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Report to Congressional Requesters

March 2004

HIGHWAYS AND TRANSIT

Private Sector Sponsorship of and Investment in Major Projects Has Been Limited

GAO-04-419

March 2004

GAO
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Highlights

Highlights of GAO-04-419, a report to congressional requesters

HIGHWAYS AND TRANSIT

Private Sector Sponsorship of and Investment in Major Projects Has Been Limited

Why GAO Did This Study

Many in Congress, as well as many transportation experts, believe more money needs to be spent to keep up with the country's surface transportation needs. As Congress considers reauthorization of the nation's surface transportation laws, many observers believe increased private participation and investment in transportation can help meet these needs.

GAO was asked to examine cases where state and local governments have used active private sector sponsorship and investment on major highway and transit projects where the private sector was the primary stakeholder in designing, financing, constructing, operating, and maintaining such projects. Among its objectives, GAO (1) identified the extent to which states have used active private sponsorship and investment to finance and build highway and transit projects; (2) identified some advantages, from the perspective of state and local governments, resulting from private sponsorship and investment and some trade-offs; (3) determined challenges that the private sector faced in these projects; and (4) presented legislative proposals that could help increase private sponsorship and investment in highway and transit projects.

We provided a draft of this report to the Department of Transportation (DOT) for its review and comment. DOT generally agreed with the information in the report.

www.gao.gov/cgi-bin/getrpt?GAO-04-419.

To view the full product, including the scope and methodology, click on the link above. For more information, contact JayEtta Hecker, (202) 512-2834, heckerj@gao.gov.

What GAO Found

Active private sector sponsorship and investment has been used to a limited extent to build and finance major highway and transit projects; thus the nation has had little experience with such sponsorship. We identified six such major projects—five toll road projects and one transit project. Three projects were for-profit ventures financed with equity and debt while three were non-profit ventures financed with tax-exempt debt.

Private sector sponsorship and investment in major projects has resulted in advantages from the perspective of state and local governments—such as completing projects more quickly—and trade-offs—such as the political costs of relinquishing control over toll rates and the contractual constraints to improving competing publicly owned roadways. On one project, State Route 91 in California, this latter constraint motivated the county government to purchase the road from the private consortium.

The private sector encounters many challenges to becoming more actively involved in highway and transit projects because of limited opportunities and barriers to financial success. Currently 23 states permit private participation while 20 of these allow it for highways. Where state and local governments have elicited such participation, it has occurred on mostly lower priority projects, such as toll roads built in anticipation of future development. State and local governments traditionally build and finance highway projects through their capital improvement programs including using federal funds that reimburse about 80 percent of the costs. While these governments could open higher priority projects to private sector partners, they might be wary of doing so since political costs such as the limited ability to improve competing publicly owned roads would likely be greater. While legislative proposals could encourage greater private participation, private sponsorship seem best able to advance a small number of projects—but seems unlikely to stimulate significant increases in funding for highways and transit.

Sources: GAO (left); Orange County Transportation Authority (right).

Traffic on the Pocahontas Parkway in Virginia (left), built in anticipation of future development, has not met traffic and revenue projections, while the SR 91 Express Lanes in California (right), built to relieve congestion, has met these projections and is financially successful.

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Abbreviations

AB	Assembly Bill
Caltrans	California Department of Transportation
CTV	California Transportation Ventures
CPTC	California Private Transportation Company
DOT	U.S. Department of Transportation
FD/MK	Fluor Daniel/Morrison Knudsen
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
GAO	U.S. General Accounting Office
ISTEA	Intermodal Surface Transportation Efficiency Act of 1991
LVMC	Las Vegas Monorail Company
NHS	National Highway System
OCTA	Orange Country Transportation Authority
PPA	Pocahontas Parkway Association
RTC	Regional Transportation Commission
SANDAG	San Diego Association of Governments
SCDOT	South Carolina Department of Transportation
SIB	State Infrastructure Bank
TEA-21	Transportation Equity Act for the 21st Century
TIFIA	Transportation Infrastructure Finance and Innovation Act of 1998
TRIP II	Toll Road Investors Partnership II, L.P.
VDOT	Virginia Department of Transportation
WMATA	Washington Metropolitan Area Transit Authority

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G A O
Accountability * Integrity * Reliability

United States General Accounting Office
Washington, D.C. 20548

March 25, 2004

Congressional Requesters

Many in Congress, as well as many transportation stakeholders, believe that more money needs to be spent to keep up with the country's highway and transit needs. Proponents of this view cite estimates from the Federal Highway Administration (FHWA), for example, that the nation will need to spend, on average, about $76 billion (in 2000 dollars)—or 18 percent more than it spent in 2000—each year through 2020 just to maintain the condition and performance of the nation's highways and bridges, and about $107 billion (in 2000 dollars) or 65 percent more than it spent in 2000 to efficiently improve the nation's highways and bridges. These projections raise concerns because many analysts believe that, in the years ahead, federal and state governments will face serious budget deficits and a demographic tidal wave where mandatory spending for Social Security and Medicare will command a greater share of the nation's resources, overwhelming the funding available for discretionary programs such as transportation. Consequently, many transportation stakeholders have begun to look for ways to bridge a potential gap between currently available resources and the costs of building, maintaining, and improving the nation's highway and transit infrastructure.

Congress is considering legislation reauthorizing the nation's highway and transit programs during 2004, and many observers have suggested that increased private sector participation and investment in the transportation system could potentially help bridge this gap. State and local governments have traditionally sought and used private sector participation and investment to meet their highway and transit infrastructure needs—these governments routinely contract, for example, with private construction companies to build and maintain roads and transit systems. In addition, they have sold billions of dollars in bonds to private investors to finance construction and maintenance of transportation projects. In 2001, state and local governments owed about $104 billion in debt to the private sector for transportation infrastructure projects. However, many observers believe that even greater private sector participation in the transportation system is possible. In particular, some observers point to cases where state and local governments have encouraged active private sector sponsorship of and investment in major highway and transit projects—cases where the private sector has been the primary stakeholder in designing, financing, constructing, operating, and maintaining such projects.

You asked us to examine these particular cases where state and local governments have used active private sector sponsorship and investment on major projects. Our objectives were to (1) identify the extent to which states have used active private sector sponsorship and investment to finance and build major highway and transit projects and how that sponsorship and investment was accomplished; (2) identify some advantages, from the perspective of state and local governments, that resulted from private sector sponsorship and investment in these projects and what some of the trade-offs were; (3) determine challenges that the private sector faced sponsoring and investing in these projects; and (4) present pending legislation that could help increase private sector sponsorship and investment in highway and transit projects. In addition to these objectives, we also collected information on (1) private participation and investment in selected other countries, including Australia, Canada, and in Europe, and (2) cases where the private sector provided funding in projects without taking a direct sponsorship role, in the form of strategies for capturing increased land values from projects. This additional information can be found in appendixes IV and V.

To meet these objectives, we reviewed published information on private sector participation and investment in the transportation sector in the United States and internationally and met with bond market analysts, investment bankers, bond insurers, economists, associations, FHWA, the Federal Transit Administration (FTA), and other industry representatives to obtain their views. We focused on cases where active private sector sponsorship and investment had been used to build and finance "major" projects, which we defined as highway and fixed guideway transit projects with an estimated total cost of $100 million or more.[1] We identified six such projects, and for each we met with project officials and officials from state and local governments and reviewed pertinent program documentation. We did not evaluate the social benefits and costs of these projects nor determine whether these were projects that should or should not have been built. We excluded privately owned roadways used to access commercial properties such as vacation areas and privately owned bridges. We did not review projects that were publicly financed or projects where states or public entities such as turnpike authorities obtained private

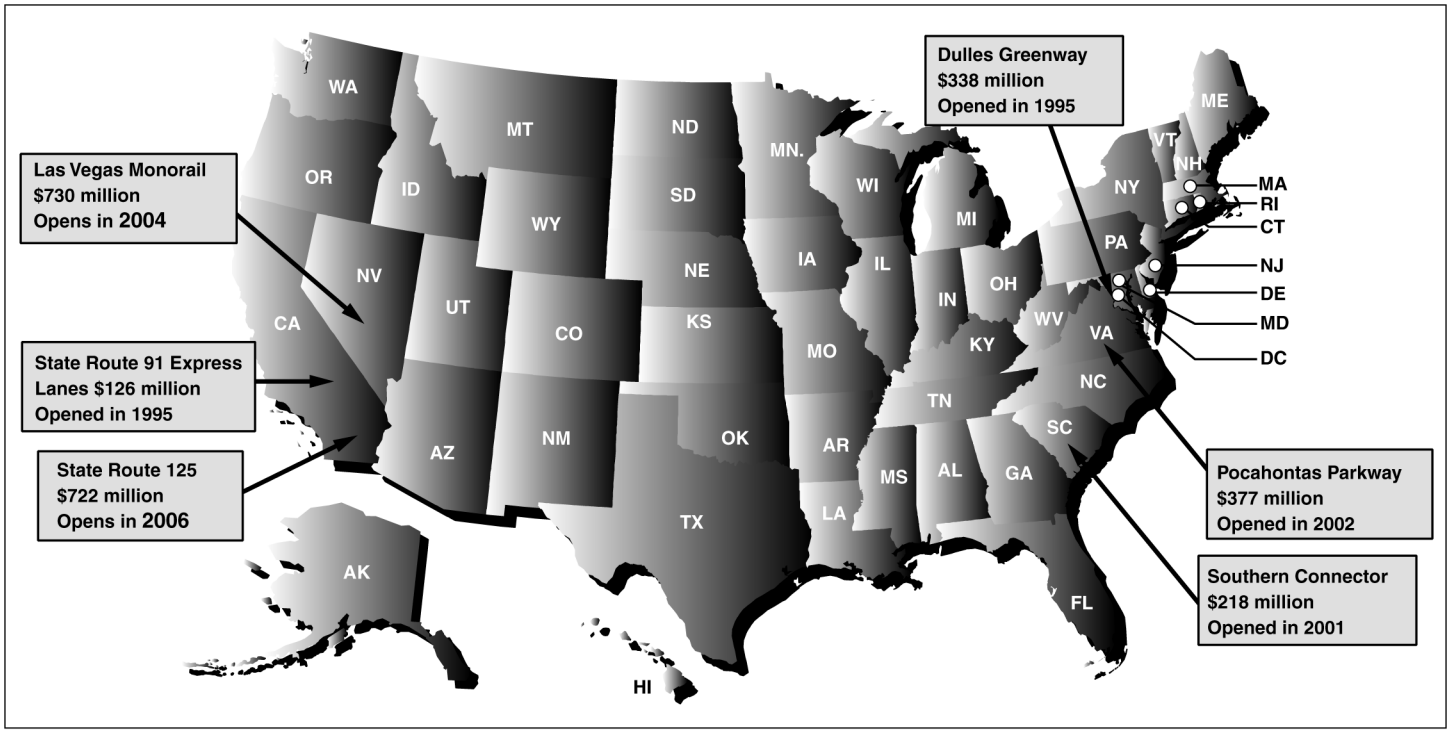
[1]There is currently no standard definition of what constitutes a "major" project. This definition has been applied to projects with a total cost of as little as $10 million and as much as $1 billion. DOT has recently proposed using $100 million as the major project threshold for its financial planning and reporting requirements under 23 USC 106, and therefore we have used that threshold for this report.

investment to build or expand their systems. We examined program documentation of FHWA's innovative financing initiatives and reviewed surface transportation reauthorization legislative proposals. Our work was performed from February 2003 through February 2004 in accordance with generally accepted government auditing standards. For more detailed information about our scope and methodology, see appendix I.

Results in Brief

Active private sector sponsorship and investment has been used to a limited extent in the United States to fund, construct, and operate major highway and transit projects; as a consequence, the nation's experience with active private sector sponsorship and investment has been limited. We identified only six such major projects that have been completed or started in the last 15 years—five toll road projects and one transit project—which are shown in figure 1. To accomplish these projects, states enacted or used existing legislation to authorize private sector participation and awarded a franchise to a private consortium to build the project and to own and operate it for a limited time. Three of these consortia were private, for-profit companies that invested equity and issued commercial debt to finance the project; the other three were nonprofit corporations formed by the public and private sectors, that issued tax exempt bonds to fund the projects. The franchise agreements that states had with each of the consortia ranged in length from 30 to 50 years and included, in four of the five toll road projects, noncompete clauses whereby, for a specified period, the states agreed not to build new roads or improve existing roads that would compete with the toll road.

Figure 1: Six Major Projects Built with Active Private Sector Sponsorship and Investment



Source: GAO.

Private sector sponsorship and investment in major projects has resulted in advantages from the perspective of state and local governments—such as completing projects more quickly without using traditional funding sources—as well as some trade-offs, including political and financial costs. The privately sponsored toll road projects that we identified had all been on their respective federally required state transportation plans from 7 to 30 years and still had a fairly low priority for completion when the private sector undertook them. By eliciting private sector participation rather than using funding from their highway capital improvement programs as originally planned, state and local governments conserved their federal grants and state tax revenues for other projects. Moreover, the respective state governments were not responsible for the debt incurred by private consortia and thus did not expose the states to risks if toll revenues proved insufficient to meet debt service requirements. Active private sector sponsorship and investment involved trade-offs for these governments, however, as some states relinquished political control over their ability to

set toll rates and to carry out infrastructure improvements on competing publicly owned roadways. On one of the five highway projects, SR 91 in California, this latter constraint proved to be too significant a trade-off to the county government, motivating it to purchase the road back from the private consortium. In addition, state and local governments have been responsible for some project-related costs on five of the six projects we identified, such as designing projects, acquiring rights of way, conducting environmental assessments, or establishing new public institutions or arrangements to accommodate the private consortia. Federal funding was used on three of the projects. In addition, the three projects financed with tax-exempt debt have resulted in foregone tax revenues to the federal government—and to a lesser extent the state governments. For example, we estimate that, in 2003, the federal government had foregone a total of between $25 million and $35 million in tax revenues. Finally, states can be liable for costs if private entities encounter financial difficulty, and might be liable for some or all of the cost of operating and maintaining the toll road if a consortium went out of business.

Private companies encounter many challenges to becoming more actively involved in highway and transit projects because there are limited opportunities and barriers to financial success. Currently, 23 states have legal authority for private sector participation in transportation projects, while 20 of these have the legal authority to utilize private sector participation in highway projects. Additionally, there is significant political and cultural resistance to toll roads—the most common way that the private sector generates revenues. Moreover, state and local governments traditionally build and finance highway projects through their capital improvement programs; federal grant funds are available for eligible projects and pay 80 percent of the costs on most projects. This can provide a powerful incentive to build these as untolled roads.[2] Where state and local governments have elicited private sector sponsorship and investment, it has usually been on lower-priority projects, such as those built in anticipation of future growth and development. Three of the privately sponsored toll roads we identified that have opened to traffic met these criteria, and each has struggled financially because it did not achieve the level of traffic expected when the anticipated development did not occur. Only SR 91 in California, which was built in an already congested corridor,

[2]For transit projects, the Las Vegas Monorail presents a special case that may never be replicated because it is rare that projected farebox and advertising revenues would be sufficient to cover debt service and operations and maintenance costs.

has generated a profit. Furthermore, toll road projects require a substantial initial investment of time and capital before construction can begin. According to industry and bond market analysts, once construction is completed, it can take up to several years before traffic and revenue levels build to a level that allows a toll road to break even and, in the case of for-profit toll roads, make a profit. In addition, each of the toll road projects faced additional risks because they were "stand-alone" toll roads that did not have the benefit of being part of a turnpike or toll road authority that could have helped absorb early losses. These problems may affect investors' willingness to invest in similar projects in the future.

The federal government cannot, under the current design of the federal-aid transportation program, directly provide opportunities for private sector participation and investment, but it can provide incentives to state and local governments to do so. Legislative proposals offered by the administration, approved by the Senate,[3] and considered by the House—such as expanding the mileage of federally aided roadways eligible for tolling or encouraging states to study the feasibility of using toll financing to add new capacity—might serve to encourage state and local governments to open high-priority projects in established corridors to private sector partners, increasing the chances that these ventures could be financially viable and making future projects more attractive to private sector investors. Other proposals would provide private for-profit firms access to tax exempt debt similar to those instruments currently available for privately financed housing, water, and other projects. While these proposals would lower the cost of borrowing for private consortia, this may not be enough to make stand-alone toll roads financially attractive. Existing projects financed entirely with tax-exempt debt have struggled when traffic projections have not met expectations. Absent fundamental changes to current federal transportation programs, states are likely to continue to devote significant funding including federal funds to building untolled roads. Thus, under current conditions and circumstances, private sector sponsorship and investment seems best able to finance a relatively small number of projects but seems unlikely to stimulate significant increases in the funding available for highways and transit.

[3]The Senate approved surface transportation reauthorization legislation (S. 1072) on February 12, 2004.

We provided a draft of this report to DOT for its review and comment. DOT representatives generally agreed with the information in the report. They also provided technical comments, which we incorporated as appropriate.

Background

In 2001, state and local governments, with federal assistance, spent about $125 billion to build and maintain the nation's highways and bridges and about $19 billion to build and maintain the nation's transit systems. Of the $125 billion spent on highways and bridges, about $66 billion was spent on highway capital projects.

Of the $66 billion spent on highway capital projects in 2001, almost $30 billion was federal funding, obtained mostly through a series of formula grant programs collectively known as the federal-aid highway program. These grant funds are derived from motor fuel and other taxes deposited into the Highway Trust Fund and made available to the states by the Federal Highway Administration (FHWA) for capital projects, such as new construction, reconstruction, and many forms of capital-intensive maintenance. These funds are available for eligible projects and pay 80 percent of the costs on most projects. States prepare periodic transportation improvement plans for federal approval in coordination with metropolitan planning organizations. These plans include both highway and transit projects. Unlike the federal highway program and certain other transit programs, under which funds are automatically distributed to states on the basis of formulas, major transit projects are primarily funded through the FTA's New Starts program. The New Starts program requires local transit agencies to compete for project funds based on specific financial and project justification criteria. FTA assesses the technical merits of a major transit project proposal and its finance plan and then notifies the Congress that it intends to commit, subject to appropriations, New Starts funding to certain projects through full funding grant agreements. The agreement establishes the terms and conditions for federal participation in the project, including the maximum amount of federal funds—which by law must be no more than 80 percent of the estimated net cost of the project, but in practice is often less than that percentage.

About 437,000 of the nation's 4 million miles of roads are arterial highway mileage, much of which is generally eligible for federal-aid funding. Among these 437,000 miles are 4,611 miles of publicly owned toll roads, representing about one percent of the nation's arterial highway mileage. There are also 15 privately owned toll roads, representing about 111

miles—10 of these are roadways used to access properties such as vacation areas. In addition, there are 15 privately owned toll bridges.

Private sector participation and investment in highway and transit is not new. In the 1800s, private companies built many roads that were financed with revenues from tolls, but this activity declined due to competition from railroads and greater state and federal involvement in building tax-supported highways. Private sector involvement in highways was relegated to contracting with states to build the roads. In the absence of private toll roads, states and local governments were responsible for road construction and maintenance. In the 1930s many states began creating public authorities that built toll roads such as the Pennsylvania Turnpike that relied on loans and private investors buying bonds to finance construction.

In 1916, the federal government began programs to provide funds for states to develop their highways with passage of the Federal-Aid Road Act. In the 1930s and 1940s, proposals were made for a national interstate system of limited access highways to meet mobility and national defense needs. Early proposals for this system included provisions to build the highways as toll roads and finance them with bonds sold to private investors. However, those plans were abandoned and the Federal-Aid Highway Act of 1944 authorized construction of the interstate highway system. The Federal-Aid Highway Act of 1956 established a tax-supported road system with revenues from motor fuel taxes rather than from tolls and prohibited tolling on newly constructed interstate highways. The funding levels achieved through federal-aid highway cost-sharing arrangements with the states precluded the need for private sector investment other than through bonds issued by states to pay for construction.

By expanding applications for tolling, federal programs have gradually become more receptive to private sector participation and investment. The Surface Transportation and Uniform Relocation Assistance Act of 1987 allowed tolling non-Interstate roads, and construction costs for these projects were eligible for a 35 percent federal-aid match.[4] In 1991, the Intermodal Surface Transportation Efficiency Act (ISTEA) raised the federal share of construction costs on toll roads to 50 percent and specifically included privately operated toll roads as eligible. The National Highway System Designation (NHS) Act raised the match. ISTEA also

[4]This was initially a pilot program for nine states that was expanded to all states in 1991.

included a congestion pricing pilot program that allowed for tolling both Interstate and non-Interstate roads to reduce highway congestion. The pilot program allowed up to five projects to participate. The Transportation Equity Act for the 21st Century (TEA-21) renamed the program as a value-pricing pilot and expanded the number of projects allowed to participate to 15. Fifteen roads currently participate in this pilot. TEA-21 also created a pilot program for tolling interstate highways. Under this pilot, states can toll interstates if the purpose is to reconstruct or rehabilitate the road and the state could not adequately maintain or improve the road without collecting tolls.[5] The pilot is limited to three interstates that are to be in three different states. Currently, no states are participating in this project. Both of these pilots allow the private sector to participate.

In addition, the Transportation Infrastructure Finance and Innovation Act of 1998 (TIFIA) created a new federal program to assist in the financing of major transportation projects, in part by encouraging private sector investment in infrastructure. TIFIA authorized up to $10.6 billion in credit assistance over the fiscal year 1999 through 2003 period to stimulate capital investment in transportation infrastructure by providing credit rather than grants to projects. The TIFIA program offers direct loans with flexible repayment terms; loan guarantees; and standby lines of credit during the first 10 years of operations. TIFIA limits the amount of assistance to no more than 33 percent of total project costs.

The original term for the current surface transportation program authorization under TEA-21 expired in September 2003.[6] The U.S. Department of Transportation's (DOT) proposal to reauthorize the program is based on a set of core principles articulated by the Secretary of Transportation in May 2002, which includes encouraging greater private sector investment in the transportation system. Additionally, reauthorization bills were introduced in both the Senate and the House of Representatives. The administration bill proposed to increase funding for surface transportation to $256 billion, an increase of $38 billion over the $218 billion authorized in TEA-21, and the bill approved by the Senate (S. 1072) would increase funding to $318 billion, an increase of $100 billion

[5]Free bridges and tunnels that are being reconstructed may be tolled as a part of their reconstruction.

[6]This program was extended to April 30, 2004.

over TEA-21. A House bill (H.R. 3550) was under consideration at the time we concluded our review.

Active Private Sector Sponsorship and Investment in Major Highway and Transit Projects Has Been Limited

Active private sector sponsorship and investment has been used to a limited extent in the United States to fund, construct, and operate major highway and transit projects. We identified six major projects—five toll road projects and one transit project—where this occurred during the last 15 years. To accomplish these projects, the states in which these projects are located enacted or utilized existing legislation enabling private sector participation and awarded a franchise to a private consortium to build the project and to own and operate it for a limited time. Three of these consortia were private, for-profit companies that invested equity and issued debt to finance the project, while the other three were nonprofit corporations formed by the public and private sectors, which issued tax exempt bonds to fund the projects.

Six Projects Have Used Active Private Sector Sponsorship and Investment during the Last 15 Years

GAO identified five major private toll road projects and one transit project in the United States that used active private sector sponsorship and investment. The highway projects were: State Route (SR) 91 Express Lanes in Orange County, California; SR 125 in San Diego County, California; the Dulles Greenway between Dulles International Airport and Leesburg, Virginia; the Pocahontas Parkway in Richmond, Virginia; and the Southern Connector in Greenville County, South Carolina. The transit project was the Las Vegas Monorail in Las Vegas, Nevada. (See appendix III for a description of each of these projects.) These projects are summarized in table 1.

Table 1: Summary of Privately Sponsored Highway and Transit Projects

Project	Mileage	Arrangement	Financing
Highway projects			
Dulles Greenway Virginia	14	For profit	Equity, commercial debt
State Route 91 Express Lanes California	10	For profit	Equity, commercial debt
State Route 125 California (not yet open)	10	For profit	Equity, commercial debt, federal credit assistance (TIFIA), federal funds, local government
Southern Connector South Carolina	16	Non-profit	Tax exempt debt
Pocahontas Parkway Virginia	9	Non-profit	Tax exempt debt
Transit projects			
Las Vegas Monorail Nevada (not yet open)	4	Non-profit	In-kind contribution, tax exempt debt

Source: GAO.

The states in which these projects are located enacted enabling legislation authorizing private sector participation. Nevada passed legislation specifically authorizing a private consortium to construct the Las Vegas Monorail. Virginia passed the Virginia Highway Corporation Act of 1988 and the Public Private Transportation Act of 1995, which allowed the submission of proposals involving private sector participation and investment. The Dulles Greenway was built under the 1988 law, and the consortium that built the Pocahontas Parkway did so under the 1995 law. In 1989, California passed enabling legislation, Assembly Bill (AB) 680, which authorized four demonstration projects to be developed, constructed, and operated at private sector expense. Two of the projects that we reviewed—SR 91 and SR 125—were authorized by this legislation.[7] In 1976, South Carolina passed enabling legislation, which later allowed the private development of the Southern Connector. Virginia has received proposals for four other projects that could also involve active private

[7]The other two projects were never constructed.

sector sponsorship and investment;[8] no such plans are currently under way in South Carolina. California has repealed the enabling legislation created by AB 680.

Institutional arrangements

The private consortia fall into one of two different categories—for-profit and nonprofit. In the first category, private sector participants generally formed special-purpose corporations and limited partnerships for the sole purpose of building and operating the project. For example, a partnership formed by a property owner in Virginia, a U.S. developer, and an Italian firm involved in private toll roads overseas built the Dulles Greenway, while State Route 125 in California is being built and financed through a limited partnership comprised of a pool of investors whose principal member is an Australian firm with experience developing private toll roads overseas. In the second category, investors and other individuals formed private, nonprofit corporations to build and finance the projects. For example, the Pocahontas Parkway Association and the Connector 2000 Association are nonprofit corporations with obligations that are considered issued on behalf of a governmental unit pursuant to IRS Revenue Ruling 63-20 (and are called "63-20 corporations"). As nonprofit corporations, they can collect tolls to pay debt service on the road but cannot make a profit—any excess revenue must revert to the state. The Pocahontas Parkway Association was formed as a partnership between the state and the investors and has a board of directors appointed by the association, the Virginia Department of Transportation (VDOT), and the developer. Similarly, the Las Vegas Monorail Company was formed under Section 501(c) (4) of the Internal Revenue Code[9] in order to obtain tax-exempt financing to build the Las Vegas Monorail. The corporation has a special governing board whose members are appointed by the state, county, and the local metropolitan planning organization.

For each of these projects, the private and public sector entities developed a detailed agreement outlining the responsibilities of each party involved. These agreements varied but generally awarded a franchise or concession from the state government to design, build, own, and operate the project

[8]These projects are the I-95 High Occupancy Toll (HOT) Lanes, the Capital Beltway HOT Lanes, the Western Extension of the Powhite Parkway (Route 76) near Richmond, and the Interstate 81 Widening Proposals.

[9]Unlike the Pocahontas Parkway and Southern Connector, the Las Vegas Monorail was not formed as a corporation under IRS Revenue Ruling 63-20 because Nevada prohibits 63-20 corporations.

and collect tolls or fares for a period of time ranging from 30 to 50 years, at which time ownership of the project will revert to the state. In some cases, the private sector consortia are responsible for all aspects of the operation and maintenance of the road and perform those functions directly. For example, the consortium that owns the Dulles Greenway performs its own maintenance, such as snow removal, while in other cases the consortia reimburse the states for providing those services. The consortium that owns the SR 125 franchise will reimburse the state of California for police services, and the Connector 2000 Association reimburses South Carolina for maintenance services.

In addition to the franchise agreement, noncompete clauses have been key components of agreements between states and the consortia, under which the public sector agrees to varying degrees not to build any new roads or improve any of the existing roads that may result in additional capacity within a predetermined distance of the newly constructed road for a certain period of time. Four of the five toll roads we examined included noncompete clauses within their contracts. In contrast, an official with the Dulles Greenway's private consortium said that while the consortium did not have a noncompete clause in its franchise agreement with Virginia, it understood that the state would not build a competing road. Subsequent to the opening of the Dulles Greenway, however, VDOT made improvements to a nearby alternate road earlier than the consortium expected. A VDOT official said that these improvements were planned but the timing was uncertain because construction was dependent on available funding. According to a bond rating agency, these improvements adversely affected the level of traffic projected to use the toll road.

Financial Arrangements

Each of the five toll road projects and the Las Vegas Monorail were financed differently. As table 2 indicates, the for-profit toll roads relied primarily on a combination of equity investments, market rate debt, and other debt. For example, the private consortium that is building the SR 125 project invested $160 million, borrowed $321 million from banks in other countries, and received a $140 million TIFIA loan to finance that project. In contrast, the nonprofit toll roads relied primarily on tax-exempt financing, with relatively small amounts of state funding. For example, the Pocahontas Parkway Association issued $354 million in tax-exempt debt and obtained an $18 million loan from the state of Virginia. The Las Vegas Monorail, also a nonprofit, relied on a combination of equity contributions and tax-exempt debt. Toll revenues will be used to repay debt for the toll roads, while farebox and advertising revenues will be used to repay the monorail's debt.

Table 2: Financing Arrangements for Privately Sponsored Projects

Dollars in millions

Project	Equity	Commercial debt	Tax-Exempt debt	Other financing
Dulles Greenway Virginia	$40	$298[a]		
State Route 91 Express Lanes California	$20	$100		$5.6 subordinated debt[b]
State Route 125 California	$160	$321		$140 TIFIA loan,[c] $81 federal funding, $20 local funding
Southern Connector South Carolina			$200	$17.5 state contribution
Pocahontas Parkway Virginia	$5[d]		$354	$18 state loan
Las Vegas Monorail Nevada			$649	$81

Source: GAO analysis of project documentation.

[a]Original financing arangements—project financing was restructured in 1999.

[b]Subordinate debt has a lower priority for repayment than other (i.e., commercial) debt.

[c]TIFIA loans are subordinate to commercial debt for repayment.

[d]Revolving line of credit to be used as debt service reserve fund.

All but one of the six projects reviewed received some type of public sector subsidy that aided in the planning, financing, or construction of the project. In one case, SR 125 in San Diego, the local government funded a $101 million interchange that links the toll road to other state roads.[10] This interchange was part of the project's original scope and is critical to the success of the highway. The SR 125 consortium also received a federal TIFIA loan. The SR 91 Express Lanes were constructed in the median of an existing road on publicly owned land. The Southern Connector and Pocahontas Parkway received federal funds from the state for preliminary engineering and design costs. The Pocahontas Parkway, the Southern Connector, and the Las Vegas Monorail each benefited from tax-exempt debt financing. The Dulles Greenway was the only project of the six that

[10]The local government is also funding another small roadway that connects the interchange to another state road and is a separate project.

did not receive public sector assistance or subsidies or any other type of public support.

Private Sector Sponsorship of and Investment in Major Projects Has Resulted in Advantages for State and Local Governments As Well As Some Trade-Offs

Private sector sponsorship of and investment in major projects has resulted in advantages from the perspective of state and local governments as well as some trade-offs. Major projects were built sooner than if the private sector had not become actively involved. States and localities were able to build the five toll road projects without using their highway capital improvement program funding as originally planned—as a result, these governments were able to conserve resources such as federal grants and state tax revenues. Moreover, state governments were not responsible for the debt incurred to construct these projects and thus did not expose the states to financial risks if toll revenues proved insufficient to repay the outstanding bonds. These advantages were not without trade-offs. States have assumed certain political costs, such as relinquishing control over toll rates and reducing their ability to carry out infrastructure improvements on certain publicly owned roadways. Projects financed with tax-exempt debt resulted in foregone tax revenue on the interest on that debt. State and local governments have also been responsible for costs related to acquiring rights of way, or establishing new public institutions or arrangements to accommodate the private consortia. Furthermore, states assumed certain risks and responsibilities if the private consortia were to go out of business.

Advantages of Private Sector Sponsorship of and Investment from the Perspective of State and Local Governments

Major projects that state and local governments wanted to build—and that the federal government approved for funding—were built sooner than they would have been had the private sector not become actively involved. For example, the five private sector toll road projects had all been on their respective federally approved state transportation plans for periods ranging from 7 to 30 years and still had a fairly low priority for completion when the private sector undertook them. State, local, and federal officials with whom we spoke characterized these projects as needed and worthy but as projects that the state and local governments were either unable or unwilling to undertake for some time because of resource constraints. According to these officials, private sector sponsorship and investment were critical to advancing these projects. For example, South Carolina authorized a private consortium in 1998 to build the Southern Connector, which had been on South Carolina's transportation plans since 1968, after a proposal in the General Assembly to increase the motor fuel tax did not pass. California officials told us that the state approved legislation in 1989

enabling private sponsorship of the SR 91 and SR 125 projects because the state's poor budgetary and economic conditions precluded public funding. According to a California Department of Transportation (Caltrans) official, the state had identified the need to add lanes to SR 91 in 1983 and had proposed adding High Occupancy Vehicle lanes in 1988. The SR 91 Express Lanes opened in 1995 but would likely not have been built until 2001 without private sector involvement.

In addition to the toll road projects, the Las Vegas Monorail project had been included in the region's transportation planning for 3 years before a private consortium began advancing it. It is currently expected to open in 2004. Had this project been publicly financed, it would have likely sought federal funding through FTA's New Starts program. As we have previously reported, the New Starts Program is very competitive because more state and local transit agencies than ever are seeking Full Funding Grant Agreements from FTA.[11] Had the project sought a Full Funding Grant Agreement, it would have then been subject to extensive federal requirements, including environmental, public outreach, and strict project readiness, financial, cost-effectiveness, and land use criteria prescribed in law. According to FTA, meeting these requirements would likely have lengthened the project's schedule. In addition, funding would have been subject to the congressional appropriations process.

By relying on private sector sponsorship of and investment to build the roads rather than financing them as originally planned, the states conserved funding from their highway capital improvement programs for other projects. Four of the five toll roads were originally planned as untolled roads funded from states' highway capital improvement programs. The states could have undertaken these projects as toll road projects themselves, by borrowing to build the road and then charging tolls to pay back the debt. However, by engaging the private sector, the states avoided the up-front costs of borrowing needed to bridge the gap until toll collections became sufficient to pay for the cost of building the roads and paying the interest on the borrowed funds. Moreover, none of the bonds that the private consortia have issued for these projects counted against the legislative or administrative limits that govern the amount of outstanding debt that states are allowed to have. As such, to the extent that

[11] *Mass Transit: Status of New Starts Program and Potential for Bus Rapid Transit Projects*, GAO-02-840T (Washington, D.C.: June 20, 2002); *Mass Transit: FTA Could Relieve New Starts Program Funding Constraints*, GAO-01-987 (Washington, D.C.: Aug. 15, 2001).

states were constrained by these limits, engaging private sector sponsorship and investment also enabled the states to devote more of their debt capacity to financing other projects.

Finally, private sector sponsorship of and investment in these projects had the advantage, from the perspective of state and local governments, of limiting these governments' exposure to risks associated with acquiring debt. The debt incurred by private consortia to construct these six projects was not backed by their respective state governments, and thus did not expose the states to liability for the debt should toll revenues prove insufficient to meet the debt service requirements on the outstanding bonds. For example, when the Dulles Greenway defaulted on its debt in 1996, Virginia was not liable for the debt, nor did the debt affect the state's credit rating. Similarly, both the Pocahontas Parkway's and Southern Connector's bond ratings have been lowered to below investment grade; however, this has had no effect on either Virginia's or South Carolina's credit ratings.

Trade-offs from the Perspective of State and Local Governments of Private Sector Sponsorship and Investment

Projects involving private sector involvement have resulted in some trade-offs for federal, state, and local governments. These trade-offs include political costs that limited states' accountability and flexibility. On the three projects owned and operated by for-profit consortia, states generally relinquished control over toll rates. For example, the consortium that owned the SR 91 Express Lanes had complete control over the toll rates, as will the consortium that owns SR 125 when that road opens in 2006. In Virginia, while the Dulles Greenway has a toll ceiling approved by the state, the toll road has been able to adjust its tolls within that ceiling without state approval. The goal of private entities is to maximize their profit, which could conflict with state or local governments' desire to limit or control the amount and frequency of toll increases.

States have also lost the flexibility to carry out infrastructure improvements on some publicly owned roadways through noncompete clauses contained in franchise agreements. In one project—the SR 91 Express Lanes—this loss of flexibility eventually led the public sector to purchase the road from the private consortium. The language in the noncompete clause for the SR 91 Express Lanes in Orange County, California, effectively prevented the state from improving the nontolled freeway lanes of SR 91 until 2030—the term of the franchise agreement—and was the subject of litigation and considerable public outcry. As a result, the Orange County Transportation Authority bought the road back

from the private developer even though it was profitable. California subsequently took steps on the SR 125 project to ensure that the language in the noncompete clause allowed the state sufficient flexibility to make needed improvements to other roads while also protecting the private sector developer. If California makes any improvements that are not in its current long term transportation plan, the state will need to compensate the developer for lost revenues caused by those improvements. According to state and private officials, this agreement provides the state flexibility to make improvements currently planned, but will require the state to pay the private consortium for improvements beyond those that were already planned.

Projects involving private sector involvement have also resulted in foregone tax revenue to the federal government—and to some extent state governments. Three of the six projects were financed with tax-exempt debt. In 2003, for example, the outstanding value of bonds that were being used to finance the Pocahontas Parkway, Southern Connector, and Las Vegas Monorail totaled about $1.2 billion. We estimated that in 2003 the tax exemption for the interest on these bonds likely cost the federal government between $25 million and $35 million. In addition, South Carolina's and Virginia's state tax exemptions for the interest paid to in-state purchasers likely cost those two states a total of approximately $1 million to $3 million in 2003. Nevada has no state income tax.[12]

State and local governments have also been responsible for some aspects of projects' costs, such as acquiring rights of way, performing environmental work, or taking on some other aspects of the project. For example, Virginia completed the environmental work for the Pocahontas Parkway before the private sector became involved in the project. Orange County had completed the environmental work for the SR 91 Express Lanes before the private sector became involved, and California owned the rights of way on which it was built. States also used federal funding for the Southern Connector, Pocahontas Parkway and the interchange for SR 125. The consortium building SR 125 also received a TIFIA loan to help finance the project. In addition, state governments have incurred costs to establish new institutions or arrangements created to accommodate the private sector. Nonprofit corporations formed for the tax-exempt toll roads

[12]The sizes of the revenue losses depend upon the federal and state marginal tax rates of bond purchasers and upon what proportion of the total amount of bonds was purchased by in-state taxpayers. See appendix II for details on our estimation methodology.

required legal arrangements to be separate from state governments and to ensure their tax-exempt status. According to a former VDOT official involved with the Pocahontas Parkway project, creating the nonprofit corporation was a complicated process that took considerable time and effort. In California, billing and accounting systems had to be established on the SR 125 project to ensure that the state was properly reimbursed for property acquisition and other work it did on behalf of the private consortium and that public and privately funded segments of the project were kept separate. According to California DOT officials, this was a costly, complicated, and time-consuming process.

While private sector sponsorship and investment has limited state and local governments' exposure to some risks, states can be liable for costs if private entities encounter financial difficulty, particularly on toll roads where traffic and revenue is less than expected. For example, when the Pocahontas Parkway opened, Virginia agreed to pay for the costs of operating and maintaining the road with the expectation that the toll road would eventually have sufficient revenues to pay for them itself, as well as reimburse Virginia for the costs it has paid to date. The toll road has not generated sufficient revenues to reimburse VDOT any of these costs, which totaled $2.8 million as of the state fiscal year ending June 2003. In addition, if a consortium went out of business before the franchise agreement expired, the state may be liable for some or all of the cost of operating and maintaining the toll road. Whether a state can recoup costs from tolls depends on the terms of the franchise agreement. For example, in the case of the Pocahontas Parkway, the state would have to use toll revenues to pay debt service first, before operations and maintenance. Other projects may have different arrangements. For example, in the case of the Southern Connector, the toll revenues would have to be used to cover items such as operating costs and debt service before expenses such as maintenance costs. However, a state might be able to avoid incurring additional costs by granting a franchise to operate the toll road to a new consortium.

Challenges to Private Sector Involvement in Transportation Infrastructure Include Limited Opportunities and Barriers to Financial Success

Private sector consortia have had limited opportunities to participate in transportation infrastructure and have faced barriers to financial success. Limited opportunities exist because only some states have the legal authority to permit or encourage private sector sponsorship and investment. Additionally, political and cultural resistance to tolls has influenced states to avoid their use. Moreover, the projects offered to private consortia were generally of a lower priority. When the private sector had the opportunity to participate in projects, it encountered barriers to financial success. These projects require a substantial investment of time and capital many years before construction begins and traffic and revenues are sufficient for the roads to be financially successful. These toll roads can also compete with tax-supported roads not subject to tolls. Further, investors were at increased risk because all of the toll roads we reviewed were "stand-alone" toll roads (roads that were not part of a turnpike or toll road authority), and four of these were built or are being built in anticipation of future development. For the three roads already built, development has not occurred as expected and, consequently, the roads have struggled financially. The problems faced by these stand-alone toll roads may affect investors' willingness to invest in similar projects in the future.

Limited Opportunities for Private Sector Participation

The private sector has had limited opportunities to participate and invest in highway infrastructure projects. For example, according to an analysis prepared by a law firm that represents various state and local transportation agencies involved in projects utilizing private sector participation,[13] 23 states currently have legal authority for private sector participation in transportation projects. Of these 23 states, however, 20 have legal authority to utilize private sector participation in highway projects.[14] Among these, Washington only allows six demonstration projects and in Arkansas, the law only applies to projects along bodies of water. In Florida the state legislature must specifically authorize each project. However, in most states with this authority, state officials can, in

[13]*States with Public Private Partnership Authority as of February 2004*, prepared by Nossaman, Gunther, Knox, and Elliott, LLP, Los Angeles, Calif.

[14]These are Alabama, Arizona, Arkansas, Colorado, Delaware, Florida, Georgia, Louisiana, Maryland, Minnesota, Missouri, Nevada, North Carolina, Oregon, South Carolina, Texas, Utah, Virginia, Washington and Wisconsin. Massachusetts also has enabling legislation, but it only applies to one project.

general, approve the projects through their normal processes and operations. For example, the Pocahontas Parkway project was initiated when a consortium submitted a proposal for the road to Virginia's transportation department under the state law allowing private sector involvement in transportation projects. In addition, the toll roads in California, SR 91 and SR 125, became private ventures through special legislation authorizing four toll road projects.[15] According to one industry official, the lack of specific legislation authorizing private sector participation requires any type of "special" project, such as a private sector transportation project, to get approval through the state legislature, which is difficult to do.

Other legal restrictions also limit opportunities for the private sector. One contracting method, design-build,[16] is favored by consortia and, according to FHWA officials, promotes private sector sponsorship and investment because it provides that the consortium that designed the project will also construct it, thereby minimizing the financial risks. Design-build—or a form of it—was used in all of the projects we examined.[17] Although FHWA allows the use of design-build for federal projects, not all states allow its use for highways. According to a study prepared by a law firm involved in projects using design-build, 32 states have laws allowing the use of design-build, and 28 of these allow its use in highway projects.[18] Moreover, the laws in 4 of these 28 states limit the use of design-build to pilot programs or to a very small number of projects.

Political and cultural resistance to tolls has also limited states' willingness to use toll roads and, because toll roads are the most common way the private sector recoups its investment in highways, this resistance limits private entities' opportunities. Political resistance to tolling is also

[15]California passed enabling legislation, Assembly Bill 680, authorizing four projects in 1989. We reviewed two of these projects—SR 91 and SR 125. The other two were never built. See appendix III for additional information. This legislation was repealed in 2004.

[16]Design-build is a system of contracting under which one entity performs both architecture/engineering—that is, design—and construction under one single contract.

[17]In California, state law prohibits the use of design-build. However, for the two California projects we examined, the legislation allowing the private sector to build the SR 91 Express Lanes and SR 125 also authorized a procurement method similar to design build because the projects were private ventures.

[18]50-State Survey of Transportation Agency Design-Build Authority (Nossaman Gunther Knox & Elliott, LLP, 2004)

reflected in the design of the federal-aid highway program, which as early as 1916 prohibited the use of tolls on federally funded roadways. Currently, tolling on the Interstate Highway System is prohibited except for the two pilot programs that allow tolling of interstates in limited situations—the value pricing pilot established in 1991 and the Interstate tolling pilot authorized in 1998. According to a 1997 Congressional Budget Office report,[19] while motorists are willing to pay tolls if they see a clear benefit such as avoiding congestion or saving time, people generally oppose tolls because they perceive that motor fuel taxes and other fees should be sufficient to meet highway needs. According to state and local officials we spoke with in California, the state has very few toll roads because the popular opinion in California is that roads should not be tolled. The few toll roads that exist have met with strong public resistance, and most have struggled financially. The SR 91 Express Lanes in Orange County reached traffic and revenue expectations and was successful, but the project had to overcome considerable resistance from neighboring Riverside County because residents believed that they were paying twice for the road—once through their taxes and then again with the toll. In addition, the Southern Connector in South Carolina has lower traffic than expected. According to a local official, people in that area of the state are not used to toll roads and consequently resist paying to use the road.

Opportunities for the private sector to participate and invest have also been limited because states have generally offered the private sector only certain projects—and generally these have been low-priority projects where traffic growth is anticipated but not yet realized. For example, all five of the private toll projects that we examined had been in their respective state plans for 7 to 30 years before they were turned over to private consortia. With one exception, all of these roads were undertaken in anticipation of future development. The one exception, the SR 91 Express Lanes, was built to relieve congestion. On the other hand, states have traditionally financed their high priority projects—such as those in heavily traveled areas that could produce substantial toll revenues—with funds from their own highway programs. States have chosen to give priority to these projects and to dedicate funding from states' highway capital programs, including the federal-aid highway program apportionments. This apportionment has usually been used to pay 80 percent of a project's cost and gives states the incentive to continue to fund their high-priority

[19]Congressional Budget Office, *Toll Roads: A Review of Recent Experience* (February 1997).

projects through the federal-aid program because states need to provide only 20 percent of the cost from state funds.

Barriers to Financial Success

Even where opportunities for participation and involvement have emerged, private consortia have faced additional barriers to achieving financial success. For example, these projects require significant investment in time and capital long before any revenues can be expected or before there is even an assurance that the project will go forward at all. For example, it took more than 10 years for the private sector consortium originally involved in SR 125 to satisfy environmental requirements. The environmental work had to be complete before construction could begin—and before revenues were generated. For another example, the private consortium that built the Dulles Greenway acquired the right of way on its own. An official with the consortium told us that this was much more costly than if the state had acquired it because of the state's power of eminent domain. Furthermore, private consortia run the risk that after significant expenditures, the project still may not be authorized to go forward. For example, according to FHWA and local officials, the first consortium for SR 125 spent more than $30 million dollars over 10 years and had not obtained final approval to proceed with construction. Little progress had been made, and one of the members withdrew from the consortium, in part because of the investment in time and money without any return. Consequently, when another consortium made an offer to purchase the franchise, the first group accepted their offer.

Once a toll road is built, it can take time for it to break even and, in the case of for-profit toll roads, make a profit. Because a substantial number of high-priority roads are built with state highway capital program and federal money, private entities operating toll roads have competed with tax-supported roads that the public generally perceives as "free." For example, the Southern Connector has struggled financially, and state and toll road officials attribute the low revenues, in part, to the public's aversion to paying tolls. In order for a toll road to attract enough motorists to be profitable, it must offer them enough of a benefit, such as saving time, to overcome their aversion to paying tolls. This situation is most likely to occur in corridors that are already congested. In such cases, motorists are more likely to be willing to pay tolls to benefit from the time savings that a new road or new lanes could offer. Similarly, an official with the Dulles Greenway indicated that traffic on that toll road declined after Virginia improved a nearby road that was not tolled.

All five of the toll roads we reviewed are stand-alone toll roads, which are not part of a turnpike or toll road authority. According to bond rating agencies, toll road authorities are better able to absorb the impact of a new toll road that needs to build traffic and revenue levels because they can support the new road with revenues from several different toll roads, many of which have been in existence for many years. In contrast, stand-alone toll roads do not have the luxury of being part of a system; they do not have other toll roads that can absorb the low revenue levels during the early years of operation. As a result, these toll roads have a limited source of revenue with which to pay for debt service, as well as operations and maintenance.

Four of the five toll roads have faced an additional barrier to financial success because they were or are being built in anticipation of future growth and development. The Pocahontas Parkway, the Southern Connector, and the Dulles Greenway are open to traffic, and each has struggled financially because the expected level of traffic has not been achieved. For example, the Pocahontas Parkway outside of Richmond, Virginia, was built at a cost of $377 million and opened to traffic in 2002 with the expectation that additional industry—and corresponding traffic—would develop along the James River. Such development has not occurred, and the traffic along this road has been lower than expected, resulting in lower than expected revenues. According to one of the bond rating agencies, lower than expected regional economic growth has negatively affected forecasted traffic. The Southern Connector has also not achieved expected levels of traffic and revenue because development along its rural route has been slow. As a result, bond-rating agencies have downgraded ratings on both toll roads' bonds. Similarly, the Dulles Greenway, a for-profit toll road that opened in 1995, has yet to make a profit. The fourth road, SR 125, is also a stand-alone toll road that is being built in anticipation of future growth and development and is scheduled to open in 2006. According to an FHWA official, the traffic studies for this project may be optimistic because, while they are based on anticipated development in San Diego County, they are also based on traffic from Mexico that may not materialize if anticipated development south of the Mexican border does not occur. SR 91, the only toll road that was built to relieve existing highway congestion, rather than in anticipation of future development, has been profitable.

Figure 2: Traffic on the Pocahontas Parkway, a Stand-Alone Toll Road Built in Anticipation of Future Growth and Development, Has Not Met Expectations

Source: GAO.

Note: Photograph taken on August 21, 2003, at 12:30 p.m.

The problems faced by these stand-alone toll roads may affect investors' willingness to invest in similar projects in the future. When traffic projections and revenues do not meet expectations, bondholders face the possibility of taking a loss on their investments because the bondholders have no recourse to either state or local governments. According to officials from a bond insurance company, when projects such as stand-alone toll roads default on bonds, or experience financial difficulty, the prospects for financing future projects of that type can be uncertain. For example, according to a bond market analyst, when the bond ratings for Pocahontas Parkway and the Southern Connector were lowered, the value of the tax-exempt bonds used to finance the projects dropped by more than 50 percent. Although any investment carries risks, bond analysts indicated that the information available to individual investors was limited, and they were unaware of all of the circumstances surrounding these two toll roads. They said that in the future, they would require much more information before recommending investments in bonds for this type of project.

Legislative Proposals Could Provide Incentives for Eliciting Private Sector Participation

Legislative proposals offered by the administration, approved by the Senate, and considered by the House during the 108th Congress could help provide incentives for state and local governments to seek private sector sponsorship of and investment in highways and transit. (See table 3.)

Table 3: Elements of Legislative Proposals That Could Increase Private Sector Sponsorship of and Investment in Highway and Transit Projects

Element of Proposal	Summary
Tolling	• Change the Interstate System Rehabilitation and Reconstruction Pilot Program requirement that tolls be the only way to improve the highway to a relaxed requirement that tolling be most efficient, economical, or expeditious way to advance project • Authorize states to establish variable toll pricing programs for specified highways and allow tolling interstate highways to manage congestion or reduce emissions in any areas not meeting the air quality standards of the Clean Air Act • Modify prohibitions on tolling Interstate Highways System to permit states, or public or private entities designated by a state, to collect fees to fund interstate highway expansion to reduce traffic congestion • Require the Secretary of Transportation, for any federal-aid project estimated to cost $50 million or more, to study the feasibility of a toll road and the financial advisability of privatizing its construction, maintenance, and operation.
Bonds	Provide private for-profit firms access to tax-exempt debt in the form of qualified private activity bonds to finance highways.
Other assistance	• Relax TIFIA provisions to lower the project cost threshold from $100 million to $50 million and remove restrictions on when the TIFIA line of credit can be accessed. • Establish a Public Private Partnership Pilot Program to demonstrate the advantages of public private partnerships for capital projects and provide funding to assist in the development phase of 10 or more projects.

Source: GAO.

The Interstate System Rehabilitation and Reconstruction Pilot Program, established in 1998 under TEA-21, gave states the authority to toll interstate highways to finance capacity or other major improvements for three projects and allow private sector participation in those projects. Currently no projects are participating in the pilot, but Virginia has applied to participate. Changing the pilot program requirements could stimulate additional private sector interest in interstate toll roads because it makes it easier for states to justify tolling interstate highways. However, the program is still limited to a total of three projects. Because interstates have not been tolled previously, and because the existing Interstate Tolling Pilot Program has not been used yet, there is no evidence that states would avail themselves of this opportunity and no track record to reliably predict the potential success of private sector sponsorship and investment. Political and cultural resistance could likely be high for an action that would dramatically change long-standing policy.

Under other proposals, states would be authorized to establish variable toll pricing programs for highways, bridges, and tunnels, including interstates. These proposals would repeal the previous value pricing pilot program, and many interstate highways could become eligible for tolling. Interstate construction projects with a variable pricing component could have a greater chance of financial viability—and thus increase the incentive for the private sector to become involved—because the purpose of tolling would be to relieve congestion. Nevertheless, this proposal might not increase sufficient opportunity to warrant private sector interest and investment nor would states necessarily see an advantage to it.

Another proposal introduced during the 108th Congress would authorize fees to be collected on new lanes until the project was complete and the construction, debt service, and other costs specified in the proposal, including maintenance, were paid. Existing lanes could not be tolled. This proposal could result in increased private sector involvement in toll road projects because private sector investment would be dependent on toll revenue and the traffic and revenue projections would likely be predictable in a high-traffic corridor. A further provision would require that states consider tolling in order to receive federal funding. This could also provide states with an incentive to consider involving the private sector in transportation projects.

Other proposals would expand access to tax-exempt debt in the form of qualified private activity bonds for financing highways. These proposals would allow states to issue tax-exempt debt for projects involving private

consortia. Private activity bonds are currently available for privately financed housing, water projects, rail, and other qualified activities, but highway projects have not been eligible. States currently have the ability to access the tax-exempt market for highways by creating nonprofit entities such as turnpike authorities or special purpose entities. These proposals would allow private for-profit companies to benefit from tax-exempt debt, thus lowering the costs of borrowing, compared with commercial debt, and would, according to DOT, obviate the need for states to create special-purpose entities such as the Pocahontas Parkway Association. Nevertheless, lower interest rates may not be enough to make stand-alone toll roads financially attractive. The Pocahontas Parkway and Southern Connector, for example, were financed almost entirely with tax-exempt bonds and still have struggled because traffic projections have not met expectations. In addition, increasing the use of tax-exempt bonds would result in lost federal tax revenue and would be an indirect federal subsidy for the highway program. While this loss in tax revenue could be offset by economic activity that generates new revenue, it could also divert investment from another sector of the economy, negating the new revenue generated.

Proposals made to relax some of the provisions of the TIFIA program could make it more attractive to private sector investors. Lowering the project threshold would allow more projects to become eligible for TIFIA financing. Removing restrictions on accessing the TIFIA line of credit would also give other lenders more security and could help reduce the interest rates charged on senior debt for the projects. However, allowing access to the line of credit sooner could allow a project that is already struggling financially to incur additional debt, thus exposing the government to greater losses should the project ultimately fail.

Concluding Observations

Opportunities for the private sector to participate in and invest in funding, constructing, and operating major highway and transit projects has been limited; as a consequence, the nation's experience with active private sector sponsorship and investment has also been limited. For any state or local government, the decision to involve the private sector begins with an assessment of the benefits and costs of a particular project and a decision, through the planning process, as to whether that project should or should not be built. If a project is deemed needed and worthwhile, governments will weigh, particularly in the case of highway projects, whether to use federal grant funds and finance these projects through their capital improvement programs, or to undertake them as toll road projects. If they

decide to take the latter approach, they will also face a decision about whether to build the road themselves, by borrowing the money and charging tolls to pay back the debt, or to seek active private sector participation to fund, construct, and operate the toll road. The decision to engage the private sector would likely rest on whether state and local government officials conclude that the advantages of engaging the private sector are more appealing than the trade-offs, such as the political costs of relinquishing control over toll rates and the ability to improve publicly owned roadways.

The reality is that few state and local governments have come to that decision. We identified only six such cases, and one of these, the Las Vegas Monorail transit project, presents a special case that may never be replicated because it is rare that expected farebox and advertising revenues are sufficient to cover debt service, operations, and maintenance costs. State and local governments traditionally build and finance highway projects using their federal-aid grant funds that pay around 80 percent of the costs of construction. These funds provide a powerful incentive to build these projects as untolled roads. This is reflected in the fact that fewer than 5,000 miles of the nation's 437,000 arterial road mileage—about one percent—is tolled. In four of the five cases where decisions have been made to build toll roads and to invite active private sector sponsorship and investment, state and local governments offered lower-priority projects to the private sector to be built in anticipation of future growth and development. When growth and development did not occur as projected, the projects struggled financially. As a result, taken collectively, the limited record of privately sponsored highway projects has not been successful.

By opening high-priority projects in established corridors to private sector partners, state and local governments could potentially increase the chances that these ventures could be financially viable and make future projects more attractive to private sector investors. These projects in established corridors might also face less public opposition to tolling if they provided motorists with tangible benefits, such as avoiding traffic congestion and saving time. But state and local government decision makers might be wary of eliciting private sponsorship of such projects because the political costs of relinquishing control over toll rates and the ability to improve publicly owned roadways would likely be greater for higher-priority projects. These decision makers might well conclude that it is simply more advantageous for state and local governments to undertake these projects as either untolled roads or to build toll roads through public agencies such as turnpike authorities.

Under the current federal-aid program design, the federal government cannot directly provide opportunities for the private sector to participate. Therefore, expanding opportunities for private sector participation would require legislative and executive action by a multiplicity of federal, state, and local governments. The federal government can provide incentives, however, and some legislative proposals—such as expanding the mileage of federally aided roadways eligible for tolling or encouraging states to study the feasibility of using toll financing to add new capacity—might serve to encourage state and local governments to look to the private sector when addressing its critical highway infrastructure needs. However, absent fundamental changes to current federal transportation programs, states are likely to continue to devote significant funding, including federal funds, to building untolled roads in local traffic corridors. Thus, under current conditions and circumstances, private sector sponsorship and investment seems best able to finance a relatively small number of projects but seems unlikely to stimulate significant increases in the funding available for highways and transit.

Agency Comments and Our Evaluation

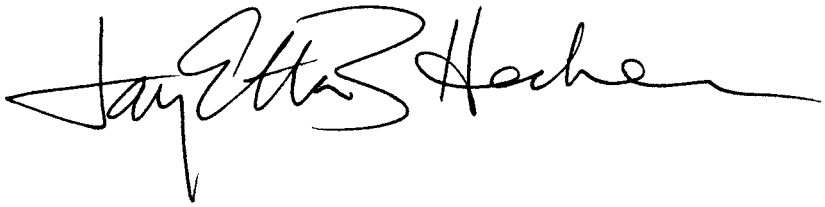
We provided a draft of this report to DOT for its review and comment. In February and early March 2004, DOT provided comments from representatives of FHWA, FTA, the Office of the General Counsel, the Office of Budget and Financial Management, and the Office of the Secretary of Transportation. In general, these representatives agreed with the information presented in this report and provided other technical comments, which we have incorporated as appropriate. FHWA officials commented that while they agree with our discussion of active private sector sponsorship and investment in highway and transit projects, they believe that limited experience to date may not reflect future interest on the part of some states. In particular, FHWA officials believe that some states may be willing to explore arrangements other than those that have been used to date, including greater sharing of financial commitments between the public and private sectors. FHWA officials also stated that highway spending and revenues will be constrained in the future and that this may cause states to look more closely at private sector participation.

We continue to believe that under current conditions and circumstances, active private sector sponsorship and investment seems unlikely to stimulate significant increases in the funding available for highways and transit. While we agree that the limited experience to date may not reflect future interest on the part of some states, the many barriers and challenges we have cited in this report would still need to be overcome in order for

significantly increased private sector sponsorship and investment to occur. While states may seek alternatives in a financially constrained environment, we would note that surface transportation spending has been constrained for some time when compared to the investment needs outlined by DOT and that all reauthorization proposals being considered in 2004—including the administration's proposal—envision federal funding increases and real growth over the amounts authorized in TEA-21. Therefore, we believe that states are likely to continue to devote significant funding, including federal funds, to building untolled roads. Finally, we acknowledge that, in addition to the active sponsorship and investment that was the focus of this report, many other models of private sector participation exist, such as those where states or public entities such as turnpike authorities issue bonds to obtain private investment to build or expand their systems. These arrangements—and the present or future interest of the states in them—were beyond the scope of this review.

We are sending copies of this report to the Secretary of Transportation. We also will make copies available to others upon request. In addition, the report will be available at no charge on the GAO Web site at http://www.gao.gov.

If you have any questions about this report, please contact me at heckerj@gao.gov or (202) 512-2834 or Steve Cohen at cohens@gao.gov or (202) 512-4864. GAO contacts andacknowledgments are listed in appendix VI.



JayEtta Z. Hecker
Director, Physical Infrastructure

List of Congressional Requesters

The Honorable Charles E. Grassley
Chairman
Committee on Finance
United States Senate

The Honorable James M. Inhofe
Chairman
Committee on Environment and Public Works
United States Senate

The Honorable Max S. Baucus
Ranking Member
Committee on Finance
United States Senate

The Honorable James M. Jeffords
Ranking Minority Member
Committee on Environment and Public Works
United States Senate

The Honorable Don Young
Chairman
Committee on Transportation and Infrastructure
House of Representatives

Objectives, Scope, and Methodology

The objectives of this report were to 1) identify the extent to which states have used active private sector sponsorship[1] and investment to finance and build major highway and transit projects and how that sponsorship and investment was accomplished; 2) identify some advantages, from the perspective of state and local governments, that resulted from private sector sponsorship and investment in these projects and what some of the trade-offs were; 3) determine challenges that the private sector faced sponsoring and investing in these projects; and 4) present pending legislation that would help increase private sector sponsorship and investment in highway and transit projects.

To identify the extent to which states have used private sector sponsorship and investment to finance and build major highway and transit projects, we examined program documentation of FHWA's innovative financing initiatives and interviewed FHWA officials. We met with officials from transportation industry associations and with bond market analysts, investment bankers, bond insurers, and economists to obtain their views on public/private partnerships in the transportation sector in the United States and internationally. To identify projects in the United States that involved private sector sponsorship and investment, we met with officials from highway and public/private partnership associations and FHWA, reviewed published literature and FHWA reports, and searched the Internet. From this work we identified five major toll road projects and one transit project. There is currently no standard definition of what constitutes a "major" project. This definition has been applied to projects with a total cost of as little as $10 million and as much as $1 billion. DOT has recently proposed using $100 million as the major project threshold for its financial planning and reporting requirements under 23 USC 106, and therefore we have used that threshold for this report. The projects that met this threshold included the Dulles Greenway and the Pocahontas Parkway in Virginia, the Southern Connector in South Carolina, the State Route 91 Express Lanes and State Route 125 in California, and the Las Vegas Monorail in Nevada. We omitted a private toll road in Texas, the Camino Columbia toll road, because the construction cost ($50.1 million) did not exceed the $100 million threshold we had established for selection. We also excluded privately owned roadways used to access commercial properties such as vacation areas and privately owned bridges. Because

[1]In this report, private sector sponsorship refers to projects in which the private sector was the primary stakeholder in terms of designing, financing, building, operating, and maintaining them.

our focus was on private sector sponsorship and investment, we did not review projects that were publicly financed or projects where states or public entities such as turnpike authorities issued bonds to obtain private investment to build or expand their systems. To review and document the origins, scope, and financial and institutional arrangements for each project, we contacted state and local government officials, private sector project sponsors, and FHWA or FTA officials as appropriate, and obtained project development and financial plans. We also used this information to calculate the cost of each project. For the purposes of this study, we included project construction and development costs, including financing costs,[2] which would have to be repaid from revenues.

To identify advantages and trade-offs, we interviewed state and local government transportation officials as well as bond market analysts, investment bankers, bond insurers, and economists to obtain their views on the advantages that accrued to state and local governments from private sector participation and investment in highway projects. We reviewed published reports and obtained documentation of federal agencies' positions on pending proposals that could have an effect on financing private transportation projects. We also performed an analysis of the costs to the government when tax-exempt debt was used to finance highway projects. We computed the potential loss in federal and state tax revenues resulting from the use of tax-exempt debt to finance three of the projects we reviewed—the Pocahontas Parkway, the Southern Connector, and the Las Vegas Monorail. See appendix II for a detailed discussion of this analysis. We did not evaluate the social benefits and costs of these projects nor did we determine whether these were projects that should or should not have been built. Moreover, we did not conduct a comprehensive cost-benefit analysis to quantify the benefits and costs, both public and private, of these projects and their relationship to each other.

To determine challenges to private sector sponsorship and investment, we reviewed federal legislation and regulations that affect private sector involvement in transportation projects, as well as state laws and published reports that identified states that had passed legislation permitting private sector participation and investment in transportation projects. We also interviewed officials from transportation industry associations, bond market analysts, investment bankers, bond insurers, and economists to

[2]Financing costs include bond issuance fees, interest on construction cost, and reserve funds for maintenance and debt service.

identify and discuss challenges that the private sector faced in the projects we reviewed. We also raised the issue of challenges to sponsorship with project developers and with state and local government officials at each of the projects we visited. To identify states with legal authority to utilize private sector financing and design-build construction, we relied upon recent legal analyses by Nossaman, Gunther, Knox, and Elliott, LLP, a law firm that represents various state and local transportation agencies involved in projects utilizing private sector participation. We verified the statutory references within the analyses provided to us by the law firm, but we did not attempt to verify whether there were any statutory omissions to those provided. We independently analyzed the laws identified as to whether they could be applied to private sector financing or design-build construction for highways.

Finally, we presented pending legislation proposals to reauthorize TEA-21 that could help to increase private sector participation and investment in highway and transit projects and discussed their potential effects on private sector participation and investment.

In addition to our objectives, we gathered information on (1) private sector sponsorship and investment overseas and (2) selected cases where the private sector helped finance major projects but did not actively sponsor their construction or operation and compared this participation to similar private sector participation outside the transportation sector. The selection of countries and individual projects was not based on a comprehensive review of all private sponsorship of transportation infrastructure projects, and the results cannot be projected. For private sector sponsorship and investment overseas, we selected and reviewed projects in Canada, Australia, and in European countries such as the United Kingdom, France, the Netherlands, and Italy based on the prevalence of publicly available literature. To identify cases in which the private sector helped finance projects but did not sponsor them, we reviewed literature and interviewed officials with the FHWA, FTA, and association officials. We also interviewed officials and reviewed documentation associated with specific highway and transit projects, as well as other transportation and education projects in Oregon, Nevada, Virginia, and Washington, D.C.

Our work was performed from February 2003 through February 2004 in accordance with generally accepted government auditing principles.

Methodology for Estimating Revenue Loss on Tax Exempt Bonds for Three Projects

This appendix describes the methodology we used to estimate the revenue losses to the federal and state governments in 2003 due to the issuance of tax-exempt bonds for the Pocahontas Parkway, the Southern Connector, and the Las Vegas Monorail. Given the uncertainty surrounding certain assumptions that we needed to make, we performed a sensitivity analysis, which leads us to present our results as ranges, rather than as point estimates.

Following the practice used by prior analysts, we assumed that if the tax-exempt bonds under review had not been issued, then the bond purchasers would have, instead, invested equal amounts of money in investments that yielded returns that are taxed by the federal government and, in some cases, by the state governments.[1] The revenue loss to those governments is the amount of tax that they would have been able to collect from those alternative taxable investment returns. We assumed that the returns on those alternative investments would have been approximately equal to the actual returns paid on the project's bonds, on an after-tax basis.

To compute the actual returns paid on the project's bonds, we first computed the total value of the tax-exempt bonds outstanding for these projects in 2003 and computed a weighted average annual interest rate for each issue of the projects' bonds.[2] We then obtained the amount of interest that each project paid in 2003 by multiplying the value of the bonds by the weighted average interest rates. We then estimated the returns on the alternative investments by dividing the former by one minus the federal marginal tax rate of marginal bond purchaser. (In our sensitivity analysis we allowed this tax rate to range between 28 percent and 31 percent.) We then estimated the federal revenue loss by multiplying these returns by the average federal marginal tax rate of all of the bond purchasers. (In our sensitivity analysis we allowed this tax rate to range between 28 percent and 34 percent.)

To estimate the amounts of revenue that Virginia lost on the Pocahontas Parkway bonds and that South Carolina lost on the Southern Connector

[1]See, for example, Harvey Galper and Eric Toder, "Modelling Revenue and Allocation Effects of the Use of Tax-Exempt Bonds for Private Purposes," in George G. Kaufman, (ed.), *Efficiency in the Municipal Bond Market: The Use of Tax Exempt Financing for "Private" Purposes*, JAI Press, Inc., Greenwich, Conn., 1981.

[2]Each project issued multiple series of bonds between 1998 and 2000 that remained outstanding as of 2003 (and will remain so for many more years).

bonds, we made assumptions regarding how many of those bonds would be purchased by residents of the states in which they were issued.[3] (In our sensitivity analysis we allowed the percentage of bonds purchased by residents of the same state in which they were issued to range between 25 percent and 100 percent.) We also assumed that all bond purchasers in Virginia and South Carolina were subject to those states' top tax rates (of 5.75 percent and 7, respectively) because the income floors for those top tax rate brackets are relatively low. We computed the state revenue loss as the return on the alternative investments, multiplied by the percentage of the bonds sold to residents, then multiplied by the states' marginal tax rates.

As a final step, we adjusted the federal revenue loss estimate for the fact that the taxpayers would have been able to deduct any state taxes paid on those same returns from their federal tax liabilities. The amount of the state tax deductions was equal to our estimate of the state revenue losses on the alternative investments.

[3]There were no state revenue losses on bonds sold to nonresidents because the states do not exempt interest paid to nonresidents. There was no state revenue loss on the bonds for the Las Vegas Monorail because Nevada does not have a state income tax.

Selected Privately Sponsored Projects

Table 4: Summary of Selected Privately Sponsored Projects

Dollars in millions

Project	Cost	Arrangement	Financing	Open
Highway project				
Dulles Greenway, Virginia	$338	For-profit	Equity, commercial debt	1995
State Route 91 Express Lanes, California	$126	For-profit	Equity, commercial debt	1995
State Route 125, California	$722	For-profit	Equity, commercial debt, TIFIA	2006 (expected)
Southern Connector, South Carolina	$218	Nonprofit	Tax-exempt debt	2001
Pocahontas Parkway, Virginia	$377	Nonprofit	Tax-exempt debt	2002
Transit project				
Las Vegas Monorail, Nevada	$730	Nonprofit	In-kind contribution, tax exempt debt	2004 (expected)

Source: GAO.

Dulles Greenway, Virginia

The Virginia Highway Corporation Act of 1988 authorized the private development of toll roads. In 1993, the Toll Road Investors Partnership II, L.P. (TRIP II) was formed to build the Dulles Greenway. A construction contract was awarded in 1993, and the road was opened to traffic in 1995. The Dulles Greenway was built as a four-lane 14-mile private toll road that extends from the Dulles Toll Road and Dulles International Airport to Leesburg, in Loudoun County. It has seven interchanges and is designed to accommodate expansion of up to six lanes, as well as mass transit development in the median. In 2001, an additional 5-mile lane was added in each direction on the eastern end of the road. The road was built in anticipation of development in Loudoun County. According to developers, travelers using the road can reduce their travel time by as much as fifty percent compared to alternative routes. The Dulles Greenway is the first private toll road built in Virginia since 1816.

Institutional Arrangements

The Dulles Greenway was developed as a private, for-profit venture. TRIP II owns the franchise for the Dulles Greenway and consists of three partners: a Virginia family, the AIE Limited Liability Corporation, and Brown and Root of Houston, Texas. Brown and Root, Inc., was the prime contractor for the construction of the toll road. Autostrade, an Italian private toll road developer and operator, is responsible for operations and maintenance. TRIP II was developed for the sole purpose of building and operating the toll road and has a 42-year franchise from the state. At the end of that period, the road reverts to state control. The partnership handled and paid for all aspects of developing the project, including acquiring the right of way and conducting the environmental work, and the road falls under regulatory control of the State Corporation Commission. TRIP II acquired all of the land for the project and owns the right of way and the road. Consequently, TRIP II also pays real estates taxes on the property and has insurance to cover any liability that may occur (i.e., as the result of an accident). A TRIP II official said that the Virginia Department of Transportation (VDOT) had oversight responsibility during construction and inspected the road as it was being built.

Under the franchise agreement, TRIP II is responsible for all costs associated with operating and maintaining the road. TRIP II uses Virginia state troopers specifically assigned to the toll road to police the road and reimburses the state for this service. The Dulles Greenway does not have a noncompete agreement with the state. According to a TRIP II official, it was the company's understanding that the state would not make improvements to competing roads ahead of schedule. However, he said, VDOT made significant improvements to a competing road, State Route 7, ahead of schedule. According to a bond rating agency, these improvements adversely affected the traffic projected to use the toll road. The improvements to State Route 7 were in the state's plans in 1989 and, according to a VDOT official, the state did not have a timetable in place for making those improvements. Rather, once projects were in the state's plans, they made the improvements when funding was available.

Financing

The Dulles Greenway's construction cost was initially financed with equity contributions from the partnership, bank loans, and long-term, fixed-rate notes purchased by major institutional investors. According to a Congressional Budget Office report, the project cost about $340 million, financed as shown in table 5.

Table 5: Cost of Financing the Dulles Greenway

Source of financing	Amount (dollars in millions)
Long term fixed rate notes	$258
Revolving credit	40
Equity	40
Total amount financed	**$338**

Sources: Congressional Budget Office (data); GAO (analysis).

TRIP II went into default on its loans and note agreements in 1996 as a result of revenue that was less than projected. In 1999, the partnership refinanced its debt, which helped to enhance the project's survivability and protection provided bondholders by allowing debt service requirements to better match expected growth in toll revenues. The refinancing paid off the outstanding debt, created project reserve funds, and covered costs associated with the refinancing. As a result of the refinancing, TRIP II issued approximately $370 million in senior bonds and $76 million in subordinate bonds. The senior bonds are privately insured, and the partnership must maintain a reserve equal to one year of debt service payments. Subordinate bonds are not insured, and debt service payments can only be made on subordinate bonds after operating expenses, debt service on senior bonds, and required payments to project reserves. The state has no liability for any of the debt. The repayment of the debt was also extended 9 years and was configured to keep debt service payments much lower than the original plan until 2011. According to a TRIP II official, the restructuring also resulted in significantly lower interest rates.

Revenue Source

The Dulles Greenway's revenue source is tolls. When the toll road opened to traffic in 1995, TRIP II set the toll at $1.75. In 1996, the State Corporation Commission set a $2.00 ceiling on the tolls that can be charged for cars. TRIP II may set tolls within that ceiling without additional state approval. TRIP II lowered the toll in 1997 to encourage drivers to use the road. As of January 2004, there are two different rates—a weekday rate of $1.90 and a lower weekend rate of $1.50. Tolls are discounted for those paying electronically.

The project has struggled financially. Revenues have been less than projected because traffic has been lower than projected. In the toll road's first year of operation, it generated 20 percent of the projected revenue; in

its fifth year, the road generated 35 percent of the revenue forecast. New toll roads are expected to experience a period of several years during which the traffic ramps up to expected levels. Before the road opened, traffic was projected to be about 33,000 vehicles per day in the first year and needed to reach 68,000 vehicles per day to meet its expenses, based on a $2.00 toll. However, initially, traffic was about 10,500 vehicles per day. Residential and economic growth has continued in the area and traffic has increased, averaging 46,000 vehicles per day in 2000. According to a TRIP II official, although the toll road's cash flow is positive, it still has a negative income and has never made a profit for its investors.

Status

According to a TRIP II official, the Dulles Greenway is hoping to increase tolls during peak hours (i.e., rush hour). TRIP II has requested the State Corporation Commission to approve a toll ceiling increase to $3.00. However, a TRIP II official stressed that just because TRIP II has an increased ceiling does not mean it would increase tolls to the limit.

California State Route 91 Express Lanes

In 1989, Assembly Bill 680[1] authorized the California Department of Transportation (Caltrans) to enter into agreements with private entities for the development, construction, and operation of four demonstration transportation projects. California's State Route 91 (SR 91) Express Lanes was one of these four public-private projects. According to a Caltrans official, the state had planned to add lanes to the SR 91 freeway in 1983. In 1988, the additional lanes were proposed as High Occupancy Vehicle (HOV) lanes. However, the state authorized the SR 91 private toll road project because public revenue for transportation had not kept pace with California's transportation needs. SR 91 is a four-lane, 10-mile toll road located within the median of the pre-existing eight-lane freeway between SR 55 in Orange County and the Riverside County line. The project connects large residential areas in Riverside and San Bernardino counties, with major employment centers in Orange and Los Angeles counties. The road was built to reduce congestion on the existing freeway. The highway opened to traffic in December 1995 and was the first toll road in the United

[1]Assembly Bill 680 authorized four demonstration projects: Route 91, Route 125, Route 57, and the Mid-State Tollway. Only SR 91 and SR 125 went forward. According to a Caltrans official, SR 57 was not built because of a lack of funding for the environmental impact study; this official also indicated that the franchise for the Mid-State Tollway was terminated in January 2001 because of a lack of local support.

States to use variable congestion pricing. In addition, SR 91 was the world's first fully automated toll road, utilizing electronic transponders to collect tolls.

Institutional Arrangements

The California Private Transportation Company (CPTC) developed SR 91 in partnership with Caltrans. CPTC was an entity formed by subsidiaries of Level 3 Communications, Inc., Compagnie Financiere et Industrielle des Autoroutes (Cofiroute), and Granite Construction, Inc. CPTC signed a franchise agreement with Caltrans in December of 1990. This agreement leased SR 91 to CPTC for 35 years after the opening of the toll road. These new lanes were officially designated a part of the California State Highway System, and the California Highway Patrol (CHP) was responsible for providing police services at CPTC's expense. Maintenance and operational costs for the road were also the responsibility of CPTC.

This project had a noncompete clause that created a 1.5-mile protection zone along each side of SR 91, which precluded any improvements along the corridor until the year 2030. An official with Cofiroute stated that one of the conditions that lent itself to this project was the existence of the median on which the toll lanes were built, which meant that right of way did not have to be separately acquired for this project. According to a Caltrans official, the Orange County Transportation Authority (OCTA) prepared an environmental review because the state had originally planned to build HOV lanes. OCTA subsequently conducted a supplemental review on the express lanes to augment the original review. CPTC purchased both reviews from OCTA when it developed the toll road. Although CPTC held the franchise for the toll road, the state of California retained the title to the land.

Financing

SR 91 was privately financed at a cost of $125.6 million. According to officials with Cofiroute, in July 1993 financing closed and consisted of a combination of equity and bank and institutional debt. The debt on this project carried a commercial rate of interest of about 12 percent. The project's debt financing was provided by a group of commercial banks and institutional lenders. Table 6 indicates the specifics of the financing for SR 91.

Table 6: Cost of financing the SR 91 Express Lanes

Source of financing	Amount (dollars in millions)
Bank loans (14-year)	$65
Other long term loans (24 years)	35
Equity	20
OCTA (subordinated debt)[a]	5.6
Total project cost	**$125.6**

Source: GAO.

[a]Used to purchase previously completed engineering and environmental work.

Construction of SR 91 was fully paid for by the private sector. According to Caltrans officials, the financing was contingent upon Caltrans assuming liability for injuries resulting from accidents. In order for Caltrans to assume this liability, however, CPTC was required to follow Caltrans' standards and guidelines for design, construction, and operation of the road.

Revenue Source

Lanes on SR 91 are tolled using congestion management pricing, which means toll rates vary based on the time of day. OCTA officials reported that volume on SR 91 has increased steadily from 7.3 million trips in 1999 to 9.5 million trips in 2002. They also reported total annual revenue grew steadily over that same period, from $19.5 million in 1999 to $29 million in 2002. Growth is projected for both Orange and Riverside counties over the next 25 years. Orange County is projected to add over a half million jobs, while Riverside County's population is projected to increase by one million people. Officials with both Cofiroute and OCTA pointed out that a unique advantage of this project is that mountains on both sides of the road effectively prevented any alternative routes. Officials with Cofiroute and Caltrans stated that there was a 17 percent profit cap on the project, tied to inflation. However, there were also vehicle occupancy incentives to increase carpooling that offered up to a 23 percent rate of return. If tolls generated more money than this, the excess could be used to retire the debt or it would go back to the state's general highway fund. The franchise agreement gave CPTC sole authority to set and adjust tolls—Caltrans approval was not needed for increases.

Status

In April 2002, OCTA reached an agreement with CPTC to purchase SR 91 for $207.5 million. In September 2002, AB 1010 authorized OCTA to purchase the toll road from CPTC, and OCTA took possession of the road on January 3, 2003. OCTA officials said that the impetus for this purchase was public pressure on Caltrans to make improvements to the nontolled lanes of SR 91 that were prohibited by the noncompete clause.

The acquisition was contingent on state legislation (AB1010) authorizing OCTA to buy and operate the toll road, dismissal of the litigation that CPTC had initiated against Caltrans, and the elimination of the noncompete clause from the franchise agreement that OCTA would hold. To satisfy another condition of the sale, OCTA contracted with Cofiroute to operate the toll road. OCTA paid the $207.5 million—$135 million in taxable bonds and $72.5 million in cash. The bonds will be retired with toll revenues.

California State Route 125

In 1989, Assembly Bill 680[2] authorized the California Department of Transportation (Caltrans) to enter into agreements with private entities for the development, construction, and operation of four demonstration transportation projects. California's State Route 125 (SR 125) was one of these four public-private projects. The section of SR 125 south of SR 54, now planned for a toll road, was included in the state's transportation plan in the early 1960s but was not built because state funds were not available and the need was not considered high because the area had not been developed. However, the project was incorporated into the county plan in 1984. Once constructed, SR 125 will be a 9.5-mile, four-lane toll road from just south of SR 54 to SR 905 near the international border with Mexico. The highway will be located entirely within San Diego County and will run through the city of Chula Vista. It is intended to increase capacity for future travel between the United States and Mexico, serve the existing and future development of communities along its right of way, and reduce congestion locally and on Interstates 5 and 805. The project has been planned to allow for expanding the highway to six to eight lanes as development and traffic in the area increase.

[2]Assembly Bill 680 authorized four demonstration projects: Route 91, Route 125, Route 57, and the Mid-State Tollway. Only SR 91 and SR 125 went forward. According to a Caltrans official, SR 57 was not built because of a lack of funding for the environmental impact study; this official also indicated that the franchise for the Mid-State Tollway was terminated in January 2001 because of a lack of local support.

Institutional Arrangements

The private sponsor, California Transportation Ventures (CTV) is a limited partnership selected by the state in 1991 to develop the project. Macquarie Infrastructure Group, an international firm that has built and operated toll roads in many countries, purchased a majority interest in CTV in 2002. Caltrans entered into a franchise agreement with CTV for 35 years, commencing from the time the road opens to traffic. During that period, the state retains ownership of the land. The franchise included a noncompete clause under which the state agreed not to build any highway or make improvements that would compete with the toll road and were not already contained in the state's 20-year plan. The noncompete agreement contained a provision allowing the state to build a competing road but required that CTV be reimbursed for the lost revenues caused by the new road. At the end of the franchise period, control over the road will revert to the state. As part of the franchise agreement, Caltrans shepherded the project through the environmental review process, acquired the right of way for the project, and will provide police service on a reimbursable basis once the toll road is open to traffic. In addition, several developers in the Chula Vista area donated land for about 50 percent of the required right of way. Although CTV is responsible for financing, building, operating and maintaining the toll road, Caltrans is responsible—with funding from the San Diego Association of Governments (SANDAG)—for an interchange and a mile of road to connect to the northern end of the toll road to SR 54. However, CTV will oversee the design-build construction of the interchange and connecting roadway as well as the toll road.

Financing

Macquarie Infrastructure Group is a for-profit corporation that obtained debt financing in the form of market-rate loans from European banks and made a substantial equity investment. In addition, Macquarie obtained a Transportation Infrastructure Finance and Innovation Act (TIFIA) loan from the U.S. Department of Transportation (DOT). SANDAG funded the $101 million construction of the SR 125 interchange with SR 54.[3] The construction of the interchange and 1 mile of road connecting SR 125 to SR 54 will be funded from the county's half-cent sales tax that voters approved in 1988 to fund local transportation projects, including the designated interchange. According to Caltrans and SANDAG officials, the toll road and the locally funded project are being administered as separate projects

[3]In addition, CTV is reimbursing Caltrans $1.3 million for Caltrans' oversight of the project.

but are integral to each other and the environmental review treated them as one project.[4] Table 7 indicates the financing for the SR 125 construction.

Table 7: Cost of Financing SR 125

Source of financing	Amount (dollars in millions)
Macquarie Infrastructure Group	$160
Bank loans	321
TIFIA loan	140
Total toll road cost	621
Federal funding for connector	81
SANDAG funding for connector	20
Total project cost	**$722**

Source: GAO.

Revenue Source

Tolls will provide the revenue to pay for the project and earn the private partners a return on their investment. Under the franchise agreement, CTV can set tolls without state approval. However, CTV's return on investment will be limited to 18.5 percent. The company plans to use variable pricing, with higher tolls charged during peak periods and lower tolls when traffic is less congested. According to a CTV official, one goal of the tolling will be to control congestion. For example, after lanes are added, other improvements made, and capacity is reached, tolls could be raised to discourage use, thus keeping traffic from getting too heavy. Traffic volume is expected to range from 20,000 to 70,000 vehicles per day during the first year of operations and is projected to reach 200,000 vehicles per day once all of the planned development takes place.

Status

Litigation challenging the final record of decision on the environmental impact statement for the project was resolved in favor of Caltrans in March 2003. Construction started in July 2003. Construction is expected to take 34 months, with the toll road completed and open to traffic in 2006.

[4]SANDAG is also funding another small piece of road—with federal funding—that connects the interchange to State Road 54 and is a separate project covered by a separate environmental review.

Southern Connector, South Carolina

The Southern Connector is a 16-mile, four lane toll road linking Interstates 85 and 385 in southern Greenville County—the road includes six interchanges. The road begins at the I-185/I-85 interchange west of Greenville, runs south of the Donaldson Center Industrial Park, and ends at the I-385/US-276 interchange near Simpsonville. The toll road was completed in February 2001 and uses electronic toll collection. Officials involved in this project said the road was needed to lower congestion on other highways and local roads, provide access to an area previously served only by local roads, and stimulate industrial and residential development in southern Greenville County.

The Greenville Area Transportation Study and the South Carolina Department of Transportation (SCDOT) first identified the east-west roadway project for Southern Greenville County in 1968 but lack of available funding kept it on the planning list. In 1992, SCDOT received federal funding and initiated the environmental and preliminary engineering work. The location and environmental studies, public hearings, and the environmental impact statement were successfully completed. However, lack of funding once again put the project on hold. In 1996, SCDOT issued a Request for Proposal, soliciting innovative ways to finance, design, and build the project using a Public/Private Partnership agreement. This was the first time that South Carolina had attempted to use this type of arrangement. SCDOT officials considered this arrangement beneficial because the state was able to conserve resources and was not at risk for any financial obligations if revenues were less than expected, other than the $17.5 million the state contributed to the project.

Institutional Arrangements

The Connector 2000 Association, a not-for-profit corporation comprised of local business leaders, was established to finance and operate the Southern Connector. In 1997, the state Department of Transportation Commission passed a resolution authorizing SCDOT to enter into a license agreement with the Connector 2000 Association based on legislation passed in 1976. Signed in February 1998, the license agreement gives Connector 2000 the right to own and operate the project for the earlier of 50 years or until the bonds are paid off. Once the bonds are retired, operation and ownership of the road will be transferred to the state.

The license agreement granted Connector 2000 the right to acquire, in the name of SCDOT, the appropriate rights of way necessary for developing the project. Officials from SCDOT said that they also helped acquire a portion

of land for the right of way. Once construction was complete, the Southern Connector was accepted into the South Carolina State Highway System and therefore the state police patrol the toll road. In addition, the association was responsible for operation of the toll road. SCDOT maintains the road and is reimbursed by the association. The Southern Connector does not have a comprehensive noncompete clause. The Connector 2000 Association's license agreement for the Southern Connector contains only limited protection from competitive transportation activities such as a nontolled road. The language is open-ended but indicates that SCDOT will refrain from certain activities that would be competitive in nature. The state had already completed the environmental impact statement for this project. An attorney with Connector 2000 pointed out that South Carolina's ownership of the right of way is an important feature of the license agreement because it protects Connector 2000 from tort liability. He said that if Connector 2000 owned the right-of-way, accident victims could possibly sue it, which would have been an unacceptable risk.

Financing

The financing for this project utilized the sale of tax-free toll revenue bonds to be repaid by toll revenue over a 35-year term. Connector 2000 issued the bonds on behalf of the state. The Connector 2000 Association received tax-free bond status by forming a nonprofit corporation under Revenue Ruling 63-20 of the IRS tax code. The specifics on the financing of the Southern Connector are shown in table 8.

Table 8: Cost of Financing the Southern Connector

Source of financing	Amount (dollars in millions)
Tax-exempt senior current interest bonds	$66.2
Tax-exempt rated senior capital appreciation bonds	87.4
Tax-exempt unrated subordinate capital appreciation bonds	46.6
SCDOT contribution	17.5
Total project cost	**$217.7**

Source: GAO.

The state contributed $17.5 million to build the road linking the Connector with I-85, but did not finance any cost of building the project. The state of South Carolina has no responsibility for the bonds and officials with

SCDOT stated that the license agreement was crafted to protect the state from any liability for the debt.

Revenue Source

The Southern Connector's revenue source is its tolls, which are collected through manual, automatic coin machine, and electronic tolling. According to the license agreement, SCDOT set the rates for the entire 50-year term of the agreement according to a preset schedule. The first increase will occur in 2005—from $.75 to $1.00. Because Connector 2000 is a 63-20 corporation, it cannot make a profit from the toll revenues.

Revenues from tolls have been sufficient to cover operating costs but only a portion of debt service payments because traffic projections for the toll road have not met expectations. As a result, Connector 2000 has had to withdraw funds from its reserve accounts. The traffic projections Connector 2000 received before the project was built indicated that traffic would be about 28,000 vehicles per day. The traffic has only reached a peak of about 15,000 vehicles per day and is typically about 14,000 vehicles per day. Nevertheless, Connector 2000 can now cover operating expenses, and the payments that it made to the state for highway maintenance in the first year of operation have been more than enough to cover state costs for some time to come.

Status

In January 2002, Standard & Poor's lowered the rating on the bonds financing the Southern Connector project from "stable" to "negative." That change was based on traffic performance that was significantly lower than anticipated and the prospects of a longer ramp-up period that would lead to reduced financial flexibility, as well as the need to use the debt service reserve account to meet debt service requirements. At the time Standard & Poor's changed its outlook, average daily traffic was near 10,000 transactions (one trip between toll booths), which was 45 percent of the 22,000 trips anticipated for that stage of the ramp-up and 64 percent less than the originally forecasted level of 28,000 trips for the first year. The Connector 2000 Association has had to notify investors that it has used reserve funds to make its debt service payments.

Pocahontas Parkway, Virginia

In 1995, the Public Private Transportation Act authorized the Virginia Department of Transportation (VDOT) to enter into agreements with private entities for the development, construction, and operation of

transportation projects. The law also allowed private consortia to submit unsolicited proposals to develop specific projects. In 1995, a limited liability company consisting of Fluor Daniel and Morrison Knudsen submitted an unsolicited project to develop the Pocahontas Parkway. The Pocahontas Parkway is a four-lane, 8.8-mile toll road located south of Richmond. It connects the Chippenham Parkway in Chesterfield County at I-95 with Laburnum Avenue and I-295 east of Richmond International Airport in eastern Henrico County. The road was built in anticipation of development along the James River, as well as to relieve congestion. The eastbound lanes of the highway opened in May 2002, and the westbound lanes opened in September 2002. The road had been included in Virginia's state plan since 1983 as an untolled road. Before Fluor Daniel and Morrison Knudsen undertook the project, VDOT had used federal funds for preliminary design and engineering costs.

Institutional Arrangements

The Pocahontas Parkway was developed in partnership with VDOT by Fluor Daniel/Morrison Knudson Limited Liability Company (FD/MK) and the Pocahontas Parkway Association (PPA). The PPA is a nonprofit corporation that was created in 1997 to finance the design, construction, and operation of the Pocahontas Parkway. The PPA has a seven-member board of directors. The PPA appoints three of the five voting members, VDOT appoints the remaining two voting board members and one nonvoting member, and FD/MK appoints a nonvoting member. In June 1998, FD/MK entered into an agreement with the state that included a design-build contract to construct the toll road. In July 2002, when construction was nearly complete, VDOT and PPA reaffirmed the franchise agreement and PPA took over operations. Under the franchise agreement, PPA has the right to impose and collect tolls for 30 years. VDOT owns the right of way as well as the road, and it operates and maintains it with the understanding that the PPA will reimburse VDOT when the toll road's revenues are sufficient to do so. PPA has been receiving an operating budget from VDOT and will continue to do so until revenues are sufficient to cover these expenses. VDOT expects to be reimbursed for these expenses. Similarly, the Virginia State Police provide law enforcement services under contract with VDOT; VDOT will pay this cost until the PPA can do so. The state approved the route for the Pocahontas Parkway in 1983, and VDOT completed the environmental work in 1984. However, the project was put on hold because funds were not available.

The Pocahontas Parkway does not have a comprehensive noncompete clause. The franchise agreement contains only limited protection from

competitive transportation activities, such as a publicly funded road. The language is open-ended but indicates that VDOT will refrain from certain activities that would be competitive in nature. However, the agreement does not provide for any remedies in the event that VDOT opens a competing road.

Financing

The Pocahontas Parkway was financed at a cost of $377 million. This included a combination of tax-exempt bonds and a loan from Virginia's State Infrastructure Bank (SIB). The state has no liability for the bonds. The PPA was created as a nonprofit entity authorized under IRS Revenue Ruling 63-20 to enable the corporation to issue tax-exempt debt. Table 9 shows the specifics of the financing for the Pocahontas Parkway.

Table 9: Cost of Financing the Pocahontas Parkway

Source of financing	Amount (dollars in millions)
Tax-exempt bonds	$354
VDOT SIB loan	18
FD/MK debt service reserve funds	5
Total project cost	**$377**

Source: GAO.

Revenue Source

The Pocahontas Parkway's revenue source is its tolls, about 40 percent of which are collected through electronic tolling. The PPA sets toll rates, and any increases must be made in conjunction with a toll consultant's recommendation. Currently, the maximum toll is $1.50 for cars. Because the PPA is a 63-20 corporation, it cannot make a profit from the toll revenues. If revenues exceed expenses, VDOT would receive the excess.

Revenues have been less than projected because traffic has been lower than projected. Traffic projections indicated that for 2003, traffic would be at about 840,000 transactions per month. Revenues were projected to be about $1.4 million. However, as of January 2004, traffic has been about 400,000 transactions per month, and revenue has been about $630,000 per month. The PPA must use its revenues to pay its debt service first because VDOT agreed to a gross revenue pledge, which stipulates that the revenues are first used to pay debt service. This type of pledge guarantees operation

and maintenance of the toll road because VDOT pays for the operations and maintenance of the road if the toll road does not bring in sufficient revenue to pay for those expenses.

Status

In November 2002, Fitch placed its rating of the Pocahontas Parkway's bonds on a negative watch. In December 2002, Standard and Poor's lowered its rating of the bonds to below investment grade. The ratings agencies took action based on traffic and revenue performance that was significantly lower than anticipated and concerns that traffic levels would not achieve forecasted levels. At the time, average daily traffic was just under 10,000 transactions (a transaction is one trip through a toll booth), which was 57 percent of the current projection of 17,300 transactions. As of January 2004, Fitch's and Standard and Poor's bond ratings had not been changed.

Las Vegas Monorail, Nevada

The Las Vegas Monorail is a 4-mile fixed-guideway system serving the resort corridor along Las Vegas Boulevard in Clark County, Nevada, and terminating on the north, at the city limits of Las Vegas. The system was initiated because of increasing congestion in the resort corridor along Las Vegas Boulevard and major arterial streets. In 1999, Las Vegas had almost 34 million visitors and, according to a traffic survey, 77 percent of them visited three or more casinos every day. The project will have seven stations, connecting eight resorts and the convention center. This system expands upon an earlier monorail that was operated between two hotels, the MGM Grand and Bally's. In addition to the stations and guideway, the system will include an operations and maintenance facility for the nine fully automated, driverless trains, each with four cars. The monorail company entered into a design-build contract and construction on the expanded system began in August 2001. Construction is expected to be completed and the system operating in 2004. When the system opens, the trains will operate 20 hours per day at about 4-minute intervals.

The Las Vegas Monorail was one of the alternatives included in a major investment study initiated in 1995 by the Regional Transportation Commission of Southern Nevada (RTC), the local metropolitan planning organization, to address congestion and resulting air quality problems along the major resort corridor in Clark County, on Las Vegas Boulevard, and on the surrounding arterial streets. Using a fixed-guideway system such as the monorail as the focal point for this program was one of several

alternatives considered for development. In 1998, Clark County granted the Las Vegas Monorail Company (LMVC) a franchise for a monorail system along the eastern side of the resort corridor. A second phase is planned, extending north to the downtown section of Las Vegas, as well as subsequent phases to connect the system.

Institutional Arrangements

The LVMC is a nonprofit public benefit corporation (501(c)(4) corporation) that was created for the development of the monorail because the project needed to be financed with tax-exempt debt. Because the LVMC is a quasi-state agency created to provide oversight of the project, the board of directors is appointed by the governor of Nevada. Transit Systems Management, an affiliate of the original developer of the project, serves as program and project manager for the nonprofit corporation. The monorail will be operated under the same franchise that Clark County granted to MGM Bally's Monorail, LLC, for the original, two-station monorail. The station franchise is for 50 years and was transferred to LVMC after financing for the project was in place. Although area hotels and resorts made in-kind contributions and helped fund station construction, they hold no ownership interest in the project.

Financing

The monorail was financed with tax-exempt revenue bonds issued through the state of Nevada and with contributions from area hotels and resorts. However, the state has no financial liability for the bonds. The first tier bonds totaling $451 million are privately insured. In order to use tax-exempt financing, a nonprofit corporation had to be established. The seven hotels and resorts adjacent to stations contributed about $27.5 million for construction of connecting walkways to stations. They also contributed about $54 million in land easements for the right of way and committed to provide operations and maintenance costs for the connectors for 35 years. In addition, resorts and contractors purchased $48.5 million in third tier bonds. Debt service on the third tier bonds is only required after all other costs have been met. The specifics of the financing for the monorail are shown in table 10.

Table 10: Cost of Financing the Las Vegas Monorail

Source of financing	Amount (dollars in millions)
Tax-exempt current interest and capital appreciation bonds (1st tier)	$451.4
Tax-exempt project revenue bonds (2nd tier)	149.2
Tax-exempt subordinated bonds (3rd tier)	48.5
Hotel and resort in-kind contributions	81.4
Total project cost	**$730.5**

Source: GAO.

Revenue Source

The monorail's principal source of revenue will come from fares charged to riders, with a secondary source of revenue from advertising. As of December 2003, fares were to be $3 for a one-way ticket and $5.50 for a round-trip ticket. The projected ridership is expected to be more than 53,000 per day and exceed 19 million per year in the first year of operation. Based on the projected ridership and a $2.50 fare, farebox revenues could be over $48 million in the first year. The farebox revenue, combined with LVMC's projected advertising revenue of about $6.5 million in the first year, would be needed to cover the costs of operations and maintenance for the monorail.[5] However, company officials indicated that advertising revenues could significantly exceed expectations. The company has already signed a contract dedicating all advertising space on one train, including the entire outside of the cars, for $1 million per year for the next 10 years and signed an additional contract that could generate another $4 million per year, well ahead of expectations.

The LVMC plans to use electronic systems to make it easy for people to use the monorail: one way is to make monorail rides part of the packages that visitors buy from hotels and resorts in the area; another is to allow hotel guests to charge their fares to their hotels using their room keys. To encourage hotel and resort employees to use the system, the LVMC is exploring the possibility of employer subsidies.

[5]Debt service payments are not scheduled to start until 2005.

Status

Construction is on schedule to allow operations to begin in 2004. The LVMC has reported that construction costs are under budget. Phase II of the project, to extend the monorail to downtown Las Vegas, will also be managed by Transit Systems Management. Construction of the publicly funded $450 million extension project is expected to be completed by 2007.

Active Private Sector Sponsorship and Investment in Other Countries

Active private sector sponsorship of and investment in transportation infrastructure is more common in other countries than in the United States. There are several reasons for this, including the use of longer-term franchise agreements, lack of competition from untolled highways, greater federal authority to enlist private participation as a matter of policy, and greater public subsidies for highway projects that have been undertaken by the private sector.

The franchise arrangements in other countries are generally longer in duration than those in the United States, which generally range from 30 to 50 years. A longer franchise agreement allows private investors more time to realize returns on their investments, which could make projects more attractive to potential investors. For example, the consortium building and operating Ontario's Highway 407 in Canada has a 99-year concession, while a French consortium has contracted with the French government to pay all building, operating, and maintenance costs for the A86 West tunnels in Paris for a period of 70 years after the tunnel opens. Additionally, a private company has obtained a government concession to design, build, and run the M6 Toll in the United Kingdom until 2054—a 53-year concession agreement. According to industry experts, private toll roads in countries with established markets—such as France and Italy—do not generally face public competition in the form of state-funded untolled highways. However, in other countries, particularly those in emerging markets, there is a greater risk that the government could open a competing, nontolled road. Noncompete clauses are more common in those countries.

According to industry experts, an advantage overseas is that, in other countries, the central governments can make private sector participation a matter of policy. In comparison, as the U.S. federal-aid highway program is currently structured, only states and local governments may enact the enabling statutes required to partner with the private sector. Industry experts said a ministerial government such as the one in the UK can simply decide to begin to use public-private partnerships, as opposed to the United States, in which such a change would have to go through the legislative and regulatory process. In Australia, the Ministry for Transport produced a plan to improve infrastructure in Sydney that detailed 25 rail, bus, and road projects and specified which projects would be funded with private investment. In Ireland, the national government adopted a program to overhaul the country's decaying transport infrastructure—in part through private participation. In addition, the National Roads Authority, which is supported by Irish and international advisers, has launched 11 projects requiring private finance. In addition, industry experts indicated that other

countries, such as the Netherlands and Italy, have established central units for guiding the process to utilizing the private sector.

Public subsidies to privately sponsored highway projects overseas have surpassed those in the United States in several instances. For example, in Australia on the Melbourne City Link project, the public sector accepted the risk of any impact of a native title claim by indigenous Australians and agreed to indemnify the sponsor for most environmental impact statement costs. On the Confederation Bridge project in Canada—a bridge between Prince Edward Island and the Canadian mainland built, managed, and operated as a 35-year concession—the Canadian government covers an annual subsidy that pays the debt service on the bonds that were issued to finance the project. On the A86 Tunnel in Paris, the European Investment Bank, the European Union's long-term financing institution, approved a 200 million euro loan to the private consortium at a below market interest rate.

Private Participation through Financing with Revenues from the Value Created by Projects

In addition to active private sector sponsorship and investment, the private sector has taken a role in financing projects while not participating in their construction or operations. These projects have typically been sponsored by state or local governments and have involved recouping or capturing some of the increased value of land located near transportation or other public projects that had been newly created or improved by a governmental entity. This method has been used in three ways: (1) states' sales or leases of surplus land that states had obtained when constructing projects; (2) special tax districts, in which businesses paid increased taxes to help pay for transportation improvements located near them; and (3) developer-funded interchanges in which the private sector paid for new interchanges to improve access to its property.

States' Sales or Leases of Surplus Land

One way in which states have derived additional revenue has been by acquiring and subsequently selling or leasing land that was not needed for the construction of a highway right of way. This practice has allowed states to capture any increase in the value of land states had acquired that was not used for construction. States are permitted to sell this land, but must use the federal share of the proceeds for transportation projects that would be eligible for federal aid. FHWA does not maintain data on how much revenue states have generated through acquiring and subsequently selling or leasing land; however, in 2002 we calculated that, for fiscal years 1998 through 2002, 37 states generated about $148 million from the sale or lease of land purchased with federal-aid highway funds.[1]

This approach to generating revenues has been used more aggressively in transit and other sectors. For example, the Tri-Met Airport extension in Portland, Oregon, was financed with a combination of revenue from special tax districts and $28 million paid by a private sector partner for a long-term lease to develop an industrial park adjacent to the new rail line. The land for the industrial park had originally been purchased to provide a noise buffer to keep residential development from encroaching on the airport. The Washington Metropolitan Area Transit Authority (WMATA) also

[1]U.S. General Accounting Office, *Federal-Aid Highways: States Need Guidance on Sales or Leases of Real Property Purchased with Federal Funds*, GAO-03-207 (Washington, D.C.: Dec. 13, 2002). Total includes data from 37 state departments of transportation. The total represents the amount generated from sales and leases but does not reflect the increased value of the land from the original purchase price. Further, the total does not include sales or leases of land purchased solely with state funds. We converted nominal dollars to constant 2001 dollars.

capitalized on the value of a vacant 32-acre site next to one of its Metro stations that had been purchased when the system was being built many years ago. WMATA received over $50 million for its capital development fund by leasing the land to a private sector developer for 95 years. Real estate assets have been used to finance educational and transit infrastructure projects by capturing the increased value of property that occurred since its acquisition. For example, the Oyster Bilingual School in Washington, D.C., was rebuilt at a cost of over $11 million by a private sector developer. In exchange, the developer received title to land that had previously been a little-used playground and built an apartment building. The rents from the apartment building will be used to pay off the bonds used to finance the school's construction.

Although transit and other sectors have financed projects by capturing the increased value of land, this approach has limitations for highways. First, it can only be used where land adjacent to a project would be likely to be the subject of commercial or dense residential development. Land adjacent to highways in rural areas would be less likely to increase in value sufficiently to offset the costs of highway construction. If a state acquires land by exercising its eminent domain power, the acquisition must be for a public purpose, and the state must pay adequate compensation. State highway departments and other public agencies have realized some financial gain from the sale or lease of excess property that was originally acquired during construction of infrastructure projects such as highways. Moreover, the acquisition of these properties was not part of a financing plan and was coincidental to completing the original project.

The administration's reauthorization proposal would take the first steps to expand existing practices by establishing a pilot program to permit commercial operations at new or existing rest areas on Interstate highways. Such commercial operations could be privately run to provide goods, services, and information that benefit the traveling public and could include state promotional or tourism-oriented items and commercial advertising and displays within the rest areas. This proposal could generate additional funds for highway and transit projects because states would be required to use the profit derived from these operations for transportation projects that would generally be eligible for federal funding.

Special Tax Districts

In another approach, localities applied taxes—in cooperation with business owners—on property to pay for highways. For example, a group of businesses in Virginia agreed to enter into a special tax district to

generate additional real estate taxes to raise funds to pay for a significant portion of the cost of improvements to State Route 28 in Fairfax and Loudoun counties. The businesses along the road wanted to expedite the improvements to improve access to their businesses. They sought and received legislative approval from the state to form the special tax district to raise funds to pay for the construction. The tax is applied at a rate based on the value of the land. As the land value goes up, so does the revenue. The state used the funds to pay for the project but is responsible for the operations and maintenance of the road. The businesses in the tax district and VDOT agreed to pay 75 percent and 25 percent, respectively, of the project costs, which VDOT estimates will total $341.5 million.

Special tax districts have also been used in other sectors. For example, to finance a major rail project, the city of Reno, Nevada, imposed a combination of local taxes to fund debt on a project to eliminate railroad crossings in the city's downtown area by lowering the railroad tracks below ground. The city is financing this project—which will cost $283 million—with a combination of debt, contributions from the Union Pacific Railroad, and a TIFIA loan. The debt on the project will be repaid by a combination of local taxes imposed on downtown businesses benefiting from the project. These include a sales tax, a hotel room tax, and property taxes. In addition, lease income from properties donated by Union Pacific will also be used to repay the debt.

Developer-Funded Interchanges

Developer-funded interchanges offer another variation of the value capture method of financing highway improvements. According to FHWA officials, although there is no data on the extent or dollar amount spent, developers frequently pay for interchanges to improve access to their businesses. In effect, such payments are impact fees paid by developers, who recoup the costs from the profits they make from their business ventures. For example, Nevada Department of Transportation officials indicated that 50 percent of the interchanges have been funded this way. In one case in Henderson, Nevada, an area was being developed for numerous automobile dealerships and needed a new interchange to provide access to interstate I-515. A private developer and the city of Henderson shared the costs of the project and reimbursed the state department of transportation for the construction. For these types of projects, the developer could either do the work directly or hire a contractor or the state could oversee construction and be reimbursed for the cost. If the developer constructed the interchange or hired a contractor, the state would oversee and inspect the

work. Developers have also funded several interchanges in Utah, according to a former Utah Department of Transportation official.

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