

# Thinking Outside the Farebox

*Creative Approaches to  
Financing Transit Projects*





This guidebook was written by Kevin DeGood of Transportation for America. Additional writing, editing, and design by Stephen Lee Davis, David Goldberg, and Nick Donohue of Transportation for America. Valuable review and feedback provided by Roy Kienitz of Roy Kienitz LLC, Rob Puentes of the Brookings Institution, and Sarah Kline of Reconnecting America. *Design by BLANK (blankblank.com).*



Transportation for America  
<http://t4america.org>  
1707 L Street NW Ste. 250  
Washington, DC 20036  
202-955-5543

#### **Transportation for America Executive Committee**

Smart Growth America (co-chair)  
Reconnecting America (co-chair)  
Alternatives for Community & Environment  
America Bikes  
American Public Health Association (APHA)  
Apollo Alliance at the Blue Green Alliance  
LOCUS: Responsible Real Estate Developers and Investors  
National Association of City Transportation Officials  
National Association of Realtors  
National Housing Conference  
Natural Resources Defense Council  
PolicyLink  
Rails-to-Trails Conservancy  
The Surface Transportation Policy Partnership  
Transit for Livable Communities (MN)  
U.S. Public Interest Research Group



# Contents


<b>INTRODUCTION</b> .....	<b>4</b>
<b>CHAPTER 1</b> ..... Shaping the Future with Transit	<b>8</b>
<b>CHAPTER 2</b> ..... Navigating the Money Maze: Financing, Funding, and Revenue	<b>20</b>
<b>CHAPTER 3</b> ..... Public-Private Partnerships	<b>48</b>
<b>CHAPTER 4</b> ..... How They Did It: Transit Success Stories	<b>58</b>
<b>CONCLUSION</b> .....	<b>76</b>
<b>APPENDIX</b> .....	<b>78</b>
Program Overviews Photo/Image Credits	







# Introduction



The demand for public transportation service is at its highest point in 50 years. The causes are many: rising gas prices, an increasingly urbanized population, growing numbers of seniors, and the preferences of the “millennial” generation. These factors and more are contributing to soaring ridership on existing transit routes. And more communities today are looking for funds to build and operate rail and bus lines than ever before.

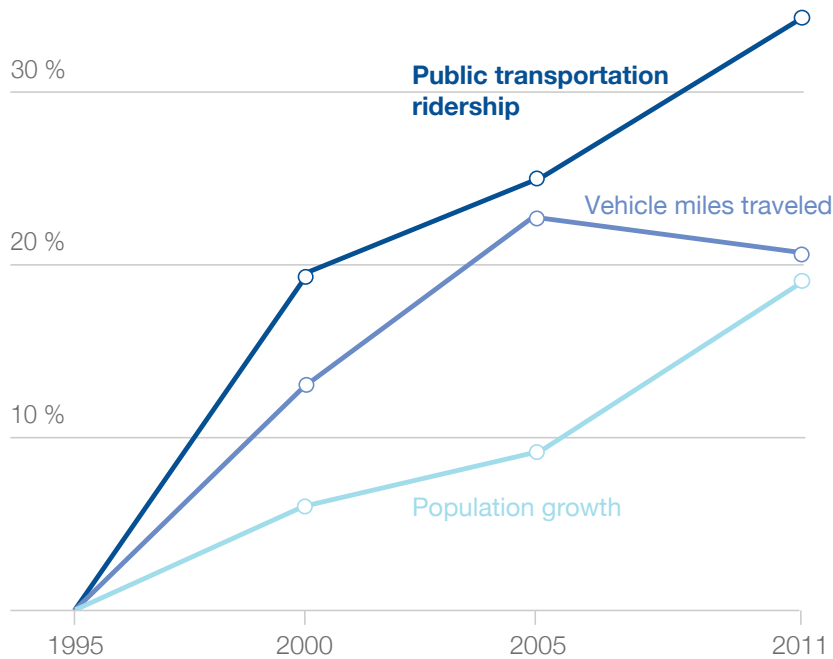
Communities are looking to mass transit as a way to achieve their vision for the future. At the same time, conventional sources of funding are harder

to obtain. A combination of ideological gridlock in Congress, dwindling federal gas tax revenues, and the elimination of earmarks have made traditional

approaches to building transit more challenging.<sup>2</sup> Despite these obstacles, many communities are finding creative ways to move ahead.

## Strong growth of transit ridership<sup>1</sup>

percent change from 1995



*In the past 16 years, transit ridership has increased by more than 30 percent—dramatically outpacing population growth.*

<sup>1</sup> Population data from U.S. Census Bureau tables “Population Projections: States, 1995 – 2025” and “Projections of the Population and Components of Change for the United States: 2010 to 2050”; mileage data from Federal Highway Administration “Historical Monthly VMT Report”; and transit trip data from American Public Transportation Association (APTA) historical ridership tables.

This guidebook is designed to help community leaders get from Point A—the desire to meet the demand for transit—to Point B—raising the money needed to build and operate it.

Communities of all sizes are planning and designing streetcars, rapid busways, light rail, commuter rail, and other so-called “fixed guideway” systems because they move a lot of people, while doing a lot more than that. These lines can shape development so that growth and change will improve—and not harm—existing neighborhoods and quality of life. Such development generates a higher level of tax revenues per acre than traditional, low-density development. This is especially true when transportation planners work with other public agencies and the private sector to grow walkable neighborhoods around transit stations.

Transit helps to maintain the efficiency of the existing road network, because every transit rider is one person not traveling by car. A city bus can carry more than 60 people and a full train more than 1,600, meaning that high-capacity busways and

<sup>2</sup> Construction costs have also continued to rise, causing a 33 percent reduction in the purchasing power of the federal gas tax, which was last raised in 1993.



rail lines can carry the equivalent of seven highway lanes or seventeen lanes of urban street.<sup>3</sup> That helps communities avoid the disruptive and expensive cycle of road-widening that never seems to solve congestion for long.

A good transit system also saves people money. When all the costs of car ownership are accounted for—purchase price, finance charges, insurance, gas, repairs, etc.—it eats up a big slice of the family budget. Transit can give people the option to use their cars less, buy less gas, or own fewer cars.

Growing public interest in transit is leading many communities to look for ways to expand their offerings. Many of the metropolitan regions with transit today—Atlanta, Dallas, Salt Lake City, Denver, Phoenix, and Minneapolis to name a few—received significant federal money through the U.S. Department of Transportation New Starts program, which provides funding to cover the construction or expansion of fixed-guideway transit systems. Now many other communities are hoping to follow their lead and expand transit.

As more communities seek to develop or expand transit systems, this already over-subscribed program will not be able to fund every project

seeking assistance. To make the money go further, the program has recently covered one-half of project costs, down from 80%, with some projects getting as little as a one-third from New Starts. Even with this policy in effect the waiting list grows longer every year. A city hoping to get a New Starts grant should be prepared to wait 10 years until project completion. With the current political environment in Congress, it is unlikely that transportation funding, including New Starts, will increase for the next several years.

But all is not lost. There are ways to pay for new transit investments without waiting so long, and a growing number of communities are pursuing them. But doing so requires more sophistication in the art of project finance than has been needed in the past.

Someday—soon, we hope—the Federal Government may respond to the high level of demand for new transit investments by increasing funding available to communities. Those of us who aspire to provide these options for people in our communities must continue to work toward that goal. In the meantime, though, we can demonstrate the depth of the need and the strength of our desire by finding our own creative ways to make these projects happen. This guidebook is a first step toward that goal.



3 APTA “Economic Development: Promoting Growth (2012)”: [www.apta.com/resources/reportsandpublications/Documents/Economic-Recovery-APTA-White-Paper.pdf](http://www.apta.com/resources/reportsandpublications/Documents/Economic-Recovery-APTA-White-Paper.pdf)







# Shaping the Future with Transit

As a local leader, you have the ability to engage residents in a broad discussion about how public investments will meet their needs, while shaping future growth.

This process raises fundamental questions: What type of region do we want to be in 20 or 30 years? How will people make a living or get to work, health care, and recreation? What transportation systems will help us achieve this vision in a sustainable and cost-effective way? How can we ensure that costs, benefits, and burdens are shared equitably?



An increasing number of metropolitan regions are turning to public transportation as an answer to these questions, especially to so-called fixed guideway transit—light rail, commuter rail, streetcars, busways, and the like. These investments often are attractive because they can address several goals at once. The right projects can offer an alternative to congestion in certain corridors, while helping to breathe life into struggling neighborhoods, reduce pollution, and attract both major employers and a skilled workforce seeking a high-quality, walkable lifestyle.

In the near term, the construction work required to build these systems stimulates economic activity, creates jobs, and increases local tax revenues. Research by the U.S. Department of the Treasury and Council on Economic Advisors shows how transportation infrastructure spending produces

high skilled, middle-class jobs.<sup>1</sup> These investments also provide an excellent opportunity to connect local residents to high-quality construction jobs.

But these are not make-work investments. A well-conceived transit system has multiple economic pay-offs for households, local tax coffers and businesses. Consider the benefits to individuals: today, the typical household spends 46 percent more on transportation than on food.<sup>3</sup> A household with two working adults using public transportation can save more than \$9,743 annually compared to a similar family without access to transit.<sup>4</sup> And, of course, for those who are unable to drive, for whatever reason, having a transit option can mean the difference between having a job or not.

One of the most important benefits of transit is its ability to serve as a focal point for future development, and in the process raising property values and generating additional tax revenues to support local services. Because rail and rapid bus systems can move large numbers of people,



New apartments, offices, and mixed-use buildings have sprung up along Charlotte's Blue Line since it opened in 2007, generating \$6.5 million annually for the city and \$12.2 million annually for the county along the system's corridor

they allow a higher concentration of economic development than would otherwise be possible. This can benefit both well-established communities and growing regions. In more-developed areas, a transit system can help accommodate substantial growth and improve mobility (even when only a limited number of parcels remain). For younger communities, focusing development around transit can help preserve existing neighborhoods and green space, while reducing the cost of spreading roads, water, sewer, and other infrastructure far and wide to support growth.

Creating walkable neighborhoods within easy access of rail and bus lines—what some refer to as “transit-oriented development”—is essential to making the most of new transit investments. Station areas

## Transportation Costs as a Percentage of Household Income<sup>2</sup>

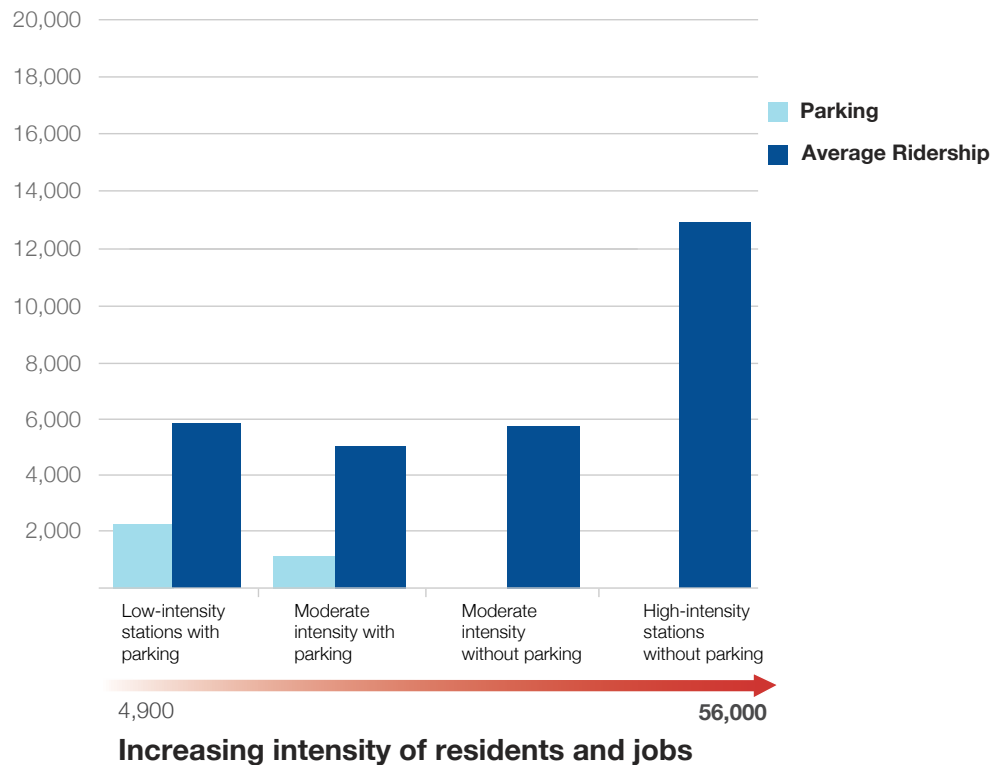


- 1 Department of the Treasury defines middle-class jobs as those with wages between the 25th and 75th percentile of the national distribution of wages.
- 2 Research conducted by the Center for Transit Oriented Development from 2004 Bureau of Labor Statistics data.
- 3 Ibid.
- 4 American Public Transportation Association (June 2012) “June Transit Savings Report”: [http://apta.com/mediacenter/pressreleases/2012/Pages/120620\\_TSR.aspx](http://apta.com/mediacenter/pressreleases/2012/Pages/120620_TSR.aspx)



## Increased Development Supports Transit Ridership

Ridership at WMATA rail stations in Washington, DC



Source: Center for Transit Oriented Development analysis of 2006 WMATA ridership data

with a greater development density have higher ridership levels. For example, in Washington, DC, ridership levels increase steadily with the density of development around Metro stations.<sup>5</sup>

Increased ridership not only provides the transit operator with additional farebox revenues, but also improves the efficiency and reliability of the entire surface transportation network. For example, the Metrorail extension in Northern Virginia (highlighted in Chapter 4) is anticipated to increase the travel capacity within the corridor it serves by 60 percent.

<sup>5</sup> Center for Transit Oriented Development (July 2011) "Planning for TOD at the Regional Scale: The Big Picture": <http://reconnectingamerica.org/assets/Uploads/RA204REGIONS.pdf>

A new transit line can catalyze development, as was the case in Charlotte, NC. Since opening in 2007, Charlotte's Blue Line has attracted millions of dollars in commercial and residential development around the 15 stations along the 9.6-mile length. The line has helped attract 2,600 residential units, 420,000 square feet of retail space, and 320,000 square feet of office space, generating \$6.5 million annually for the City of Charlotte and \$12.2 million annually for the county.<sup>6</sup> In many cases, some of the increased tax revenue can be applied to the construction of the transit line itself. (Chapter 2 provides additional detail on such local revenue-generating approaches.)

### Did You Know?

**BUS RAPID TRANSIT:**  
A bus system operating in a dedicated right-of-way with characteristics similar to rail systems, including larger vehicles, fewer stops, and reduced travel times.

<sup>6</sup> Data on ridership, system elements, and economic development provided by the City of Charlotte and the Charlotte Area Transit System.

## Transit Modes by the Numbers

Each transit mode—bus, subway, commuter rail, streetcar, etc.—has its own construction time and cost, operating parameters, and ridership levels. A subway, or heavy rail line, will take more time and money than other modes to implement, but in return, these high-capacity systems can quickly and cost-effectively move large numbers of people and support dense development. By comparison, an express bus program that provides commuters with reliable peak period service from suburban communities into the central business district will likely have a less complex funding package and shorter implementation period. The trade-off is that an express bus program carries fewer people and provides less of a platform for economic development. In the end, the choice of mode should align with your region's transportation, development, and land use goals.

The table “Transit Modes at a Glance” presents potential ranges of cost, ridership, and time to completion for different transit modes, as well as the optimal population and job densities associated with each. At the low end of the spectrum are express bus projects, which may be implemented at a lower cost within a year or two. Rapid bus and streetcar projects require more substantial infrastructure, with



TYPICAL TRANSIT MODES: Clockwise from top left: Los Angeles' Orange Line express rapid bus line, Seattle's South Lake Union Streetcar, Washington, DC's iconic Metro heavy rail system, and Minnesota's Hiawatha light rail line

a higher cost and time to completion. On the high end of the spectrum are light rail, commuter rail, and heavy rail projects. These systems often require multiple studies, major right-of-way acquisition, and complex funding and financing packages. Because no two projects are alike, the table presents large cost and time to completion ranges.

## Summary of Key Concepts

Careful consideration of the benefits and trade-offs of each transit mode, combined with coordinated planning, will help ensure you leverage transit's full potential.

- Transit investments should reinforce land use and economic development plans.

## Transit Modes at a Glance<sup>7</sup>

\$15 - \$30 Million	\$150 - \$400 Million	\$400 Million - \$2 Billion	\$2 - \$5 Billion
<p><b>Express Bus with System Improvements</b></p> <ul style="list-style-type: none"> <li>Increased speeds, frequency, and fewer stops</li> <li>New buses with branding</li> <li>Electronic fare cards for rapid boarding</li> <li>Signal prioritization</li> <li>Enhanced stops, including shelters and street furniture</li> <li>Modest increase to operations and maintenance budget</li> </ul>	<p><b>Streetcars</b></p> <ul style="list-style-type: none"> <li>May operate in mixed traffic, on dedicated right-of-way, or a combination</li> <li>Median and curb running</li> <li>Overhead electrification</li> <li>Short trains with mid-size rail cars that fit within existing street network</li> <li>Dedicated maintenance facilities</li> </ul> <p><b>Bus Rapid Transit</b></p> <ul style="list-style-type: none"> <li>Dedicated right-of-way for all or substantial portion of route</li> <li>Larger articulated buses</li> <li>Median and curb running</li> </ul>	<p><b>Light Rail and Commuter Rail</b></p> <ul style="list-style-type: none"> <li>Larger trains traveling at higher speeds over longer distances</li> <li>Stops farther apart</li> <li>Dedicated and grade-separated right-of-way</li> <li>Dedicated maintenance and storage facilities</li> <li>Large stations with fare payment upon entrance</li> <li>Parking at some stations</li> </ul>	<p><b>Heavy Rail/Subway</b></p> <ul style="list-style-type: none"> <li>High-frequency, high-capacity trains</li> <li>Dedicated and grade-separated right-of-way</li> <li>Third rail electrification</li> <li>Large stations with fare payment upon entrance</li> <li>Specialized maintenance and storage facilities</li> <li>Significant operations and maintenance expenses</li> </ul>
<b>Daily Ridership:</b> 800 – 2,000	<b>Daily Ridership:</b> 5,000 – 8,000	<b>Daily Ridership:</b> 10,000 – 30,000	<b>Daily Ridership:</b> 40,000 +
<b>Population within ½ Mile of Corridor:</b> 8,000 – 12,000	<b>Population within ½ Mile of Corridor:</b> 20,000 – 40,000	<b>Population within ½ Mile of Corridor:</b> 35,000 – 100,000	<b>Population within ½ Mile of Corridor:</b> 150,000 +
<b>Employment within Corridor:</b> 5,000 – 10,000	<b>Employment within Corridor:</b> 15,000 – 50,000 Jobs	<b>Employment within Corridor:</b> 30,000 – 90,000 Jobs	<b>Employment within Corridor:</b> 90,000 + Jobs
<b>Time to Complete:</b> 1-2 years	<b>Time to Complete:</b> 4-6 years	<b>Time to Complete:</b> 6-10 years	<b>Time to Complete:</b> 10-15 years
<p><b>Possible Funding/Financing:</b></p> <ul style="list-style-type: none"> <li>Local transportation funds</li> <li>FTA formula funds</li> <li>FTA discretionary grants</li> <li>State funds</li> </ul>	<p><b>Possible Funding/Financing:</b></p> <ul style="list-style-type: none"> <li>Local sales tax</li> <li>Local/municipal bonds</li> <li>State grants</li> <li>Federal loan</li> <li>Federal grants, formula funds</li> </ul>	<p><b>Possible Funding/Financing:</b></p> <ul style="list-style-type: none"> <li>Local sales tax</li> <li>Local/municipal bonds</li> <li>Tax increment financing</li> <li>State grants</li> <li>Federal loan</li> <li>Federal grants, formula funds</li> <li>Private capital through a public-private partnership</li> </ul>	<p><b>Possible Funding/Financing:</b></p> <ul style="list-style-type: none"> <li>Local sales tax</li> <li>Local/municipal bonds</li> <li>Special assessment district</li> <li>Tax increment financing</li> <li>State grants and loans</li> <li>Federal loan, grants, and formula funds</li> <li>Private capital through a public-private partnership</li> </ul>

<sup>7</sup> This table was developed with the assistance of local transit agencies regarding cost, ridership, and time to completion as well as with data on population and employment from the National Transit Oriented Development database: <http://toddata.cnt.org/index.php>



- Scenario planning helps to ensure that transit investments deliver their full benefit. Planning should take place at the regional level and be driven by community goals (e.g., access to jobs, economic development, travel time savings, and environmental improvements, etc.).
- Each transit mode has unique characteristics and the choice of mode should align with the region's transportation, development, and land use goals.
- The cost and time to completion of each mode has important implications for building and maintaining a political coalition as well as the overall complexity of project financing and the size of the local funding commitment.
- Before implementing a new transit project, it is important to plan for operation and maintenance costs.

As with any major infrastructure project, once you have decided what you want to build comes the question of how to pay for it. The next chapter provides detailed information on the most common financing tools, grant programs, and local revenue sources. Since your project is likely to include some form of borrowing (financing), this chapter discusses the benefits and drawbacks of each financing tool as well as the most frequently used sources of local revenue to pay off this debt.



## Tucson, AZ - Planning for Transit Operations



*A new transit line costs money to build, but it also creates ongoing costs after construction is over, both for operating the trains and for ongoing upkeep of the trains, tracks, and structures, also called 'capital maintenance.' Therefore, transportation plans must comprehensively address not just the up-front construction costs but also ongoing expenses.*

Many communities fund a portion of their transit capital project through a regional sales tax. One of the most effective approaches is to dedicate a portion of sales tax revenues to operations. Tucson, Arizona presents an excellent example of strategically planning for ongoing costs by dedicating a portion of sales taxes to operating expenses.

In 2006, voters in the Tucson region approved a 20-year transportation plan and a half-cent sales tax that will provide more than \$2 billion for a mixture of highway and transit projects. Included in the plan is a modern streetcar system that will link the central business district in downtown Tucson with the University of Arizona.

The Regional Transportation Authority estimates that operating the streetcar line will cost \$3.2 million annually with farebox revenues providing between \$300-500,000. Regional elected officials and planners decided early on to dedicate \$1 million in transportation sales tax revenues annually to cover a portion of the streetcar's operating expenses. When combined, the sales tax and farebox revenues will cover approximately 45 percent of total operating costs each year.<sup>A</sup> The remaining operating expenses will be covered by City of Tucson through its general fund.

Because local leaders effectively planned for both the construction and operation of new system, existing bus services are not scheduled for any reductions. This will ensure that residents who depend on long-standing routes for work and other needs can continue to depend on reliable service.

<sup>A</sup> Data on sales tax revenue projections and operating costs provided by the Pima Association of Governments – Regional Transportation Authority.



## Arlington, VA—A Thriving Suburb ‘Grows Up’ Around Transit<sup>B</sup>

*Since the 1970’s, the Northern Virginia suburb of Arlington, across the river from Washington, DC, has turned investment in a regional rapid rail system into a powerful engine of prosperity and livability.*

*When the National Capital Transportation Agency began planning what would become Metro in the 1960’s, Arlington, Virginia decided to make the rail line the focal point of future growth. At the time, Wilson Boulevard, the east/west thoroughfare that paralleled the proposed rail route, was a low-rise commercial corridor that catered to the automobile, surrounded mostly by neighborhoods of single-family homes. Ballston, at the western edge of the corridor, had an auto-oriented, failing shopping center called Parkington and the county found itself losing jobs and population to the outward sprawl of the region.*

*In deciding where the transit routes would go, the regional bodies deferred largely to the local jurisdictions for their alignment preferences. Arlington County leaders and planners had three key insights: one, stations in the*

*median of the planned Interstate 66 with “park and ride” lots would fail to generate the kind of ridership needed for a successful transit system; two, using the Metro to catalyze denser development at the stations would help create ridership while also boosting the county’s tax rolls; and three, preserving the integrity of the single-family neighborhoods surrounding the corridor was of paramount importance. Arlington decided to bury the Orange Line beneath Wilson Boulevard and provide five new stations.*

### Orange Line Under Construction 1977



<sup>B</sup> Data on the Arlington-Ballston corridor taken from Arlington County.



*With the completion of the first station in 1977 and Ballston in 1979, the corridor began a slow transformation as new multi-story, mixed-use buildings were added in the station areas. That transformation really took off in the 1990's and 2000's. Great care was taken in the land use planning and zoning documents to step down density from the station area to the neighborhoods, resulting in a graceful transition from high density mixed use buildings on Wilson Boulevard to single-family neighborhoods—almost all of which were left intact by the new Orange Metro line.*

## Orange Line Today



*Though Arlington has added 22 million square feet of office space and nearly 30,000 units of housing, traffic counts on Wilson Boulevard are almost exactly what they were in 1970 before the Metro opened, about 15,000 per day. Fewer than half the residents in the corridor drive to work, two-in-three live in buildings immediately adjacent to the Metro and commute via transit while almost 40 percent in the corridor as a whole use transit.*

*Today, a small county with limited land for development collects an impressive one-third of its property tax revenue from just 7.6 percent of its land, keeping tax rates extremely low. By leveraging the new Metro corridor, Arlington was able to develop in a way that reduces the development pressure on single-family neighborhoods while yielding revenue to invest in amenities like libraries, parks, and recreation centers throughout the county.*

## Scenario Planning—Making the Most of Transportation Investments

*Before deciding whether and where to build rail lines and bus ways, many regions have benefitted from an in-depth, community-wide process of planning for the future. This process usually involves comparing two or more scenarios for transportation investments and associated land-use patterns to understand their costs and potential impacts on the region.*

*Development patterns are not set in stone; scenario planning helps decision makers weigh how different choices about transportation can alter the path of development and improve or degrade both government and household budgets and quality of life. In short, scenario planning provides local communities with a framework for taking control of their future and making informed decisions about investments and their trade-offs.*

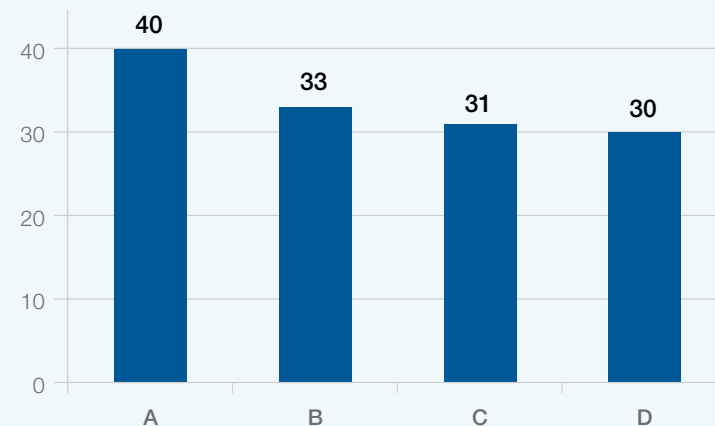
*Everyone wants limited transportation funds to support projects that provide the most benefit. The first step is to begin a community-wide conversation about what shape the region should take in the future. Once a broad range*

*of goals have been established, the next step is to develop alternative investment strategies that will make progress toward that ideal future.*

*Depending on the goals outlined by the community during the scenario planning process, transportation planners could measure the impacts of alternative investment scenarios on metrics such as:*

### Per Capita Vehicle Miles Traveled (City)

Scenarios B, C, and D would result in Tulsans driving fewer miles than Scenario A





- Infrastructure lifecycle costs
- Congestion and total vehicles miles traveled (VMT)
- Air quality (e.g., smog, particulate matter)
- Access to job training and employment centers
- Access to parks and other recreational facilities
- Green space preservation
- Walkability of neighborhoods

Scenario planning is a tool that can help direct limited dollars to those projects that make the most progress toward achieving community goals.

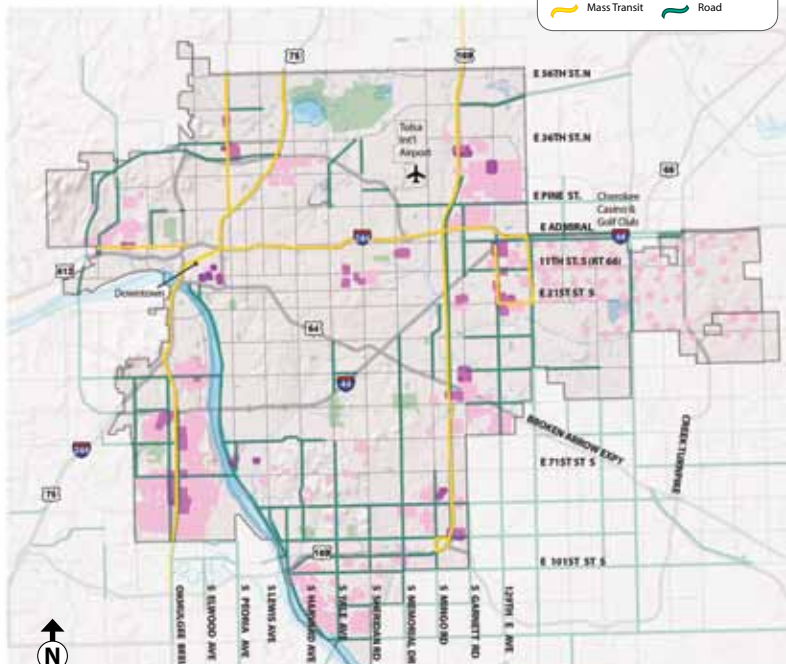
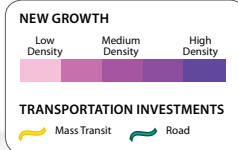
**Additional Resources**

**U.S. Department of Transportation - Federal Highway Administration**

[http://www.fhwa.dot.gov/planning/scenario\\_and\\_visualization/scenario\\_planning/index.cfm](http://www.fhwa.dot.gov/planning/scenario_and_visualization/scenario_planning/index.cfm)

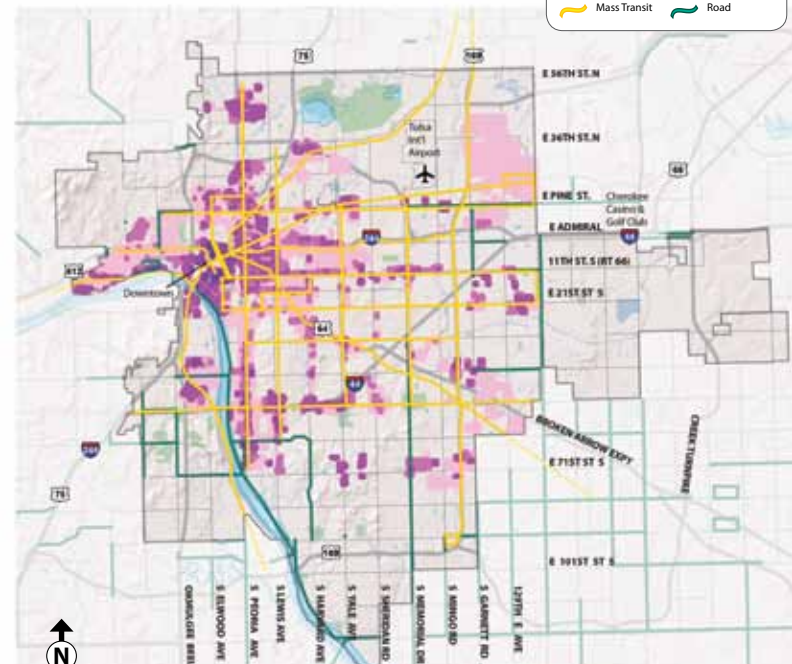
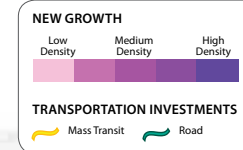
**SCENARIO A**

The map shows the location of potential new population and employment growth represented in pink for low density to violet for high density.



**SCENARIO D**


The map shows the location of potential new population and employment growth represented in pink for low density to violet for high density.







# Navigating the Money Maze: Financing, Funding, and Revenue



Now that you have a strong sense for how different types of projects can help your community achieve its goals for the future, it's time to look at how much traditional funding sources may provide and how much of a gap will remain.



**Federal:** The Federal Government has an essential role to play in supporting the construction, expansion, and operations of transit systems. State and local success in the years to come will only be possible with a continued strong partnership with the Federal Government.

At the moment, the future size and strength of the federal program are in doubt. A combination of ideological gridlock, dwindling fuel tax receipts, and a lack of consensus on the goals of a federal program mean that grant-making is likely to remain flat for the foreseeable future even as demand for funding rises.

At the same time, Congress has expanded low-cost, flexible federal loans for highway and transit projects tenfold. As this chapter will discuss, a low-cost federal loan and other financing options may help supplement traditional grant support.

**State:** With some notable exceptions, states have focused on funding highway projects. While some states support transit as well, these programs often represent a modest share of overall state transportation expenditures. New fixed-guideway transit projects often require (either formally or as a matter of historical practice) a special legislative or budgetary act to appropriate funds. Thus, while the Federal Government has formal, ongoing, and well-established competitive grant programs to

fund transit, at the state level opportunities vary greatly.

**Local:** Local governments have a wide range of revenue options, such as sales taxes, special assessments, parking and car rental fees, tax increment financing, and property taxes. These revenues can be applied directly to project costs or used to as a repayment stream either for municipal bonds or private investment. Often, though, these funds are dedicated to operating and maintaining existing transit service and roads, leaving little or no surplus that can be used for new transit capital projects.

Innovative financing is one way to assemble a complete funding package—especially when a region can generate revenue through a local option sales tax or other source.

### Filling the Gap: Financing, Federal Grant Programs, and Local Revenues

Building a new transit project typically requires sponsors to combine multiple sources of funding (grants or money that does not have to be repaid) and financing (debt or money that must be repaid). Each grant program, financing tool, and local revenue source has unique characteristics. Some options may work better than others depending on the needs of your community. No two projects are ever developed in the same way. One of the



overarching goals of this chapter is to help you to think critically about what combination is best for your community.

The Chapter is divided into three sections: Project Financing, Grant Programs, and Local Revenue Sources.

## I. Project Financing

This section details the most common financing options: general obligation bonds, revenue bonds, grant anticipation notes, private financing and equity, federal TIFIA and RRIF loans, and state infrastructure banks.

### What you will learn

- The advantages and drawbacks of each financing option and how they might fit with your community's needs
- Relationship between risk of default and interest rates/cost of funds
- Difference between a general obligation bond backed by a full faith and credit pledge and a revenue bond backed by a specific revenue source

### Important questions to ask

- How will this long-term debt obligation impact other budgetary priorities?
- Can we take steps to balance risk and cost?
- Are there cheaper federal borrowing options?

Bonds are the basic way that governments—and government-created entities—borrow money. State and local bonds are often simply referred to as municipal bonds or “munis.” Bonds allow local governments to finance large infrastructure projects that would not be possible within the limitations of annual budgets. By issuing a bond, a public project sponsor can spread costs over many years for projects that typically last far longer. In return for lending the government money by purchasing a bond, investors receive a specified rate of return or interest payment.

The interest paid by the public entity issuing the bond determines the “cost of funds.” A lower interest bond allows a project sponsor to access capital more cheaply than a high interest bond. The risk of default (i.e., failing to pay bondholders back what they are owed) governs the rate of interest that a project sponsor must offer to attract investors. Interest rates follow a rule: the greater the risk that a bondholder will not be repaid, the higher the interest rate required to attract investors.

Local governments can take steps to make their bonds more secure and attractive to investors. In return for reducing the risk of default, the project sponsor is able to offer a bond with a lower interest rate. For instance, a local government may lower risk to investors by issuing a bond with insurance.

If the local government is unable to pay, the insurance company repays bondholders.

When building a funding package for your project, it is important to balance risk and cost. The mixture of grants, loans, bonds, and other financial tools should expose you to an acceptable level of risk at the lowest possible cost.

**General Obligation Bonds:** General obligation bonds are secured by and repaid from the general tax revenues of the borrowing government. The government issuing the bond pledges its full faith and credit to investors. In effect, the government is promising to use its full powers of taxation to generate enough revenue to repay bondholders. The strength of the full faith and credit pledge makes general obligation bonds a low-risk investment. In exchange for the security that comes from such a powerful pledge, investors are willing to accept a lower interest rate.

### Did You Know?

#### **LOCAL OPTION TAX:**

*Voter-approved tax measures such as property, sales, and vehicle taxes can be used to support new transportation projects, ongoing operations, and capital maintenance.*

## Making the Grade: How Bond Ratings Affect Interest Rates

*Before a bond may be issued, a credit rating agency must provide a rating that allows potential investors to understand the risk of default. The three most prominent national credit rating agencies are Standard & Poor's, Moody's, and Fitch Group.*

The rating agency analyzes the financial strength of the issuing government as well as the repayment source pledged to retire the bond. When a bond receives a high credit rating this indicates a low risk of default. A strong credit rating lowers the interest rate and can save a project sponsor millions of dollars in total financing costs.

A local government issuing a bond can also reduce the risk to investors by purchasing insurance or securing a letter of credit. Bond insurance comes into play if the local government agency cannot make its principal or interest payments as anticipated. As with all insurance policies, the government must pay to issue their bonds with the backing of an insurance company. Similarly, governments may choose to obtain a line of credit that can be drawn down in the case of revenue shortfalls.

*Benefits:* The principal benefit of issuing a general obligation bond for a project sponsor is its low cost compared to other financing options. Even a modest increase in the interest rate on a bond can add millions of dollars to total project costs. The savings that result from low-cost financing may make the difference between successfully implementing a project and failing to move forward.

*Drawbacks:* General obligation bonds represent a promise to repay investors before making any other budgetary expenditure. This is a significant risk to the government project sponsor. If tax revenues fall below projected levels, the government must still repay bondholders. As a result, other programs and projects may be at risk of being cut or eliminated. Finally, most governments are limited in how much general obligation debt they may take on. Choosing to offer a general obligation bond may limit the ability of the government to pursue other projects in the future.

*Bottom Line:* The decision to offer a general obligation bond should include an in-depth analysis of its potential budgetary impacts. The lower borrowing costs associated with a general obligation bond should be balanced against the additional budgetary risks.

### *Additional Resources*

**Federal Highway Administration (FHWA):  
Project Finance Primer**  
[www.fhwa.dot.gov/ipd/pdfs/finance/  
ProjectFinancePrimerREV4.pdf](http://www.fhwa.dot.gov/ipd/pdfs/finance/ProjectFinancePrimerREV4.pdf)

**Municipal Securities Resource Board**  
[http://emma.msrb.org/EducationCenter/  
EducationCenter.aspx](http://emma.msrb.org/EducationCenter/EducationCenter.aspx)

**Revenue Bonds:** Revenue bonds are repaid from a specific source of funds. The creditworthiness of a revenue bond is determined by the strength of the specific source of funds pledged toward repayment. Bondholders do not have a general claim to government revenues. Instead, they have a claim only to those revenues pledged to retire the bond. Generally, revenue bonds are treated as a riskier investment than a general obligation bond due to the narrow repayment pledge. As a result, revenue bonds often require a higher interest rate to attract investors.

*Benefits:* Revenue bonds are attractive to the project sponsors who are borrowing money because they represent a lower level of budgetary risk than a general obligation bond. In addition, many infrastructure projects generate revenue that may be pledged to repay bondholders.

For instance, if a local government wanted to finance the construction of a parking deck, it could offer a revenue bond that pledged to repay investors with the resulting parking fees. In this case, the local

government is not pledging its full faith and credit. Bondholders are entitled to the revenues generated by the project and nothing more.

*Drawbacks:* Revenue bonds have a higher long-term cost for project sponsors than general obligation bonds due to the higher risk of default, which requires them to offer a higher interest rate.

*Bottom Line:* The decision to issue a revenue bond is driven by two main considerations: the strength of the revenue source (either generated by the project or a separate source such as a sales tax) and the desire to limit the budgetary risk to other programs and projects. A project with uncertain revenue generating potential that receives a lower credit rating (requiring a high interest rate to attract investors) may not be able to generate enough to pay a higher interest rate.

**Tax Increment Bonds:** Tax increment bonds (sometimes known as tax allocation bonds) are a form of revenue bond that takes advantage of the increased property tax revenues that result from the transit investment. Building a new transit line can increase surrounding land values and serve as a catalyst for new real estate development. As new residential and business projects are built around the transit line, the assessed value of land rises and property tax revenues increase. The increase in property taxes is dedicated to making payments to bondholders.

## Coverage Ratio — A Measure of Financial Strength and Risk

*When a government project sponsor offers a general obligation bond, a rating agency will assess the overall financial condition or creditworthiness of the sponsor. This analysis includes all outstanding indebtedness (liabilities) and revenues (taxes, fees, etc.). When taken together, this information provides a reliable measure of the ability of the project sponsor to repay investors.*

By comparison, when a project sponsor offers a revenue bond (i.e., one backed by a specific pledge or source of revenues), the rating agency will look at the projected revenues and compare them to the required debt service payments; the relationship between these two numbers is known as the “coverage ratio.” In short, a revenue source must not only generate enough money to repay bondholders, but also provide a cushion. The more money that a revenue source brings in over and above what is required to repay

investors, the higher the ratio and the stronger the rating. The additional money acts as a backstop should actual revenues fall below forecasted levels at some point over the life of the bond. Revenue bonds with a high coverage ratio tend to receive higher ratings and have lower interest rates.

### **Rate Covenant—A Commitment to Bondholders**

Some infrastructure projects generate revenue by charging people each time they use the facility. A rate covenant is a binding commitment by the government project sponsor to keep user fees at or above a specified level. Rate covenants are designed to protect lenders against the possibility that a future elected official may be tempted to lower user fees to help his or her constituents even at the risk of defaulting on the loan. This helps to ensure that the sponsor will collect enough revenue to make bond payments. Often, the rate covenant does not set a specific dollar amount for the user fee. Instead, the project sponsor will commit to a certain coverage ratio (e.g., a fee that ensures a coverage ratio of 1.5).



## Did You Know?

### METROPOLITAN PLANNING ORGANIZATIONS:

Are regional government agencies responsible for developing the long-range transportation plan for a region through continuing, cooperative, and comprehensive planning.

**Benefits:** Building a transit project can raise property values and serve as a catalyst for real estate and other forms of economic development. Tax increment financing captures the expected benefits of a transit project in a way that helps get the project

built today. Also, by only pledging incremental revenues, it can reassure people that existing revenue sources already being used for other needs will not be tapped.

**Drawbacks:** Tax increment bonds rely on significant new development to occur around transit stations and within the corridor. Because the potential real estate development may slow, the anticipated increase in revenues may not materialize. These bonds can require a project sponsor to pay a higher interest rate than general obligation bonds. Also, the amount of money generated this way is usually less than a regional sales tax or other broad-based tax measure.

**Bottom Line:** In order for tax increment bonds to be successful and a receive a high bond rating, local leaders, planners, and developers must think

critically about how to maximize development potential around stations and within the corridor. This cooperative partnership should begin as early as possible. Also, tax increment financing can cover a portion of project costs, but is not likely to provide full project funding.

### Grant Anticipation Notes (GAN)/GARVEE

**Bonds:** Transit agencies in metropolitan areas over 200,000 in population receive funds from the federal government each year based on a formula. Transit agencies are permitted to borrow against those future formula funds. Grant anticipation notes (GANs) are a form of municipal security that pledges future federal funds to make debt service payments.

Federal funds are widely considered a strong revenue stream. As a result, the interest rate on GANs is relatively low. Urban Area Formula funds (also known as 5307 funds for the section of federal law that authorizes them), and State of Good Repair grants (section 5337) are commonly pledged to repay grant anticipation notes. A project sponsor may also issue bonds known as Grant Anticipation Revenue Vehicles (GARVEE) bonds, supported by flexible funds allocated to federal highway programs, to help construct a transit project. This involves concurrence by either the state or the applicable metropolitan planning organization (MPO).

**Benefits:** Federal formula funds are a predictable and stable source of revenue. National credit rating agencies typically rate grant anticipation notes highly. As a result, GANs have a lower interest rate. Grant anticipation notes may be an especially attractive option for transit authorities that do not have the power to tax.

**Drawbacks:** The decision to obligate future federal formula funds means a portion of those revenues will not be able to carry out other capital projects such as replacing aging vehicle fleets. Moreover, the growing political impasse in Washington and lagging gas tax revenues have lowered the long-term security of federal funding.

**Bottom Line:** You should weigh the decision to obligate formula funds traditionally dedicated to maintaining the existing capital stock against the benefits of accessing low-cost financing.

### Additional Resources

**American Association of State Highway and Transportation Officials (AASHTO) Center for Excellence in Project Finance**

[http://www.transportation-finance.org/funding\\_financing/financing/other\\_finance\\_mechanisms/](http://www.transportation-finance.org/funding_financing/financing/other_finance_mechanisms/)

**FHWA: Office of Innovative Program Delivery**

[http://www.fhwa.dot.gov/ipd/finance/tools\\_programs/federal\\_debt\\_financing/garvees/index.htm](http://www.fhwa.dot.gov/ipd/finance/tools_programs/federal_debt_financing/garvees/index.htm)



**Private Financing and Equity:** For decades, transportation agencies and local governments have built transit systems with a combination of federal, state, and local funds and bond financing. More recently, governments have started forming public-private partnerships (hereafter P3) as an alternative method for financing and delivering large projects. A P3 approach allows a private partner to provide money to cover a portion of project costs.

In a public-private partnership, a private entity takes responsibility for aspects of project delivery that have traditionally been carried out by the

government. In return, the private party is allowed to collect fees from users, is promised a stream of payments by government, or a mix of the two.

**Benefits:** Where the private party receives government payments, this obligation often does not count against a government's statutory limitations on indebtedness in the same way as bond financing. In addition, a P3 can allow a local government to shift a portion of the risk for delivering a project to the private sector.

**Drawbacks:** The cost of private capital is usually higher than traditional bond financing. In addition, the government project sponsor agrees to give up some control over project implementation to the private sector.

**Bottom Line:** P3 deals are complex and you must exercise caution to ensure you don't end up with more expensive financing than a traditional public bond without effectively transferring risk and responsibility to the private partner.

Because P3s are growing both more common and more complex, Chapter 3 discusses public-private partnerships in greater detail.

**Private Activity Bond:** Private activity bonds are tax-exempt bonds issued by a state or local government with the proceeds passed through to a private entity as part of a public-private partnership. The money raised by the private activity bond offering is used by the private entity to construct the project. And even though the private entity is responsible for repayment, the interest income earned by investors is not subject

### *Did You Know?*

**HIGH-OCCUPANCY TOLL LANES:** Allow single-occupant vehicles to use a HOV lane by paying a toll while multi-person vehicles travel for free. Federal law permits highway tolls to support transit projects under certain conditions.



## Did You Know?

**FINANCING:** Money that must be repaid with interest by the project sponsor. Common financing options include bonds, government loans, and private funds through a public-private partnership.

to federal income taxes. In exchange for the favorable tax treatment, investors are willing to accept a lower interest rate than for a traditional private bond. Once construction is complete, the public agency begins paying the private partner for

delivery of the project. The private partner then takes a portion of these funds to repay bondholders.

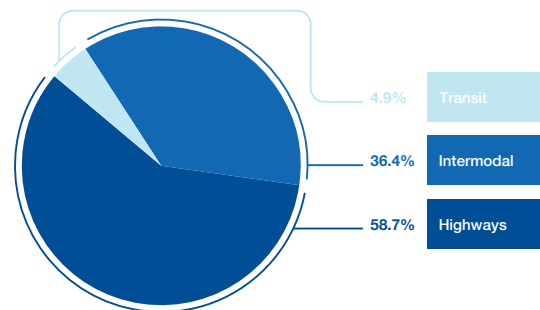
Federal tax rules clearly distinguish municipal bonds from private sector bonds. The federal government provides favorable tax treatment to investors in municipal bonds because the projects they fund have a clear public purpose and benefit. By exempting the interest income on public bonds from federal income taxes, the federal government helps to lower borrowing costs for state and local government. Investors are willing to accept a lower interest rate on municipal bonds because the earnings are tax-exempt. Private bonds, on the other hand, fund business activity intended to generate private profit. The income investors earn on private bonds is subject to federal income taxes. As a result, interest rates on private bonds have to be higher in order to attract investors.

In a P3 deal, private entities often raise capital to cover a portion of construction costs by issuing a bond. Because this is a private bond, investors must pay federal income taxes on the earnings. The increased cost of the private bonds is ultimately passed along to the project sponsor (read: taxpayers). The increased cost of private capital is a disincentive for project sponsors to engage in public-private partnerships. To help address this issue Congress developed private activity bonds.

Private activity bonds provide investors with income not subject to federal taxes even though the private entity is responsible for repayment. In essence, private activity bonds allow the private entity to raise capital as if it were a local government if it is for a project with a clear, defined public purpose.

Congress has set a limit on the total amount of private activity bonds that may be issued for

**Private Activity Bonds: 2005-2011**  
by Mode



transportation projects. A project sponsor must apply to U.S. Department of Transportation (USDOT) for approval to offer a private activity bond. The Secretary of Transportation has the authority to allow up to \$15 billion total in private activity bonds for highway, transit, commuter rail, and intermodal freight transfer projects.

Generally speaking, the decision to move forward with an application to USDOT will be driven by the private entity depending on how much capital they are responsible for providing under the terms of the P3 agreement.

*Benefits:* Private activity bonds allow private entities to raise capital for transit projects at a lower cost than would otherwise be possible with a traditional private bond offering.

*Drawbacks:* A public-private partnership may not be suitable for your project. In those cases, a traditional public bond offering may offer the most benefit. In addition, Congress has set a limit on the total amount of private activity bonds that may be offered for transportation projects. Interest in private activity bonds has increased as more project sponsors implement projects through P3 agreements.

*Bottom Line:* Private activity bonds are an attractive option for large transit projects delivered through a P3. The decision to seek authorization

## PAB Projects and Authorization Amount<sup>1</sup>

Mode	Number of Projects	Average PAB Authorization
Highway	7	\$678,000
Intermodal/ Freight Rail	5	\$589,160
Transit	1	\$397,835

<sup>1</sup> FHWA Office of Innovative Program Delivery.

to offer a private activity bond will come through conversations with the private entity. If you are not pursuing a P3, then private activity bonds are not an option.

### Additional Resources

#### FHWA: Private Activity Bonds

[www.fhwa.dot.gov/ipd/pdfs/fact\\_sheets/4\\_tfi\\_pabs\\_1\\_19\\_12.pdf](http://www.fhwa.dot.gov/ipd/pdfs/fact_sheets/4_tfi_pabs_1_19_12.pdf)

#### FHWA: Office of Innovative Program Delivery

[http://www.fhwa.dot.gov/ipd/p3/tools\\_programs/pabs.htm](http://www.fhwa.dot.gov/ipd/p3/tools_programs/pabs.htm)

### Transportation Infrastructure Finance and Innovation Act (TIFIA):

TIFIA is a federal government program that provides transportation projects with low-interest, flexible loans, loan guarantees, and standby lines of credit. These loans and loan guarantees can save millions of dollars in financing charges over a standard public bond offering. Moreover, project sponsors have the option to defer repayment, which can allow a project to successfully scale up and begin generating tax revenues or user fees before the bill from the Federal Government comes due.

The recently enacted MAP-21 surface transportation authorization includes several provisions that make it substantially easier for transit authorities to receive TIFIA financing. In addition, MAP-21 expands the TIFIA program from \$122 million annually to \$750 million in FY2013 and \$1 billion in FY2014. This expansion will allow USDOT to

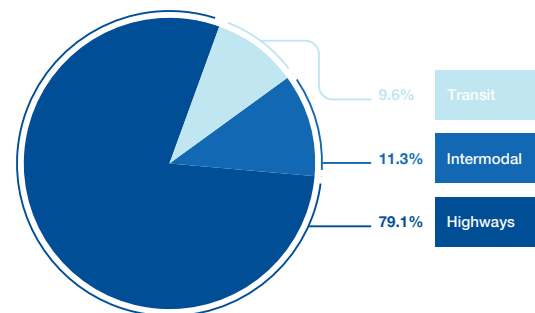
provide approximately \$10 billion in project loans each year. In addition, the bill allows a TIFIA loan to cover up to 49 percent of eligible project costs (an increase over the previous limit of 33 percent).

TIFIA interest rates are often lower than municipal bond rates on the open market even for communities with a high overall credit rating. As of this writing, the TIFIA program is offering loans at 3.44 percent.

Under TIFIA, a project sponsor can defer initiating repayment for five years following completion of the project. By comparison, traditional borrowing requires that debt service payments begin immediately—meaning repayment begins during construction. The delayed repayment allows a project to “ramp up” before initiating repayment. For example, a project sponsor may receive a TIFIA loan to construct an intermodal facility that will rely on tax increment financing generated from adjacent private real estate development for repayment. By taking advantage of the deferred repayment option, private sector projects have time to come on line and begin generating local tax revenues.

TIFIA loans are also attractive because the low interest rate does not increase when the loan is subordinate to other project debts or the project

Share of TIFIA Loans: 1998-2011  
 by Mode







## Subordinated Debt and the Benefits of TIFIA

Funding large transit projects often requires taking on multiple sources of debt. Typically, when a project involves multiple sources of indebtedness, some are classified as senior debts and others as junior, or subordinate, debts. The classification of debt affects the order of payment in case of bankruptcy or insolvency. If project revenues are not sufficient to cover all bond and loan payments, then investors holding senior debt are paid first. After all senior debts have been covered, then holders of subordinate debt receive whatever is left. For this reason, investing in subordinate debt carries a higher risk than investing in senior debt. In exchange for taking on this additional risk, project sponsors must offer investors a higher rate of return (interest rate).

One of the most attractive features of a TIFIA loan is that the interest rate does not change even when the loan is subordinate to other project debts. Unfortunately, many transit authorities have struggled to access TIFIA financing in the past because their local revenue source—often a sales or property tax—is also pledged to repay pre-existing debt from other capital projects. **Fortunately, MAP-21 makes several important technical changes that will allow transit authorities with existing debt to access a TIFIA loan without having to restructure the existing debt—which can be costly and time consuming.**

receives a credit rating below AAA.<sup>2</sup> This benefit cannot be overstated. A traditional subordinate bond—especially one with a senior debt obligation rated below AAA—could have an interest rate approaching twice as high as TIFIA. By securing a TIFIA loan, a project sponsor can save millions of dollars in interest payments compared to a comparable private debt.

*Benefits:* A TIFIA loan has three significant advantages over traditional financing: lower cost, ability to defer repayment to allow projects and their benefits to “ramp up”, and the same low interest rate even when the loan is in a subordinate position to other project debts, or has a credit rating below AAA.

*Drawbacks:* Competition for TIFIA financing has increased in recent years. In FY2011, TIFIA loan requests exceeded available funds 14 to 1. The dramatic expansion of the program within MAP-21 should allow many more projects to access low-cost financing.

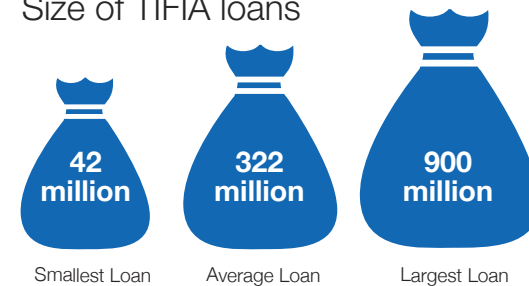
*Bottom Line:* The TIFIA program offers project sponsors access to low-cost, flexible financing that

---

<sup>2</sup> Under Federal law, a TIFIA loan may be subordinate to other debt. In the case of default by the project sponsor, the federal government springs to parity with senior debt holders to claim any revenues that remain. Under MAP-21, this provision is modified to allow a true subordinate position (in relation to pre-existing debt) for a TIFIA loan to a public agency borrower that uses a tax-backed revenue pledge to repay the TIFIA loan. This change will significantly help transit authorities.

### TIFIA Interest Rate: 3.44%

Size of TIFIA loans



can save millions of dollars in total project costs over other financing options.

#### *Additional Resources*

**FHWA: TIFIA Program Homepage**  
<http://www.fhwa.dot.gov/ipd/tifia/index.htm>

**FHWA: TIFIA Program Guide**  
[http://www.fhwa.dot.gov/ipd/pdfs/tifia/tifia\\_program\\_guide\\_110411.pdf](http://www.fhwa.dot.gov/ipd/pdfs/tifia/tifia_program_guide_110411.pdf)

#### **Railroad Rehabilitation and Improvement Financing (RRIF):**

The Federal Railroad Administration (FRA) provides low-cost, flexible loans and loan guarantees for intercity passenger and freight rail projects that improve public safety, increase capacity, promote economic development and competitiveness, or promote intermodal connections. RRIF program allows private railroads to apply directly without a government co-sponsor. In addition, RRIF loans may cover up to 100 percent of eligible project costs.



# Ohio State Infrastructure Bank

FRA may provide loans and loan guarantees provided that the total outstanding principal does not exceed \$35 billion. Since its inception, the RRIF program has provided more than \$1.6 billion in loans and loan guarantees. (See the Appendix for additional information).

*Benefits:* A RRIF loan is often cheaper than private financing and it may be used for freight and intercity passenger rail projects not eligible under TIFIA.

*Drawbacks:* Under the RRIF program, the loan recipient must pay the cost of the loan “subsidy.” When the Federal Government offers a transportation loan, it sets aside money that serves as a loss reserve against the possibility of default by the borrower. The size of the set aside is determined by the riskiness of the loan. This loss reserve payment adds to the total cost of the loan. (Under TIFIA, the government covers the cost of the subsidy or loss reserve.)

*Bottom Line:* Cost matters and RRIF loans are often cheaper than the private market, but it is necessary to factor in the cost of the subsidy payment when assessing the attractiveness of a RRIF loan.

**State Infrastructure Banks (SIB):** State Infrastructure Banks, as the name implies, are established by states to provide loans and credit assistance for the construction of highway, transit,

intercity passenger rail, or other infrastructure projects. States are permitted to use their annual federal formula funds to capitalize their infrastructure banks, which typically also use other state revenue sources such as gas tax receipts, vehicle registration fees, general fund appropriations, or other sources.

Federally supported SIBs may provide a range of assistance in addition to loans:

- *Credit Enhancements:* This consists principally of bond insurance, which reduces the potential risk to investors and in turn lowers the interest rate and cost to the project sponsor.
- *Capital Reserve:* A SIB could establish a capital reserve for a specific project as a backstop to the risk of default faced by bondholders. In short, the reserve fund would have enough money to make a certain number of bond payments, thus lowering the risk of default and therefore the interest rate paid by the project sponsor.
- *Interest Rate Subsidy:* A SIB may also buy down the interest rate for a particular bond offering by a project sponsor.
- *Line of Credit:* A SIB may provide a project sponsor a line of credit to backstop their project, which serves as a contingency loan that can be drawn on in case of need.

Since 1995, Ohio’s infrastructure bank has funded highway, transit, rail, intermodal, and other projects that have a stable source of revenue and support the goals of the SIB: corridor completion, economic development, competitiveness in a global economy, and improved quality of life.

Cities, state agencies, regional transit authorities, and ports are eligible to apply for various forms of assistance: (1) loans and loan guarantees; (2) lines of credit; (3) leases; (4) interest rate subsidies; (5) debt service; and (6) cash reserves. In addition, the SIB acts as a pass-through authority for bond offerings that support local projects, allowing local communities to take advantage of the technical expertise of the Ohio Department of Transportation (ODOT).

The bank was initially capitalized with \$40 million in general revenues provided by the Ohio State Legislature, \$10 million in state motor fuel taxes, and \$87 million in Federal Highway Funds.<sup>A</sup> Project sponsors are required to submit an application to ODOT that is then reviewed by a loan committee that makes final recommendations on each project. Since 1996, the bank has provided \$353.9 million in loans and credit support.

	Amount (Millions) <sup>B</sup>	Number of Projects	Share
Bikeway	\$2.2	1	0.6%
Airports	\$23.9	12	6.4%
Transit	\$7.4	2	2.0%
Railroads	\$5.7	4	1.5%
Highways	\$333.0	117	89.5%

A Ohio Department of Transportation, Division of Finance and Forecasting: “State Infrastructure Bank Loans and Bonds”: [http://www.dot.state.oh.us/policy/PoliciesandSOPs/Policies/18-012\(P\).pdf](http://www.dot.state.oh.us/policy/PoliciesandSOPs/Policies/18-012(P).pdf)

B Ohio Department of Transportation: “State Infrastructure Bank Annual Financial Report: Federal Fiscal Year 2011”: <http://www.dot.state.oh.us/Divisions/Finance/SIB%20Annual%20Statements/2011%20SIB%20Annual%20Report.pdf>



## Financing Tools at a Glance

Financing Tools	Repayment	Cost/Risk	Benefit	Drawback
General Obligation Bonds	Full faith and credit of government	Typically lower risk and lower interest rates	Lower interest rate can save millions in total financing costs	Budgetary risk to project sponsor if tax collections are lower than expected
Revenue Bonds	Specific revenue source (e.g., sales tax, property taxes, user fees)	Typically a higher risk to investors resulting in a higher interest rate	Lower budgetary risk - investors have no claim on general tax collections	Higher interest rates raise the cost of building a project
Tax Increment Bonds	Building transit increases surrounding land values—providing additional property tax revenues used to repay bondholders	Real estate development takes time and increased revenues may come more slowly—this tends to raise risk and interest rates	Building transit catalyzes development—tax increment bonds tap into this development to help fund the project	Real estate markets fluctuate and forecasted growth may happen more slowly than originally anticipated
Grant Anticipation Notes	Federal formula	Formula funds are stable resulting in low risk and low interest rates	May have a lower interest rate than traditional government bonding options	Obligating future federal funds
Private Capital	Full faith and credit or a specific revenue stream	Private capital provided through public-private partnership typically has higher cost than other bonding options	Public-private partnerships can provide benefits that make increased cost worthwhile	More costly than traditional municipal bond markets
Private Activity Bond	Private entity is responsible for repayment	Risk and cost depend on the repayment source pledged by private entity	Private entity responsible for repayment - debt does not count against public borrowing caps	Must apply to USDOT for authorization to issue a private activity bond—(PAB only possible within public-private partnership)
TIFIA	Full faith and credit or a specific revenue stream	Federal government assumes risk and offers low-cost, flexible loan	Lower interest rate and delayed repayment	Must apply to USDOT
RRIF	Project sponsor may pledge a variety of repayment sources	Federal government assumes risk and offers low-cost, flexible loan	Lower-cost and more flexible loan than other bonding options	Loan recipient must pay the lost reserve or “subsidy” cost
State Infrastructure Banks	Full faith and credit or a specific revenue stream	Risk depends on specifics of project - state bank sets the interest rate	State bank loan may have lower cost than bond market	Not all states have an infrastructure bank

- *Transit Lease Agreements:* This provides the SIB with authority to assist with transactions in which a private corporation purchases transit vehicles and then leases them to the project sponsor.
- *Bond Security:* This allows a SIB that issues its own bonds to use the federal funds as collateral for that debt offering.

*Benefits:* Much as the federal TIFIA program, state infrastructure banks can help to reduce the cost of borrowing. Typically there is less competition for this assistance than for the TIFIA program, though with TIFIA increases this may change.

*Drawbacks:* Few states operate true infrastructure banks with the full range of credit assistance allowed under federal law and even where they do the dollar amounts available to project sponsors are often not very large.

*Bottom Line:* Not every state has an infrastructure bank and every state with a bank structures its assistance differently. Only a close assessment of the options available in your state will let you know if pursuing state credit assistance will be beneficial.

### *Additional Resources*

**Federal Transit Administration (FTA): Update on State Infrastructure Bank Assistance to Public Transportation**  
[www.fta.dot.gov/documents/2005\\_SIB\\_Report\\_Final.pdf](http://www.fta.dot.gov/documents/2005_SIB_Report_Final.pdf)

## II. Federal Grant Programs and State Funding

In addition to bonding and other forms of indebtedness, project sponsors may pursue transit capital funding from USDOT through the TIGER and New Starts programs. This section also provides a discussion of state-level support for transit.

### What you will learn

- The key elements of each grant programs such as eligible projects, average grant size, application timelines, and selection criteria

### Important questions to ask

- How will we raise revenues to cover remaining project costs?
- How long will the application process take?
- Does this timeline fit with our regional goals?
- Will our political coalition wait that long?

**New Starts Program:** The Federal Transit Administration (FTA) provides capital funding to build, expand, or improve the capacity of fixed-guideway transit systems through the New Starts program.<sup>3</sup> Capital funds are provided on a competitive basis to those projects that successfully

complete the application and review process. FTA formally provides an overall rating on each project and submits an annual report to Congress with funding recommendations. Congress retains the final control over how much funding individual projects receive each year.

- *Funding:* Under SAFETEA-LU, FTA has awarded New Starts funding to 22 projects with an average award of \$589 million, representing less than 50 percent of total project costs. In addition, FTA has funded 32 Small Starts projects with an average award of \$35.4 million.
- *Full Funding Grant Agreement (FFGA):* FTA awards funds through a “Full Funding Grant Agreement” that specifies the total federal funding commitment. In order to enter into a FFGA, a project must receive an overall rating of “medium” or higher. This overall rating is based on the strength of the local financial commitment and project benefits, such as mobility benefits, cost effectiveness, environmental benefits, etc.
- *Time to Completion:* Depending on the size, complexity, and environmental challenges facing a project, the New Starts process can take between 6 and 12 years to complete from initial application to the opening of a project. (For Small Starts projects, this timeline is between 4 and 6 years.)

---

<sup>3</sup> The three programs differ in the complexity of the application and review process before FTA makes a grant award decision. Lower cost projects are not subjected to the same level of review and analysis as large projects funded through the New Starts process: [http://fta.dot.gov/12347\\_5221.html](http://fta.dot.gov/12347_5221.html)

Program Category <sup>4</sup>	Grant Award Size	Total Cost
New Starts	\$75 million or more	No limit
Small Starts	Less than \$75 million	Less than \$250 million
Very Small Starts	Less than \$25 million	Less than \$50 million
Core Capacity Improvement <sup>5</sup>	Awaiting FTA Guidance	Awaiting FTA Guidance

4 The complexity of the FTA application and review process is different for each project category. Lower cost projects are not subjected to the same level of review and analysis as large projects funded through the New Starts process.

5 MAP-21 includes a new project category called Core Capacity Improvement, defined as a substantial corridor-based capital investment in an existing fixed-guideway system that increases capacity in the corridor by at least 10 percent. Core Capacity does not include projects intended to maintain a state of good repair of a legacy system.

**Benefits:** The New Starts and Small Starts programs provide significant funds to complete your project.

**Drawbacks:** New Starts and Small Starts grant awards, while significant, require substantial local and state financial commitments that may crowd out other priorities. The application process is highly competitive and can take many years to complete.

**Bottom Line:** The choice to pursue New Starts funding involves a rigorous calculus regarding the benefits of a large grant award with the time and challenges necessary to complete the process.

### Transportation Investment Generating Economic Recovery (TIGER):

The TIGER program was created in 2009 as part of the American Recovery and Reinvestment Act (ARRA). The program provides funding on a competitive basis for highway, transit, freight, port, bike/pedestrian, and multimodal projects.

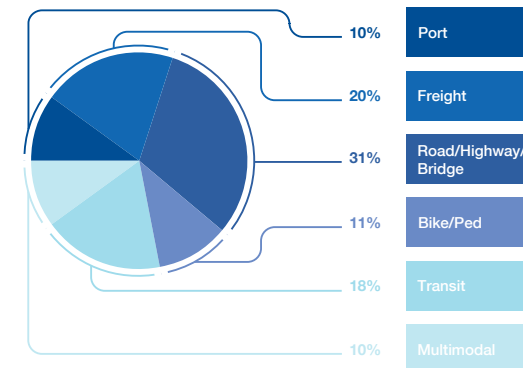
The focus of the TIGER program is to invest in projects that provide concrete, long-term benefits to the transportation system and the economy while also stimulating employment and additional economic activity. As the chart to the right demonstrates, the TIGER program has invested in a balanced set of projects across modes. TIGER grants have a 20 percent local matching requirement, which is waived for projects in rural areas.

The TIGER program is quite popular and therefore extremely competitive. In 2011 USDOT received \$14 billion in requests for \$511 million in available funding.

**Benefits:** Securing TIGER grant funds lowers the total local and state funding and financing needed to complete a project. Also, the TIGER application and award process is quick.

**Drawbacks:** The TIGER program is highly competitive and many projects do not receive funding. In addition, grant award sizes are relatively low compared to the New Starts and Small Starts program. Finally, the future of TIGER grants is uncertain. In recent years, the fight over whether or not to continue the program has intensified.

**TIGER Grants: 2009-2011**  
by Mode





### Primary Selection Criteria

#### Improves Long-Term Outcomes:

- Increases the state of good repair of transportation infrastructure
- Contributes to the economic competitiveness of the U.S.
- Improves livability by providing people with additional choices and access to transportation services
- Contributes to environmental sustainability, including increasing energy efficiency and reducing dependence on oil
- Improves safety

#### Job Creation and Near-term Economic Activity

- Priority for projects that quickly create and preserve jobs

### Secondary Selection Criteria

#### Innovation

- Priority consideration for projects that use innovative strategies to achieve the primary objectives

#### Partnership

- Priority consideration for projects that demonstrate strong collaboration among a broad range of participants and integrate transportation with other public service efforts

*Bottom Line:* Before you set your sights on the TIGER program, take a close look at the project selection criteria to see how closely your project matches program goals.

## Grant Programs at a Glance

Grant Programs	Funding	Benefits	Drawbacks
TIGER	Average award \$10-20 million	New multimodal federal program that rewards innovative projects	Highly competitive application process—funding not guaranteed
New Starts/Small Starts	Average New Starts award \$589 million Average Small Starts award \$35 million	Large grant awards help cover a substantial share of total project costs—lowering the total money that local communities must raise	Highly competitive and lengthy application process that may take more than 10 years from initiation to project opens to service
Flexible Federal Highway Funds (STP)	STP funds account for more than 20 percent of federal highway funds provided to states and large metro areas each year	Flexibility of STP funds allows state and local leaders to determine the best use of these dollars	Transit projects must compete against highway projects for flexible funds
State Capital Funds	Funding awards vary by state and projects	State grant funds lower the local funding necessary to meet federal matching requirements	State funds are often the smallest percentage of total project costs and some states do not have a formal process for assessing and funding transit projects

**Flexible Federal Highway Funds:** The Federal Government provides states and large metropolitan areas with annual highway funding through a formula set in law. A portion of these funds is distributed through the Surface Transportation Program (STP) and the Congestion Mitigation and

Air Quality Improvement Program (CMAQ). States and metropolitan areas may use flexible STP funds on either highway or transit projects. And CMAQ funds may support a wide range of projects that improve air quality, including new transit service and other projects that benefit transit.

*Benefits:* Surface Transportation and CMAQ funds can complement Federal Transit Administration formula funds and other grant programs.

*Drawbacks:* Competition at the state and regional level is high for flexible federal highway funds (STP or CMAQ).

*Bottom Line:* When building a funding package, don't overlook STP funds.

**State Capital Funds:** States have a very important role to play in funding transit projects. Without state grants and financing, many transit projects simply could not be built. Often, states focus limited capital on major projects that address a regional or statewide need. In addition, limited capital funds and regional equity considerations make it likely that a state DOT will only fund one major transit project in your area every few years. Building a strong local coalition allows you to demonstrate to state DOT officials that your project meets the significance threshold.

## Ohio DOT: Transportation Review Advisory Commission (Major New Capacity Program)

*Ohio, like many states, has a regular process for collecting and expending transportation funds. However, standard funding and project selection channels often struggle to adequately address large projects with regional or statewide impacts. Often, major funding decisions are the result an opaque, informal and messy project-by-project process.*

In order to improve transparency and ensure that funding decisions flowed from a rational decision making process, the Ohio General Assembly created the Transportation Review Advisory Commission (TRAC). Since 1997, the Commission has provided a formal process for considering applications to the New Capacity program. TRAC must review all projects with a total cost greater than \$12 million that expand capacity or reduce congestion.

Applications to the TRAC are scored against several criteria:

- Anticipated increase in peak hour ridership
- Decrease in vehicle miles traveled (VMT)
- Ratio of cost to the reduction in vehicle miles traveled
- Anticipated emissions reductions
- Local financial commitment
- Economic growth and development impacts

The Major New Capacity program represents an important source of capital funds for transit projects throughout Ohio. For example, TRAC approved \$75 million for the HealthLine bus rapid transit project in Cleveland.

### III. Local Revenue Sources

In order to access many of the financing tools and to compete effectively for grant programs, your community will need to raise local revenues. Debts have to be repaid and federal programs reward applicants with a strong local financial commitment (also referred to as local match).

#### What you will learn

- The most common local revenue streams and how they work
- The equity and political implications of different options

#### Important questions to ask

- How much revenue will this tax or fee yield?
- How reliable/volatile is the revenue stream?
- Is the tax equitable?
- Is the tax politically feasible?

Local funds typically originate from six common sources of taxes and fees. Each potential tax and fee has its own unique benefits and trade-offs that this chapter will discuss in detail.

Property	License Fees
Income	User Fees
Sales	Business Activity

When debating the merits of a particular revenue strategy, four considerations are critical:

Revenue Yield	Reliability
Will the tax generate enough revenue to make debt service payments?	Is the tax susceptible to cyclical fluctuation or sudden changes?
Equity	Political Feasibility
Does the tax unfairly burden certain residents or businesses?	Can the tax generate sufficient political support from elected officials and key stakeholders?

A successful revenue strategy will combine those tax and fee options that produce sufficient money to support project financial obligation and also hold together a local political coalition. The revenue options outlined in this section are some of the most common and robust.

**Value Capture:** Building a new transit project increases surrounding land values. Value capture is a general term referring to any tax, assessment, or fee structure intended to appropriate a portion of that land value to fund the project. Value capture strategies tie project funding to the benefits created by the project.

**Tax Increment Financing (TIF):** Tax increment financing is a way of applying the additional property tax revenue generated by the surrounding land after a project is completed. Tax increment financing does not involve a tax rate increase. Instead, the rise in property values resulting from the transportation project generates additional revenues that are dedicated to making payments on debt, for the transit project or supportive projects. Tax increment funds are set aside from properties within a defined geographic zone around the project for as long as necessary to close out project debts.

Property taxes are typically expressed as a certain number of dollars per \$100 of assessed value. For instance, at \$2 per \$100 of assessed value, a \$375,000 business property would owe \$7,500 in property taxes each year. If the value of the same property rose to \$500,000, after the transit project was completed, the property tax liability would rise by \$2,500 to \$10,000 in total. The \$2,500 increase in property tax revenue would be dedicated to covering construction costs or making debt service payments.

**Revenue:** The revenue yield from tax increment financing is highly variable. In part, the amount of revenue generated depends on the geographic size of the TIF district. Moreover, the extent to which local planners work with developers to facilitate new real estate development also greatly impacts property tax receipts. Tax increment financing is





Opened in July 2009, about 10,000 riders pass through the Rosa Parks Transit Center in downtown Detroit, Michigan each day.

an important source of revenue, but will likely not be the only source for your project. As discussed above, in some cases, tax increment revenue can be pledged to support a Tax Increment Bond, or a local government can agree to provide capital funds for a project based in part on its expected increase in revenue in future years.

**Reliability:** Property values tend to be relatively stable over time, providing a degree of predictability.

**Equity:** The benefit of tax increment financing is that it connects project financing with those property owners who benefit directly from the new system and it is considered less regressive than a sales tax.

**Political Feasibility:** Because TIF is not a new tax, it usually does not encounter the political opposition that other sources of revenue might. Still, tax increment financing may raise concerns that a new project is diverting money that would otherwise flow to other public services.

### *Additional Resources*

#### **Center for Transit Oriented Development: Capturing the Value of Transit**

<http://www.reconnectingamerica.org/assets/Uploads/ctodalcapture110508v2.pdf>

**Special Assessment District:** A special assessment district is another form of property tax. The properties located within a defined zone around the transportation project are assessed with a higher tax rate or a flat fee expressly to fund amenities that benefit those properties. A special assessment district may levy the additional taxes or fees based on distance from the project, type of land use, total acreage, or frontage along the transit line. Special assessments are typically structured to generate either a specified level of revenue or to last a set number of years.

**Revenue:** The revenue yield from a special assessment district can be substantial. Typically, an assessment district is applied to a highly developed portion of the metropolitan area or an area with significant planned development. The developed land has high property values that can generate significant revenue.

**Reliability:** Property values tend to be stable or rise over time, providing a high degree of predictability.

**Equity:** The benefit of a special assessment district is that it connects project financing with those property owners that directly benefit from the new system.

*Political Feasibility:* Because special assessments are levied on specific parcels they are a highly visible form of taxation that may prove more politically challenging than a diffuse revenue stream such as a sales tax. Moreover, special assessment districts are a new tax.

**Development Contributions:** Development contributions are one-time fees levied on commercial or residential developments in order to cover a portion of the costs of new infrastructure, including streets, schools, utilities, and parks. As it relates to public transportation, a development contribution may result from a negotiation between a large developer and the project sponsor during the planning stages for system alignment. A developer may propose an extension to the new system, additional stops, or a change in alignment that will provide direct benefit to their property (as well as generate additional ridership). In exchange, the project sponsor may request a financial contribution to balance the larger public benefits resulting from greater ridership with the private benefits to the developer.

*Revenue:* The revenue from a development contribution tends to be lower than other forms of property-based funding.

*Reliability:* Development contributions tend to be one-time events helping to fund smaller project elements.

*Equity:* This type of contribution can help avoid the charges that a developer received a “sweetheart deal” for their project.

*Political Feasibility:* Provided the contribution is negotiated openly and in good faith, a development contribution can garner a high degree of political support.

**Land Sales:** Cities and transit authorities often own parcels of land that may be sold or leased to help fund a new transit project.

*Revenue:* The value of undeveloped land will depend on numerous local economic factors.

*Reliability:* Land sales are a one-time transaction yielding a specific amount of revenue. Similarly, a long-term lease will provide a stable stream of payments.

*Equity:* Land sales typically present few equity concerns.

*Political Feasibility:* While raising revenues through land sales is not often contentious, the purpose for which the land will be used once it is sold may generate significant debate and conflict. Maintaining

community character is a high priority for many residents and business owners. Land sales and the resulting development should fit within larger plans for a neighborhood, corridor, or metro area.

**Sales Tax:** A sales tax is a broad-based revenue source capable of generating substantial revenue due to the large volume of transactions that happen each year.

In many states, the legislature must enact an enabling statute that provides local jurisdictions the authority to impose a dedicated sales tax to support transit. The taxing jurisdiction has the flexibility to determine applicability or scope of the sales tax (i.e., the types of goods and services to which the tax will apply). This flexibility allows the taxing jurisdiction to address concerns over equity. For instance, local officials may decide to exclude food, medicine, and other essential goods from the sales tax. In many cases these “local-option” sales taxes must receive voter approval.

## Did You Know?

**FUNDING/GRANTS:** Money for a transit project that does not have to be repaid by the project sponsor.



## Success at the Ballot Box

*Ballot initiatives seeking voter approval to raise money for transportation have twice the success rate of ballot measures generally. Since 2000, more than 400 transportation funding measures have appeared on ballots nationwide, and 70 percent have been approved. Year after year, voters in both liberal and conservative communities, prove at the ballot box that they understand the importance of infrastructure investment.*

The vast majority of those measures ask voters to direct their tax dollars towards transportation investment. These measures run the gamut from property tax levies in small Michigan townships that bring in just over six figures annually to a 30-year sales tax increase in Los Angeles County projected to generate \$40 billion. Property and sales taxes are by far the most common method of ballot-box financing, but bonds, vehicle fees, and other innovative tax mechanisms are also used with success. Often, these sources of dedicated local funding are the linchpin for securing state and federal capital grants.

### Hallmarks of Successful Ballot Measures

Across all types of communities and financing methods, winning transportation measures are united by certain hallmarks of success:

**Building the reputation of the implementing agencies:** Voters are inclined to vote for transportation initiatives if they believe the agency responsible is capable of doing a good job. In 2007, a sales tax measure in Salt Lake City sponsored by the Utah Transit Authority (UTA) passed with a two-thirds majority even though specifics of the measure were not worked out until six weeks before Election Day. One key to success was that the agency had put great effort into maintaining a strong, positive public reputation prior to launching the campaign. TV ads were already regularly appearing reminding

the public of the benefits of the service provided by UTA. When it came time to initiate the electoral campaign, early outreach efforts had already paved the way.

Early polling and fundraising are crucial to ensuring a successful campaign. Early fundraising allows for a more robust campaign and can be used to engage in pre-campaign educational activities. Early polling reveals not only where voters stand, but also what messages will resonate. Clark County, WA,

*Voters in Baton Rouge approved a regional sales tax to nearly double the dedicated revenue for their struggling bus system*





ran a successful sales tax campaign in 2011, the same year neighboring county Pierce lost a similar measure. One of the key differences for Clark County was early polling. Coalition leaders took this information to the County Board to aide elected officials in developing the right plan.

**Tout specific benefits:** When voters understand the transportation and economic benefits they will receive, they are much more likely to support a tax measure. Both the language of the measure itself and the messaging

*Salt Lake City's light rail (pictured), bus and commuter rail systems have been expanded with funding from a 2007 voter-approved sales tax, which won by a two-thirds majority*



of the campaign need to make those clear. Officials in Grand Rapids, MI, discovered this in 2009 when they lost a measure that would have invested in bus rapid transit serving only half of the communities in the service area. After the loss, the transit agency formed the “Mobile Metro 2030 Task Force” to develop a transit master plan that would bring a specific set of outcomes to the broadest possible swath of voters. A subsequent ballot measure passed in 2011.

**Strong champion(s):** Successful ballot measures usually benefit from the support of prominent public figures, whether elected officials, sports figures, academics or business leaders. They help put a face to the issue and draw media attention to the cause. When a repeal of the transit sales tax in Charlotte, NC, went on the ballot in November 2007, the president of the Carolina Panthers appeared with a player in a commercial asking for a vote against the repeal. In another ad, two popular former mayors from opposing political parties appeared in an ad where they “secretly” admitted to agreeing on the same issue—namely that a vote against repeal was important for the community.<sup>C</sup>

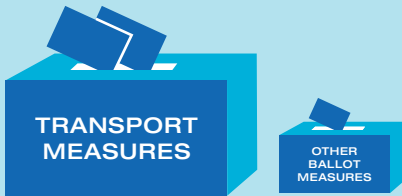
<sup>C</sup> Ballot initiative data provided by the Center for Transportation Excellence.

# RAISING MONEY *at the* **BALLOT BOX**



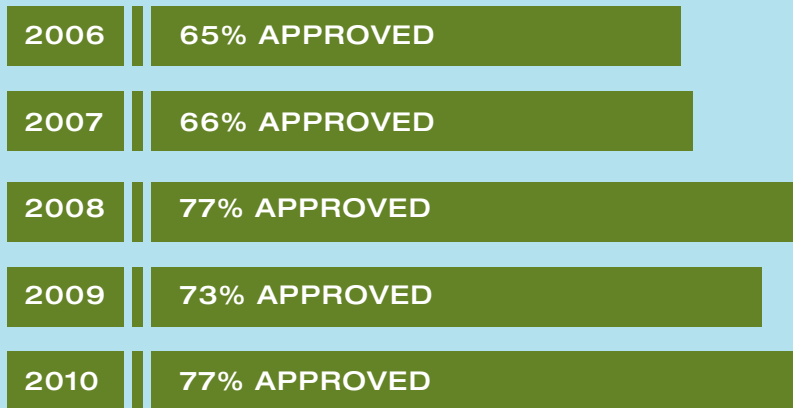
Funding at the ballot box is a successful way to raise money for your transportation projects, whether you are in New York City or Baton Rouge.

TRANSPORTATION BALLOT MEASURES PASS AT **TWICE** THE RATE OF ALL OTHER BALLOT MEASURES.



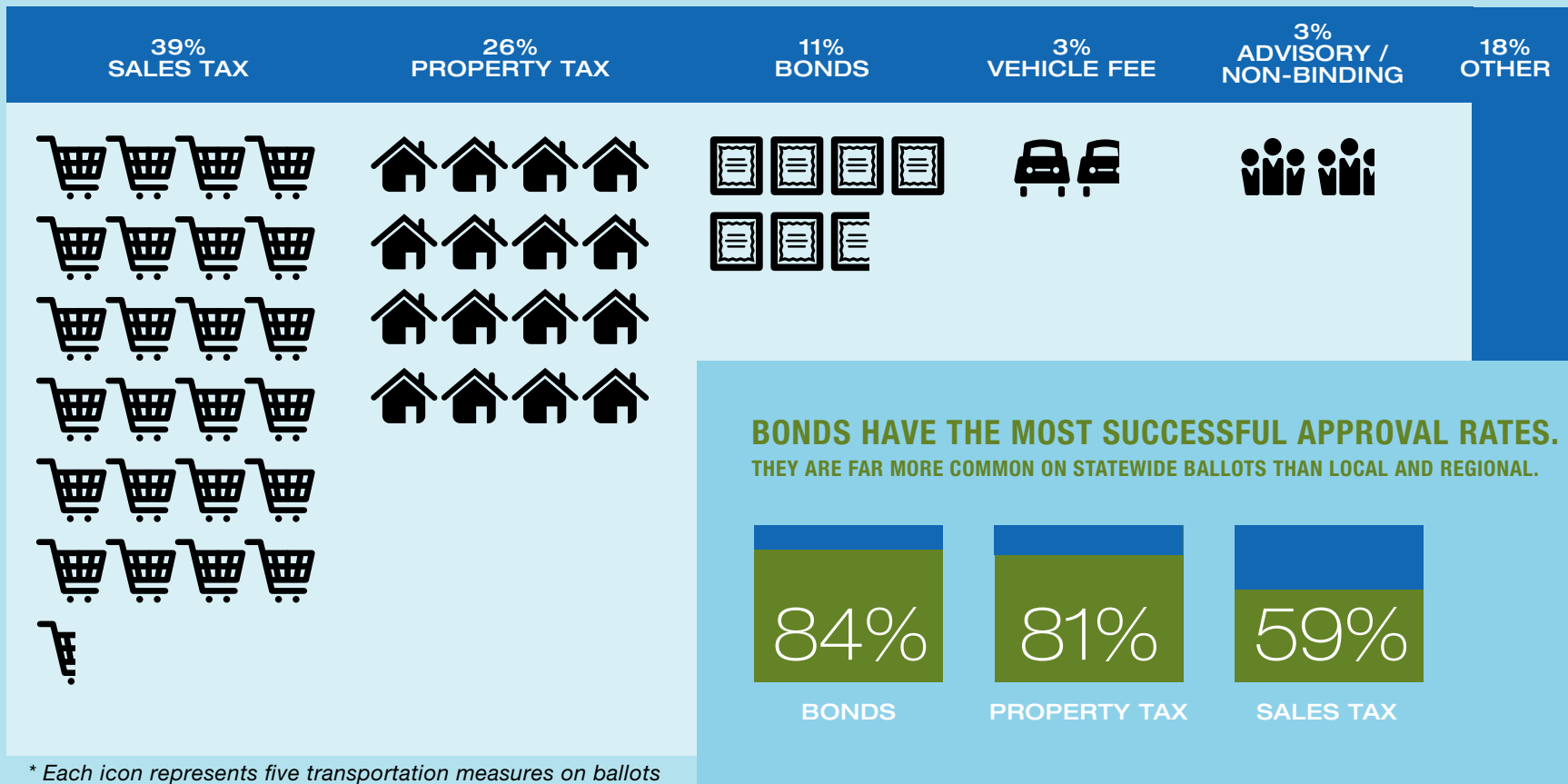
THIS SUCCESS HOLDS ACROSS DIFFERENT REGIONS, POPULATIONS AND PARTY AFFILIATIONS.

**70%** THE AVERAGE APPROVAL RATE FOR PUBLIC TRANSPORTATION BALLOT MEASURES OVER THE LAST 10 YEARS



309

BALLOT MEASURES WERE CONSIDERED NATIONWIDE FROM 2000–2010 TO RAISE NEW REVENUES FOR TRANSPORTATION. WHAT TYPES OF REVENUES DID THEY SEEK?



\* Each icon represents five transportation measures on ballots from 2000–2010.



The following table provides an estimation of the potential revenues that could be generated by various sales tax rates for cities of different sizes. This table is useful when considering how much funding your community will be able to generate and whether or not this amount generally matches with the scale and cost of the system you intend to build.

It should be noted that many factors influence the total revenue generated by a sales tax, including the volume of transactions and the total dollar value of those transactions. This table takes a conservative approach by providing estimates based on the low, median, and high sales tax receipts taken from a sample of representative

cities. In many cases these ‘local-option’ sales taxes must receive voter approval.

*Revenue:* Sales taxes can generate robust revenues—especially when levied on a region-wide basis.

*Reliability:* Sales tax transactions are a relatively stable source of revenue (though they are typically not as stable as property taxes). The recent economic downturn has substantially affected sales tax receipts.

*Equity:* Sales taxes are sometimes critiqued as being regressive because they take a higher percentage of income for individuals further

down the earnings scale. Equity concerns may be addressed by exempting certain basic products from sales taxes.

*Political Feasibility:* The political feasibility of a sales tax depends on many factors. In part, a regional sales tax should be connected to transportation projects that bring regional benefits. Building support for a sales tax, which often requires voter approval, requires a well-designed campaign and time. It also requires a well-defined set of projects and benefits that voters can connect to. Initiatives that meet those criteria often meet with voter approval.

**Tolls:** State highways (and under certain conditions Interstates and other federal-aid highways) can generate substantial revenue through tolls. While tolls are traditionally dedicated to covering the initial cost of highway construction or ongoing maintenance, they may also be used to support transit projects within the corridor. For instance, revenues from the Dulles Toll Road have been pledged as the repayment source for bonds issued to construct the Silver Line Metrorail extension in Northern Virginia. (For additional information, see the Dulles Metrorail extension case study in Chapter 4.) Federal law allows highway tolls to support transit projects if there are excess revenues after covering debt service, operations and maintenance, and any private rate of return.

## Approximate Sales Tax Revenues<sup>6</sup> (Millions) by Population and Sales Tax Rate<sup>7</sup>

Tax Rate	250,000			500,000			1,000,000		
	Low	Median	High <sup>8</sup>	Low	Median	High	Low	Median	High
0.25%	\$4	\$7	\$17	\$8	\$14	\$34	\$16	\$27	\$67
0.50%	\$8	\$14	\$34	\$16	\$27	\$67	\$33	\$55	\$135
0.75%	\$12	\$21	\$51	\$25	\$41	\$101	\$49	\$82	\$202
1.00%	\$16	\$27	\$67	\$33	\$55	\$135	\$66	\$109	\$269

6 Estimates based on data from Atlanta, Boston, Chicago, Dallas, Denver, Washington, DC, Houston, Los Angeles, New York, Philadelphia, San Francisco, and Seattle.

7 Sales tax estimates calculated by the District of Columbia Downtown Business Improvement District.

8 The highest sales tax estimates per resident are in cities/counties that import sales taxes from residents in other areas because they are an attractive shopping destination. For this reason, they may have higher tax revenues than another region with similar population size.



Several Metro stations on the new Washington, DC Silver Line will be placed in the median of the Dulles Toll Road, on which tolls are paying a share of capital costs for the new heavy rail line.

**Revenue:** Tolls have the potential to generate robust revenues.

**Reliability:** Toll revenues are generally reliable—especially for existing highways with proven travel demand. However, toll revenue can drop significantly during economic downturns.

**Equity:** Tolls, like other flat fees, are regressive. However, this can be addressed by using toll revenues for transit projects to provide low-income individuals with other options.

**Political Feasibility:** Using toll revenues to support transit can be politically contentious if local leaders do not demonstrate the regional benefits of

developing a balanced surface transportation system that provides residents with options. Investing in transit can significantly increase the travel capacity within a corridor, bringing relief to roadway users. Even with roadway benefits, imposing new tolls for any reason is very tough.

### *Did You Know?*

**RETURN ON INVESTMENT:**  
*The ratio of money gained on an investment relative to the amount of money invested – typically expressed as a percentage.*

#### **Vehicle Assessment or Registration Fees:**

Traditionally, states collect vehicle registration and annual license or tag fees. In addition, some states allow city and county governments the option of imposing an annual assessment based on the value of the vehicle. Local vehicle taxes may also support transit capital projects.

**Revenue:** Vehicle registration fees are the second most common (and robust) source of transportation revenues at the state level.

**Reliability:** Vehicle ownership and registration rates are stable.

**Equity:** Registration fees are typically a flat percentage of vehicle value. Thus, owners of older vehicles have a lower total tax liability than owners of newer models.

*Political Feasibility:* Political fights over vehicle registration fees are more common than some of the other revenue sources discussed in this chapter. Some states do not permit local jurisdictions to levy vehicle registration fees. Some states also have statutory or constitutional limitations that limit the use of vehicle registration fees only to road projects.

**Parking Fees:** Many transit facilities include parking, particularly for established commuter and light rail lines. Parking facilities can provide revenues beyond what is needed to maintain the lot or deck. The decision to raise parking fees to help support a new capital project should consider the potential impacts on ridership. Well-established systems with strong travel demand or regions with significant roadway congestion may provide the most robust revenues.

*Revenue:* Parking revenues can vary significantly depending on the total number of parking spaces and the average daily ridership. Moreover, as you design your system, you should weigh the benefits and trade-offs of whether devoting land to parking will limit the development of homes and businesses that can attract riders and make the most use of the transit investment.

*Reliability:* Parking fees are reliable and stable.

*Equity:* Parking fees are sometimes critiqued as regressive. Equity issues can be addressed by providing good feeder bus service and affordable housing near stations so that low-income individuals do not have to drive to get there.

*Political Feasibility:* Parking fees are a well-established revenue mechanism and not likely to garner less substantive political opposition than other revenue sources. Commuters and other transit users are sensitive to price changes. Increasing parking rates too high may drive away potential riders and actually reduce overall parking revenues. Hourly and daily rates must balance revenue and ridership goals.

**Fuel Tax:** For decades, states have funded a large portion of their transportation expenditures with motor fuel taxes. Some states allow city and county governments to tax fuel either on a per gallon basis or through sales taxes.

*Revenue:* The United States consumed more than 134 billion gallons of gasoline in 2011.<sup>9</sup> Moreover, states also raise the majority of their transportation revenues from gas taxes. Fuel taxes—depending on the tax rate—are a robust but declining source of revenue.

*Reliability:* Historically, fuel consumption has been a stable, growing source of revenue. Recently, with total driving on the decline and more fuel-efficient vehicles, the future of gas taxes at all levels of government is less certain.

*Equity:* Fuel taxes, like all flat taxes or fees, are regressive, meaning they represent a higher percentage of income for individuals further down the earnings scale.

*Political Feasibility:* Fuel taxes are a well-established revenue mechanism, though not all states permit local jurisdictions to levy fuel taxes. Increasing gas prices make raising gas taxes a difficult political lift.

---


9 U.S. Energy Information Agency “Frequently Asked Questions”: <http://www.eia.gov/tools/faqs/faq.cfm?id=23&t=10>



Revenue Sources	Amount	Reliability	Equity	Political Feasibility
Tax Increment	Variable depending on the size of the tax increment district boundary around the transit facility	Land values tend to be stable over time providing predictable revenues	Tax increment revenues tie project benefits (increased land values) to funding the transit project	High—tax increment is not a new tax or a tax increase
Special Assessment District	Variable depending on the size of the district and the tax rate applied to properties	Land values tend to be stable over time providing predictable revenues	Ties project funding to taxes levied on surrounding landowners who are direct beneficiaries	Moderate—these are new taxes and land owners need to understand the connection between a new project and the benefits it will bring
Development Contributions	Specific amount negotiated between project sponsor and developer	Typically a one-time contribution	Ties project funding to real estate development that will benefit directly from the new transit facility	High—provided the contribution is viewed as reasonable in relation to the benefit to the developer
Sales Tax	Sales taxes are broad-based and generate robust revenue	Sales taxes are a little less stable than property taxes but still provide a great deal of predictability	Sales taxes are regressive—although this may be addressed by exempting certain items such as food	High—sales taxes are typically politically successful when the projects they fund brings regional benefits
Tolls	Robust	Toll revenues are steady—especially for established highways with predictable travel demand	Regressive like all other flat user fees—not a concern for transit dependent residents	Low—increasing or using toll revenues to support other projects is often contentious
Vehicle Registration Tax	Moderate	Vehicle ownership rates are stable	Regressive like all other flat taxes—not a concern for transit dependent residents	Moderate—vehicle owners are sensitive to registration fees
Parking Fees	Variable depending on total number of spaces and travel demand	Peak period travel demand is mostly stable, though riders are sensitive to price changes	Regressive—not a concern for transit dependent residents	High—parking fees are a common and accepted source of project revenues
Fuel Tax	Robust	Driving rates are historically steady (subject to increasing fuel efficiency standards and recent changes in driving patterns)	Regressive—not a concern for transit dependent residents	Moderate—high fuel prices make new taxes difficult and not all local governments have the authority to impose a fuel tax
Land Sales	Variable depending on the local market and the size of the parcels	Land sales provide one-time revenues	Few equity concerns	Moderate to high—depends if resulting development conforms to community desires or development affects community character and existing commerce



# Public-Private Partnerships



The choice to pursue a public-private partnership involves carefully weighing multiple factors, including cost, risk transfer, technical capacity, efficiency, and implementation timeline. Agreements must be carefully negotiated to ensure that there is a net benefit to the public, while at the same time allowing for a reasonable return on private investment.



When the public engages in due diligence and negotiates competently, a public-private partnership can help deliver some projects faster and with less risk to the public sector. This chapter will focus on P3 agreements for new construction in which the public project sponsor retains ownership of the resulting infrastructure. This chapter does not cover lease agreements for existing assets, which typically involve transferring the management of an existing transportation asset to a private entity for a specified number of years in exchange for a large upfront payment. Finally, this chapter includes a detailed case study of Denver's Eagle P3 and the FasTracks program, which combines multiple innovative financing tools with a public-private partnership.

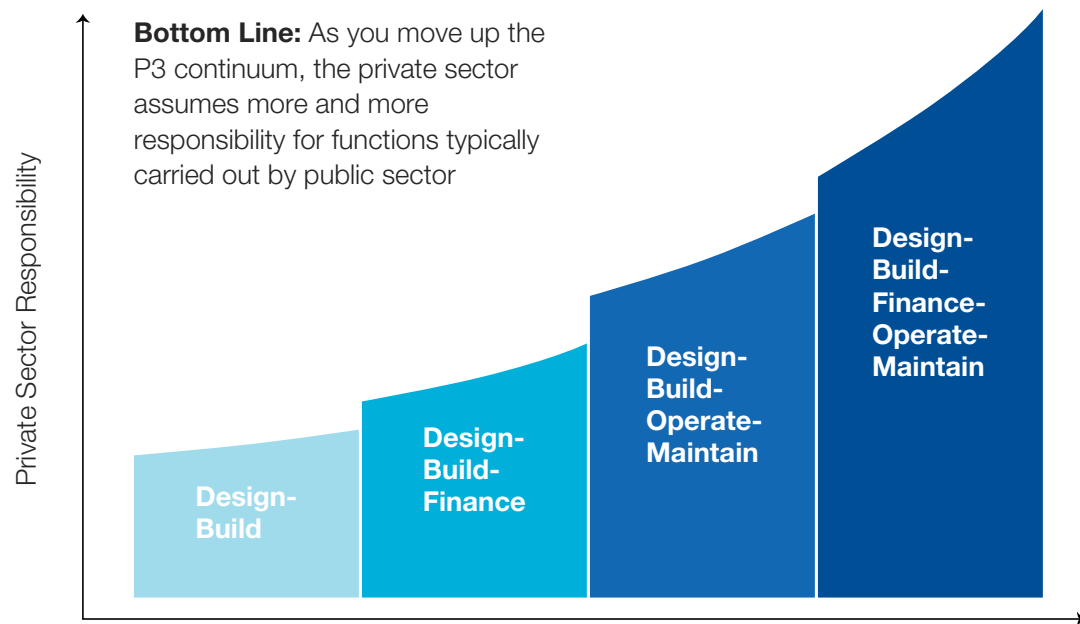
## Defining Public-Private Partnerships

The private sector has always been involved in implementing transportation projects. In fact, virtually all government-sponsored transportation projects depend on the private sector as a contractor. The difference with more recent forms of public-private partnerships is the degree of responsibility assumed by the private sector. USDOT defines a public-private partnership as a contractual agreement between a public agency and a private partner that allows the partner to participate in project implementation beyond traditional procurement

practices.<sup>1</sup> This means that the private partner assumes responsibility for functions traditionally carried out by the public agency. Although every agreement is unique, P3s can be grouped together according to specific characteristics, as the graphic “Continuum of Public-Private Partnership Structures” shows.

Implementing a transportation project involves four major elements: (1) financing; (2) design and engineering; (3) construction; and (4) operations and maintenance. Under a traditional procurement process (known as design-bid-build), the public sponsor is responsible for providing all funds or issuing a bond, hiring a firm to design the project (if design is not done in-house) and hiring another

## Continuum of Public-Private Partnership Structures



<sup>1</sup> FHWA: “User Guidebook on Implementing Public-Private Partnerships for Transportation Infrastructure Projects in the United States”: [www.fhwa.dot.gov/ipd/pdfs/ppp\\_user\\_guidebook\\_final\\_7-7-07.pdf](http://www.fhwa.dot.gov/ipd/pdfs/ppp_user_guidebook_final_7-7-07.pdf)

firm to construct the project. The public entity then carries out all operations and maintenance. A public-private partnership differs from the traditional approach by transferring responsibility for one or more of these core functions to the private sector.

Under a design-build approach, the project sponsor hires a contractor for both engineering and construction. The recipient of the design-build contract can be a single entity, a consortium, or other joint venture. The design-build approach is at the low end of the P3 continuum. A design-build contract is different from traditional procurement in two significant ways: construction on the project can start before all the design work is completed, and the private sector takes on the risk for designing and delivering the project on time and on budget, reaping financial benefits for finishing faster and accepting penalties or other costs for delays.

Under a design-build model, the public agency gives the contractor a list of performance specifications for the project, but the contractor has the flexibility to design the project in the way it feels will meet these specifications at the lowest possible cost. When done properly this can lead to substantial cost savings.

At the high end of the public-private partnership spectrum is design-build-finance-operate-maintain (DBFOM). This approach shifts almost all traditional public sector functions over to the private

partner. Under a DBFOM agreement, the private sector not only takes responsibility for providing capital and delivering a project, but also for ongoing operations for a period of time. This means that the P3 agreement must include long-term performance standards. For a transit project, this may include specifying a minimum number of operating trains, frequency of service, station maintenance, and even snow removal, among other requirements. A DBFOM approach locks in contractual commitments that both the government and private partner must abide by for many years. With DBFOM, the public sector is able to transfer the risk and responsibility for almost all aspect of delivery and operations, but must also pay a premium for this benefit.

At its best, a DBFOM structure allows the private sector to innovate in design, operations, and maintenance to deliver the required performance at the lowest possible cost. At its worst, the public agency gets the same project it could have built itself while also funding a profit margin for the private partner.

Between design-build on the low end and design-build-finance-operate-maintain on the high end, there are many other possible P3 combinations. Each includes transferring some additional responsibility to the private sector.

## Negotiating A Deal

Public-private partnership agreements are highly complex requiring parties to negotiate over hundreds of issues based on assumptions about the project and the future.

This process is slightly different from traditional procurement. While the public is provided with an initial concept of the deal, final negotiations take place privately in order to protect the private party's proprietary information. This feature may open the process up to additional scrutiny and criticism if not properly conducted.

## Benefits of Public-Private Partnerships

- **Risk Transfer:** Traditional government procurement practices expose the public sponsor to significant risk, including re-design, delays, and cost escalations. By comparison, a P3 agreement can transfer responsibility for delivering on time and on budget. This transfer, however, comes at a price as private entities will not take on risk without compensation.

### *Did You Know?*

**INCREASED GAS PRICES** often lead to higher transit ridership. Research shows that many new transit riders continue to use transit even when gas prices fall (Research by American Public Transportation Association).



## When Does a P3 Approach Make Sense?

Here are some indications that a public-private partnership may be beneficial:

- Traditional funding sources are insufficient to cover project costs
- Public entities are constrained by a debt limit and payments to a P3 partner do not count against this cap
- The project is of sufficient size and complexity to warrant the additional costs and challenges of a public-private partnership (typically over \$500 million)<sup>A</sup>
- Public sponsor has the expertise to negotiate, monitor, manage, and enforce the agreement
- Public sponsor has identified a long-term revenue stream that can cover payments to the private entity
- State law allows for P3s
- When the public project sponsor does not have experience managing or operating the type of transit to be constructed
- P3 not used to circumvent labor, manufacturing, or other established public policies
- Analysis demonstrates that benefits from P3 exceed traditional project delivery over the life of the deal

A FHWA: "User Guidebook on Implementing Public-Private Partnerships for Transportation Infrastructure Projects in the United States"; [www.fhwa.dot.gov/ipd/pdfs/ppp\\_user\\_guidebook\\_final\\_7-7-07.pdf](http://www.fhwa.dot.gov/ipd/pdfs/ppp_user_guidebook_final_7-7-07.pdf)

- **Access to Private Capital:** A P3 agreement allows a project sponsor a different way to tap into the financial resources of the private sector. Instead of the government project sponsor issuing a traditional public bond, the private partner comes up with the construction funding, either by issuing bonds, borrowing from banks or using its own investment capital. In exchange for providing financial capital, the private entity negotiates a return on their investment (which may be specific or variable). Often, this rate of return is higher than other forms of debt financing such as federal loan programs or bond markets.
- **On-time Completion:** Complex, multi-year construction projects often experience significant delays and cost overruns. The reasons for such delay are manifold. A well-structured P3 agreement can provide strong financial incentives that facilitate improved coordination and problem resolution by the private entity. In the end, financial incentives are often far less costly than delay.
- **Expertise and Technical Capacity:** The private sector may have experience dealing with types of transit as well as federal agencies and regulations that are new to the project sponsor. An important factor affecting the project

development timeline is ensuring regulatory compliance. The private partner may be able to navigate the approval process more efficiently than the project sponsor.

## Drawbacks of Public-Private Partnerships

- **High Cost of Private Capital:** Private equity does not come cheap. Investors are attracted to P3 deals because they provide substantial financial returns. The project sponsor must determine if the additional cost of private capital is outweighed by the potential benefits of passing responsibility for delivery to a private entity.
- **Experience Differential:** The firms that partner to build transportation projects almost always have more experience negotiating complex agreements than their government counterparts. If P3 agreements are not structured appropriately, the public sector can end up paying a high rate of return and still retain much of the project risk. A significant challenge is trying to anticipate all possible future issue that may impact a deal. Given the long-term nature of many P3 contracts, poor decisions by one group of elected officials can carry over for decades.



- **Loss of Public Control:** Most P3 agreements last for a substantial period of time—typically between 35 and 99 years.
- **Labor:** Public-private partnerships allow for functions traditionally carried out by the public sponsor to be taken over by the private entity. This may include labor associated with the fabrication of rolling stock (train cars or buses) or other project components as well as operating personnel. Project sponsors should bring all stakeholders to the negotiating table early to ensure that the P3 contract does not undermine long-standing labor policies and practices.

### *Additional Resources*

**FHWA: User Guidebook on Implementing Public-Private Partnerships for Transportation Infrastructure Projects in the United States**  
[www.fhwa.dot.gov/ipd/pdfs/ppp\\_user\\_guidebook\\_final\\_7-7-07.pdf](http://www.fhwa.dot.gov/ipd/pdfs/ppp_user_guidebook_final_7-7-07.pdf)

**National Conference of State Legislatures: Public-Private Partnerships for Transportation: A Toolkit for Legislation**  
<http://www.ncsl.org/documents/transportation/PPPTOOLKIT.pdf>



## Denver Regional Transportation District FasTracks and Eagle Public-Private Partnership

Population growth and development have helped make the nine-county Denver area a thriving, dynamic community. With this growth, however, have come increased travel demand and congestion. In the past 20 years, total vehicle miles traveled have increased from 38 to 64 million miles. During this same period, major roadway congestion quadrupled.<sup>2</sup> Regional leaders knew that these

problems would only increase with time. Today, more than 2.6 million people live in the area and by 2030 the population is expected to reach 3.9 million—an increase of almost 50 percent.<sup>3</sup>

In the early 1990s, regional leaders began developing a long-range framework to accommodate growth, support additional economic development, and efficiently manage transportation demand. The Denver Regional Council of Governments (DRCOG) developed a Metro Vision plan calling for growth focused around transit and in mixed-use urban centers.<sup>4</sup>

<sup>3</sup> Ibid.

<sup>2</sup> Denver Regional Council of Governments: “Metro Vision Plan 2020”: [http://www.drcog.org/documents/2020\\_Metro\\_Vision\\_Plan-1.pdf](http://www.drcog.org/documents/2020_Metro_Vision_Plan-1.pdf)

<sup>4</sup> The DRCOG Board of Directors adopted the Regional Transportation Plan in September 1998 as the fiscally constrained transportation plan.



completed in 2011, the remaining work building a new underground bus station and a new commuter and inter-city rail terminus will be completed progressively by May 2014.<sup>7</sup>

With this work underway, the FasTracks program faced two substantial challenges: total cost and on-time completion. Successfully delivering such

an aggressive program of projects would require RTD (the project sponsor) to raise significant local revenues, obtain substantial federal funding, take advantage of innovative financing, and enter into a public-private partnership (known as the Eagle P3).

The Eagle P3 consists of \$2.2 billion in specific projects from the overall FasTracks program. RTD awarded the concession agreement for the Eagle P3 in 2010 to a consortium called Denver

Transit Partners. The Eagle P3 uses a design-build-finance-operate-maintain (DBFOM) structure. The agreement includes detailed performance standards for the maintenance and operation of the Eagle P3 elements throughout the life of the contract, which runs through December of 2044. In addition, the deal includes the use of an availability payment, which allows RTD to repay the private capital and cover ongoing operations and maintenance while still retaining control over fares.

---

<sup>7</sup> Information on project timelines provided by Denver Regional Transportation District.

## Advantages of Using an Availability Payment

*An availability payment is a long-term series of stable, pre-determined payments made by the public sector to a private entity as part of a public-private partnership in return for the private partner delivering a transit project. In some cases this also includes operations and maintenance of a transit facility.*

Availability payments allow a project sponsor to use a public-private partnership without transferring responsibility for fare rates, service frequency and other policy decisions related to operations over to the private sector. By retaining these responsibilities the public sector also retains the risk for ridership and repayment of borrowed money through a revenue source unrelated to ridership. This structure can work well for transit projects, which typically do not generate sufficient revenue to pay for construction and operating costs.

In this P3 structure the private sector assumes responsibility for design and construction of a project. In some instances the private sector also take over operations and maintenance for a fixed period of time. When this is done

there are often performance standards set by the public sector that must be met—usually accompanied with incentives and penalties. Some transit agencies may want to consider turning over operations and maintenance when they have limited experience operating a particular type of transit mode.

*Benefits:* An availability payment allows a local government sponsor to spread the cost of a transit project over many years in a stable and predictable way. In addition, the sponsor retains control over fares and operations to maximize public policy goals such as ridership, equity, and service quality.

*Drawbacks:* An availability payment requires a public-private partnership, which may not be suitable for your project. In addition, the public sector retains the risk for repayment of borrowed money.

### **Additional Resources**

Jeffrey A. Parker and Associates, Inc. "Introduction to Public-Private Partnerships with Availability Payments"

[www.transportation-finance.org/pdf/funding\\_financing/financing/jpa\\_introduction\\_to\\_availability\\_payments\\_0709.pdf](http://www.transportation-finance.org/pdf/funding_financing/financing/jpa_introduction_to_availability_payments_0709.pdf)



Denver Transit Partners assumed responsibility<sup>8</sup> for:

Design-Build

- East Rail Line, Gold Rail Line, and the electrified segment of the Northwest Line
- Commuter rail maintenance facility
- Denver Union Station systems (power, signals, etc.)
- Commuter rail rolling stock

Operate & Maintain

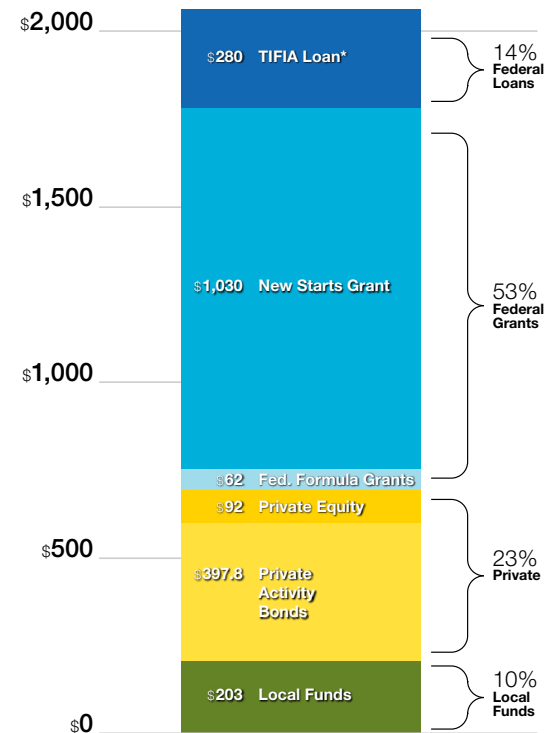
- East Rail Line, Gold Rail Line, and the Northwest Electrified Segment
- All commuter rail rolling stock

Finance and Equity

- \$487.8 million commitment

Under the innovative Eagle P3, RTD used local sales taxes to access multiple financing tools, while saving money. The winning bid by Denver Transit Partners was \$300 million lower than RTD’s internal cost estimate.<sup>9</sup>

**Denver Eagle P3 Funding\*\***  
in Millions of Dollars



\*All federal loans and private bonds will have to be repaid with local funding.  
\*\*Denver Regional Transportation District "2011 Annual Report to DRCOG on FasTracks," available through the following link: [http://www.rtd-fastracks.com/main\\_54](http://www.rtd-fastracks.com/main_54)

8 Denver Regional Transportation District: "2011 Annual Report to DRCOG on FasTracks": [http://www.rtd-fastracks.com/main\\_54](http://www.rtd-fastracks.com/main_54)



Denver Transit Partners’ financing commitment consists of \$91.7 million in private equity and \$397.8 million in tax-exempt private activity bond (PAB) proceeds. The Eagle P3 is one of only thirteen projects that have taken advantage of the Federal authorization for private activity bonds.

In addition to the private financing, RTD was successful in securing a New Starts grant award from the Federal Transit Administration for over \$1

billion. This was secured, in part, due to the project being structured as a P3 and being part of FTA’s Public-Private Partnership Pilot Program (Penta-P). After award of the P3 concession agreement with Denver Transit Partners, RTD was able to secure a TIFIA loan of \$280 million. According to internal estimates based on interest rates on revenue bonds for the same amount, RTD saved \$164 million in financing costs by securing a TIFIA loan. This cost savings was made possible by the strength of the

local sales tax revenues that secured this debt obligation. (In 2011, sales tax receipts provided \$166 million for the FasTracks program).<sup>11</sup>

The Eagle P3 agreement also provided RTD with a mechanism for transferring substantial risk to the private partner. It

is important to note that RTD retains the risk that system ridership (and by extension farebox revenues) will fall below estimated levels. Under the terms of the Eagle agreement, RTD is required to make a pre-determined availability payment to Denver Transit Partners regardless of ridership levels. The availability payment repays the private contribution with interest and covers the cost of operations and maintenance through 2044.

### Did You Know?

*The Denver Eagle public-private partnership is the largest transit P3 in history.*

- Total Cost: \$2.2 billion<sup>12</sup>
- 35.9 miles of commuter rail
- Design-Build-Finance-Operate-Maintain P3 structure

## Eagle P3 Project Risk Allocation<sup>10</sup>

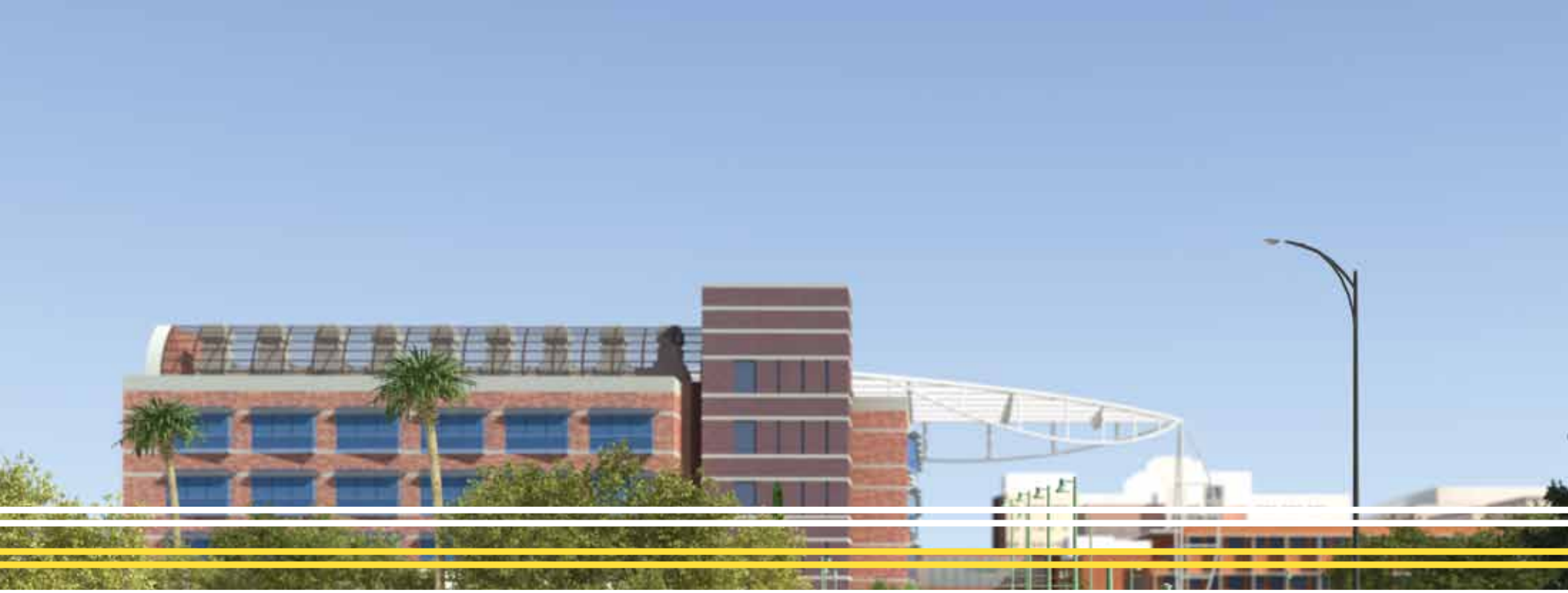
Regional Transportation District (Project Sponsor)	Denver Transit Partners (Private Partner)
Environmental review and permitting	Design and construction delays and resulting cost overruns
Ridership	Additional land requirements
Project and design changes requested by RTD	Compliance with environmental requirements
Unforeseen archeological challenges	Subcontractor defaults
Construction site access	Safety and security of transit system
Dry utilities such as electricity	System operating performance
	Operating and maintenance of commuter rail lines and vehicles
	Utilities: water, sewage, and drainage
	Condition of transit system at passback to RTD following P3 concession

<sup>10</sup> Denver Regional Transportation District presentation (March 2009) “Lessons Learned from the Penta – P RTD FasTracks: A Cast Study”.

<sup>11</sup> Ibid.


<sup>12</sup> Denver Regional Transportation District: “2011 Annual Report to DRCOG on FasTracks”: [http://www.rtd-fastracks.com/main\\_54](http://www.rtd-fastracks.com/main_54)







# How They Did It: Transit Success Stories

A decorative graphic consisting of five horizontal lines of varying colors (white, yellow, white, white, white) is positioned to the left of the text.

Complicated though it may be to craft just the right package of grants, financing, and local revenues to build transit projects, many communities have **done it**. This chapter presents several case studies of metropolitan regions that have successfully implemented transit projects.

The first case study describes how the San Diego Metropolitan Transit System built an express bus network using traditional funding sources and toll revenues. In the second case, Tucson, AZ, is building a modern streetcar by combining local sales tax revenues with a federal TIGER grant. The third case is a bus rapid transit line in Cleveland, OH, that combines federal New Starts funds with a grant from a competitive state capital fund.

The Crenshaw light rail case in Los Angeles shows how a local sales tax measure leveraged a large federal loan from the TIFIA program. In the Washington, DC, metro area the Silver Line combines federal New Starts funding with a local special property tax assessment and bonds supported by toll revenues from the Dulles Toll Road. The last case highlights Denver Union Station, built by combining two federal loans—one from TIFIA and another from the RRIF program—with state and local funds as well as tax increment financing and a special property tax assessment district.

Each case study is accompanied by a “funding stack” graphic showing the share of funds that came from each of the four categories: federal, state, private, and local. Two of the case studies also include an illustrative funding approach to show how a project of similar cost and scale could be completed using federal financing tools if grants were substantially smaller or unavailable. These illustrative scenarios help demonstrate how the development benefits of a project can be used to help pay for the project.

Project	Total Cost (Millions)	Purpose and Need	Take Away
San Diego, CA Express Bus	\$2.1 (Annually)	To provide efficient and cost-effective commuter bus service from communities in north San Diego County to downtown	Toll revenues from I-15 managed lanes used to support express bus services, reducing congestion during peak hour commutes
Tucson, AZ Modern Streetcar	\$162	To connect two major activity centers: downtown Tucson and the University of Arizona	Strong sales tax revenues from Pima County used to successfully compete for federal TIGER grant
Cleveland, OH Bus Rapid Transit	\$200	To provide travel time savings, focus economic development, and increase livability and pedestrian access	Well-designed rapid bus system, funded in part with New Starts, spurred more than \$4.3 billion in institutional, commercial, and residential development
Los Angeles, CA Crenshaw Light Rail	\$1,749	To provide a critical north-south rail link through South Central Los Angeles as well as a connection to LAX Airport	Strong sales tax revenues in Los Angeles County used to successfully compete for low-cost, flexible federal TIFIA loan program
Northern Virginia Dulles Metrorail Extension	\$3,142 (Phase I)	To provide a high-capacity, high-quality Metrorail connection to Dulles International Airport and the major employment center Tysons Corner in Northern Virginia	The project leveraged toll revenues from the Dulles Toll Road and special assessment district taxes on areas that will be redeveloped for major new heavy rail transit capital project
Denver, CO Union Station (Multimodal)	\$489	To provide a multimodal transit hub in central Denver that will tie together multiple transit modes, including rail, bus, bike, and pedestrian	Project sponsor applied the increased property value resulting from the economic development around the project to support the expansion and rehabilitation of Denver Union Station



## Express Bus San Diego Metropolitan Transit System (SDMTS)

One advantage of express bus programs is their relatively low cost. Often, adding express service may be accomplished with a mixture of annual federal formula funds and state and local revenues.

San Diego County is part of the dynamic and fast-growing Southern California region with substantial transportation challenges. Since 1980,

the population has increased by 1.3 million (with many residents living in the northern portions of the county). Interstate 15 is a vital North/South highway serving a large percentage of commuters during peak hours, funneling them into downtown San Diego.

I-15 suffers frequent congestion and delays that affect the performance of the entire transportation network. In an attempt to better manage the Interstate, the state transportation department (CalTrans), converted the high-occupancy vehicle lanes into a high-occupancy toll (HOT) lane that allows multi-passenger cars to travel without charge and other single occupant vehicles to use the lanes for a fee. CalTrans, the regional planning agency SANDAG, and SDMTS have partnered to allow the express buses to use the managed lanes without charge. In addition, the enabling legislation authorizing the I-15 HOT lane requires that any toll revenues collected in excess of the cost to maintain the highway lanes be dedicated to providing express bus service. SDMTS uses toll revenues to cover a portion of annual operating costs.

The SDMTS premium express bus service is a highly successful example of a targeted, efficient, and low-cost solution to regional commuting needs. Each day five express routes carry more than 1,200 passengers from north San Diego County into downtown (with one stopping in the Sorrento Valley/UTC area). Due to the long travel distances of these routes the

buses make limited stops. The 810 route, for example, travels for 24 miles (19 within the managed lanes on I-15) from its last collection point before making its first downtown stop. SDMTS contracts operations of the express bus program to Veolia Transportation. The express fleet includes 26 buses that operate weekday, peak-period, and peak-direction only routes. Under the terms of the contract, Veolia was responsible for purchasing the buses and operating the routes. SDMTS pays \$2.1 million each year, which covers capital and operating costs. Strong demand for express bus service has resulted in farebox revenues covering 50.5 percent of annual costs.<sup>1</sup>

### Did You Know?

*From FY05 to FY10, states flexed \$6.8 billion in highway funding to transit projects (principally STP and CMAQ funds) - roughly 3.5 percent of the total funding eligible to be flexed to transit.*

<sup>1</sup> Data on cost and contract provisions with Veolia Transportation provided by the San Diego Metropolitan Transit System.





## Tucson, AZ Modern Streetcar

As the economic and transportation center of Pima County, Tucson, since 1980, has seen its population grow by more than 57 percent to 525,000. By 2040, the region's population is expected to grow to more than 1.4 million. Local elected officials and business and community leaders determined that roadways alone could not support the travel or economic development needs of this much larger population.

In 2006, voters in the Tucson metro area approved a 20-year plan put forward by the Regional Transportation Authority (RTA) and a half-cent sales tax that will provide more than \$2 billion to implement that vision. The plan includes 35

Financing <sup>3</sup>	System Design <sup>4</sup>
<p><b>Federal:</b></p> <ul style="list-style-type: none"> <li>• TIGER Grant: \$63,000,000</li> <li>• New Starts Grant: \$5,980,000</li> <li>• Surface Transportation Program: \$9,000,000</li> </ul> <p><b>State:</b></p> <ul style="list-style-type: none"> <li>• Highway Users Revenue Fund (AZ DOT): \$6,000,000</li> </ul> <p><b>Local:</b></p> <ul style="list-style-type: none"> <li>• RTA (Sales Tax): \$75,000,000</li> <li>• City of Tucson: \$3,000,000</li> <li>• Gadsden Company: \$3,000,000</li> <li>• Tucson Water: \$8,379,000</li> <li>• City of Tucson (reserve commitment): \$23,000,000</li> </ul>	<p><b>Alignment:</b></p> <ul style="list-style-type: none"> <li>• 3.9 miles total length</li> <li>• 17 stations</li> <li>• Fixed-guideway</li> <li>• Overhead electrification</li> </ul> <p><b>Rolling Stock:</b></p> <ul style="list-style-type: none"> <li>• 8 modern streetcars</li> </ul> <p><b>Performance:</b></p> <ul style="list-style-type: none"> <li>• 10/20 minute peak/off-peak headways</li> <li>• Operating in mixed traffic</li> </ul> <p><b>Ridership:</b></p> <ul style="list-style-type: none"> <li>• 3,250 weekday (2013)</li> <li>• 4,217 weekday (2020)</li> </ul> <p><b>Population and Employment:<sup>5</sup></b></p> <ul style="list-style-type: none"> <li>• 44,224 population within ½ mile of the line</li> <li>• 64,151 total employment within ½ mile of the line</li> </ul>

major roadway projects as well as safety and other transportation projects.<sup>2</sup> In addition, the plan provides dedicated funding for the construction of a modern, high-capacity streetcar that will connect the University of Arizona with downtown Tucson.

The project will provide a new transportation option along one of the most heavily traveled corridors in the city as well as a connection between the central business district and the largest employment center, the University of Arizona. The streetcar is expected

to support population and employment growth while focusing economic development downtown. Finally, the project will help to reduce the need to expand surface parking facilities that are heavily constrained within the city center.

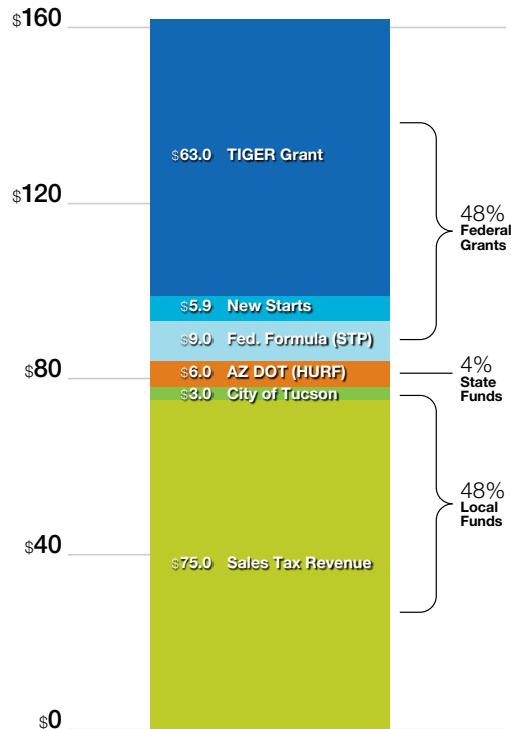
<sup>2</sup> Regional Transportation Authority: <http://www.rtamobility.com/>

<sup>3</sup> Pima Association of Governments – Regional Transportation Authority (March 2012) “Tucson Modern Streetcar Project Update”: <http://tucsonstreetcar.com/documents/RTAUpdatePackage4262012.pdf>

<sup>4</sup> Information on system design provided by Pima Association of Governments – Regional Transit Authority.

<sup>5</sup> Data on employment and ridership taken from the National Transit Oriented Development Database: <http://todata.cnt.org/>

### Funding for Tucson Streetcar in Millions of Dollars



Tucson faced two significant challenges when developing plans for a streetcar. First, under Arizona’s constitution, transit projects are prohibited from receiving Highway User Revenue Funds (HURF), which are largely based on gas and motor vehicle taxes. Therefore, a principal source of

project funding had to be the RTA, which is sales tax funded. In the end, HURF funds did support a related roadway project, accounting for only four percent of total project costs.

Second, in the preceding 20 years, four different transportation ballot initiatives failed. These efforts were unsuccessful in part due to a lack of coalition building and substantive public involvement. Prior to the 2006 vote, RTA established a 35-member citizen advisory committee with representation from small businesses, transit advocates, freight operators, homebuilders, environmentalists, and the special needs community, among others. In addition, RTA created a 22-member technical advisory committee with a mixture of public officials, planners, and private experts. The sustained outreach included surveys and focus groups, regular meetings with editorial boards and elected officials, along with 27 open houses, and more than 300 presentations to community stakeholders. Business leaders also provided \$1.1 million in financial support to bolster the campaign effort before the vote.<sup>6</sup> In the end, local leaders succeeded in making a compelling case that raising local revenues was essential to building a strong region for years to come.

6. Pima Association of Governments – Regional Transportation Authority (June 2007): “Getting the Green Light on Transportation Initiatives”: [www.cfte.org/events/Gary%20HayesTX%2006-07.ppt](http://www.cfte.org/events/Gary%20HayesTX%2006-07.ppt)

The RTA sales tax was leveraged to secure a highly competitive TIGER grant. While securing a New Starts grant is a more involved process that can take several years, the TIGER application and grant award timeline was only one year.

The Tucson Streetcar represents the power of local coalition building and the importance of raising local revenues to effectively compete for federal funds. Without the local commitment to the project, demonstrated by voter-approved matching funds, it is highly unlikely that Tucson would have been awarded a TIGER grant.

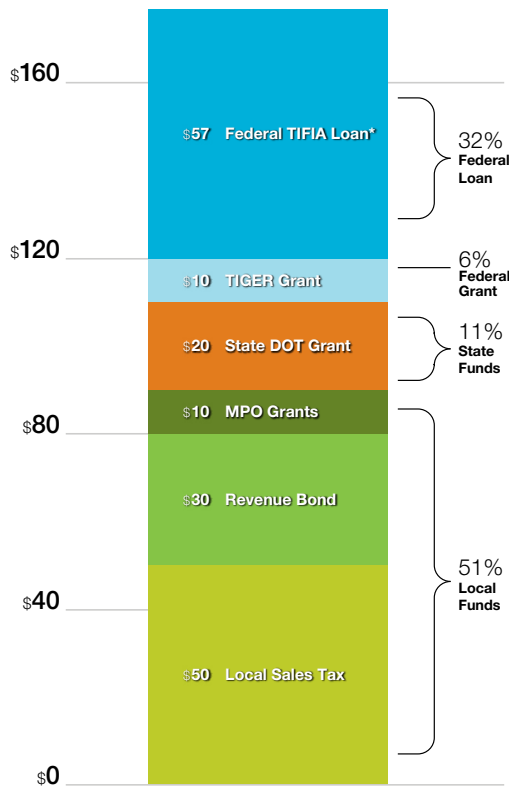
The TIGER program is highly competitive and oversubscribed—many applicants are not successful. In 2011, USDOT was only able to fund 3.7 percent of all TIGER funding requests. So how could another community build a similar project without a TIGER grant? One answer is a TIFIA loan repaid by the development the project stimulates in the corridor.

The Tucson Streetcar is projected to generate significant real estate development. By 2015, the City expects property values in the corridor to increase by \$35 million.<sup>7</sup> In addition, the project will help spur development along the corridor, including expansion of the Arizona Health Services

7. Pima Association of Governments – Regional Transportation Authority (October 2011): “Tucson Modern Streetcar Project TIGER III Application”: [www.tucsonstreetcar.com/documents/TucsonTigerIII2.pdf](http://www.tucsonstreetcar.com/documents/TucsonTigerIII2.pdf)

**Current TIFIA  
Interest Rate: 3.44%**

**Alternative Financing Scenario  
for a Comparable Streetcar Project**  
in Millions of Dollars



\*All federal loans and private bonds will have to be repaid with local funding.

Center, retail and housing to support growth at the University of Arizona, and other infill development on 26 undeveloped acres.<sup>8</sup> A principal benefit of streetcars is the ability to catalyze real estate and other economic development.

The tax revenue from this economic development could repay a loan to cover the remaining cost of the project. This will allow the economic benefits of the project to help pay for a portion of the cost of the project. A community with a project similar to the Tucson Streetcar could take advantage of the TIFIA loan program using tax revenues resulting from development and increased property values.

TIFIA loans are structured in a way that provides benefits beyond those of traditional bonds—especially for projects where repayment of the loan will come from economic development. A community gets the money to build the project on day one but is not required to start repayment of TIFIA loans until a project is complete—which can take several years—and defer repayment for up to an additional five years. This allows time for development to start generating tax revenue before repayment of the loan starts, while a traditional bond or loan would require repayment to start immediately.



**Cleveland HealthLine  
Bus Rapid Transit**

Since the 1970s, Cleveland, like many Midwestern cities, has experienced a decline in heavy manufacturing and a loss of residents and jobs to surrounding communities. This left the city with an aging infrastructure supported by a shrinking tax base. Local leaders decided to invest in an innovative bus rapid transit (BRT) line that would connect two of the largest employment centers and provide a focus for future economic development.

The Euclid Avenue BRT line (later renamed the HealthLine) runs for 7.1 miles connecting downtown with the Cleveland Clinic, Case Western University, and University Hospitals.<sup>9</sup>

8 Ibid.

9 Greater Cleveland Regional Transit Authority "RTA HealthLine": <http://www.rtahealthline.com/healthline-what-is.asp>



The BRT line was designed to:

- Provide significant travel time savings and better connections to other lines
- Focus economic development activities around transit facilities and grow the tax base
- Improve regional access to major employment and activity centers
- Improve access, safety, and comfort for pedestrians
- Improve regional air quality by replacing diesel buses with cleaner vehicles

The HealthLine has proven an overwhelming success. Since initiating service in 2008, the Euclid corridor has seen more than \$4.3 billion in real estate investment. This includes 7.9 million square feet of commercial development and 4,000 residential housing units. The new development has generated more than \$60 million in local tax revenue. In short, the BRT line has served as a focal point for attracting institutional, commercial, and residential development. The HealthLine has also surpassed ridership forecasts with 15,100 daily riders in 2011.<sup>10</sup> In fact the HealthLine experienced a 46 percent increase in ridership in its first year of operation over

the previous #6 bus.<sup>11</sup> This success is due, in part, to the careful attention given to surrounding land use and the needs of pedestrians. The project included numerous streetscape improvements to facilitate access and use by pedestrians.

The Cleveland bus rapid transit line represents a traditional approach to funding a major capital project, relying on competitive federal and state grant programs.<sup>12</sup>

This approach to project funding requires sponsors to secure the entire funding package during final

design and before construction. When successful, this method can lead to highly impactful projects that provide real benefits to the community as proven by the HealthLine. However, this approach also adds substantial time and risk to the project delivery process as a failure to successfully combine funding from multiple levels of government can add extensive delays or even stop a project all together. In short, project sponsors do not control their own destiny under a traditional competitive grant approach.

Financing	System Design
<p><b>Federal:</b></p> <ul style="list-style-type: none"> <li>• New Starts Grant: \$82,200,000</li> <li>• Formula (FTA 5309): \$600,000</li> </ul> <p><b>State:</b></p> <ul style="list-style-type: none"> <li>• Ohio DOT: \$75,000,000</li> </ul> <p><b>Local:</b></p> <ul style="list-style-type: none"> <li>• Greater Cleveland Regional Transit Authority: \$20,800,000</li> <li>• Cleveland Clinic: \$3,400,000</li> <li>• City of Cleveland: \$8,000,000</li> <li>• MPO: \$10,000,000</li> </ul>	<p><b>System and Alignment:</b></p> <ul style="list-style-type: none"> <li>• 7.1 miles with 36 stations with off-board fare collection</li> <li>• 4.5 miles of dedicated right-of-way</li> <li>• Articulated diesel-electric hybrid buses</li> </ul> <p><b>Performance:</b></p> <ul style="list-style-type: none"> <li>• 5 minute peak and 10-15 minute off-peak headways</li> </ul> <p><b>Ridership:</b></p> <ul style="list-style-type: none"> <li>• 15,100 weekday (2011)</li> </ul> <p><b>Population and Employment:<sup>13</sup></b></p> <ul style="list-style-type: none"> <li>• 41,000 population within ½ mile of the line</li> <li>• 134,000 total employment within ½ mile of the line</li> </ul>

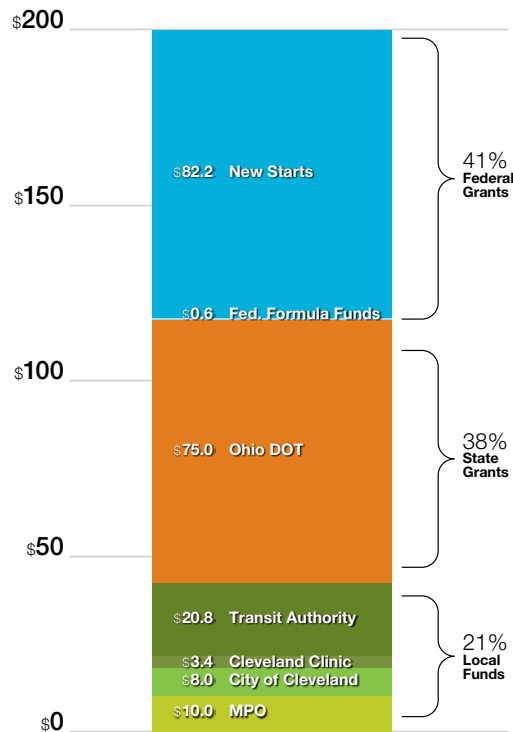
11 Northeast Ohio Areawide Coordinating Agency (NOACA): <http://www.noaca.org/gcrta2011healthline.html>

12 This is the first time that the Greater Cleveland Regional Transit Authority has pursued New Starts funding for a major new fixed-guideway transit project.

13 Data taken from the National Transit Oriented Development Database: <http://toddata.cnt.org/>

10 Data on project cost, local tax revenue, economic development, ridership, and system design provided by the Greater Cleveland Regional Transit Authority.

### Funding for the Euclid Avenue/ HealthLine Corridor\* in Millions of Dollars



\*Project funding data provided by Greater Cleveland Regional Transit Authority.

These programs are highly competitive and political demands for regional or national equity make it less likely that a sponsor will be selected more than once. The HealthLine project received 79 percent of its total project funding from competitive state and national sources: Ohio Department of

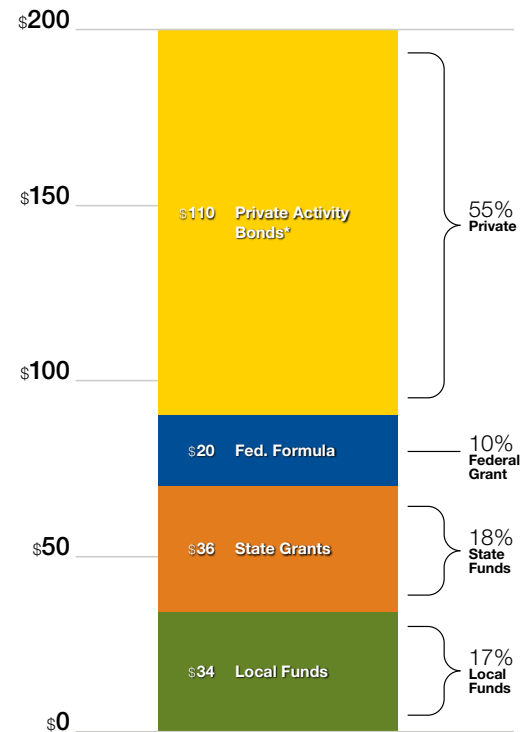
Transportation’s major new projects program (\$75 million or 38 percent); and the federal New Starts program (\$82.2 million or 41 percent).

Thus, traditional competitive funding sources represent a powerful method for delivering projects—particularly when a strong political consensus forms around a regional vision and well-designed project that can compete at the state or national level. In the absence of a robust state or federal grant, project sponsors have few other pathways to implement their projects and deliver benefits to their communities.

As we discussed earlier in Chapter 2, using the New Starts program can take a significant amount of time—often adding years to the completion of a project. With very large projects, New Starts funding may be the key to the financial puzzle. A project like the HealthLine could instead be developed using a public-private partnership in which private investment is repaid by the new real estate development and resulting increased property values created by the project. A P3 approach may allow the project to be completed more quickly compared to working through the New Starts process.

A public-private partnership for a similar project could be structured on an “availability payment” model. Under this model the public sector retains control over the operation and maintenance of the

### Alternative Financing Scenario for a Comparable BRT Project in Millions of Dollars



\*All federal loans and private bonds will have to be repaid with local funding.

service and the private sector takes responsibility for the design, construction, and financing of the project. Initial capital for the project could come from available state and local funds combined with capital raised through private activity bonds.

The project sponsor would provide a portion of capital up front and pay the private partner a fixed amount of money over a pre-determined number of years. The funding for the availability payment would come from local funds in the initial years and then from increased property tax receipts from the new development and improved property values brought on by the project. The HealthLine has generated significant economic development—\$4.3 billion in investments generating more than \$60 million in new local tax revenue. Similar projects can also generate significant development through coordinated land use planning and by working closely with developers and property owners.

Under this option, the cost for the project sponsor will be higher than the cost of the HeathLine as the sponsor will need to pay back the principal and interest on the private activity bonds. Each community will need to decide whether the benefits of having a project put in place years earlier is worth the higher cost.



## LA Metro: Crenshaw/LAX Light Rail Line Los Angeles

Los Angeles is a city synonymous with cars. Yet this image obscures the transformational changes taking place there. A coalition of local officials, led by Los Angeles Mayor Antonio Villaraigosa, is aggressively pursuing a program of transit projects known as “30/10” (a reference to building 30 years of projects in just 10 years).

A central element of this plan is the Crenshaw/LAX light rail line, which will provide a north/south link between the existing Exposition line to the north and Metro Green line to the south with a connection along the way to a proposed people mover connecting with LAX airport. The Crenshaw/LAX corridor is a densely populated area with many transit-dependent residents. Approximately 23 percent of the population within the corridor lives

below the poverty line. In addition, 16 percent of all households do not have access to an automobile (compared to 8 percent in urbanized areas nationally).<sup>14</sup> By 2030, demand for public transit is anticipated to increase by 55 percent. However, efforts to improve existing bus service must contend with a congested road network. On average, buses in the corridor travel 30 percent more slowly than in the rest of Los Angeles County.<sup>15</sup>

The line has an estimated total cost of \$1.75 billion. Once completed, the Crenshaw line will reduce travel times by 31 percent and attract additional economic growth, especially around transit stops.<sup>16</sup>

---

14 Crenshaw Light Rail Final Environmental Impact Statement: [http://www.metro.net/projects/crenshaw\\_corridor/crenshaw-feis-feir/](http://www.metro.net/projects/crenshaw_corridor/crenshaw-feis-feir/)

15 Ibid.

16 Ibid.



Funding <sup>17</sup>	System Design
<p><b>Federal:</b></p> <ul style="list-style-type: none"> <li>TIFIA Loan: \$545,900,000 (repaid by local Measure R Sales Tax)</li> <li>Formula: \$98,000,000</li> </ul> <p><b>State:</b></p> <ul style="list-style-type: none"> <li>State Bonds: \$201,200,000</li> <li>Grants: \$36,700,000</li> </ul> <p><b>Local:</b></p> <ul style="list-style-type: none"> <li>Measure R Sales Tax: \$661,100,000</li> <li>Prior Sales Tax (Props. A &amp; C): \$153.7</li> <li>Cities of Los Angeles and Inglewood: \$52,400,000</li> </ul>	<p><b>System and Alignment:</b></p> <ul style="list-style-type: none"> <li>8.5 miles with six stations</li> <li>Dedicated right-of-way</li> </ul> <p><b>Performance:</b></p> <ul style="list-style-type: none"> <li>5/10 minute peak/off-peak headways</li> </ul> <p><b>Ridership:</b></p> <ul style="list-style-type: none"> <li>20,200 weekday (2035)</li> </ul> <p><b>Population and Employment:</b></p> <ul style="list-style-type: none"> <li>44,800 population within ½ mile of the line</li> <li>28,300 total employment within ½ mile of the line</li> </ul>

17 Los Angeles County Economic Development Corporation (LAEDC) "Crenshaw/ LAX Transit Corridor"

Research by the Los Angeles County Economic Development Corporation estimates that the project will produce \$2.8 billion in total economic output, create 18,100 jobs and generate \$118 million in total new tax revenue.<sup>18</sup>

The Crenshaw/LAX light rail line represents the leveraging possibilities that result from a strong voter-approved local sales tax commitment. The Crenshaw/LAX project combines traditional federal, state, and local grants with a flexible, low-interest TIFIA loan and bonds issued by LA Metro.

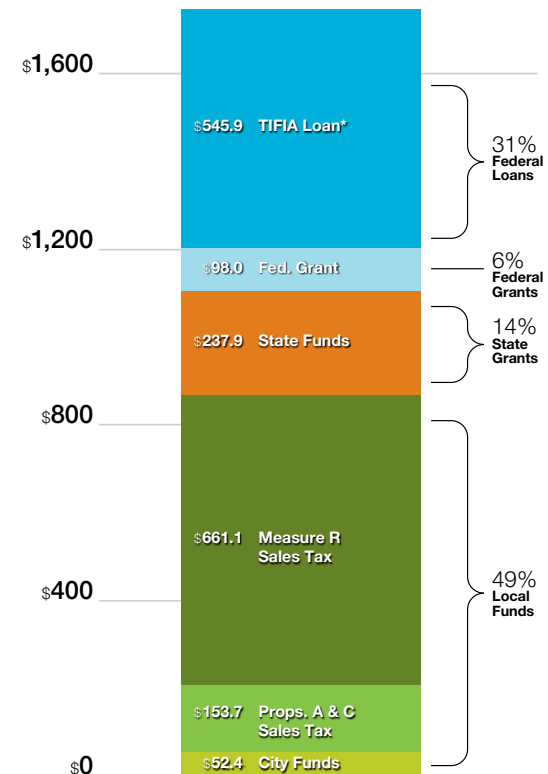
In 2008, voters in Los Angeles County approved Measure R, a regional half-cent sales tax dedicated

to building a mix of new highway and transit projects, including the Crenshaw/LAX line. Measure R is expected to generate \$40 billion over its 30-year authorization.

For the Crenshaw/LAX line, Measure R sales taxes will provide up front construction cash (\$655 million) as well as the repayment stream for the bonds issued by LA Metro and the federal TIFIA loan. One substantial advantage of this funding approach is the accelerated time to completion. Typically, a rail project of this size would pursue a New Starts grant. However, this approach can delay completion for a number of years. By leveraging sales tax revenues to access a federal loan and bond markets, the Crenshaw/LAX project is scheduled for completion in 2018.

18 LA Metro Finance, Budget, and Audit Committee (October 2011) "Crenshaw/LAX Transit Corridor Project".

**Funding for Crenshaw Light Rail Line**  
in Millions of Dollars\*\*



\*All federal loans and private bonds will have to be repaid with local funding.  
\*\*LA Metro Finance, Budget, and Audit Committee (October 2011)  
"Crenshaw/LAX Transit Corridor Project"

Another benefit of using sales tax revenues is their strength and stability. As a result, bonds backed by sales taxes are often—though not always—rated highly and, therefore, have a lower interest rate leading to lower overall financing costs to the project sponsor.



# Crenshaw/LAX Transit Corridor



## Economic Impacts of Transportation Investments

Investing in transportation infrastructure is a powerful tool to spur economic activity. Building new facilities creates jobs, raises property values, and generates additional tax revenues. The Measure R sales tax in Los Angeles County is an excellent example of the impacts of investment.

In 2008, voters approved a countywide half-cent sales tax dedicated to transportation improvements. Over its 30-year authorization period, Measure R is anticipated to generate \$40 billion.

An analysis by the Los Angeles County Economic Development Corporation calculates that the Measure R projects will stimulate nearly \$70 billion in economic output. Moreover, the highway and transit projects funded by the measure will stimulate the creation of more than 16,000 new jobs each year. Finally, the projects will generate new local, state, and federal tax revenues.

### Economic Impact of Measure R Projects<sup>A</sup>

	Total	Annual
Economic Output (\$ millions)	\$68,775	\$2,292
Employment	\$507,500	\$16,900
Earnings (\$ millions)	\$22,376	\$746

### Fiscal Impact of Measure R Projects (\$ Millions)

Federal Tax Revenues	\$6,586	\$219.5
State Tax Revenues	\$2,304	\$76.8
County Tax Revenues	\$271	\$9.0
Local Tax Revenues	\$155	\$5.0

A Los Angeles Economic Development Corporation: "The Construction Impact of Metro's Measure R Transportation Projects 2009-2038": [http://www.laecd.org/reports/consulting/2011\\_EconomicImpactofMeasureRProjects2009\\_2038\\_041911.pdf](http://www.laecd.org/reports/consulting/2011_EconomicImpactofMeasureRProjects2009_2038_041911.pdf)

## Long-term Community Benefits of Local Hire and Job Training

*Building a new transit project creates construction jobs. But who gets those jobs? When a project sponsor publishes a construction bid, firms from all over the nation respond. This raises the prospect that many of the resulting jobs will flow to workers outside the community. In addition, the distribution of construction benefits and burdens is especially sensitive when the impacted area faces heightened social and economic challenges. After all, major construction projects disrupt neighborhoods and small businesses, add to travel times, and produce lasting environmental impacts.*

*Local hiring programs are an example of sharing the benefits of growth and investment.*

Local hiring—especially when combined with job training and other educational opportunities—can provide strong middle class jobs and long-term skills that last for years after a project has been completed. When done right, local hiring programs can provide a boost to local employment without increasing costs or affecting the project schedule.

**Funding Sources:** The type of funding used on a project affects how to plan for local hiring. The greatest restrictions apply to federal highway funds. As currently interpreted, federal law prohibits agencies from including local hire requirements in most construction contracts sent out for bid. And without a requirement in the bid document, the winning contractor is under no obligation to hire locally. In cases where projects are not bid out in the traditional manner, such as negotiated design-build contracts, public agencies have more leeway to ask contractors to hire locally.

Federal transit funds are not subject to the same restrictions. This gives transit agencies much greater flexibility to include incentives for local hiring when it asks contractors to bid on a project.

**Skills Training:** The most successful local hire programs usually include a training component to assure that local residents working on the project either possess or acquire the correct skills. Once the project is over these workers are qualified to work on other projects. Many training programs work through the appropriate local union organizations to create an apprenticeship pipeline within the union structure, although this is not mandatory.





## Case Study - Alameda Corridor - Los Angeles, CA

In the early 1990s, local leaders in the Los Angeles metropolitan region decided to implement a large-scale freight project to reduce conflicts between trains serving the Ports of Los Angeles and Long Beach and city streets. The resulting \$1.3 billion project eliminated hundreds of crossings, substantially improving safety and travel times and providing the ports with the infrastructure necessary to expand operations and volume for decades to come. The majority of construction and disruption took place in the historically disadvantaged neighborhoods in and around South Central Los Angeles.

In response, community members organized a coalition and entered into discussions with the project sponsor regarding job opportunities and mitigating community impacts. After a series of negotiations, community members and the project sponsor agreed that 30 percent of the work hours on the middle section of the project would go to residents living in the 30 ZIP codes bordering the project. According to Dennis Rockway of the Legal Aid Foundation of Long Beach, "This is the largest local hiring plan of any public works project in the history of the United States." The Alameda Corridor Transportation Authority provided funding for a new, community-based agency that recruited local residents and assured they were properly trained. More than 700 local residents received construction jobs. The project and its hiring plan were a great success.<sup>C</sup>

**To Lean More:** To learn more about how to set up a local hiring program for your project please follow this link: [http://www.transportationequity.org/index.php?option=com\\_content&view=article&id=326&Itemid=203](http://www.transportationequity.org/index.php?option=com_content&view=article&id=326&Itemid=203)



<sup>C</sup> Lisa Rangelhi, Center for Community Change, (2002): "Replicating Success - The Alameda Corridor Job Training & Employment Program": <http://www.campusactivism.org/server-new/uploads/acjc%20replication%20manual.pdf>



## Dulles Metrorail Extension (Silver Line), Northern Virginia

Northern Virginia is one of the fastest growing regions in the United States. Within Fairfax County, Tysons Corner is the largest suburban business district in the country with more than 25 million square feet of office space, 110,000 jobs, and 20,000 residents—surpassing the central business districts in Miami, San Diego, and St. Louis.<sup>19</sup>

<sup>19</sup> Metropolitan Washington Airport Authority presentation (2009) “A Look at the Dulles Corridor”.

Funding for Phase I (\$ Millions)	System Design
<p><b>Federal:</b></p> <ul style="list-style-type: none"> <li>• New Starts: \$900</li> <li>• Federal Formula (STP): \$75</li> </ul> <p><b>State:</b></p> <ul style="list-style-type: none"> <li>• Virginia DOT: \$176.7</li> </ul> <p><b>Local:</b></p> <ul style="list-style-type: none"> <li>• Fairfax County Transportation Improvement District: \$523.8</li> <li>• Dulles Toll Road Revenues and Bond Proceeds (MWAA): \$1,467</li> </ul>	<p><b>System and Alignment:</b></p> <ul style="list-style-type: none"> <li>• 11.7 miles with 5 stops (Phase I)</li> </ul> <p><b>Performance:</b></p> <ul style="list-style-type: none"> <li>• 7/12 minute peak/off-peak headways</li> </ul> <p><b>Ridership:</b></p> <ul style="list-style-type: none"> <li>• 24,600 weekday 2013 (Phase I)</li> <li>• 85,700 weekday 2030 (Phases I &amp; II)</li> </ul> <p><b>Population and Employment:</b></p> <ul style="list-style-type: none"> <li>• 9,700 population within ½ mile of the line</li> <li>• 97,500 total employment within ½ mile of the line</li> </ul>

The rapid growth in Tysons and the Dulles corridor has created robust travel demand, which has strained the existing transportation network, degraded air quality (the Washington DC metro region suffers from severe non-attainment for ozone), substantially reduced system reliability, and increased travel times.<sup>20</sup>

Tysons is anticipated to add more than 80,000 residents and 100,000 jobs by 2050.<sup>21</sup> However, local leaders determined that the largely built-out area could not achieve this growth by continuing

<sup>20</sup> Metropolitan Washington Airport Authority Final Environmental Impact Statement (December 2004): “Chapter 1”: [http://www.dullesmetro.com/pdfs/FEIS\\_I/FTA\\_FEIS\\_Chapter\\_1.pdf](http://www.dullesmetro.com/pdfs/FEIS_I/FTA_FEIS_Chapter_1.pdf)

<sup>21</sup> Metropolitan Washington Airport Authority (MWAA): “A Look at the Dulles Corridor”: [http://www.dullesmetro.com/pdfs/2009\\_DullesCorridorOverview.ppt](http://www.dullesmetro.com/pdfs/2009_DullesCorridorOverview.ppt)

a traditional car-oriented and dependent highway development pattern.

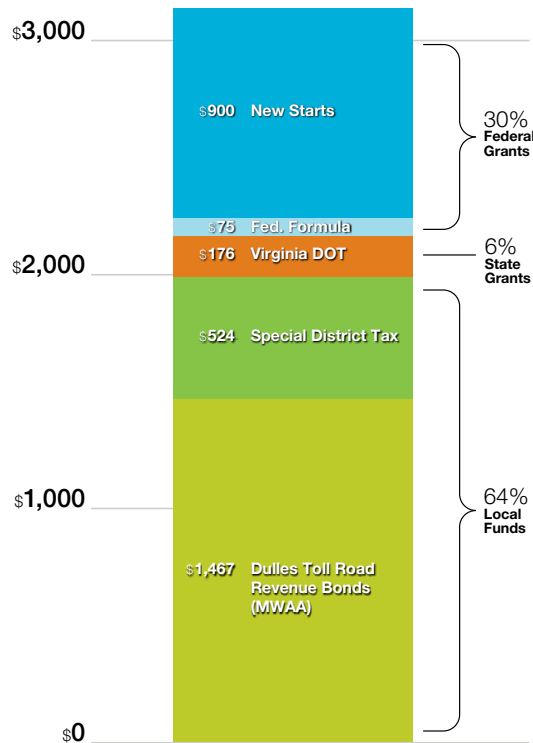
After significant study, regional leaders decided to pursue a Metrorail extension. By 2030, the rail extension will increase travel capacity within the Dulles corridor by 60 percent.<sup>22</sup> Without the travel capacity and efficiency of the expanded rail system, much of the anticipated growth over the next forty years would either be reduced or forced to spread across a far larger geographic area, requiring many costly roadway expansion projects.

When completed, the Dulles project will extend Metrorail through Tysons (Phase 1) and then beyond Washington Dulles International Airport, which

<sup>22</sup> Metropolitan Washington Airport Authority: “Dulles Corridor Metrorail Project Extension to Wiehle Avenue”: <http://www.dullesmetro.com/pdfs/FinalPMPV6-0.pdf>



### Funding for Dulles Metrorail Extension Phase I in Millions of Dollars



served more than 23.7 million passengers in 2010, to Route 772 in eastern Loudoun County (Phase 2). The introduction of Metrorail to the Dulles Corridor will catalyze transit-oriented development, reduce travel times, and improve air quality. By 2025, the project is anticipated to reduce annual vehicles miles traveled by 402 million, carbon monoxide emissions

by 160 tons, nitrogen oxide emissions by 130 tons, volatile organic compounds by 15 tons; and particulate matter by 1 ton.<sup>23</sup>

These economic, community, and environmental benefits would not be possible without careful attention to land use planning. By focusing on the interactions between development and the transit system, local leaders have ensured their community reaps the full benefits of the investment.

The Metrorail extension represents the power of leveraging a revenue-generating toll highway as well as the willingness of local businesses to financially support a large transit investment that delivers extensive economic, transportation, and quality of life benefits.

Based on current funding agreements, Fairfax and Loudoun Counties and the Metropolitan Washington Airport Authority (MWAA) will contribute 25% of the total project funding for Phase 1 and 2: Fairfax County 16.1 percent; Loudoun County 4.8 percent; and MWAA 4.1 percent from aviation funds (expected to be passenger facility charges).<sup>24</sup> Fairfax County is funding its Phase 1 contribution from special taxes imposed on commercial and industrial property in the Dulles Rail Phase 1 Transportation

<sup>23</sup> Metropolitan Washington Airport Authority "Dulles Corridor Metrorail Project".

<sup>24</sup> Metropolitan Washington Airport Authority (March 2012) "Dulles Corridor Enterprise Financial Update".

## By 2025, the Dulles Metrorail Extension is anticipated to annually reduce...





## Did You Know?

**SINCE 2000**, more than 400 transportation tax ballot measures have appeared before voters with 70 percent approved - twice the rate of ballot measures generally.

Improvement District, a special tax district authorized in 2004.<sup>25</sup>

Almost one-third of Phase 1 will be funded from a federal New Starts grant and formula funds. The Commonwealth of Virginia will provide approximately 5.0 percent of the Phase 1 funding. The

remainder of the funding, nearly half of the Phase 1 project cost, will come from the proceeds of toll road revenue bonds issued by MWAA. In 2006, the Commonwealth of Virginia agreed to transfer operational control of the Dulles Toll Road to the Airports Authority to facilitate the funding of the project.<sup>26</sup> The Dulles Toll Road is a mature commuter road in a strong service area that can generate sufficient revenue to support the estimated \$3.0 billion in bonds that may be required to complete Phases 1 and 2.



## Denver Union Station, Denver, CO

Denver, Colorado, is a dynamic and fast-growing metropolitan region. Today, more than 2.6 million people live in the nine-county Denver area. By 2030, the population is expected to grow to 3.9 million—an increase of almost 50 percent. Beginning in the early 1990s, regional leaders started working on a long-range vision that would address population growth, economic development, and transportation needs. The result was FasTracks, a plan to build 122 miles of new commuter and light rail lines, 18 miles of bus rapid transit, and a major redevelopment of Denver Union Station.<sup>27</sup>

The redeveloped Denver Union Station will tie together light rail, commuter rail, intercity passenger rail, regional and intercity bus, taxis, shuttles, vans, and bicycle and pedestrian facilities. Moreover, the station includes 20 acres of land that will provide:<sup>28</sup>

- 1 million square feet of office space (Class A and B);
- 300,000 square feet of residences (250-300 units);
- A business-oriented or boutique hotel of 120 to 200 rooms; and
- 100,000 square feet of retail and other commercial uses.

25 Data on funding sources and the special purpose taxing district provided by Metropolitan Washington Airport Authority.

26 Metropolitan Washington Airport Authority: "Dulles Corridor Metrorail Project – Timeline": <http://www.dullesmetro.com/about/timeline.cfm>

27 Denver Regional Transportation District: "2011 Annual Report to DRCOG on FasTracks": [http://www.rtd-fastracks.com/main\\_54](http://www.rtd-fastracks.com/main_54)

28 Denver Union Station Project Authority: "Master Plan": <http://www.denverunionstation.org>

Once complete, the new Denver Union Station will provide efficient and convenient connections to multiple transit modes as well as an active 24-hour pedestrian-oriented district that supports and enhances the Lower Downtown, the central business district, and the Central Platte Valley. These benefits are possible because from the very outset local officials and planners envisioned the station not merely as a transportation facility, but an integral part of a larger urban area.

**Funding**<sup>29</sup>

**Federal:**

- TIFIA Loan: \$ 145.6 million
- FRA Loan: \$ 155 million
- Federal Grants: \$83.5 million

**State:**

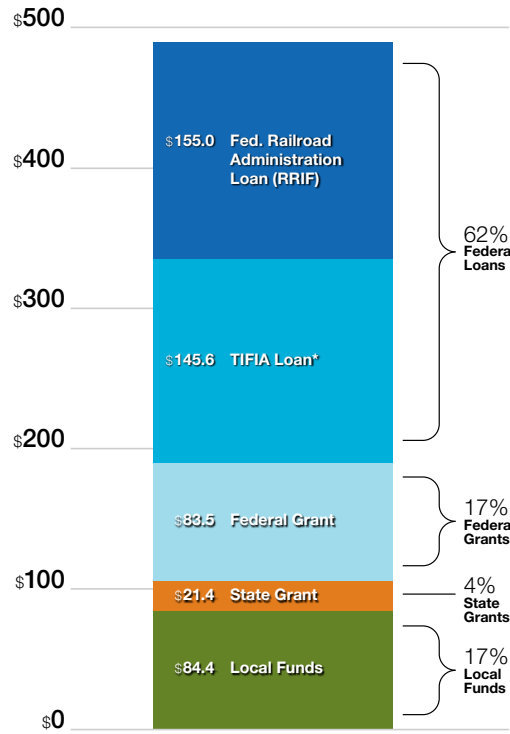
- Colorado DOT: \$21.4 million

**Local:**

- MPO: \$2.5 million
- RTD/Other Local Contribution: \$81.9 million

As the graph shows, a substantial share of the total project cost is covered by federal loans. The revenues dedicated to repaying these low-interest, flexible loans will come from intergovernmental transfers, tax increment financing, a special assessment district,

**Funding for Denver Union Station\*\***  
in Millions of Dollars



\*All federal loans and private bonds will have to be repaid with local funding.  
\*\*Denver Union Station Project Authority (March 2012) "Plan of Finance"

and hotel occupancy taxes. All together, property taxes will provide 49 percent of project revenues with intergovernmental transfers of sales taxes accounting for another 13 percent.

Achieving the financing package required the coordinated planning of the Denver Union Station Project Authority (project sponsor): Denver Region Council of Governments, City and County of Denver, Colorado Department of Transportation, and the Regional Transportation District.

As a result of this joint effort, Denver Union Station will turn currently vacant land into a transportation hub along with a new urban neighborhood near downtown sites with high-value real estate generating a high tax return per acre. The Denver Union Station project serves as a model for intergovernmental cooperation and joint planning that leverages the economic development potential of transit to access low-cost federal credit assistance.

Transportation for America would like to thank the following people and organizations for their time and assistance in developing the case studies:

Brent Boyd of the San Diego Metropolitan Transit System  
Carlos de Leon of the Pima Association of Governments/  
Regional Transportation Authority

Michael Schipper of the Greater Cleveland Regional  
Transit Authority

Roderick Diaz and David Yale of LA Metro

Andrew Rountree of the Metropolitan Washington  
Airport Authority

Libby Cox of the Denver Regional Transportation District

Brian Middleton of the Denver Regional Transportation District

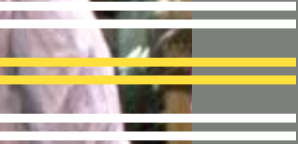
29 Denver Union Station Project Authority (March 2012) "Plan of Finance".







# Conclusion

A decorative graphic consisting of five horizontal lines of varying colors (white, yellow, white, white, white) is positioned to the left of the first paragraph.

In many respects, the commitment to build rail and bus-way transit is the ultimate expression of faith in your community. It says not only that your hometown has a future, but that its people believe enough in that future to plan carefully for it. They believe enough to make investments that will outlast them, while paying dividends today and for generations to come.

Building transit is a commitment to support mobility and economic opportunity for the entire community: transit allows low-wage workers access to jobs when a car might be out of reach; it provides continued independence and a connection to community for older residents; it helps employers find a reliable workforce; and it provides options for the many who are seeking more ways to get around and a younger generation less enamored with driving.

If you've read this far, you are one of the potential game-changers in your community. We know that no book can give you every answer you need, but we hope this document at least helped you to understand the questions you'll want to ask. Let us know if we can help further as you find answers and step forward into your community's future.

# Appendix

TIGER		
<b>Purpose</b>	The TIGER program provides grant funding on a competitive basis for projects that will have a significant impact on the nation, a metropolitan area, or a region	
<b>Goal</b>	The TIGER program is intended to create jobs, facilitate economic recovery, and advance projects that contribute to national transportation priorities and objectives	
<b>Eligible Projects</b>	<ul style="list-style-type: none"> <li>• Highway</li> <li>• Bridge</li> <li>• Transit</li> <li>• Intercity and high-speed passenger and freight rail</li> </ul>	<ul style="list-style-type: none"> <li>• Intermodal freight</li> <li>• Port infrastructure/access</li> <li>• TIFIA credit assistance subsidy cost</li> </ul>
<b>Eligible Recipients</b>	<ul style="list-style-type: none"> <li>• State and local governments</li> <li>• Tribal governments</li> <li>• Transit agencies</li> </ul>	<ul style="list-style-type: none"> <li>• Port authorities</li> <li>• Metropolitan Planning Organizations</li> <li>• Multi-state or multi-jurisdictional authorities</li> </ul>
<b>Repayment</b>	<ul style="list-style-type: none"> <li>• Projects that use TIGER funds to pay the subsidy cost of TIFIA credit assistance must comply with all requirements of the TIFA program, including having a dedicated revenue stream</li> </ul>	
<b>Appropriation</b>	<ul style="list-style-type: none"> <li>• FY12 \$500 Million</li> <li>• FY11 \$526.9 Million</li> </ul>	<ul style="list-style-type: none"> <li>• FY10 \$600 Million</li> <li>• Recovery Act (ARRA) \$1.5 Billion</li> </ul>
<b>Federal Share</b>	<ul style="list-style-type: none"> <li>• 80% for projects in urban areas and up to 100% in rural areas</li> </ul>	
<b>Applications and Scoring</b>	<ul style="list-style-type: none"> <li>• Improved transportation outcomes               <ul style="list-style-type: none"> <li>• State-of-good repair</li> <li>• Increased economic competitiveness</li> <li>• Increased livability</li> <li>• Increased environmental sustainability</li> <li>• Safety improvements</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Job creation and near-term economic activity</li> <li>• Innovation</li> <li>• Partnership</li> </ul>
<b>Award Requirements</b>	<ul style="list-style-type: none"> <li>• TIGER awards in urban areas must be at least \$10 million and not more than \$200 million</li> <li>• TIGER awards in rural areas must be at least \$1 million</li> <li>• USDOT must award at least \$120 million to projects in rural areas</li> </ul>	

TIFIA		
<b>Purpose</b>	TIFIA provides credit assistance: loans, loan guarantees, or lines of credit	
<b>Goal</b>	The goal of the TIFIA programs is to leverage federal funds by attracting substantial private and other non-federal co-investment	
<b>Eligible Projects</b>	<ul style="list-style-type: none"> <li>• Highway and Bridge</li> <li>• Transit</li> <li>• Railroad</li> </ul>	<ul style="list-style-type: none"> <li>• Intermodal freight</li> <li>• Port access</li> </ul>
<b>Eligible Recipients</b>	<ul style="list-style-type: none"> <li>• State and local governments</li> <li>• Transit agencies</li> <li>• Railroad companies</li> </ul>	<ul style="list-style-type: none"> <li>• Special authorities</li> <li>• Special districts</li> <li>• Private entities</li> </ul>
<b>Repayment</b>	TIFIA projects must have a dedicated revenue stream: <ul style="list-style-type: none"> <li>• <b>User Fees:</b> Tolling, parking fees, rental car fees</li> <li>• <b>Local Option Taxes:</b> Fuel, sales, property, vehicle registration, income/payroll</li> <li>• <b>Value Capture:</b> Impact fees, special assessment, tax increment financing, joint development</li> <li>• <b>Availability Payment:</b> Pledged by project sponsor</li> </ul>	
<b>Authorization</b>	<ul style="list-style-type: none"> <li>• FY2013 \$750 million</li> </ul>	<ul style="list-style-type: none"> <li>• FY2014 \$1 billion</li> </ul>
<b>Federal Share</b>	TIFIA credit assistance cannot exceed 49 percent of the total project cost (33 percent for projects that qualify for the modified springing lien)	
<b>Modified Springing Lien</b>	In the case of bankruptcy or insolvency by the project sponsor, the Federal Government springs to parity with other creditors. Under the following conditions, the federal loan may remain in a subordinate position: <ul style="list-style-type: none"> <li>• Project sponsor/borrower is a public agency</li> <li>• Loan repayment is from a tax-backed source such as a sales or property tax and which is unrelated to project performance</li> <li>• If the loan is rated "A" or higher</li> <li>• TIFIA loan represents 33 percent or less of total project cost</li> </ul> This provision makes it far easier for transit authorities to access the TIFIA loan program.	
<b>Independent Rating Agency Review</b>	Before USDOT may provide TIFIA credit assistance, the sponsor must have the financial soundness of the project evaluated by an independent rating agency. Only projects that receive an investment grade rating on their senior debt may receive assistance.	



# Appendix

## RAILROAD REHABILITATION AND IMPROVEMENT FINANCING (RRIF)

<b>Purpose</b>	RRIF provides direct loans and loan guarantees for rail projects that improve public safety, enhance the environment, promote economic development and global competitiveness, increase the capacity of the U.S. rail system, or promote intermodal connections.
<b>Eligible Activities</b>	RRIF loans and loan guarantees may support the following: <ul style="list-style-type: none"> <li>• Acquisition, improvement, or rehabilitation of intermodal or rail equipment and facilities such as tracks, bridges, yards, buildings, and shops</li> <li>• Refinance outstanding debt</li> <li>• Develop new intermodal or railroad facilities</li> </ul>
<b>Ineligible Activities</b>	RRIF loans and guarantees may not support rail operating expenses
<b>Eligible Recipients</b>	<ul style="list-style-type: none"> <li>• State and local governments</li> <li>• Interstate compacts authorized by Congress</li> <li>• Government sponsored authorities</li> <li>• Railroads</li> <li>• Joint ventures that include at least one railroad</li> </ul>
<b>Repayment</b>	Repayment of a direct loan constitutes a general obligation of the borrower. Before making a loan, the Secretary of Transportation must determine that it is justified based on the present and probable future demand for rail services or intermodal facilities.
<b>Authorization</b>	The Secretary of Transportation may provide direct loans and loan guarantees provided that the total amount of outstanding principal not exceed \$35 billion at any one time. Since its inception, the RRIF program has provided more than \$1.6 billion in loans and loan guarantees.
<b>Federal Share</b>	Direct loans can fund up to 100 percent of a railroad project. Repayment must occur within 35 years and the interest rate must be equal to the cost of borrowing to the government (i.e., equal to the interest rate on a Treasury security of equivalent duration).
<b>Loss Reserve/Credit Subsidy</b>	Before providing a loan or loan guarantee, USDOT must determine the likelihood of default on the part of the applicant. This is used to calculate the loss reserve payment (also referred to as credit subsidy) that the applicant must pay to USDOT. Congress may also appropriate funds to cover the cost of the credit subsidy. To date, Congress has not provided such funding and all credit subsidy payments must be made by the applicant.

## PHOTO/IMAGE CREDITS

**FRONT/BACK COVER:**

Rendering of Denver Union Station multi-modal redevelopment project. Courtesy of Denver Union Station Project Authority  
<http://www.denverunionstation.org>

**TABLE OF CONTENTS:**

*Top:* Courtesy of [www.Detroit1701.org](http://www.Detroit1701.org), Reynolds Farley and Judy Mullin.

*Bottom:* Flickr photo by the Chicago Transit Authority  
<http://www.flickr.com/photos/ctaweb/6303370800/>

**INTRODUCTION:**

*Page 4:* Durham, N.C. rendering courtesy of Creative Solutions, URS Corporation

*Page 7:* Flickr photo by Daniel Hoherd  
<http://www.flickr.com/photos/warzauwynn/7377583638/>

**CHAPTER 1:**

*Page 8:* Flickr photo by EMBARQ Brasil  
<http://www.flickr.com/photos/embarqbrasil/7217017118/>

*Page 10:* Flickr photo by Williamor Media  
<http://www.flickr.com/photos/bz3rk/2669144654/>

*Page 12 Top Left:* Photo courtesy of the Metro Library and Archives <http://www.transitunlimited.org/>

*Page 12 Top Right:* Flickr photo by the Seattle DOT  
[http://www.flickr.com/photos/sdot\\_photos/3796010679/](http://www.flickr.com/photos/sdot_photos/3796010679/)

*Page 12 Bottom Right:* Flickr photo by Andrew Bossi  
<http://www.flickr.com/photos/thisisbossi/5362800956/>

*Page 12 Bottom Left:* Flickr photo by Steven Vance  
<http://www.flickr.com/photos/jamesbondsv/4182634921/>

*Page 14 Top Left:* Photo courtesy of Dan Burden,  
<http://walkable.org/>

*Page 14 Top Right:* Photo courtesy of Arlington (Va.) Transit.

*Page 14 Bottom Right:* Flickr photo by Rob Holland  
<http://www.flickr.com/photos/robh/130029/>

*Page 14 Bottom Left:* Photo courtesy of Dan Burden,  
<http://walkable.org/>

*Page 15:* Courtesy of the Downtown Tucson Partnership

*Page 16:* 1977 Aerial photo courtesy of Arlington County Community Planning, Housing & Development Department, annotated by T4 America

*Page 17:* Flickr photo by Arlington County  
<http://www.flickr.com/photos/arlintonva/4537645787/>, annotated by T4 America

*Page 18-19:* Tulsa graphics from PLANiTULSA and the City of Tulsa Planning Department

**CHAPTER 2:**

*Page 20:* Photo courtesy of the Atlanta Beltline  
<http://beltline.org>

*Page 22:* Flickr photo by KalinaSoftware <http://www.flickr.com/photos/40748539@N00/5932465163/>

*Page 27:* Photo courtesy of the Hillsborough Area Regional Transit Authority

*Page 30:* Wikimedia photo

*Page 31:* Flickr photos by EMBARQ Brasil <http://www.flickr.com/photos/39017545@N02/5561170937/>

*Page 38:* Courtesy of [www.Detroit1701.org](http://www.Detroit1701.org), Reynolds Farley and Judy Mullin

*Page 40:* Photo courtesy of Together Baton Rouge

*Page 41:* Courtesy of the Utah Transit Authority

*Page 45:* Photo courtesy of the Metropolitan Washington Airports Authority

**CHAPTER 3:**

*Page 48:* Flickr photo by ExpoLightRail <http://www.flickr.com/photos/54551549@N02/5550880019>

*Page 52:* Courtesy M1 Rail <http://www.m-1rail.com/>

*Page 53:* Flickr photo by vxla <http://www.flickr.com/photos/vxla/2850571117/>

*Page 54:* Map courtesy of Yonah Freemark and the Transport Politic <http://thetransportpolitic.com/>

*Page 56:* Flickr photo by Reconnecting America  
<http://www.flickr.com/photos/ractod/1435215560/>

**CHAPTER 4:**

*Page 58:* Courtesy of Tucson Streetcar

*Page 61:* Courtesy of the Metropolitan Transit System, San Diego

*Page 62:* Courtesy of Tucson Streetcar

*Page 64:* Flickr photo by EMBARQ Brasil  
<http://www.flickr.com/photos/embarqbrasil/7216591830/>

*Page 67:* Image courtesy of Metro ©2012 LACMTA

*Page 69 Left:* Image courtesy of Metro ©2012 LACMTA

*Page 69 Right:* Flickr photo by ExpoLightRail  
<http://www.flickr.com/photos/54551549@N02/5097703629>

*Page 70:* Photo courtesy of the Construction Career Collaborative <http://www.constructioncareercollaborative.org>

*Page 71:* From the Alameda Corridor Transportation Authority

*Page 72:* Flickr photo by Mark Plummer  
<http://www.flickr.com/photos/mdmarkus66/6208013525/>

*Page 73:* Flickr photo by VaDOT  
<http://www.flickr.com/photos/vadot/6922273778/>

*Page 74:* Rendering courtesy of the Denver Union Station Project Authority <http://www.denverunionstation.org/>

**CONCLUSION:**

*Page 76:* Courtesy of the American Public Transportation Association

**POST-APPENDIX:**

*Top:* Rendering courtesy of the Denver Union Station Project Authority <http://www.denverunionstation.org/>

*Bottom:* Flickr photo by William Yurasko  
<http://www.flickr.com/photos/wfyurasko/5573962244/>







*FRONT/BACK COVER IMAGE:*

*Rendering of Denver Union Station multi-modal redevelopment project.*

*Courtesy of Denver Union Station Project Authority <http://www.denverunionstation.org>*

