995	Landis, J. et al. "Rail Transit Investments, Real Estate Values, and Land Use Change: A Comparative Analysis of Five California Rail Systems," Institute of Urban and Regional Development, UC Berkeley, 1995.
Chicago METRA Commuter Rail System	+20% w/in 1,000 ft of station	Commuter Rail	1997	Gruen, A. <i>The Effect of CTA and METRA Stations on Residential Property Values</i> , Regional Transportation Authority, 1997.
St. Louis MetroLink Light Rail System	+32% w/in 100 ft	Light Rail	2004	Garrett, T. "Light Rail Transit in America: Policy Issues and Prospects for Economic Development," Federal Reserve Bank of St. Louis, 2004.

**TABLE 2-2: TRANSIT INVESTMENT IMPACTS ON RESIDENTIAL REAL ESTATE VALUES**

Variable/Location	Premium Effect	Transit Type	Year	Source
Condominium sales price:				
San Diego San Diego Trolley System	+2% to 18% w/in 2,640 ft of station	Light Rail	2001	Cervero, R. et al. "Land Value Impacts of Rail Transit Services in San Diego County," Urban Land Institute, 2002.
Apartment rental rate:				
San Francisco Bay Area BART System	+5% w/in 1,320 ft of station	Rapid Transit	1991	Bernick, M. et al. "A Study of Housing Built Near Rail Transit Stations: Northern California," Institute of Urban and Regional Development, UC Berkeley, 1991.
San Diego San Diego Trolley System	+0% to 4% w/in 2,640 ft of station	Light Rail	2001	Cervero, R. et al. "Land Value Impacts of Rail Transit Services in San Diego County," Urban Land Institute, 2002.
Santa Clara County VTA Light Rail	+45% w/in 1,320 of station	Light Rail	2002	Cervero, R. "Benefits of Proximity to Rail on Housing Markets: Experiences in Santa Clara County," <i>Journal of Public Transportation</i> , Vol. 5, No. 1, 2002.

Sources: Cambridge Systematics Inc. et al., *Economic Impact Analysis of Transit Investments*, Transportation Research Board, 1998; PriceWaterhouseCoopers, Review of Property Value Impacts at Rapid Transit Stations, Richmond/Airport - Vancouver Rapid Transit Project, April 2001; Smith, J. et al., Financing Transit Systems Through Value Capture, Victoria Transport Policy Institute, September 2006.

**TABLE 2-3: TRANSIT INVESTMENT IMPACTS ON COMMERCIAL REAL ESTATE VALUES**

Variable/Location	Premium Effect	Transit Type	Year	Source
Office				
Washington, D.C. Metrorail System Downtown Washington Station	+9% w/in 300 ft of station	Rapid Transit	1981	Rybeck, W. "Transit-Induced Land Values," <i>Economic Development Commentary</i> , 16-20, October 1981.
Washington, D.C. Metrorail System Silver Spring Station	+14% w/in 300 ft of station	Rapid Transit	1981	Rybeck, W. "Transit-Induced Land Values," <i>Economic Development Commentary</i> , 16-20, October 1981.
Washington, D.C. Metrorail System	+12.3% to 19.6% w/in 300 ft of station	Rapid Transit	1993	Cervero, R. et al. "Assessing the Impacts of Urban Rail Transit on Local Real Estate Markets Using Quasi-Experimental Comparisons," <i>Transportation Research</i> , 27A, 1:13-22, 1993.
Atlanta MARTA System	+11% to 15.1% w/in 300 ft of station	Rapid Transit	1993	Cervero, R. et al. "Assessing the Impacts of Urban Rail Transit on Local Real Estate Markets Using Quasi-Experimental Comparisons," <i>Transportation Research</i> , 27A, 1:13-22, 1993.
San Francisco Bay Area BART System - East Bay Stations	No premium effect w/in 2,640 ft of station	Rapid Transit	1995	Landis, J. et al. "Rail Transit Investments, Real Estate Values, and Land Use Change: A Comparative Analysis of Five California Rail Systems," Institute of Urban and Regional Development, UC Berkeley, 1995.
Dallas DART Station Areas	+10% w/in 1,320 ft of station	Light Rail	1999	Weinstein, B. et al. "The Initial Economic Impacts of the DART LRT System," Center for Economic Development and Research, University of North Texas, 1999.
Santa Clara County VTA Light Rail	+15% w/in 2,640 ft of station for commercial	Light Rail	2001	Weinberger, R. "Commercial Rents and Transportation Improvements: Case of Santa Clara County's Light Rail," Lincoln Institute of Land Policy, 2001.
Santa Clara County VTA Light Rail - Downtown San Jose Stations	+120% w/in 1,320 ft of station for commercial land in a business district	Light Rail	2002	Cervero, R. et al. "Transit's Value Added: Effects of Light Commercial Rail Services on Commercial Land Values," Presented at TRB Annual Meeting, 2002.

**TABLE 2-3: TRANSIT INVESTMENT IMPACTS ON COMMERCIAL REAL ESTATE VALUES**

Variable/Location	Premium Effect	Transit Type	Year	Source
Retail				
San Francisco Bay Area BART System	+1% w/in 500 ft of station	Rapid Transit	1978	Falcke, C. "Study of BART's Effects on Property Prices and Rents," Urban Mass Transportation Administration, U.S. Department of Transportation, 1978.
San Diego San Diego Trolley System	+167% w/in 200 ft of station	Light Rail	1992	VNI Rainbow Appraisal Service. "Analysis of the Impact of Light Rail Transit on Real Estate Values," San Diego Metropolitan Transit Development Board, 1992.
San Francisco Bay Area BART System - East Bay Stations	No premium effect w/in 2,640 ft of station	Rapid Transit	1995	Landis, J. et al. "Rail Transit Investments, Real Estate Values, and Land Use Change: A Comparative Analysis of Five California Rail Systems," Institute of Urban and Regional Development, UC Berkeley, 1995.
Dallas DART Station Areas	+30% w/in 1,320 ft of	Light Rail	1999	Weinstein, B. et al. "The Initial Economic Impacts of the DART LRT System," Center for Economic Development and Research, University of North Texas, 1999.

Sources: Cambridge Systematics Inc. et al., *Economic Impact Analysis of Transit Investments*, Transportation Research Board, 1998; PriceWaterhouseCoopers, Review of Property Value Impacts at Rapid Transit Stations, Richmond/Airport - Vancouver Rapid Transit Project, April 2001; Smith, J. et al., Financing Transit Systems Through Value Capture, Victoria Transport Policy Institute, September 2006.

While in most cases the impact of transit is estimated to be positive, the extent of the transit premium ranges widely. Table 2.4 summarizes the findings of these studies and indicates that for single family residential, the property value premium has ranged from two percent in San Diego (1992) to 32 percent in St. Louis (2004). For condominiums, the premium ranged from two percent to 18 percent in San Diego (2001), while for rental apartments the range was zero to four percent in San Diego (2001) to 45 percent in Santa Clara County (2002). In terms of commercial property, the summary table shows that the value premium for office uses ranged from nine percent in downtown Washington, D.C. (1981) to 120 percent in downtown San Jose (2002). Value premiums for retail property ranged from one percent in near Walnut Creek's BART station (1978) to 167 percent in San Diego (1992).

**TABLE 2.4: SUMMARY OF ESTIMATED PROPERTY VALUE PREMIUM**

<u>Land Use</u>	<u>Range of Property Value Premium</u>	
Single Family Residential	+2% w/in 200 ft of station (San Diego Trolley, 1992)	to +32% w/in 100 ft of station (St. Louis MetroLink Light Rail, 2004)
Condominium	+2% to 18% w/in 2,640 ft of station (San Diego Trolley, 2001)	
Apartment	+0% to 4% w/in 2,640 ft of station (San Diego Trolley, 2001)	to +45% w/in 1,320 ft of station (VTA Light Rail, 2004)
Office	+9% w/in 300 ft of station (Washington Metrorail, 1981)	to +120% w/in 1,320 ft of station (VTA Light Rail, 2004)
Retail	+1% w/in 500 ft of station (BART, 1978)	to +167% w/in 200 ft of station (San Diego Trolley, 2004)

Tables 2.2 and 2.3 also show that not every study of transit and property values has found a positive correlation. For example, a 1995 study by John Landis found that values for single family homes within 900 feet of light rail stations in Santa Clara County was 10.8 percent lower than comparable homes located farther from light rail stations. The same study found that there was no value premium for office and retail property located within one-half mile of BART stations in the East Bay.<sup>13</sup>

There are several possible explanations for these negative findings. For example, real estate market data in the Landis study were collected during the recession years of the early 1990s and reflect the depressed single-family home prices and sluggish commercial property activity of that period. With regional unemployment rates above 6.5 percent for much of the early 1990s, the level of traffic congestion was reduced to the point that the real estate market placed minimal value on adjacency to transit. In addition to the negative influence of regional economic trends, the lack of property value premiums found in the Landis study may also be attributable to the fact that at the time the single family home sales data were collected, many of the VTA light rail stations had only recently opened and therefore not enough time had passed to allow the benefits of accessibility to be capitalized into the value of nearby properties.

<sup>13</sup> Landis, J. et al. "Rail Transit Investments, Real Estate Values, and Land Use Change: A Comparative Analysis of Five California Rail Systems," Institute of Urban and Regional Development, UC Berkeley, 1995.

While there is no consensus in the literature on a definitive capitalization impact that is attributable to transit, the majority of the studies cited above indicate that, despite differences in geographic location, economic circumstances, and local real estate market conditions, the presence of transit produced a measurable impact on surrounding property values.

## **CONDITIONS FOR OPTIMIZING TRANSIT'S VALUE PREMIUM**

One major factor that influences the extent to which transit has a positive impact on surrounding properties is the system's regional connectivity and frequency of service. The primary benefit of being located near transit is the access it offers to places in the community or region. The more extensive the transit system, the more benefits there will be to surrounding properties. While people take transit for a variety of reasons and to many types of destinations, recent national survey data indicate that 59 percent of trips are work-related, 11 percent are school-related, nine percent are shopping and dining-related, and seven percent are socially-related.<sup>14</sup> This proportion is very high compared to auto travel, of which work-related trips represent only 18 percent.<sup>15</sup> Since much of the value of transit is directly related to the ability to use transit for commute trips, transit systems that do a good job in linking workers to employment centers have better potential to generate higher land values. Better accessibility is also a function of more frequent transit service, and as a result the frequency of service has a positive impact on property values.

In a 2004 study of transit-oriented development (TOD) in the U.S., U.C. Berkeley planning professor Robert Cervero points out that there are at least three other factors that influence the amount of value that can be created for TOD:<sup>16</sup>

- *Good economy and healthy real estate market conditions.* Good general economic conditions as well as a healthy local real estate market are essential ingredients to value creation because transit alone cannot provide enough of a magnet to attract development.<sup>17</sup> What transit can do is to focus a portion of existing market demand at a particular location in order to leverage accessibility. Therefore, in healthy real estate markets that are experiencing strong demand, there will be a greater potential for property value appreciation near transit.
- *Supportive public policy.* The property value premium that transit generates cannot be realized unless there are supportive public policies in place that are targeted toward leveraging transit's added value through measures such as density bonuses, reduced parking requirements, and incentives for TOD. Good planning and supportive policies can help to maximize the overall value of property within a station area. Reduced parking requirements for office or residential development near transit can be particularly effective in supporting value creation from the standpoint of a developer's bottom line. Not only is parking very expensive to build, but reducing parking requirements can also leave room for more revenue-generating uses.

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<sup>14</sup> *A Profile of Public Transportation Passenger Demographics and Travel Characteristics Reported in On-Board Surveys.* American Public Transportation Association, 2007.

<sup>15</sup> Pisarski, Allan E., *Commuting in America III: the Third National Report on Commuting Patterns and Trends*, Transportation Research Board (TCRP Report 110), 2006.

<sup>16</sup> R. Cervero et. Al., Report 102, Transit Cooperative Research Program, 2004.

<sup>17</sup> Belzer, D. et al. *Transit-Oriented Development: Moving from Rhetoric to Reality*, The Brookings Institution Center on Urban and Metropolitan Policy and The Great American Station Foundation, 2002.

- *Traffic congestion.* Because it provides potential demand for TOD, as well as a built-in market for ridership, the existence of severe traffic congestion is another key element for value creation. When a region's residents and workforce population experience the daily traffic delays, automobile accidents, and excessive fuel consumption that characterize a congested road network, driving can become a less appealing option. A high level of congestion tends to encourage the political will of a region's voters and elected officials to support transit and TOD. In addition, rising gas prices and increasing concern about the environment will likely mean that transit will become an even more appealing option over time.

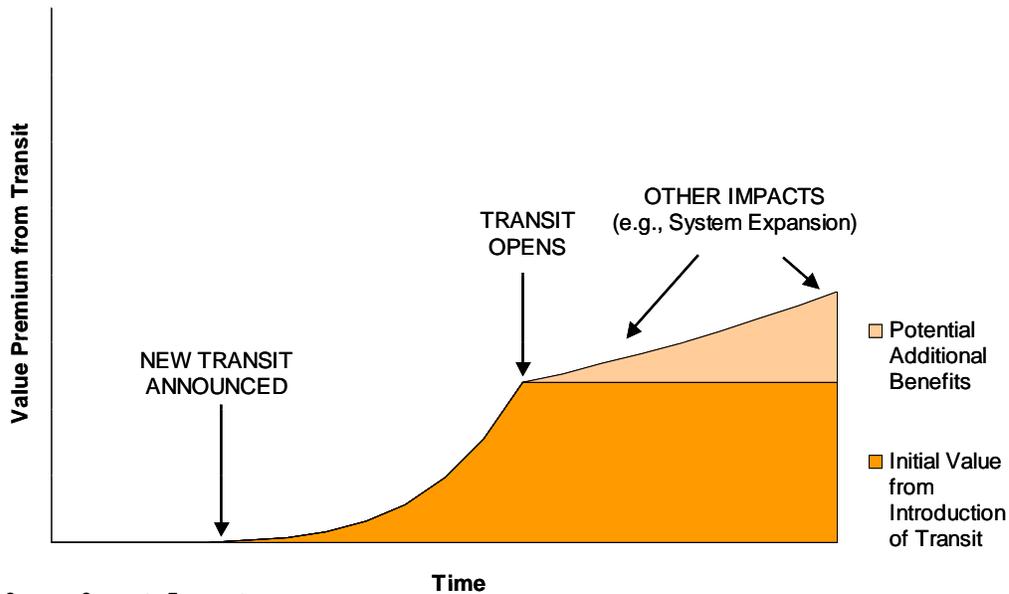
### III. VALUE CAPTURE OPPORTUNITIES

The previous section described the wealth of evidence that transit can have a measurable impact on property values. However, in practice, most of the real opportunities for transit agencies to “capture” property values are related to new development rather than property value appreciation. This section begins with a discussion of how different types of property owners experience changes in values, and why some owners of existing properties do not necessarily see a direct financial benefit from new transit. Next, we illustrate how developers view development opportunities near transit stations, and why developers are motivated to take part in value capture strategies. The section concludes with a discussion of barriers to development near transit.

#### TRANSIT AND EXISTING PROPERTY OWNERS

Many properties along new transit lines are already developed with homes, offices and other uses. The introduction of transit is likely to result in increased property values for existing property owners, particularly land uses that can benefit from increased access, such as office or residential.

**FIGURE 3-1: THE VALUE CURVE IN THEORY**



Source: Strategic Economics.

The studies described in the previous section measure the “transit premium”, which is the estimated amount that a property owner near a new transit station could expect to realize in the absence of a value capture strategy. Figure 3-1 presents a hypothetical example that illustrates how property values might increase over time as a result of new transit service.<sup>18</sup> The impact of transit is expected to begin when public discussion of a new transit system begins, or when a new transit project is first announced. Over time, property values will continue to rise as it becomes more likely that the transit will be built, and the opening of transit grows nearer. As the plans solidify, the project receives funding, construction begins and the commencement of service grows closer, the value continues to increase. On the day the transit opens, most of the value inherent in the

<sup>18</sup> It is important to note that this is a stylized example, and actual property value impacts would tend to fluctuate over time depending on expectations about future transit service and the value conferred to surrounding properties.

increased accessibility provided by transit is realized. Over time, there might also be the potential for additional growth in property values, particularly if the transit system is continuing to expand, or if other factors increase the desirability of locating near the transit station, such as rising gas prices, increased auto traffic, or station area access improvements.<sup>19</sup>

Property values can be separated into two components: land value and structure value.<sup>20</sup> The “transit premium” is really a **land value premium**, because the benefit of transit is primarily a function of the location of the property. The structure value is the value of any building or other improvement on the property, typically estimated as the amount that it would cost to replace the building. The other component of property value is the land value (technically, the earth’s surface), which reflects not only the value based on the nature of the soil and terrain (e.g., mineral rights or agricultural potential), but also the benefits that accrue to a location based on its surroundings (e.g., the benefit of being in an appealing neighborhood, on a hill with a fantastic view, or near transit). One way to understand this is to consider the fact that the “replacement cost” of a building – the cost that it would take to rebuild an existing building – will be about the same anywhere within a region, but the value of the property will depend on where it is located. This variation in property values is attributable to differences in land values, not in building values. The introduction of new transit service impacts land values by changing the desirability of a property’s location.

In some cases the increase in value reflects an immediate benefit due to proximity to transit, such as when an office property can achieve higher rents due to its location near a new transit stop. In other cases the value reflects the expectation of future value: for instance, while a property with an auto-oriented use such as a gas station may not benefit directly from new transit service, the land value might increase to reflect the potential for redevelopment of the property to a more intensive use in the future.

#### **LAND SPECULATION AND TOD**

In regions like the Twin Cities, Houston, Denver and Charlotte, asking prices for properties adjacent to planned new light rail lines have increased substantially based on the expectation of future development opportunities. The increasingly high-profile nature of transit and TOD projects is putting a spotlight on the potential of properties near transit. Along some lines this is resulting in a significant amount of new development, such as parts of Charlotte’s South Corridor. In other cases, the combination of high land costs and high construction costs is stifling new development near the transit line in favor of locations further from transit. In Midtown Houston, for example, most of the recent new development in the neighborhood consists of relatively low-density townhouse and mixed-use development, which is occurring on less expensive sites located further from transit. The real estate market may eventually catch up with property owner expectations about the value of their properties, but so far speculation has choked off the potential for TOD in Houston.

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<sup>19</sup> Planning efforts and policy changes such as station area planning, zoning modifications and new developer incentives could significantly impact the shape of this curve. However, for the sake of simplicity, these impacts are not reflected in the chart.

<sup>20</sup> Structure value is also referred to as “building value” or “improvement value”. It should be noted that in practice, breaking out these components of value for any particular property can be very challenging. See, for example, Davis, Morris A. and Michael G. Palumbo, *The Price of Residential Land in Large U.S. Cities*, Finance and Economics Discussion Series, Divisions of Research & Statistics and Monetary Affairs, Federal Reserve Board, Washington, D.C., 2006.

Based on this theoretical simplified model, it seems reasonable to conclude that property owners are likely to be willing to agree to pay an additional tax to ensure that the transit is built, as long as the amount they pay in tax is more than offset by the increase in their property values. However, more often than not, property owners are unwilling to commit to participating in a special tax. There are a number of explanations for this. First, and most obviously, property owners may question the benefit of transit to their property, or simply be opposed to new taxes on principle. Second, they may believe that the transit is likely to be built even without the special tax. Third, they may balk at the idea of taxing themselves in advance to help pay for future transit service. In the event that the assessment needs to begin before construction, the property owner would begin payments before receiving the benefit of higher property values.

Furthermore, fully realizing this increased value is frequently delayed beyond what would be expected based on Figure 3-1. While some owners of rental properties can increase their revenues immediately by charging higher rents, others are limited by the presence of long-term leases or rent control. Meanwhile, owners who occupy their own building will not realize the increase in value unless they refinance or sell. In fact, in the short term they may experience rising property taxes based on the growth in assessed value of their property. For this reason, homeowners frequently disfavor assessment districts, and they are usually exempt from the special tax.

## **TRANSIT AND DEVELOPMENT OPPORTUNITIES**

Most of the value capture literature concentrates on understanding property value increases for existing land uses near transit, as opposed to the potential for new development. One of the reasons for this focus is because documenting and measuring “windfall” gains for property owners due to public investment can help to justify public interventions to capture that value. However, often the greatest opportunities to both create and capture value are actually related to new development. This is not surprising, given that new development near a station can be designed to take advantage of the benefits of transit, and consequently to maximize the value that can be “captured” by a developer, the public sector, or both.

From a developer’s perspective, there are six main ways that transit can have a positive impact on development opportunities, *of which the transit premium is only one*:

### **1. Transit is a desirable amenity that can improve the marketability of new residential units, office space and other property types, and result in higher revenues (the transit premium).**

New development can be designed to maximize the transit premium that can be achieved at any particular location. Consumer preferences are changing in favor of more compact urban housing types that offer access to retail, services and transit. This trend is reinforced by a demographic shift toward smaller households, including a growing number of “empty nesters”, singles and non-family households who are more likely to value living in a walkable urban neighborhood. New development near transit can target demand for uses such as housing or office, and generate higher revenues because proximity to transit is an amenity that people are willing to pay for in the form of higher sale prices or rents.

## **2. The introduction of transit can make valuable new sites available for development.**

The construction of a new transit line can lead to new infill development opportunities, including joint development on transit agency owned land. In some cases, the improved access provided by transit can make it possible to develop or redevelop sites where expected traffic impacts previously precluded development of more intensive uses. One example is New York Avenue Station in Washington DC, described later in this report. Similarly, private development in Portland's Pearl District was facilitated by opening a large area for development that previously had no access.

## **3. Proximity to transit can improve the likelihood that high-density development will be allowed, and make it easier to obtain development entitlements.**

makes it possible to market units with one space instead of two or more, this not only results in lower costs for the developer, but can also free up additional space within the Higher-density development projects are subject to fierce opposition in many communities in the US. But gradually, smart growth principles such as the desirability of concentrating new development in infill locations near transit are becoming more mainstream. Transit creates a rationale for where density should be allowed, which means that cities are more likely to establish higher-density zoning near transit, and local residents and business owners are more likely to support more intensive infill development. Many cities are actively re-zoning land around transit to support higher density development, which can increase the value of development opportunities. The enhanced ability to obtain entitlements for more intensive development projects can also reduce the risk and cost for a developer, while simultaneously increasing the potential revenues from the project. New development near transit can take advantage of lower parking requirements, and consequently lower development costs.

In most parts of the country, the cost of structured parking is at least \$25,000 per space, and underground parking can cost as much as \$45,000 per space (compared to about \$5,000 per space for surface parking). These costs can easily make or break a development project. Where transit building envelope for uses that generate higher revenues.

## **4. Transit can help to improve the financial feasibility of higher-density development.**

Other things being equal, the cost to build higher density development, especially buildings over five stories, is more expensive on a per square foot basis than lower density development. As a result, projects must be able to achieve higher per-square foot revenues to make more intensive development financially feasible. The fact that transit-oriented development can command higher sales prices and/or rents makes it more likely that a more expensive construction type will be feasible to build. The combination of higher revenues and reduced parking costs can have a significant impact on a project's bottom line (see example on following page).

Thus, transit can not only make it possible to generate more revenues per square foot, but also to build a larger building. For example, a study of development in the Portland Central Business District, found that properties within two blocks of the streetcar line realized 75 percent to 90 percent of the FAR (floor area ratio – a measure of density) allowed by the zoning, compared with development at 43 percent of FAR potential for properties located more than three blocks from the line.<sup>21</sup> The higher density of development for the closer-in properties translates to higher property values and higher property tax revenues.

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<sup>21</sup> E.D. Hovee & Company. *Portland Streetcar Development Impacts*, November 2005.

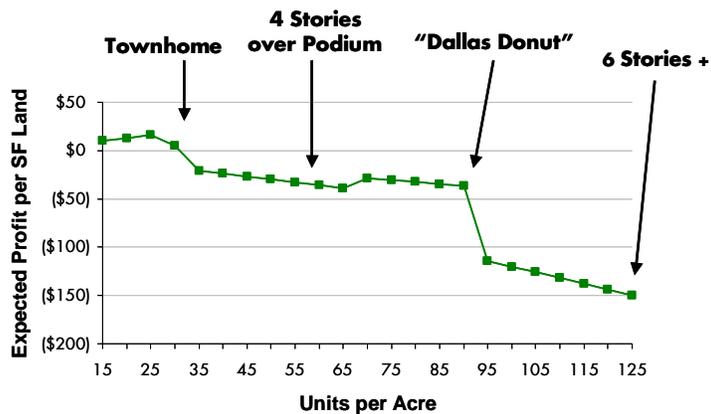
## TRANSIT CAN HELP MAKE HIGHER DENSITY DEVELOPMENT POSSIBLE

Increased density does not always mean greater profit for a developer. The graphs show the potential relationship between density and expected developer profit for a range of building types (note: actual development costs and revenues vary a great deal by region). The first graph shows that before the introduction of transit, the most profitable building type for a developer to build is a relatively low density townhome project. These units have relatively low costs per square foot, and can generate more than enough revenue to cover the development cost.

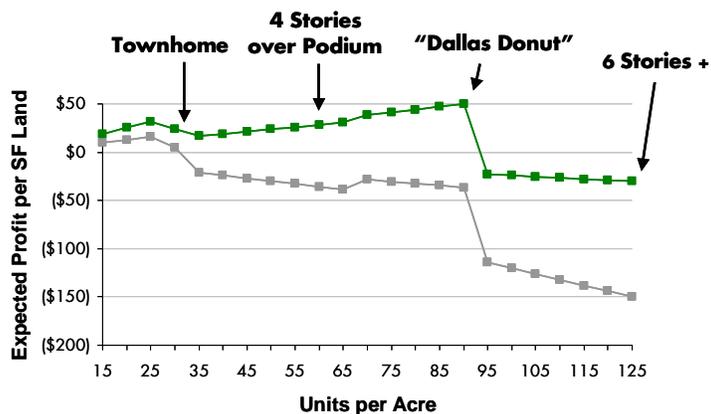
The cost to build a four-story apartment or condo building above a "podium" garage is higher, and in this example, revenues are not high enough to offset the increased cost. The same is true for "Dallas donut" apartments (an apartment building wrapped around an internal parking structure), and for development above six stories, which requires even more expensive building materials to meet building safety standards.

The second graph illustrates how the introduction of transit can make higher density development more feasible. Transit can make it possible to both reduce costs and increase revenues for new development. Lower parking ratios can have a major impact on development feasibility, since the cost to build a structured parking garage can range from \$20,000 to \$50,000 per space. At the same time, proximity to transit also makes it possible to charge higher rents or sales prices. The second chart shows that the combination of these two factors can have a major impact on development feasibility. In this invented example, the "highest and best use" increases from 25 units per acre to 90 units per acre.

### Before Transit:



### After Transit:



**5. Transit-oriented development (TOD) can promote partnerships between the private and public sectors that result in a direct subsidy for the project and/or other beneficial neighborhood investments.**

Transit-oriented development can generate a different kind of capital: political capital. The fact that TOD projects are viewed as desirable by local communities means that public agencies are willing to act as a partner in finding ways to move complex projects forward, provide supportive infrastructure and amenities, or even to subsidize development. This type of cooperation can result in development that benefits all parties.

**IMPLICATIONS FOR VALUE CAPTURE STRATEGIES**

Because developers understand and can capitalize on the kinds of opportunities listed above, they are often more likely than existing property owners to be motivated to collaborate with the public sector to help deliver a transit system.

The bottom line is that the potential value that can be “captured” from new development is much greater than the value measured by most of the studies that measure only the “transit premium”. Furthermore, a host of factors beyond simple proximity to transit, such as the potential for increased density, supportive zoning, neighborhood amenities and infrastructure, influence the potential amount of value created. This has a number of implications for a value capture strategy:

- **There must be a development (or redevelopment) opportunity.**

One of the most obvious implications of relying on development for a value capture strategy is that it requires vacant or underutilized property to be located near the transit station. The best opportunities are often areas where the transit makes central, infill locations available for development where it was not previously possible. While infill development can be challenging and have higher costs for the developer, it can also offer additional benefits to the region and local jurisdiction, because it concentrates growth in areas that are already served by infrastructure such as roads and sewer.

- **Local economic conditions must support new development.**

The viability of a value capture strategy that involves development will be better in places with a strong market demand for transit-oriented development. There is abundant evidence that demographic and cultural changes in the US increasingly favor more compact development with convenient access to transit and urban amenities.<sup>22</sup>

However, the cost to build higher-density development is higher than lower density development due to more expensive construction materials such as steel and concrete. Unless development can also achieve higher revenues on a per-square foot basis, it will not be financially feasible. Furthermore, many transit systems are built along existing highway corridors, where auto-oriented land uses are willing and able to pay a premium to locate. In some cases, the use that is the most profitable for a developer to build (the “highest and best use”) is not one that will support transit by stimulating ridership.

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<sup>22</sup> See, for example, Hidden in Plain Sight: Capturing the Demand for Housing Near Transit, Center for Transit-Oriented Development, 2004.

- **Maximizing the transit benefit will require cooperation among multiple parties.**

The value of development near transit is dependent upon numerous factors, including land prices, development costs, expected revenues, land use regulations and the nature of the transit service. Truly maximizing the value of transit will require cooperation by the transit agency, developer and local jurisdiction, each of which has different tools at their disposal.

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## IV. VALUE CAPTURE STRATEGIES

The previous section described how property owners experience changes in property values resulting from transit, and the special development opportunities created by transit. Public sector value capture strategies are an attempt to reclaim a portion of this value for purposes such as transit capital costs or operations, affordable housing, or other improvements.

This report focuses specifically on value capture strategies that are intended to capture value for the purpose of funding transit. Most of the strategies fall under four broad categories, however it is important to note that multiple strategies are frequently used for a single transit project, and that some require special legislation to enable their use, depending on the jurisdiction:

- *Special Assessment* – a tax assessed against parcels that have been identified as receiving a direct and unique benefit as a result of a public project.
- *Tax Increment Financing* – a mechanism that allows the public sector to “capture” growth in property tax (or sometimes sales tax) resulting from new development and increasing property values.
- *Joint Development* – generally, cooperation between the public and private sectors to deliver transit-oriented development (TOD), usually involving development on transit agency owned land.<sup>23</sup>
- *Developer/Impact Fee* – a fee assessed on new development within a jurisdiction as a means to defray the cost to the jurisdiction of expanding and extending public services to the development.

These mechanisms are described in detail below, including examples of how they have been used. These examples illustrate that the applicability of mechanisms differ in terms of level of involvement, reliance on new development, and the geographic scale at which they can be applied.

### ASSESSMENT DISTRICTS

An Assessment District, also sometimes referred to as a Special Assessment District (SAD), Benefit Assessment District (BAD) or Local Improvement District (LID), is an area within which a special tax is applied to properties that will benefit from a public investment. Assessment districts are most commonly used to fund the development of sewer, water, utilities or streets, but can also be used to fund services such as police, fire protection or transit. A key characteristic of assessment districts is that they typically require at least a majority vote of affected property owners in order to be implemented. The amount of the assessment must be directly related to the cost of the improvement, and the expected benefit to the property owner. Property owners who are eligible for the assessment pay higher taxes for the period of the special assessment. In some cases, a property owner may opt to pre-pay the assessment, rather than pay it over time. This strategy is

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<sup>23</sup> It should be noted that while joint development is defined here in a general way, Federal transit law is very specific about what qualifies as a joint development project that is eligible for funding (See Federal Register/Vol.72, No. 25, Wednesday, February 7, 2007. Joint development projects are defined to include commercial and residential development; pedestrian and bicycle access to a public transportation facility; construction, renovation, and improvement of intercity bus and intercity rail stations and terminals; and renovation and improvement of historic transportation facilities. In addition, the joint development must meet the following criteria: “The public transportation improvement must (i) Enhance economic development or incorporate private investment; (ii)(a) Enhance the effectiveness of a public transportation project and relate physically or functionally to that public transportation project, or (b) establish new or enhanced coordination between public transportation and other transportation; and (iii) provide a fair share of revenue for public transportation that will be used for public transportation.”

sometimes preferred by property owners who plan to develop their property and sell it, but who fear that the assessment will reduce the marketability of the property, especially residential units.

Assessment districts may be used to finance both the capital costs of transit construction and ongoing operating costs. When used to fund transit facilities, a “tiered” assessment rate is common, reflecting the greater benefits expected to accrue to properties closer to transit facilities and the lesser benefits expected to accrue to those further away. A majority of existing property owners (in some cases two thirds) must vote to enact an assessment district. Owner-occupied residential properties are frequently exempted from the assessment because it would be overly burdensome for homeowners, and consequently the assessment district would be unlikely to garner the requisite number of votes to be implemented.

There are a number of areas where assessment districts have been used to help fund new transit. One of the earliest was in 1993, for the Metro Red Line subway in Los Angeles. More recently, a LID was created to help fund the Portland streetcar, representing about 17 percent of the first phase of development, and about 20 percent for each subsequent phase.<sup>24</sup>

The success of the Portland LIDs has provoked increased interest in the use of assessment districts for funding transit, especially new streetcar lines. Half of the capital costs of the South Lake Union Streetcar in Seattle Washington, which opened in December 2007, were funded using a LID. The TECO streetcar line in Tampa, Florida, was also partially funded using an assessment district. This mechanism is also being considered as a possible source of funding for streetcar projects in Atlanta, Tacoma and Columbus, among others. Streetcar systems are particularly well suited to assessment districts, because they are typically located within a single jurisdiction, usually within a single neighborhood such as the downtown.

Assessment districts are more difficult to implement across larger areas, especially across multiple jurisdictions. One noteworthy example is the Dulles Rail Transit Improvement District, an elongated assessment district that follows the first phase of the proposed rail line that will ultimately provide service from East Falls Church Metro rail station on the Orange line to Tysons Corner, Reston, Herndon, the Dulles/Route 28 area and Dulles Airport. The assessment district only includes properties under the jurisdiction of Fairfax County, but at one point it was planned to also include part of neighboring Loudoun County. The district boundaries were eventually scaled back because a larger assessment district would be unable to receive enough support to be implemented.<sup>25</sup>

The Dulles Rail Transit Improvement District is designed to generate \$400 million from commercial, industrial and multifamily investment properties, or about 15 percent of the total cost, much of which will be generated from commercial properties in Tyson’s Corner. This amount represents the Fairfax County portion of the local match required for federal funding of building the project. As shown in Figure 4-1, the borders of the assessment district were designed to encompass the property owners who view transit as a worthwhile investment. Some property owners were interested in being included in the district because they saw the benefit of transit for development, redevelopment or intensification of their property. Others reportedly expect transit to result in higher office rents.<sup>26</sup>

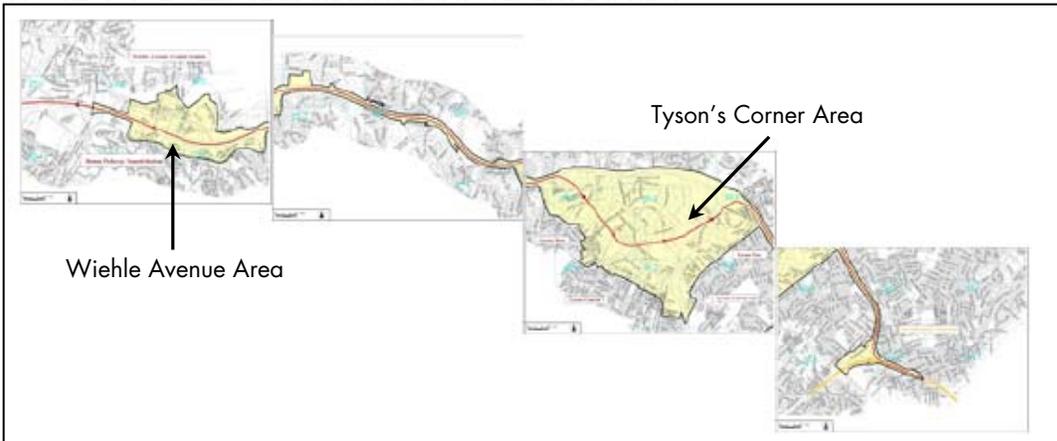
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<sup>24</sup>Bernstein, p. 40.

<sup>25</sup> In Virginia, 51 percent of property owners or the owners of at least 51 percent of the land area must petition to be included within the assessment district. It is interesting to note that because Virginia is a “Dillon Rule” state, many property owners have the right to build to a higher density regardless of the zoning. In theory, some property owners may be less likely to see the benefit of participating in an assessment district because the ability to build to a higher density is not contingent upon transit.

<sup>26</sup> Interview with Richard Stevens, Project Manager - Dulles Rail Project, Fairfax County Department of Transportation.

**FIGURE 4-1: DULLES RAIL TRANSIT IMPROVEMENT DISTRICT**



Source: Fairfax County.

Despite the fact that assessment districts are specifically designed to capture the premium conferred to existing properties by transit, in reality they are easiest to implement in an area where a few property owners will be able to take advantage of a significant development opportunity. Property owners with land that they plan to develop or re-develop are more motivated than existing property owners to participate in an assessment district, because the district will provide infrastructure that will enhance the value of their project, or in extreme cases, make development possible where it otherwise would not be.

A good example of this is the New York Avenue Metrorail Station in Washington, DC, where a Transit Benefit District was used to fund 28 percent of the cost of a new infill station along the existing Red Line. The area included a significant amount of vacant and underutilized property, however nearby streets were at capacity and as a result no new development could move forward.<sup>27</sup> Ultimately, several of the major property owners agreed to a Metro Benefit Fee, which required property owners within 2,000 feet of the station to retire \$25 million in general obligation bonds. The \$25 million was matched by funding from the Federal Transit Administration (FTA). That the property owners were willing to contribute to construction of the transit station reflects the fact that the new station would unlock the nascent value of their property, by opening up an area for development where it would not otherwise be possible.

Because assessment districts are only possible where a majority of property owners are willing to essentially “tax themselves”, they sometimes more closely resemble a negotiated agreement than a tax. A good example is in the South Lake Union area of Seattle, where a LID was used to fund \$25.7 million of a total \$52.1 million capital cost for the South Lake Union Streetcar (49 percent).<sup>28</sup> One of the key promoters of both the streetcar and the LID is Vulcan Inc., a developer that assembled approximately 60 acres of property in the neighborhood for the purpose of development. Because of the extent of their landholdings, Vulcan is responsible for about one third of the payments to the LID, and it is likely that the LID could not have been implemented without their large share of property ownership.

Assessment districts are currently the most common value capture strategy used to fund the capital costs of new transit, especially for streetcars. While assessment districts are appealing as a value capture tool because they can be designed to align taxes closely with expected property owner benefits, they are nevertheless challenging to implement. Generally, assessment districts tend to

<sup>27</sup>Rybeck, Rick, *Using Value Capture to Finance and Encourage Compact Development*, Public Works Management and Policy, April 2004.

<sup>28</sup> Cost breakdown provided by Vulcan, Inc.

work better in places with fewer property owners, and they work best if most of the property owners will realize a direct benefit from transit or if they can build projects that will maximize the value of transit.

## **TAX-INCREMENT FINANCING**

Tax increment financing (TIF) has been used in a number of U.S. cities to fund transit-related projects, most commonly to pay for station infrastructure such as parking garages, roads, and pedestrian improvements. TIF works differently according to the laws in each state, but typically it is geared to capture the increase in property values that occurs within a designated area, over a base threshold.<sup>29</sup> This tax increment can either be used on a “pay as you go” basis over time, or can be bonded against to provide an up-front source of revenue. The most common uses of TIF are for environmental clean-up, land assembly, or needed infrastructure. In some cases TIF can even be used to directly subsidize private development.

Unlike assessment districts, the fundamental purpose of a TIF district is to encourage new development to assist in revitalization of distressed neighborhoods. As a result, the goals of most TIF projects are broader than a single transit investment. Because TIF districts are usually administered by cities, transit agencies are most likely to benefit from TIF when transit is part of a broader strategy to revitalize a neighborhood. TIF districts can also play an important role in generating transit ridership through pedestrian and other access improvements, and investments that improve the viability of transit-oriented development.

Every state in the US except Arizona has authorized some version of tax increment financing. The most extensive use of TIF may be in Chicago, which has 129 TIF districts that cover 30 percent of city land. Half of these districts contain transit stations, and many of these have used TIF revenues for TOD-supporting infrastructure, such as parking garages, open space, and streetscape improvements. This dedication of public resources to public improvements has served as an incentive to developers to build near transit stations.

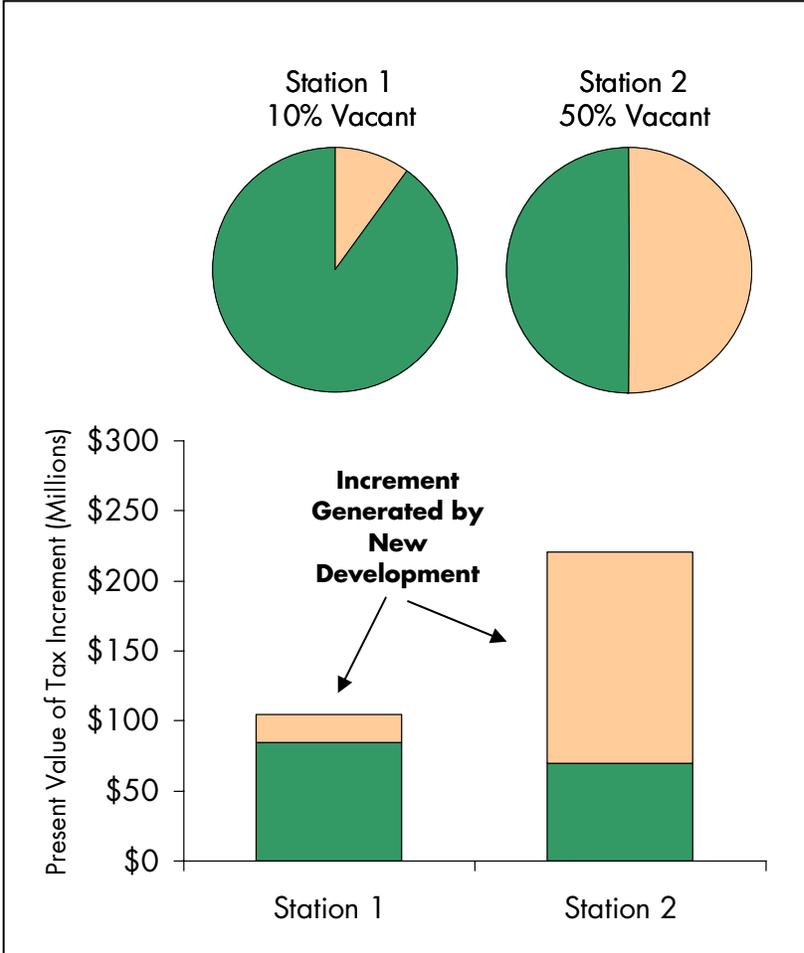
The power of TIF is that it captures the total value of growth in property taxes for use within a designated area, which can range from a single site to a district. Because the tax increment is based on the total increase in taxes generated, new development has a much greater impact on tax increment than growth in value in existing properties. This is illustrated in Figure 4-2 on the following page, which illustrates the magnitude of tax increment that would be generated in two station areas, assuming development on vacant land and increased property values for existing properties.

In theory, the amount of tax increment that could be generated over time within a station area or transit corridor could be enough to pay for a new transit line, as long as a significant amount of vacant or underutilized land were available for (re)development. However, unlike an assessment district, which can be crafted to encourage contributions from property owners for a specific, targeted use, tax increment financing is not geared specifically toward financing transit. Most transit agencies do not have the ability to establish a TIF district, and local jurisdictions typically have other goals in mind for TIF revenues. Nevertheless, where it can be used, TIF can generate a significant amount of revenue, particularly where station areas are the focus for new development. As a tool, property owners usually have a strong preference for TIF districts over assessment districts, because TIF redirects existing property taxes, instead of creating an additional obligation for property owners.

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<sup>29</sup>Note: in most states tax increment is a portion of property taxes, but in some cases it is a percentage of sales tax, such as Colorado. In Washington State no jurisdiction has ever actually created a tax increment financing district.

**FIGURE 4-2: DIFFERENTIAL TAX INCREMENT GENERATED AT TWO IMAGINARY STATION AREAS**



Source: Strategic Economics

One of the criticisms of TIF is that it diverts tax dollars that would otherwise be used for other purposes, including City or County general fund revenues, which can make it fiscally challenging to implement over a large area.<sup>30</sup> TIF can be very controversial, with some arguing that while it was originally intended as a tool for inner-city revitalization, it is now frequently used to promote greenfield development and suburban sprawl<sup>31</sup> Critics point to the use of TIF to attract big box development to suburban areas, to help finance market-rate residential development, and to attract jobs from urban locations.

In 2005, the state of Pennsylvania also authorized the use of TIF in Transit Revitalization Investment Districts (TRIDs), located in the area around transit stops. The purpose of the TRID is to promote TOD, economic development, real estate development, and transportation improvements near transit stations. The TRID legislation allows transit agencies to work cooperatively with local jurisdictions to create tax increment financing districts around transit

<sup>30</sup> Note: the purpose of a TIF district is to induce new development that otherwise would not have occurred; to the extent this is the case, the increase in property tax revenues would not otherwise exist to be diverted.

<sup>31</sup> LeRoy, Greg, "TIF, Greenfields and Sprawl: How an Incentive Created to Alleviate Slums Has Come to Subsidize Upscale Malls and New Urbanist Developments," Planning and Environmental Law, February 2008, Vol 60 No.2, p. 3.

stops.<sup>32</sup> The tax increment revenues are used for projects identified in a TRID planning study. The primary purpose of the TRID Act is to provide support for planning and implementation of TOD projects, however it also allows for value capture strategies by transit agencies. A transit agency may acquire property within a TRID for the purpose of real estate development or joint development. The legislation is intended to foster coordination among agencies and target resources near transit stations, and thus the TRID planning studies are likely to target the goals of multiple public agencies. As of the writing of this paper, several TRID planning studies are underway, however to date none of the districts have been implemented.

## **JOINT DEVELOPMENT**

Joint development is generally defined as a real estate development project that involves coordination between multiple parties to develop sites near transit, usually on publicly-owned land. However, it should be noted that the FTA is very specific about what joint development projects are eligible for public funding under Federal transit law. Guidance regarding the eligibility of joint development projects for Federal funding was updated in February, 2007.<sup>33</sup> According to this guidance, a joint development project may include commercial and residential development that is physically or functionally related to public transportation projects; pedestrian and bicycle access to a public transportation facility; construction, renovation, and improvement of intercity bus and intercity rail stations and terminals; and renovation and improvement of historic transportation facilities. Further, to be eligible for Federal funding, a joint development project must meet three criteria: 1) Enhance economic development or incorporating private investment; 2) Enhance the effectiveness of a public transportation project or establish new or enhanced coordination between public transportation and other transportation; and 3) Provide a fair share of revenue to be used for public transportation.

Transit agencies are increasingly interested in finding ways to generate value from their real estate assets, and joint development is seen as a potential source of income that can be used to generate revenues, enhance transit infrastructure, and/or obtain needed transit facilities as a part of a larger development project. Transit-oriented development on these sites can also result in increased transit ridership, and consequently, higher farebox revenues.

Joint development agreements can take many forms, ranging from an agreement to develop transit agency owned land, to joint financing and development of a larger project that incorporates both transit facilities and private development. A joint development agreement may include a cost-sharing agreement, a revenue-sharing agreement, or a combination of the two.<sup>34</sup> Cost-sharing agreements usually involve cooperation to pay for infrastructure that helps to integrate transit with surrounding development. Revenue-sharing agreements distribute the revenues that result from development among joint development partners. Examples of revenue-sharing agreements include ground lease revenues, air rights payments, or in some cases direct participation in rents or other revenues from development. Due to the complexity of many joint development projects, and the fact that they are often mixed-use projects geared toward meeting multiple goals such as provision of affordable housing, local jurisdictions may also assist in financing aspects of the project.

In the context of value capture, joint development projects can be divided into two types: joint development at existing transit stations and joint development that includes new transit stations.

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<sup>32</sup> The TRID is defined as a radius from the transit stop, and can range from one-eighth to one-half mile, depending on transit mode.

<sup>33</sup> See Federal Register Vol. 72, No. 25, Wednesday, February 7, 2007.

<sup>34</sup> "Transit-Oriented Development and Joint Development in the United States: A Literature Review", Transit Cooperative Research Program Research Results Digest, October 2002.

### **Joint Development at Existing Transit Stations**

A number of transit agencies, such as San Francisco Bay Area Rapid Transit (BART), Washington Metropolitan Area Transportation Authority (WMATA) and the Metropolitan Atlanta Rapid Transit Authority (MARTA), have entered into joint development agreements as a way to promote transit ridership and generate revenues for their systems. Most high-profile joint development projects in the US have been attempts to promote transit-oriented development around existing stations; however these projects offer mixed results as a source of revenue for transit agencies. One of the reasons is because properties adjacent to transit stations can be very complex to develop. Joint development projects often involve replacing an existing parking lot with structured parking, which is very expensive. BART, for example, has managed to transition several surface lots to higher-density development, however the high cost to build parking structures for replacement commuter parking makes joint development very challenging, and slows project implementation. As a result, much of the value created for BART has been used to pay for this parking. This need to provide parking for commuters also reduces the amount of space available for revenue-generating private development. Furthermore, in many cases multiple stakeholders are looking to what are typically high-profile development projects for affordable housing or other community benefits that provide value to the local community but reduce the potential revenue stream for the transit agency.

WMATA is considered to be one of the most successful transit agencies in terms of promoting joint development at existing transit stations. The agency began its joint development program in the 1970's, and developed its reputation based on its in-house real estate expertise, profitable development deals, and innovative deal structures. The agency has been proactive in purchasing land near stations for joint development, and by the mid-2000's was generating more than \$6 million in gross annual revenues.<sup>35</sup> However, in the mid-2000's, the joint development program came under increased scrutiny as the program began to attract fewer qualified developers, and local communities complained that WMATA was not engaged in local planning processes. A task force was convened, and issued recommendations that ultimately resulted in revised joint development policies as of February 2008. The new policies were designed to make the program more responsive to development opportunities and market conditions, promote more coordination between WMATA and local planning efforts, and focus more on the long-term benefits of transit-oriented development, as opposed to revenue goals alone.

### **Joint Development at New Transit Stations**

A number of transit agencies have used joint development to physically integrate transit stations with surrounding TOD, but there are few US examples where revenues from joint development (defined as private real estate development on publicly-owned land) have been leveraged to deliver new transit stations. Two recent examples are Cascade Station in Portland, Oregon, and the West Dublin station in Dublin, California.

#### **Cascade Station**

In Portland Oregon the RedLine/Airport MAX light rail extension was built by a private entity in exchange for development rights around Cascade Station. The joint development agreement was originally crafted in 1999, and involved the Cascade Station Development Company (a development team consisting of Bechtel and Trammel Crow), the Port of Portland, the City of Portland, the Portland Development Commission and Tri-Met (the transit agency). The development team agreed to take responsibility for repayment of \$28 million in bonds for construction of a portion of the light rail in return for development rights for the surrounding 120 acres. Because Cascade Station was in the flight path of the airport, residential development was not allowed, and the area was planned as a major retail and office destination. Development would occur on a long-term ground lease from the Port of Portland. The light rail opened in 2001;

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<sup>35</sup> R. Cervero et. Al., Report 102, Transit Cooperative Research Program, 2004, p. 230.

however development of the surrounding area stalled due to limitations on the size of retail uses, and the real estate downturn after September 11, 2001. It was not until 2005 that the project was able to move forward again, when Trammel Crow purchased Bechtel's stake in the project, and changes were made to the development agreement to allow some large-format retailers. Since then, the Cascade Station area has experienced a significant amount of new development, including several major retailers such as IKEA, Target and Best Buy, as well as new office and hotel development. While ultimately both the light rail station and the station area will be successfully developed, the project was very challenging and the profitability to the development team is unknown.

#### West Dublin/Pleasanton BART, Pleasanton, CA

The West Dublin/Pleasanton BART station is currently under construction, as part of a larger project that includes development of a transit village next to the new station. The project is being developed by a public-private partnership consisting of BART and West Dublin/Pleasanton Station Venture, Inc., a joint venture between Jones Lang LaSalle Americas and Ampelton Development Group. The West Dublin/Pleasanton station will be a new "infill" station along a ten mile stretch of the BART line where there previously were no stops, between the existing Dublin/Pleasanton and Castro Valley stations. The station will be located along Interstate Highway 580, between the towns of Dublin and Pleasanton. On the Dublin side, the project is expected to include a 310-unit apartment complex, 150-room hotel and 7,500-square-foot restaurant. The Pleasanton side will include a 350-unit apartment project and some retail.

One of the most challenging aspects of the project was the fact that the structured parking needed to be built in advance of other (revenue generating) components of the project. Ultimately, bond financing was used to build the station and structured parking. The debt service on the bonds will be repaid using BART parking and farebox revenues (approximately two-thirds of costs). The remainder will come from a combination of local and state funding, and ground lease payments from the developer. Each of the two cities and Alameda County agreed to place a total of \$8 million in a reserve account, which will be used in the event that there is a shortfall in the debt service on the bonds or in station operating costs.

While the Cascade Station project suffered some serious setbacks, the West Dublin BART example shows that joint development can be a successful mechanism to help fund transit. One of the challenges of joint development as a value capture strategy is that it usually relies on revenues from a relatively small proportion of the property that is benefited by transit service. For instance, the private development portion of the West Dublin/Pleasanton project only includes about 17 acres, or about 3 percent of the property within a one-half mile radius of the station. If a greater proportion of the property were involved in the development, or if a value capture strategy could draw from value increases from existing properties in the surrounding area, the potential for value capture would be even greater.

#### **Master Development Agreements**

Recently, transit agencies and cities have been contemplating a master developer approach where one development team enters into an agreement that gives them access to multiple development sites along a transit corridor or system. One of the potential advantages of this approach is that it means that the transit agency or city does not need to issue multiple requests for proposals (RFPs) to select individual developers for sites. It also provides for a system-wide approach wherein the developer can phase TOD projects to respond to the market. The larger scale of the development opportunity can also be a way to attract more experienced developer partners.

This approach is being considered by the City of Dallas for properties along existing DART lines; however it has yet to be implemented. In Dallas, this approach is viewed as a way to promote development in parts of the transit network that have not previously seen investment. The City hopes to pair development opportunities such that in order to take advantage of the most desirable development opportunities, the developer would also be required to develop in areas where the City hopes to stimulate investment.

In 2007, Raleigh's Triangle Transit (formerly known as the Triangle Transit Authority) entered into a development deal with Cherokee Investment Partners, which would give Cherokee the ability to coordinate TOD at future rail stations, including land owned by Triangle Transit, and additional land purchased by Cherokee.<sup>36</sup> Station development plans would be reviewed by local and state agencies to ensure that they meet community needs and promote transit use. No new development projects have occurred to date.

### **Public-Private Partnerships for New Transit Systems**

Recently there has been a push toward increased private participation in the delivery of transit systems, driven in part by rising costs and scarce federal and local funds. This type of arrangement, usually referred to as a public private partnership (PPP), consists of an agreement with a private entity to deliver a new transit system or line. In return, the transit agency agrees to annual payments to the private partner in return for building and operating new transit facilities.<sup>37</sup> A private entity is formed to be responsible and financially liable for delivering the project, and may also share in revenues from transit operations.

Several transit agencies are using a public-private partnership (PPP) structure to deliver an entire transit corridor, such as Denver's Regional Transit District (RTD). While theoretically these projects could incorporate joint development opportunities on transit-agency owned land, to date it has not been done. The primary reasons are because the inclusion of real estate makes an already complex project more complex, because the private sector participant usually is usually an engineering firm (and therefore not in the business of real estate development), and because the timing of private real estate development opportunities may or may not line up with the timing of transit construction.

As a value capture tool for funding transit, joint development makes the most sense in areas where a significant amount of land is available to the transit agency, and where developer agreements can be used to directly fund transit and related improvements. One of the biggest challenges of joint development as a value capture strategy is the fact that projects usually take place on one or more sites adjacent to a station, and as such do not "capture" value from the broader area that receives the benefit of improved transit access. In response to this, some transit agencies are looking to creative partnerships with local jurisdictions to benefit from tax receipts generated by new development (usually sales tax or transit occupancy tax). The most successful joint development projects are ones that involve cooperation between the developer, transit agency, and other local agencies and jurisdictions to find creative ways to leverage resources and maximize the value of transit.

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<sup>36</sup> "TTA enters development deal", The News and Observer (newsobserver.com), March 7, 2007;

<sup>37</sup> Goldman Sachs and JP Morgan, "Introduction to Public-Private Partnerships for Transit", presented to the Denver Regional Transportation District on October 10, 2007. This definition allows for a clear distinction between a joint development and a PPP.

## DEVELOPMENT IMPACT FEES

A development fee is a charge assessed on new development as a means to defray the cost to the jurisdiction of expanding and extending required public services. Many jurisdictions have transportation impact fees that include an allocation for transit improvements, however most are primarily focused on roadways. The fees are generally collected at one point in time, and are usually used to offset the cost of providing public infrastructure such as new streets and utilities. Two examples are described below:

### San Francisco, California

The City and County of San Francisco introduced a Transit Impact Development Fee (TIDF) in 1981 to offset the increased capital and operating costs of providing additional service to the downtown. At the time it was introduced the TIDF was \$5 per gross square foot of new office development in the downtown. Subsequently the fee was expanded to include a broader range of commercial uses, and to apply to development citywide. Fees range from \$8 to \$10 per square foot, depending on land use. TIDF revenues average about \$10 million annually, and have been used almost entirely for operating costs, rather than capital improvements.

### Broward County, Florida

Several Florida jurisdictions have experimented with impact fees to pay for transit. Most prominent among these is Broward County, which includes the city of Fort Lauderdale. In 2005, a Transit Oriented Concurrency (TOC) system was initiated to help pay for transit improvements and operations. Under this system, the County is split into ten districts, of which eight are designated Transit Concurrency Districts.<sup>38</sup> Within each district, a five-year Transit Development Plan identifies needed transit improvements. The total cost of the improvements is charged as a fee on all new development. The costs are allocated to individual projects using a formula based on expected trip generation. Projects designed to encourage transit usage and affordable housing are eligible for fee reductions. The program is expected to raise \$10.8 million for the 2006-2010 period, which would cover 28% of total transit operating and capital costs for that period.<sup>39</sup>

The premise behind impact fees is that development should pay the full cost of providing additional facilities necessary to accommodate development, and as such, is not directly connected to either property values or the value of new development. One of the criticisms of impact fees generally is that they can reduce the feasibility of development by increasing costs, or reduce the affordability of housing, because the entire cost is paid up front by the developer. Unless fees are charged across an entire region, the impact fees could unintentionally result in developers avoiding transit-accessible areas and instead concentrating development in peripheral areas to avoid impact fees. As a means to fund transit improvements, this mechanism has not been used widely, and is only likely to be successful in an area with a strong real estate market and a significant amount of new development.

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<sup>38</sup> The other two districts only charge fees related to roadway infrastructure.

<sup>39</sup> Roberson, Jonathan, "Broward County's Transit Oriented Concurrency Management System," Broward County Transit, <http://legistar.cityofgainesville.org/attachments/4215.pdf>

## V. CONCLUSION

There is ample evidence that transit can measurably increase property values. The amount of value created in any particular location is influenced by a host of factors, including the scope of the transit system, real estate market conditions, traffic congestion and other neighborhood qualities, but overall the “value premium” for properties near transit appears to be increasing over time. Demographic trends are changing the nature of the housing market, with a growing number of smaller households without children, which are less likely to need or want a large, single-family home. Tastes are also changing, with a growing number of households desiring the type of lifestyle usually associated with dense urban places, such as easy access to retail, services and entertainment. Growing concerns about the environment and rising gas prices are also working to make urban neighborhoods with good transit connections more desirable and valuable.

Capturing this value for the purpose of funding transit is a complex matter. Property owners are rarely motivated to participate in a value capture strategy. In many cases, the most motivated property owners are developers, which has implications for where a value capture strategy can be implemented and who pays. In addition, multiple groups are usually interested in capturing the value created by transit to pay for infrastructure, affordable housing, and other public benefits.

This report described the most common value capture tools, and explored where they have been used to help fund transit. Based on the research, Table 5-1 summarizes our findings about when each of the tools is most likely to be effective. While it is important to recognize that transit agencies and others are constantly finding new ways to implement value capture strategies, the table shows conditions under which each of the tools are most likely to be successful.

The research suggests several key findings that will be useful to keep in mind while devising a value capture strategy:

**The best prospects for value capture involve new development or redevelopment of existing properties.**

Property owners who do not have plans to develop or redevelop their property are rarely motivated to participate in a value capture strategy. Developers, on the other hand, can often see a direct benefit from cooperating with the public sector to make transit investments possible. Developers can capitalize on proximity to transit in a variety of ways, including taking advantage of higher-density zoning, reducing costs through lower parking ratios, and targeting the growing market for transit-oriented development.

**The most successful value capture strategies incorporate multiple tools and leverage existing resources.**

Most transit systems are financed by cobbling together funds from a variety of sources, and in many cases utilizing multiple value capture strategies. The value of new development and the potential for value capture is maximized and “unlocked” when the private sector, transit agency, local government, and other public agencies coordinate efforts to achieve common goals. The extension of transit allows public agencies to reduce required parking ratios and potentially increase density and height limits. Zoning changes can enhance the value of the development opportunity and maximize the potential value that can be captured by the public sector. Value capture strategies should be crafted to maximize local resources and financing sources.

**TABLE 5-1: SUMMARY OF TOOLS**

Value Capture Tool	Where Best Utilized
Assessment District	<ul style="list-style-type: none"> <li>▪ Local circulator such as a streetcar where benefits of transit will be concentrated in a distinct area, usually a single jurisdiction</li> <li>▪ Significant amount of property is owned by a motivated property owners (usually a few key property owners)</li> </ul>
Tax Increment Financing	<ul style="list-style-type: none"> <li>▪ Transit helps to meet goals of the local community</li> <li>▪ Boundaries of the tax increment district can be in line with the area that receives the benefit of transit</li> <li>▪ Land is privately owned</li> </ul>
Joint Development	<ul style="list-style-type: none"> <li>▪ When transit agency owns land that can be used to leverage private and public investment</li> <li>▪ Where/when real estate market is strong</li> </ul>
Development Fee	<ul style="list-style-type: none"> <li>▪ Strong market potential for real estate development</li> <li>▪ Ability to make the case that new development will drive a need for additional transit</li> </ul>

Source: Strategic Economics

**Timing is key.**

Timing has a major impact on the potential for a value capture strategy. Most require strong market conditions to stimulate property owner interest and make rising property values possible. The fact that most value capture strategies rely on development means that the opportunities to capture value are determined by the same factors as the real estate market – if construction costs are too high, or potential revenues too low, new development may not occur and the opportunity to capture value will be delayed. The timing of zoning changes can also impact a value capture strategy, since a developer will be more likely to participate in the strategy if it means that they will receive zoning changes, entitlements or other benefits.

**The most appropriate value capture strategy depends on who owns the land.**

Generally, a value capture strategy is most feasible where there are one or a few properties under single ownership that will benefit substantially from the addition of transit. When this land is owned by the transit agency, joint development is likely to be the best strategy. When land is owned privately, the transit agency should work with motivated property owners to determine the appropriate strategy to generate funds for new transit.

**The potential for capturing value is maximized when value capture tools can be matched with the geographical area receiving the benefit.**

Most existing value capture tools are focused on individual sites or districts, while transit planning and financing often happen at the corridor scale. Jurisdictions such as Fairfax County are finding creative new ways to apply value capture tools along corridors, but in most cases the ability to apply a value capture strategy across a large area is limited.

Similarly, value capture strategies that involve joint development can be limited by the inability to capture value from a large enough area. Many joint development projects occur on a single site adjacent to a transit station, while the area that receives the benefit of transit is much more extensive.

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16. Abstract (Limit: 200 words) A multitude of studies illustrate that the presence of transit can increase property values and result in valuable development opportunities. Given constrained transit funding, rising costs, and widespread demand for new and expanded transit systems, policy makers, transit planners and elected officials are increasingly interested in finding ways to capture this value to fund transit infrastructure. This paper summarizes the findings of previous studies that measure the impact of transit on nearby property values; explores the role of property owners and developers in value capture strategies; and offers examples of tools currently used by transit agencies. The paper offers several key conclusions regarding the opportunities and limitations of value capture strategies for funding transit.			
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