UNITED STATES DEPARTMENT OF TRANSPORTATION

REPORT TO CONGRESS ON PUBLIC-PRIVATE PARTNERSHIPS

December 2004

TABLE OF CONTENTS

LIST OF FIGURES

APPENDICES

ACRONYM LIST

AASHTO	American Association of State Highway and Transportation Officials
CBO	Congressional Budget Office
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CPTC	California Private Transportation Company
DOT	Department of Transportation
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FHWA	Federal Highway Administration
FOIA	Freedom of Information Act
FTA	Federal Transit Administration
GAN	Grant Anticipation Notes or Bonds
GAO	General Accounting Office[1]
GARVEEs	Grant Anticipation Revenue Vehicles
HBA	Highway Beautification Act
HOV	High Occupancy Vehicle
HUD	United States Department of Housing and Urban Development
IFB	Invitation to Bid
ISTEA	Intermodal Surface Transportation Efficiency Act of 1991
LTM	Louisiana TIMED Managers
MPO	Metropolitan Planning Organization
NEPA	National Environmental Policy Act of 1969, as amended
NHS Act	National Highway System Designation Act of 1995
NHS	National Highway System
NMSHTD	New Mexico State Highway and Transportation Department
OCTA	Orange County Transit Authority
PDC	Project Development Contractor
PPTA	Public-Private Transportation Act of 1995 (Virginia)
RFP	Request for Proposal
RFQ	Request for Qualifications
RMAs	Regional Mobility Authorities
RSPA	Research and Special Programs Administration
SAFETEA	Safe, Accountable, Flexible, and Efficient Transportation Equity Act of 2003
SEP-14	Special Experimental Project
SCDOT	South Carolina Department of Transportation
SIBs	State Infrastructure Banks
STP	Surface Transportation Program
TEA-21	Transportation Equity Act for the 21st Century, as amended
TIFIA	Transportation Infrastructure Finance and Innovation Act

[1] The General Accounting Office officially changed its name to the Government Accountability Office on July 7, 2004.

TxDOT	Texas Department of Transportation
U.S.C.	United States Code
U.S.FWS	United States Fish and Wildlife Service
UDOT	Utah Department of Transportation
U.S. DOT	United States Department of Transportation
VDOT	Virginia Department of Transportation
WSDOT	Washington State Department of Transportation
WVDOT	West Virginia Department of Transportation

DEFINITIONS

Build-Own-Operate: a private contractor constructs and operates a facility while retaining ownership. The private sector is under no obligation to the government to purchase the facility or take title. "Public-Private Partnerships: Terms Related to Building and Facility Partnerships." GAO/GDD-99-71, April 1999, http://www.gao.gov/special/pubs/Gg99071.pdf

Concession Benefits: rights to receive revenues and other benefits (often from tolling) for a fixed period of time.

Design-Bid-Build: the traditional project delivery method where design and construction are sequential steps in the project development process. (32 C.F.R. 636.103)

Design-build-contract: an agreement that provides for design and construction of improvements by a contractor or private developer. The term encompasses design-build-maintain, design-build-operate, design-build-finance and other contracts that include services in addition to design and construction. Franchise and concession agreements are included in the term if they provide for the franchisee or concessionaire to develop the project which is the subject of the agreement. (23 C.F.R. 636.103)

Developer Financing: a type of financing where a private party finances the construction or expansion of a public facility in exchange for the right to build residential housing, commercial stores, and/or industrial facilities on the site. This type of financing often takes the form of capacity credits, impact fees, or exactions. "Public-Private Partnerships: Terms Related to Building and Facility Partnerships." GAO/GDD-99-71, April 1999, http://www.gao.gov/special/pubs/Gg99071.pdf

Innovative Contracting: innovative contracting practices meant to improve the efficiency and quality of roadway construction, maintenance, or operation. Examples of innovative contracting include: A+B contracting, lane rental, the use of warranties, design-build, design-build-operate, design-build-finance-operate-maintain.

Innovative Finance: innovative methods of financing construction, maintenance, or operation of transportation facilities. The term innovative finance covers a broad variety of non-traditional financing, including the use of private funds or the use of public funds in a new way, e.g., GARVEE bonds or special tax districts.

Life-Cycle Costs: the costs of a project over its entire life: from project inception to the end of a transportation facility's design life.

Public-Private Partnership: a contractual agreement formed between public and private sector partners, which allows more private sector participation than is traditional. The agreements usually involve a government agency contracting with a private company to renovate, construct, operate, maintain, and/or manage a facility or system. While the public sector usually retains ownership in the facility or system, the private party will be

given additional decision rights in determining how the project or task will be completed. The term public-private partnership defines an expansive set of relationships from relatively simple contracts (e.g., A+B contracting), to development agreements that can be very complicated and technical (e.g., design-build-finance-operate-maintain). In the context of this report, the term public-private-partnership is used for any scenario under which the private sector would be more of a partner than they are under the traditional method of procurement. Further, the broad definition used for public-private partnerships includes many elements that are applied fairly regularly on appropriate projects. "Public-Private Partnerships: Terms Related to Building and Facility Partnerships." GAO/GDD-99-71, April 1999, http://www.gao.gov/special/pubs/Gg99071.pdf

Revenue Bonds: instruments of indebtedness issued by the public sector to finance the construction or maintenance of a transportation facility. Revenue bonds, unlike general obligation bonds, are not backed by the full faith and credit of the government, but are instead dependent on revenues from the roadway they finance. Terms Related to Public-Private Partnerships, The National Council for Public-Private Partnerships: How Partnerships Work, http://ncppp.org/howpart/pppterms.html

Shadow Tolling: Shadow tolls are per vehicle amounts paid to a facility operator by a third party such as a sponsoring governmental entity. Shadow tolls are not paid by facility users. Shadow toll amounts paid to a facility operator vary by contract and are typically based upon the type of vehicle and distance traveled.

Toll Credits: toll credits are earned when a State, a toll authority, or a private entity funds a capital highway investment with toll revenues from existing facilities. States may increase the use of available eligible Federal funding on a project, up to the normal State/local matching amount, and debit the sum of the toll credits that have been earned by that same amount.

Tolling: the process of collecting revenue whereby road users are charged a fee per roadway use. Tolls may be collected on a flat-fee basis, time basis, or distance basis and may vary by type of vehicle.

Warranty: when used in public-private partnerships for the construction of roads, warranty clauses guarantee that the roadway will meet a certain level of quality or else repairs will be made at the private contractor's expense. There are currently two types of warranties used in highway construction: (1) materials and workmanship warranties and (2) performance warranties. Under the first type, the contractor is responsible only for defects caused by poor materials and workmanship. Under the latter, the contractor is responsible for the product meeting certain agreed upon performance thresholds, regardless of whether materials and workmanship met State standards.

EXECUTIVE SUMMARY

House Report 108-243 (2003) accompanying the FY 2004 Department of Transportation Appropriations Act requested the U.S. Department of Transportation (DOT) to prepare a report identifying the impediments to the formation of large, capital-intensive highway and transit projects involving public-private partnerships. U.S. DOT was also asked to work with States and local entities to identify and eliminate existing impediments. This report addresses both of those goals by pulling from existing literature on public-private partnerships and by gathering comments from States, law firms, contractors, and trade associations with experience in these projects. These comments, gathered from stakeholders, do not necessarily represent the position of the U.S. DOT, but are included in response to the Committee on Appropriation's request according to the direction given by the House Report.

In this report, U.S. DOT answers the questions posed by Congress and attempts to provide a resource document for States interested in using public-private partnerships as a method of procurement. The report is divided into five major sections: history and initiatives, value of public-private partnerships, impediments to their formation, stakeholder comments, and recommendations for removing those impediments. The value section is designed to help States considering public-private partnerships better understand the benefits of such an approach and some of the downsides. This report, however, is not designed to be a manual on how to use public-private partnerships as part of a State program. We have not addressed the myriad issues concerning when public-private partnerships should be used and how they should be negotiated. The report focuses on the questions posed by the House Report language and provides the background necessary to provide context for the answers to those questions.

Although not widely used today, public-private partnerships are not a new model for providing surface transportation infrastructure. For decades, the Federal Highway Administration (FHWA) and State Departments of Transportation (DOTs) have experimented with ways to increase the involvement of the private sector in financing and operating surface transportation facilities. The results of these early experiments are not widely known and many of the new partnership arrangements have not been widely adopted. For this reason, the report begins with a short history of public-private partnerships and what we have learned to date.

Rapidly increasing demand for new capacity has resulted in many States considering the benefits of public-private partnerships. U.S. DOT has encouraged this both administratively and by recommending changes to Congress. Administrative changes made by U.S. DOT include creating the Innovative Finance Program—Test and Evaluation Project (TE-045) to allow greater flexibility in the financing of transportation infrastructure and enabling greater use of innovative contracting methods through Special Experimental Project 14—Innovative Contracting (SEP-14). Recent transportation acts have also provided tools for States interested in exploring innovative financial and contracting methods that make greater use of private sector resources, and the Administration has recommended a number of legal changes that will continue this trend.

As with many forms of government procurement, there are both legal and non-legal obstacles to reform. FHWA has engaged in a number of workshops and other educational efforts to address some of the lack of understanding and knowledge concerning public-private partnerships.

The FTA has also led finance and joint development workshops, in an effort to disseminate best practices and to provide "on-the-spot" technical assistance for specific projects. In public transportation, there are similar obstacles to reform. Only a handful of major public transportation agencies routinely use the capital markets as part of their project finance resources. Only the largest thirty systems have used overnight borrowing or short-term paper to manage cash flow. And, while more potential projects are in discussion, there remain few major projects in public transportation. On the other hand, increased Federal funding certainties have permitted public transportation agencies to better access capital markets.

Public-private partnerships can generate substantial benefits for public agencies interested in encouraging innovation and saving time and money on projects. Risk aversion and lack of experience with the private sector, however, often drive public agencies to spend considerable time and resources developing systems for soliciting projects, ensuring adequate competition, and allocating the risks associated with designing, constructing, and operating a large transportation facility. These administrative procedures limit private sector flexibility and have deterred many States from fully exploring such partnerships. These additional costs associated with developing a public-private partnership can diminish the potential value public-private partnerships may offer. This is especially true since some benefits of public-private partnerships are difficult to quantify.

Cost and time-savings associated with public-private partnerships are more readily quantifiable. Two reports and numerous case studies have found that public-private partnerships can save from 6 to 40 percent of the cost of construction and significantly limit the potential for cost overruns. The reason for these savings is that the private sector often has more appropriate incentives to limit costs than the public sector. In addition, having one entity responsible for design, construction, and operation can result in efficiencies that are not possible with traditional design-bid-build methods. Public-private partnerships help reduce the time it takes to build a project in two ways, through innovative finance and project management. The most significant time-savings generated by public-private partnerships are a result of innovative financing. By restructuring project financing and borrowing funds, public-private partnerships can cut many years off project delivery. Although frequently less dramatic, innovative project management also reduces the time it takes to finish a project, often saving months if not years.

Improvements in quality, environmental stewardship, and innovation have also been associated with public-private partnerships, but are more difficult to quantify, especially given the relatively limited number of projects that have been completed to date using this procurement method. Anecdotal evidence suggests that quality and innovation

increase when the private sector becomes involved in a project earlier. This report includes some of this anecdotal information.

Despite the benefits of public-private partnerships, obstacles including legal, financial, political, and cultural hurdles are often encountered in the formation of these partnerships. This report lists impediments found in State laws and policies, local communities, the private sector, and Federal laws and regulations. Our Nation's surface transportation programs are primarily administered by States and local authorities. As a result, State laws, regulations, and practices strongly influence the potential for public-private partnerships. Most States do not allow innovative forms of procurement, severely limiting the potential for a public-private partnership.

On the local level, concern is usually focused on how the proposed project will be financed. Localities tend to be resistant to projects with an innovative financing component that could create additional costs for the users of the facility. Communities are also increasingly reluctant to impose new taxes on themselves to finance facilities. These concerns make public-private partnerships more difficult. However, public support for tolls that pay for additional capacity or allow motorists to buy their way out of congestion appears to be increasing, and with that, so too should public-private partnership opportunities.

The private sector has concerns that limit its interest in partnering with a State or locality to form a public-private partnership. These concerns include: the availability of financing, uncertainty of revenue streams, risks associated with the environmental clearance process at both the State and Federal level, tort liability, and potential changes in political leadership. As public agencies and private sector firms become more familiar with public-private partnerships for highway and transit projects, and as more impediments are reduced, public-private partnerships and private sector interest can be expected to increase.

Finally, Federal procurement laws and regulations can also be an impediment. Like States, the Federal government has established a system of procurement and oversight built on the traditional design-bid-build model. This system has obvious benefits, but, in many cases, stifles innovation possible with public-private partnerships. The most noted example of this was FHWA's new design-build regulations requiring a State to have completed the environmental review process before requesting project proposals. This example is discussed further in Appendix H. This restriction limits the private sector's involvement in a project early in the design phase. In addition, there are a number of Federal laws, such as Buy America and Davis-Bacon that have been enacted to advance important public policy goals. Several stakeholders noted that these requirements may increase the cost and complexity of projects.

Chapter V includes comments from a wide variety of stakeholders, including States, law firms, private companies, and trade associations about how to eliminate existing impediments. These comments, which are summarized below, do not reflect the position

of the Administration, although many are worthy of further investigation. Furthermore, these comments represent a gathering of thought, rather than a consensus of opinion.

Stakeholders recommended changes to enhance project financing, including a relaxation of restrictions on tolling to finance highways, expansions of the Transportation Infrastructure Financing and Innovation Act (TIFIA) and State Infrastructure Bank (SIB) programs, and the use of Private Activity Bonds for transportation investments. They also recommended several administrative, regulatory and legislative changes to improve the environmental review process.

Stakeholders suggested a number of changes to procurement procedures to encourage the use of public-private partnerships including: Federal encouragement of State legislation to permit the use of design-build; greater flexibility in design approaches, subcontracting, and pre-award negotiations; elimination of State prohibitions on accepting unsolicited proposals; liberalization of rules for the use of proprietary products and techniques; and an expansion of the SEP-14 initiative to encourage innovative procurement practices to be used in public-private partnerships.

Chapter VI summarizes the U.S. DOT legislative proposals included in the Administration's surface transportation reauthorization proposal—the Safe, Accountable, Flexible, and Efficient Transportation Equity Act of 2003 (SAFETEA)—that should facilitate public-private partnerships.

In SAFETEA, the Administration recommended:

1. *Tolling:* Establishing a variable toll pricing program that would permit tolling on any highway, bridge, or tunnel, including the Interstate System, to manage congestion or reduce emissions; easing the eligibility requirements for the Interstate Rehabilitation and Reconstruction Program; and allowing States to permit single occupancy vehicles on high occupancy vehicle lanes so long as time-of-day variable charges are assessed (so called HOT lanes);

2. *Private Activity Bonds:* Allowing State and local governments to use up to an aggregate total of $15 billion in private activity, tax-exempt bonds to pay for projects eligible under titles 23 and 49 of the United State Code that serve the general public;

3. *Environmental Streamlining:* Streamlining the environmental process without substantively changing environmental protection;

4. *TIFIA:* Lowering the project cost threshold for TIFIA projects to $50 million;

5. *Design-Build:* Eliminating the $50 million threshold for design-build projects;

6. *Commercialization of Rest Areas:* Establishing a pilot program to allow States to permit commercial operations at existing or new rest areas on Interstate System highways; and

7. *Debt Service Reserve:* Allowing public transportation agencies to obligate capital grant funds for a debt service reserve, to lower the cost of locally-issued bonds.

The report concludes by noting that the U.S. DOT looks forward to continuing to work with Congress on the issue of the use of public-private partnerships in highway and transit projects.

CHAPTER I: INTRODUCTION

In the House Report accompanying the FY 2004 Department of Transportation (DOT) Appropriations Act, the House Committee on Appropriations requested the Secretary of Transportation prepare and submit a report on public-private partnerships. The Committee report specified the following:

> *Public-private partnerships*.—The Committee includes a new provision (sec. 636) providing a sense of the House that public private partnerships (PPPs) could help eliminate some of the cost drivers behind complex, capital-intensive highway and transit projects. Using qualification-based selection and performance-based contracting, PPPs integrate risk sharing, streamline project development, engineering, and construction, and preserve the integrity of the NEPA process, to result in significant schedule and cost advantages over traditional infrastructure development processes. To further demonstrate the effectiveness of PPPs, the provision encourages the Secretary of Transportation to apply available funds to select projects that are in the development phase, eligible under title 23 and title 49, except 23 U.S.C. 133(b)(8), and that employ a PPP strategy. The goal of this effort would be to evaluate how PPPs provide means to achieving cost savings. The Secretary is also directed to work with states and local entities to identify and eliminate existing impediments to successful implementation of PPPs and provide a status report to the House and Senate Committees on Appropriations within 120 days of enactment of this Act.[2]

The U.S. DOT has long encouraged the use of public-private partnerships. We welcome this opportunity to highlight the cost and time saving benefits that can be realized when transportation projects are built using a public-private partnership. To provide a fuller understanding of these benefits, our report includes a discussion of the history of public-private partnerships in transportation and a description of public-private partnership initiatives already undertaken by the U.S. DOT. The report is also designed to be a resource document for States that are interested in using public-private partnerships as an alternative method to the traditional procurement processes.

The report is a compilation of information collected from a variety of sources. The U.S. DOT first reviewed existing literature on the use of public-private partnerships on transportation projects. This review included reports on public-private partnerships authored by the FHWA, GAO, CBO, State governments, private sector consultants, law firms, and international scholars. Because interest in public-private partnerships has only recently reemerged, the literature available is not extensive. Consistent with the Committee report language, the U.S. DOT also invited State Departments of Transportation (State DOT) who are actively engaged in the use of public-private partnerships, as well as private stakeholders (contractors, designers, consultants, law

[2] H. REP. NO. 108-243, at 9 (2003).

firms, and trade associations), to share their experiences with public-private partnerships on transportation projects, identify impediments to the use of such agreements, and to provide their recommendations on how to eliminate these impediments.[3]

Consultation with local officials is a vital yet sensitive issue within the transportation planning process. Within metropolitan areas, the MPO provides the venue and policy context for this. In the development of a Statewide Transportation Improvement Plan (STIP), the MPO must consult with local officials, non-governmental organizations, businesses and other interested parties on the projects being considered for funding. Outside of metropolitan areas, FHWA and FTA are working to facilitate the most effective consultation processes within each State. FTA and FHWA will continue to ensure effective consultation between States and local officials in non-metropolitan areas in reviewing statewide planning and, specifically, in making findings in support of FTA and FHWA STIP approvals.

Chapter II defines a public-private partnership and discusses the history of public-private partnerships in both highway and transit construction. Consistent with the language in the House Report, public-private partnerships are defined broadly as a contractual agreement formed between public and private sector partners, which allows more private sector participation than is traditional. Chapter II also provides an overview of the U.S. DOT's initiatives to date to encourage the greater use of public-private partnerships within the highway and transit arena. Although public-private partnerships are often thought of as a recent innovation in public surface transportation, history shows that this is not a new concept. Chapter II examines where we have been and where we are concerning public-private partnerships. This information will help lay the foundation for understanding the value of public-private partnerships and assessing impediments to their formation.

Chapter III highlights the value of public-private partnerships and the primary benefits that may include delivering a higher quality transportation project quicker and cheaper when compared to traditional contracting methods.[4] This chapter begins with a discussion of the cost and time savings that can be realized with the use of innovative contracting methods such as design-build, warranties, and cost-plus-time bidding. It then explores additional factors that contribute to cost and time savings including: the flexibility to use private-sector financing, intellectual capital, and management resources; allocation of risk to the party best able to manage it; and the incorporation of life-cycle costs in the price of the project. It also describes some of the risks involved in using public-private partnerships.

As requested by the House Report accompanying the FY 2004 DOT Appropriation Act, Chapter IV explores the major impediments to the formation of public-private

[3] The comments gathered from stakeholders do not necessarily represent the position of the U.S. DOT or the Administration.

[4] The DOT attempted to provide a balanced report of positive and negative examples of public-private partnerships. However, the current information on public-public partnerships contains few examples of negative experiences with such arrangements.

partnerships. These impediments include State laws and policies, local opposition, private sector concerns, Federal requirements attached to Federal funding, and Federal financing. This chapter serves as a compilation of the impediments that have been identified by the commenters to the report and in the information used in this report and is not necessarily suggesting changes to Federal law. The Administration's SAFETEA proposal contains recommendations that address some of these impediments. Others will require further analysis to assess the most effective way to respond. A discussion of Federal funding and financing is included because it has been cited as a possible barrier due to the requirements that must be followed when a State or locality elects to use Federal money on a project. The literature on public-private partnerships notes that the complexity of Federal laws can limit private-sector participation in highway and transit projects.

Chapter V is a compilation of the stakeholder suggestions on administrative, regulatory and legislative changes that would remove impediments to the formation of public-private partnerships. The recommendations focus primarily on changes to environmental and procurement practices and laws. The U.S. DOT's role regarding these comments is that of a conduit for the delivery of a significant number of stakeholders' recommendations to Congress. These comments were provided by those stakeholders with an interest in or experience with public-private partnerships. This report does not represent the views of all potential stakeholders. Furthermore, the U.S. DOT did not place a fine filter on the comments, but presented all thoughtful recommendations in this chapter. Although the Administration supports a number of changes similar to those discussed in this section, the recommendations listed in this chapter are strictly those of the submitters, not the Administration.

Chapter VI explains proposals included in SAFETEA that U.S. DOT believes will help overcome some of the impediments identified in this report. These SAFETEA proposals include: amendments to TIFIA; a commercialization of rest areas pilot program; environmental streamlining proposals; expanded tolling programs; amendments to the design-build statute; and expanding the use of private activity bonds to include highway and freight transfer facilities.

CHAPTER II. PUBLIC-PRIVATE PARTNERSHIPS—HISTORY AND INITIATIVES

> "... [G]iven the fact that there are just limited financial resources all the way around, I think the need for [public-private partnerships] is going to grow much more in the future. When you think about the amount of money that goes into research and development on specific transportation modes or when you think about the long time line it takes in terms of trying to build infrastructure and especially where we're trying to -- lessen the gap between the demand for transportation and the ability of our transportation infrastructure to supply that demand, that it really requires public-private partnerships both in money, thought, and effort."—U.S. DOT Secretary Norman Y. Mineta.[5]

Transportation profoundly affects our well-being, development, growth patterns, and quality of life. Improved highway and transit facilities help National, State, regional, and local economies grow by increasing productivity, attracting new businesses, and providing access to new markets. A sound transportation system must grow as our society and economy expand. It must be kept up to the modern standards and be well maintained. Unfortunately, public surface transportation needs are far outpacing delivery of transportation projects. Thus, to keep our system vibrant, new ways to build and operate the system must be found. The U.S. DOT is committed to providing a greater role for the private sector in transportation services and infrastructure investment to supplement Federal, State and local spending for capital investment in our Nation's infrastructure. Coupling private capital and private initiatives with public transportation efforts produces more and better facilities for the traveling public.

One aspect of the transit program applies directly to this goal, by supporting joint development activities – the common use of land around a transit station for both transit purposes and related development activities. At its most advanced, this has resulted in whole neighborhoods being developed around, and depending upon, a public transportation station. In the current state of the practice, it has ranged from one-time fees for connections to major shopping centers (such as Mazza Gallerie in Washington, DC) to private construction of office buildings on top of a rail station (as with Dadeland North, in Miami). The optimal combination of public transportation investment with private sector investment results in entire corridors—such as the Ballston Corridor in Arlington, Virginia—being re-invented into places where people want to live, work, and recreate, and where the transportation system provides access and convenience for all of the traveling public.

[5] Norman Y. Mineta, Secretary of Transportation, interview by Rebecca Roberts, http://www.pbs.org/kged/springboard/segments/48/interview.html (accessed May 27, 2004, site now discontinued).

This chapter will define a public-private partnership and will discuss the history of public-private partnerships in both highway and transit construction. Additionally, initiatives to promote public-private partnerships, undertaken by the FHWA and the FTA, will be discussed.

A. Public-Private Partnership Defined

For purposes of this report, U.S. DOT has adopted the following definition of a public-private partnership: A public-private partnership is a contractual agreement formed between public and private sector partners, which allows more private sector participation than is traditional. The agreements usually involve a government agency contracting with a private company to renovate, construct, operate, maintain, and/or manage a facility or system. While the public sector usually retains ownership in the facility or system, the private party will be given additional decision rights in determining how the project or task will be completed. The term public-private partnership defines an expansive set of relationships from relatively simple contracts, e.g., A+B contracting, to development agreements that can be very complicated and technical, e.g. design-build-finance-operate-maintain. In the context of this report, the term public-private partnership is used for any scenario under which the private sector would be more of a partner than they are under the traditional method of procurement. Further, this broad definition of public-private partnerships includes many elements that are being utilized on a more routine basis.

Traditional transportation projects financed from fuel tax and other highway user fees have the greatest public sector roles and the least private sector participation. In these projects, the role of the private sector is limited to entering into design and construction contracts with the State to build roads. Public-private partnerships usually involve a government agency contracting with a private company to renovate, construct, operate, maintain, and/or manage a facility or system. While the public sector usually retains ownership in the facility or system, the private party will bear additional risks or be given additional decision rights in determining how the project or task will be completed. The term public-private partnership defines an expansive set of relationships from relatively simple contracts, such as contracts where the private sector assumes the risks of delays in schedule through financial incentives and penalties. On the other end of the spectrum, it includes very complicated and technical development projects, where the private sector builds, owns, and operates a transportation facility. In the context of this report, the term public-private-partnership is used for any scenario under which the private sector would be more of a partner than they are under the traditional method of procurement.

Public-private partnerships generally fall into one of five categories, based on the reasons for their creation. The five key public-private partnership categories are:

1. Partnerships designed to accelerate the implementation of high priority projects by packaging and procuring services in new ways;
2. Partnerships that turn to the private sector to provide specialized management capacity for large and complex programs;

3. Partnerships focused on arrangements to facilitate the delivery of new technology developed by private entities;
4. Partnerships drawing on private sector expertise in accessing and organizing the widest range of financial resources; and
5. Partnerships to allow and encourage private entrepreneurial development, ownership, and operation of highways and/or related assets.[6]

Some partnership arrangements may involve several or all of these functions. Regardless of the specific functions involved, partnership arrangements are intended to provide greater flexibility to achieve transportation program objectives by altering traditional public and private sector roles to take better advantage of the skills and resources that private sector firms can provide.[7] However, even when the private sector has a high level of participation, the government will continue to play a role in granting permits, ensuring safety, verifying fulfillment of environmental requirements, or even exercising its power of eminent domain to obtain land for rights-of-way.[8]

In between the extremes of public and private provision of roads are partnerships between government and private firms for building transportation projects. The roles and responsibilities of each partner in financing the project are specified in contracts between the parties, as illustrated by Figure 2.1. In the majority of cases, the private sector risks some capital and is rewarded if the investment is successful. The partners often form a new entity—either a special-purpose government agency or a private, nonprofit corporation—to finance and oversee the project. Another nontraditional arrangement is that of a government contracting with a private firm to operate and maintain a roadway that the government has built. Great Britain is experimenting with such a form on a limited basis, but the United States has yet to explore its possibilities in any systematic way. [9]

[6] National Council for Public Private Partnerships, AECOM CONSULT, and Parsons Brinckerhoff, Ltd., "Partnerships in Transportation Workshops, Final Report" prepared at the request of the Federal Highway Administration, March 17, 2004, 2.
[7] Ibid.
[8] Congressional Budget Office, *Innovative Financing of Highways: An Analysis of Proposals*, January 1998, 2. http://www.cbo.gov/showdoc.cfm?index=320&sequence=0.
[9] Ibid.

Figure 2.1
Sponsors and Features of Highway Financing[10]

Sponsor	Major Features of Financing	Examples
Private Equity Investors	Finance and develop the project using primarily private resources	Dulles Greenway (Virginia) 91 Express Lanes project (California) SR-125 South Toll Road (California)
Private, Nonprofit Entity	Issues tax-exempt debt backed by tolls (and without recourse to taxes) and oversees the project under the terms of the agreement between the state and the private developer	TH 212 (Minnesota) Southern Connector (South Carolina) Interstate 895 (Virginia)
Special-Purpose Public Agency	Issues tax-exempt debt backed by tolls (and without recourse to taxes) and oversees the project under the terms of the agreement with a private developer	E-470 (Colorado) Orange County, California, transportation corridor agencies
State Agency	Issues tax-exempt debt backed by tolls (and without recourse to taxes)	Some turnpikes
State Agency	Issues tax-exempt debt backed by taxes	Most highway projects that are financed by debt
State Agency	Finances highway on a pay-as-you-go basis using state taxes and fees plus federal aid	Most highways

[10] Ibid. Some of the information contained in this table was updated by FHWA.

In addition to private sector involvement in financing the project, a variety of contracting methods also can increase the level of private sector involvement in surface transportation construction. Figure 2.2 describes the name of the contracting method, the major features of the contracting methods, including the level of public and private sector involvement, and examples of projects for which the contracting method was used. These contracting methods are further discussed in Chapter III.

Figure 2.2
Contracting Methods Involving Different Levels of Private Involvement

Contracting Method	Major Features of Contracting Method	Examples
Purely Private Project	There is virtually no involvement by the public sector in the project and no contract or other formal agreement between the public and private sectors.	Dulles Greenway (Virginia).
Design, Build, Finance, Operate (concession or franchise)	Under the DBFO contracting method the private sector is responsible for all or a major part of project financing as well as facility design, construction, operation, and maintenance. Typically the facility reverts to the State after 25+ years. Revenues to the private sector can come from direct user charges, payments from the public sector, or both. Operations typically would be covered by performance incentives, and contracts would have to include such things as maximum rate of return, non-compete clauses, and maximum toll rates, etc.	SR-91and SR-125 (California) Southern Connector Toll Road (South Carolina), Massachusetts Rt. 3, Las Vegas monorail.
Design, Build, Operate, Maintain (concession or franchise)	This is similar to the DBFO contract, but involves a lesser role by the private sector in project finance. Like the DBFO, the private sector assumes major responsibilities for project design, construction methods, operations, and maintenance. Payments from the public sector may include performance incentives/disincentives for operational performance and physical condition.	Central Texas Turnpike Project, Hudson Bergen Light Rail (New Jersey), I-15 (Utah), Seattle monorail.

Design, Build, Warrant	Based on general information concerning the type of facility desired and the performance expected from that facility, the private sector is given the responsibility for design and construction of the facility. This promotes innovation in design and efficiencies in the construction process since the same firm or group of firms are responsible for both design and construction. In many cases the private sector will provide a warranty for key components of the project. The private sector may or may not participate in project financing.	Pocahontas Parkway (Virginia), San Joaquin Hills Toll Road (California). Many States have experimented with design build for large or complex projects. Other States, like Florida, use design-build almost on a routine basis.
Asset Management Contract	This type of contract is used for long-term maintenance and/or operation of an existing facility or system of facilities. The private sector typically would be responsible for financing needed improvements and would be paid a fee by the public sector for doing so. The fee may include performance incentives or disincentives. Experience to date is that private sector management contracts can often result in substantial cost savings over traditional public sector management of the road system.	Texas, Virginia, Florida.
A+B Contracting	This is a modification of the traditional design, bid, build contract in which the private contractor bids both the project cost (A) and the time to complete the project (B). The contractor assumes the risk of not completing the project in the specified time, and bonuses for early completion or penalties for late completion typically are included.	Used most frequently for major highways where completion time is a critical element.
Traditional Design, Bid, Build Contract	Public agency designs the project and awards construction contract to private sector. Very little opportunity for innovation or efficiencies.	Most highways.

B. History of Public-Private Partnerships

Public-private partnerships are not a new concept to transportation infrastructure development. For highways, the private sector historically had an important role in highway construction operation and financing. Although the role of the private-sector in highway financing and operation declined in the mid-part of the 19th century, in the late 1980's, private-sector involvement in these cases remerged. As Federal and State highway funding becomes more constrained, and as the need for highly efficient surface transportation systems continue to grow, the role of the private sector will continue to reemerge. This section will discuss the history of public-private partnerships in highway and transit development.

i. Highways

The role of the private sector in public transportation dates back to the beginning of road construction in the United States. Many of the earliest major roadways in the U.S. were private toll roads. In the early years of the Republic the importance of highways for westward expansion and trade was recognized and an era of road building began. This period was marked by the development of private turnpike companies, to construct essential highways that would be operated as toll roads.

In 1792, the first turnpike was chartered and became known as the Philadelphia and Lancaster Turnpike in Pennsylvania. The boom in turnpike construction resulted in the incorporation of more than 50 turnpike companies in Connecticut, 67 in New York, and others in Massachusetts and around the country.

Over time private involvement in highway infrastructure investment and operation declined as States and the Federal government increased the pace of road construction to open new lands and increase economic development. In 1806, the Federal government passed legislation to fund the National Road, also known as the Cumberland Road. This road stretched from Maryland through Pennsylvania, over the Cumberland Mountains, to the Ohio River.

The Federal-aid Highway Act of 1916 was a landmark piece of legislation that authorized $75 million for use on highways primarily in rural areas. It required each State to have a State highway agency with engineering professionals to carry out the Federal-aid highway program. This provision led to the formation of State Highway Departments in all States and further institutionalized the role of the State in providing major highways. The relationship between the new State Highway agencies and the Federal government that followed from the 1916 Act was strengthened by the Federal-Aid Highway Act of 1921, which created the State/Federal partnership—the hallmark of the program to this day.

Another major development was the use of fuel taxes to finance Federal and State highway programs. Beginning in the early 1900s, States and the Federal Government have increasingly relied on fuel taxes and other user fees to finance highway construction

programs. The first Federal fuel tax was levied in 1932 at the rate of 1 cent per gallon. The rate varied between 1 and 2 cents per gallon until 1956 when the Highway Trust Fund was created. Since then, the Federal tax rate increased to its current level of 18.4 cents per gallon on gasoline, but the last excise tax increase was more than ten years ago. State fuel tax rates have followed a similar pattern.[11] During the era of Interstate Highway System construction, motor fuel tax increases were much easier to get approved than during the post-Interstate era when many States have had difficulty getting fuel tax increases approved by the electorate. The use of Federal user taxes like the fuel tax did not begin until July 1, 1956 (the first day of FY 1957). While the Federal fuel tax has indeed existed since 1932 and vehicle related taxes began even earlier in 1917, there was no connection between the revenue raised and highway funding.

Immediately after World War II, States increasingly recognized that modern, high quality highway systems were needed to meet growing demands for personal and commercial travel. The Pennsylvania Turnpike was the first of the modern highways to be constructed, and it was an immediate success. Between 1945 and 1955, many States, mainly located in the North and East, began to build turnpikes on their primary intercity travel corridors. These turnpikes typically were administered by public turnpike commissions or turnpike authorities that usually were not part of the State highway agency, but were separate State agencies. They were not private enterprises as many of the earlier turnpike companies had been. The tradition of publicly-provided highways had become so deeply ingrained that few thought of involving the private sector in financing and operating highways. But, States also recognized that motorists were willing to pay tolls for the comfort, convenience and speed provided by the new turnpikes. By issuing bonds and charging tolls States could construct the needed highways much sooner than if they had to finance them primarily from fuel tax revenues.

Indeed, the Federal-Aid Highway Act of 1956, although allowing 2102 miles of existing toll roads to be incorporated into the original Interstate System, prohibited the use of Federal-aid funding for the construction of new toll Interstate highways. Tolls were only permitted on new bridges, tunnels, and approaches, provided an agreement was signed that would require these facilities to become free upon collection of sufficient tolls to liquidate any outstanding debt ("free-up agreements"). Federal law has changed a number of times since 1956, with regard to the use of Federal-aid funding on the Interstate System and on other highway facilities. Currently, 23 U.S.C 301 continues to restrict tolling on federally aided facilities, except as provided under 23 U.S.C. 129 and two pilot programs.

Once construction of the Interstate System began, proposals for additional toll roads languished. By 1963, the last of the toll roads planned before Interstate System construction began opened, and few additional proposals were seriously considered for many years.

[11] It should be noted that some State fuel taxes are deposited in a State general fund, rather than a dedicated transportation fund.

In the late 1980s some States began exploring the potential for the private sector to augment State highway construction programs. About this time, States also began exploring ways to expedite highway construction while maintaining quality and reducing the impact on the traveling public. Under the auspices of FHWA's SEP-14, created in 1990, States began to evaluate several potential contracting options, including cost-plus-time bidding, lane rental, and the use of warranties for specific project features. States also began evaluating the use of design-build contracting, especially for the more complex projects that are being constructed today to shift cost exposure to the private sector design-build contractor. Use of alternative contracting techniques continues to grow around the country, primarily for projects with tight timetables or high impact on the traveling public.

In 1991, ISTEA was enacted and established a new vision for surface transportation in the United States. ISTEA permitted the use of tolls to a much greater degree on Federal-aid facilities, including allowing Federal-aid to be used to construct new, non-Interstate System toll highways. This expansion of the use of tolls also included a congestion pricing pilot program. For the first time, private entities were allowed to own toll facilities and States were allowed to loan the Federal share of a project's cost to another public agency or private entity constructing the project. This trend in giving States greater flexibility in utilizing innovative financing and operating methods continued with subsequent surface transportation acts. These further advances will be discussed later in this chapter.

ii. Transit

Public transportation in the United States was first developed by the private sector, starting with local and intercity coach (horse and carriage) services in the nineteenth century. Eventually it evolved into horse-drawn cars (trolleys) on rails, then electrified trolley and interurban transit systems. Many American cities initiated their electric service for homes and businesses on the spine of private trolley operations. Also, since many of the first trolley and interurban rail systems were developed to service real estate developments, the private sector had a significant hand in the creation and formation of many new towns and cities. However, by the late 1950's most transit systems were in decline and they were taken over by their respective local governments. Today, the primary public/private partnership is in the provision of transit service under contract. The municipal entity contracts for some or all of its bus, rail or demand responsive service with a private sector provider.

Another activity that continues is the development around public transportation facilities. Congressman Andrew Young of Georgia inserted language in the National Urban Mass Transportation Act of 1974 (Public Law 93-503) that made certain kinds of transportation projects eligible for Federal reimbursement. Specifically, Section 3(a)(1)(D) provided Federal assistance for:

> "transportation projects which enhance the effectiveness of any mass transportation project and are physically or functionally related to such mass transportation project

> or which create new or enhanced coordination between public transportation or incorporate private investment including commercial and residential development…"

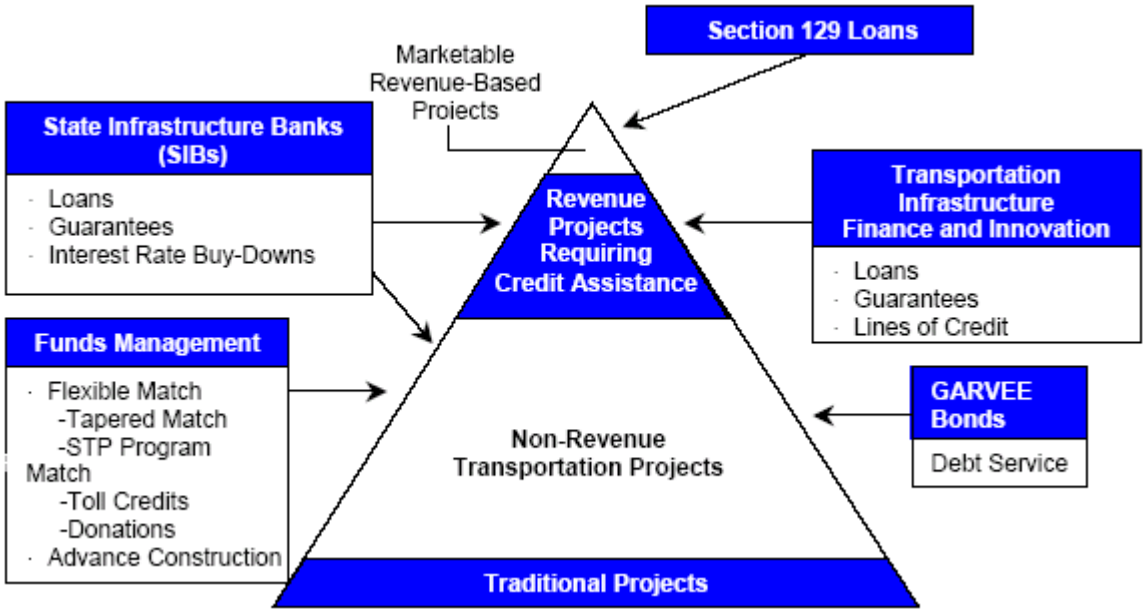
This kind of activity came to be known as "Joint Development" because it involved the joint use of public transportation property for development as well as public transportation service. Many communities are now using their transit stations and surrounding land for development. This may come about through a land sale to a private developer, but often it results from a partnership, where the transit agency builds part of a facility which the private developer finishes. The developer will pay the transit agency a market-based ground rent or provide a combination of rent and in-kind services.

In recent years, procurement has been an area of activity in which public-private partnerships could be fostered, as with Design-Build project development.

C. FHWA Initiatives to Promote Public-Private Partnerships

Over the last several years, interest in pursuing public-private partnerships has reemerged. The FHWA and FTA have undertaken a number of initiatives to explore the efficacy of public-private partnerships. Included in these initiatives are a number of Federal financing tools, as well as innovative contracting and management techniques. Some of these initiatives were developed within FHWA and FTA and others were developed pursuant to legislative direction. Figure 2.3 depicts these tools as a pyramid with the market-based projects appearing at the top of the pyramid (since there are fewer of these types of projects) and traditional, non-revenue transportation appearing at the bottom part of the pyramid, since most surface transportation projects fall into this category.

Figure 2.3
Federal Finance Tools for Surface Transportation Projects



The types of public-private partnership mechanisms that FHWA and FTA have explored and that are described below fall generally into two categories: innovative contracting methods through which the private-sector assumes greater risks or decisionmaking roles, and financing tools through which the private sector helps provide access to sources of funding other than Federal funds. In addition, this section describes other activities undertaken, such as workshops and a task force to explore the viability of public-private partnerships.

i. Innovative Contracting—Special Experimental Project (SEP-14)

The FHWA established SEP-14 in 1990 at the recommendation of the Transportation Research Board. The purpose of SEP-14 is to identify, evaluate, and document innovative contracting practices that have the potential to reduce the life cycle cost of projects while maintaining product quality. Within the regulatory requirements of the Federal-aid highway program, there is some degree of flexibility and thus SEP-14 was developed to provide the States with a vehicle to explore new concepts in construction contracting. These concepts often involve new and expanded roles for the private sector, and many also provide strong performance incentives for the private sector. Most projects undertaken under the SEP-14 program, however, have not involved private sector financing of highway projects. Even when no private money is directly involved in the construction and operation of the SEP-14 projects, many of the special construction techniques used place far greater responsibilities on the contractor. Thus, because of the

greater role assumed by the private sector, they are considered public-private partnerships in this report.

The FHWA initially approved several contracting techniques for evaluation under SEP-14:

- *Cost-Plus-Time Bidding* (also known as A+B Bidding), a contracting method that considers the time needed to complete the project in addition to the project cost. This type of contracting shifts the risks of failing to meet project deadlines to the private contractor;
- *Lane Rental* is a concept to encourage contractors to minimize road user impacts during construction. Under the lane rental concept, a provision for a rental fee assessment is included in the contract. The lane rental fee is based on estimated cost of delay or inconvenience to the road user during the rental period. The fee is assessed for the time that the contractor occupies or obstructs part of the roadway and is deducted from the monthly progress payments;
- *Design-Build Contracting*, which allows a single contract for both the design and construction of a project. This type of contract gives the private contractor a greater decisionmaking role in project development; and

- *Warranty Clauses*, a contracting mechanism by which the private contractor provides assurances that it will correct failures in materials or workmanship for a certain period of time. This mechanism shifts the risk of maintaining an acceptable level of project quality to the private contractor.

In the early 1990s, the FHWA gave SEP-14 approval to hundreds of cost-plus-time bidding, lane rental and warranty projects. Since 1990, over 300 design-build projects have been approved under SEP-14. Most States have used at least one of the innovative practices under SEP-14. In 1995, based on the collective experience of the States, the FHWA decided that cost-plus-time bidding, lane rental, and warranty clauses were techniques suitable for use on a nonexperimental, operational basis.

On December 10, 2002, based on its experience with SEP-14 and as required by section 1307 of TEA-21, the FHWA issued a final rulemaking for the design-build contracting method. In keeping with the definition of a "qualified project" in section 1307, the FHWA Division Administrators were delegated the authority to approve design-build projects greater than $50 million on an operational basis and smaller design-build projects on an experimental basis under SEP-14. The FHWA's 2002 final rule has two provisions that have a significant bearing on the use of Federal-aid highway funds and the Federal-aid approval process as it relates to the most innovative public-private partnerships. These two provisions are as follows:

- 23 CFR 636.109 describes the FHWA's policy for the release of the Request-For-Proposal document in the typical design-build procurement process relative to the

conclusion of the NEPA review process. This policy prohibits the release of a RFP prior to the conclusion of the NEPA process.

- 23 CFR 636.119 sets forth the Agency's contracting policies for design-build contracts. This policy requires contracting agencies to include price competition in the procurement process as a condition of receiving Federal-aid. If the contracting agency enters into a public-private agreement that does not assign price and risk, then the private entity (i.e., the developer) is considered to be an agent of the owner. As such, the "agent of the owner" must comply with the FHWA's requirements for construction or design-build contracts to ensure adequate price competition when subletting any work under the public-private agreement. If the public-private agreement assigns price and risk, then the developer is considered to be a design-builder and all subsequent contracts are considered to be subcontracts that are not subject to Federal-aid procurement requirements.

The design-build regulations were crafted for the typical design-build project. For example, the provision contained in Section 636.109 regarding prior completion of the NEPA process is appropriate for most design-build projects where project concepts are well developed before the design-build contract is let. However, a few public-private partnerships are formed before project concepts have developed to a point where they can be analyzed in a NEPA document. In these unusual cases, the FHWA believes further flexibility may be warranted.

Therefore, in two cases, the FHWA again used SEP-14 to allow States to try alternative approaches. On February 27, 2004 the FHWA approved the Texas Department of Transportation (TxDOT) request for a waiver of many of the FHWA's design-build requirements for the I-35 High Priority Trans-Texas Corridor Project. This waiver is significant in two important aspects. First, it will allow TxDOT to proceed with the procurement of the project developer in advance of the conclusion of the NEPA review process. To maintain an independent, unbiased NEPA review process, the TxDOT has contracted with an independent consultant to assist in the development of the NEPA document. Secondly, the I-35 waiver will also allow TxDOT to proceed with the procurement of the corridor developer at a very early stage in the project development process. It is expected that the final executed development agreement will contain provisions for the negotiation of scope and price as the project develops. Prior to executing the development agreement, the TxDOT and the FHWA Texas Division will develop formal procedures for verifying price reasonableness and developing an independent estimate. This procedure should ensure fair pricing for all work done under the development agreement. In addition, the FHWA allowed the Virginia DOT to proceed with the procurement of the I-81 corridor project subject to compliance with NEPA requirements.

It is anticipated that the use of public-private partnerships will continue to grow and the FHWA will support these projects with the appropriate SEP-14 related measures when necessary.

ii. Innovative Finance Program—Test and Evaluation Project (TE-045)

In response to Executive Order 12893 ("Principles for Federal Infrastructure Investment"), which establishes cost-effective infrastructure investment as priority for Federal agencies, and in recognition of the need to explore new financing strategies, the FHWA announced the Innovative Finance Program—Test and Evaluation Project (TE-045) in a *Federal Register* notice dated April 8, 1994. The term "innovative finance" describes techniques that supplement traditional highway financing methods. These techniques can provide mechanisms for the direct investment of private sector funds in a surface transportation project. They also may lay the foundation for a public-private partnership by providing a ready and secure source of funds that make a project more likely to attract private involvement. Alternatively, these financing techniques might precipitate the creation of a public-private partnership by providing funds for such a large project or number of projects that private sector involvement is needed to provide additional management and staff to supplement State resources.

The innovative financing program was established using statutory authority granted under Section 307(a) of title 23 of the U.S. Code (now 23 U.S.C. 502). Section 307(a) permits the FHWA to engage in a wide range of research projects, including those related to highway finance. As part of this research effort, the FHWA tested selected policies and procedures so that specific transportation projects could be advanced through the use of non-traditional financing concepts, many of which were later enacted into law in the National Highway System Designation Act of 1995.[12] These non-traditional funding concepts included applying private funds to the State match or allowing partial obligations on advance construction projects.

TE-045 was initially designed and subsequently implemented to give States a forum in which to propose and test those financial strategies that best met their needs to facilitate infrastructure investment. Projects advanced under TE-045 were identified by State-level decisionmakers as projects needing improvements, but facing real world barriers to financing. Since TE-045 did not make new Federal money available, its primary focus and ultimate measure of success was its ability to foster the identification and implementation of new, flexible strategies to overcome fiscal, institutional, and administrative obstacles faced in funding transportation projects.[13]

Throughout this process, the FHWA emphasized four overriding objectives: to increase investment, to accelerate projects, to improve the utility of existing financing opportunities, and to lay the groundwork for long-term programmatic changes. Two hallmark characteristics of the initiative have been to accomplish these ends through a

[12] National Highway System Designation Act of 1995, Pub. L. No. 104-59, §§308, 311, 313(b), and 322, 109 Stat. 568, 582-585 and 591 (1995).
[13] Infrastructure Management Group, Inc. and Maryland and Government Finance Group, Inc., *An Evaluation of the TE-045 Innovative Finance Research Initiative* prepared at the request of the Federal Highway Administration, October 1996,Chap. 1, http://www.fhwa.dot.gov/innovativefinance/evalcov.htm.

State-driven process, and to accomplish them without the commitment of new Federal funds.[14]

Several types of financing tools were proposed by States and tested under TE-045. These include tools that provided expanded roles for the private sector in identifying and providing financing for projects, such as flexible matches and Section 129 project loans, which are discussed further in this chapter.

Although TE-045, by design, provided no new Federal funds to participating States, the initiative has nonetheless supported significant increases in investment levels. The use of investment tools such as flexible match and section 129 loans resulted in additional funding being available to accelerate high priority projects that would otherwise have been deferred, or used to advance projects that likely would never have been constructed in the absence of TE-045.[15] As of March 2004, more than 100 projects with a total construction value of $7 billion have been approved.

iii. Innovative Management of Federal Funds

This section discusses two innovative financing techniques: flexible match and toll credits. These two techniques enhance flexibility and maximize resources for highway projects that rely on grant-based funding. Although these techniques are not used exclusively for public-private partnerships, they can involve a significant role for the private sector.

1. Flexible Match

Flexible match allows a wide variety of public and private contributions to be counted toward the non-Federal match of Federal-aid projects. Flexible match allows States the opportunity to recognize the many tangible contributions made to the construction and maintenance of the highway system. States do not have to appropriate extra cash simply to use Federal-aid highway funds apportioned to them by law. The NHS Act and TEA-21 introduced new flexibility to the matching requirements for the Federal-aid program by allowing certain private donations of cash, land, materials, and services to satisfy the non-Federal matching requirement.

Flexible match provisions increase a State's ability to fund its transportation programs by:

- Accelerating certain projects that receive donated resources;
- Allowing States to reallocate funds to other transportation projects that otherwise would have been used to meet Federal-aid matching requirements; and
- Promoting public-private partnerships by providing incentives to seek private donations.

[14] Ibid., Executive Summary.
[15] Ibid.

In Maine, flexible match was used to advance the construction of an Auburn intermodal truck/rail transfer facility. The State of Maine partnered with local rail lines to build the truck-to-rail transfer facility in Auburn, about 40 miles north of Portland. The facility, now known as the Maine Intermodal Terminal, is a successful public-private partnership that was funded in large part—approximately $3 million—by the Congestion Mitigation Air Quality Improvement (CMAQ) program. The value of the private railroad's contribution of materials, equipment, and labor was credited toward the match.

2. Toll Credits

States may apply toll revenues used for capital expenditures to build or improve public highway facilities to earn toll credits. Toll credits are earned when a State, a toll authority, or a private entity funds a capital highway investment with toll revenues from existing facilities. The amount of toll revenues spent on non-Federal highway capital improvement projects earns the State an equivalent dollar amount of credits. To earn toll credits, States must pass an annual maintenance of effort test. By using toll credits to substitute for the required non-Federal share on a Federal-aid project, Federal funding can effectively be increased to 100 percent.

Toll credits provide States with more flexibility in financing projects. For example, by using toll credits, (1) Federal-aid projects can be advanced when traditional-matching funds are not available, (2) State and local funds normally required for matching may then be directed to other transportation projects, or (3) project administration may be simplified when a single funding source is used. States wishing to take advantage of the toll credit provision must apply toll revenues to capital improvements and meet the maintenance of effort test.

Toll credits are being used extensively by States with toll facilities. As of November 24, 2003, 21 States had accumulated $13.2 billion in toll credits. The credits are being applied in a variety of ways, depending on the State's needs. Missouri reserves its toll credits for situations where project matching funds are unavailable in order to effectively increase Federal funding to 100 percent of project costs. Ohio uses toll credits as a match on GARVEE projects and also shares its toll credits with local government agencies for both highway and transit projects. The Florida DOT has been applying toll credits on a statewide basis since 1993. Today Florida is using toll credits on almost every new Federal-aid project, so that most of its Federal highway program is effectively 100 percent federally funded, freeing up State dollars for State-administered projects. However, toll credits do not increase the funding available for transportation.

iv. Grant Anticipation Revenue Vehicles (GARVEEs)

A Grant Anticipation Revenue Vehicle or GARVEE is a debt financing instrument authorized under 23 U.S.C. 122. GARVEEs allow a State, a political subdivision of a State, or a public authority to pledge future Federal-aid highway funds to support the costs related to an eligible debt financing instrument, such as a bond, note, certificate, mortgage, or lease. States can utilize GARVEEs for a wide array of debt-related costs,

including interest payments, retirement of principal, and any other cost incidental to the sale of an eligible debt instrument, incurred in connection with an eligible debt financing instrument. GARVEEs essentially enable debt-related expenses to be paid with future Federal-aid highway apportionments. Although not available to private entities, they can facilitate the formation of public-private partnerships by making financing available for transportation projects in a way that could attract greater private sector involvement. GARVEEs can provide an immediate and reliable source of funds that would make a project more attractive to the private sector. In addition, by providing access to this additional funding, GARVEEs can enable States to move forward on a large number of projects within a compressed time period. These projects create a short-term need for additional staff and management of these projects. Since it would not be cost-effective for most States to hire additional staff that would only be needed for a short time, the private sector can be called upon to provide these additional resources during the most active design and construction phases of the projects.

In general, projects funded with the proceeds of a GARVEE debt instrument are subject to the same requirements as other Federal-aid projects with the exception of the reimbursement process. Instead of reimbursing construction costs as they are incurred, the reimbursement of GARVEE project costs occurs when debt service is due. It is important to note that, in order to issue GARVEE bonds, States or the issuing entity must have the appropriate State authorizations related to debt issuance. States have the flexibility to tailor GARVEE financings to accommodate State fiscal and legal conditions.

The GARVEE financing mechanism generates up-front capital for major highway projects at tax-exempt rates and enables a State to construct a project earlier than it could using traditional pay-as-you-go grant resources. With projects in place sooner, costs are lower due to inflation savings and the public realizes safety, reduced congestion, and economic benefits. By paying via future Federal highway reimbursements, the cost of the facility is spread over its useful life, rather than just the construction period. GARVEEs can expand access to capital markets, as a supplement to general obligation or revenue bonds.

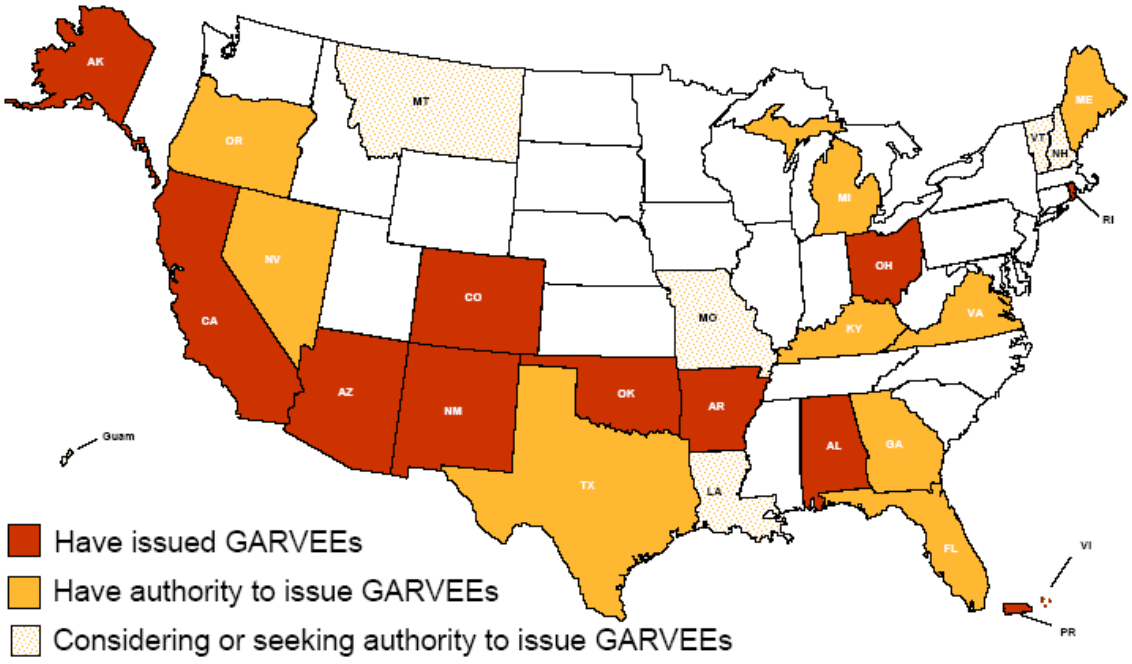
Candidates for GARVEE financing are typically large projects (or a program of projects) that have the following characteristics:

- The costs of delay outweigh the costs of financing;
- Other borrowing approaches may not be feasible or are limited in capacity;
- They do not have access to a revenue stream and other forms of repayment are not feasible; and
- The sponsors are willing to reserve a portion of future year Federal-aid highway funds to satisfy debt service requirements.

States are finding GARVEEs to be an attractive financing mechanism to bridge funding gaps and accelerate construction of major corridor projects. As of June 2004, 10 States and the Virgin Islands have issued just over $5 billion in GARVEE bonds. Figure 2.4 illustrates what States have issued GARVEEs, what States have the authority to issue

GARVEEs, and considering or seeking the authority to issue GARVEEs as of June 2004. Ohio, the first State to leverage Federal dollars through GARVEEs, sold five GARVEE issues in the FY 1998-2004 period, totaling $439 million. The proceeds of these issues are helping to finance Spring-Sandusky corridor improvements, the new Maumee River Bridge, and the Southeast Ohio Plan.

Figure 2.4
GARVEEs: State Participation as of June 2004



Colorado is advancing a multi-billion dollar program of strategic statewide projects, including the multimodal Southeast Corridor project, through GARVEE financings. As of May 2004, the Colorado Department of Transportation has sold $1.5 billion in GARVEEs in five separate issues. In Arkansas, a total of $575 million in GARVEE bonds were issued in the 2000-2002 period, to help accelerate the financing of 380 miles of Interstate system highway improvements.

GARVEE financing has raised some concerns about the degree to which the commitment of future Federal-aid highway dollars is mortgaging the future. Financing large projects by borrowing against the future can be an effective element of a State's transportation plan. However, borrowing imprudently can do damage in future years when major portions of Federal apportionments are used to pay back the GARVEE bonds and the market for smaller projects shrinks.[16] Recognizing this issue, most of the States with GARVEE enabling legislation have limits on the amount of GARVEE debt, such as a maximum amount that can be issued or coverage requirement tests.

[16] Comment provided by the Associated General Contractors of America.

v. Federal Credit Assistance

An increasing number of projects are being financed partially through some form of public credit assistance. Federal credit assistance programs include section 129 loans; low-interest loans, loan guarantees, and other credit enhancements from State Infrastructure Banks (SIBs); and credit assistance under the Transportation Infrastructure Finance and Innovation Act (TIFIA) program.

1. Section 129 Loans

Section 129 loans allow States to use regular Federal-aid highway apportionments to fund loans to projects with dedicated revenue streams.[17] A State may directly lend apportioned Federal-aid highway funds to toll and non-toll dedicated revenue projects. A recipient of a section 129 loan can be a public or private entity and is selected according to each State's specific laws and process. A dedicated repayment source must be identified and a repayment pledge secured. The Federal-aid loan may be for any amount, up to the maximum Federal share of 80 percent of the total eligible project costs. A loan can be made for any phase of a project, including engineering and right-of-way acquisition, but cannot include costs that were incurred prior to loan authorization. A State can obtain immediate reimbursement for the loaned funds up to the Federal share of the project cost. Loans must be repaid to the State, beginning five years after construction is completed and the project is open to traffic. Repayment must be completed within 30 years from the date Federal funds were authorized for the loan. States have the flexibility to negotiate interest rates and other terms of section 129 loans. The State is required to spend the repayment funds for a project eligible under title 23, United States Code. A section 129 loan serves as a project specific "mini-revolving loan fund" that recycles funds that are loaned to project sponsors by the State department of transportation. In all other ways, such repaid or revolving funds lose their character as Federal funds. This is a difference between section 129 funds and most SIBs.

States can use section 129 loans to assist public-private partnerships, by enhancing start-up financing for toll roads and other privately sponsored projects. Because loan repayments can be delayed until five years after the project is open to traffic, this mechanism provides flexibility during the start up period of a new toll facility. Loans can also play an important role in improving the financial feasibility of a project by reducing the amount of debt that must be issued in the capital markets. In addition, if the section 129 loan repayment is subordinate to debt service payments on revenue bonds, the senior bonds may be able to secure higher ratings and better investor acceptance.

If a project meets the test for eligibility, a loan can be made at any time. Federal-aid funds for loans may be authorized in increments through advance construction procedures, and are obligated in conjunction with each incremental authorization. The

[17] 23 U.S.C. §129(a)(7) (2004).

State is considered to have incurred a cost at the time the loan, or any portion of it, is made. Federal funds will be made available to the State at the time the loan is made.

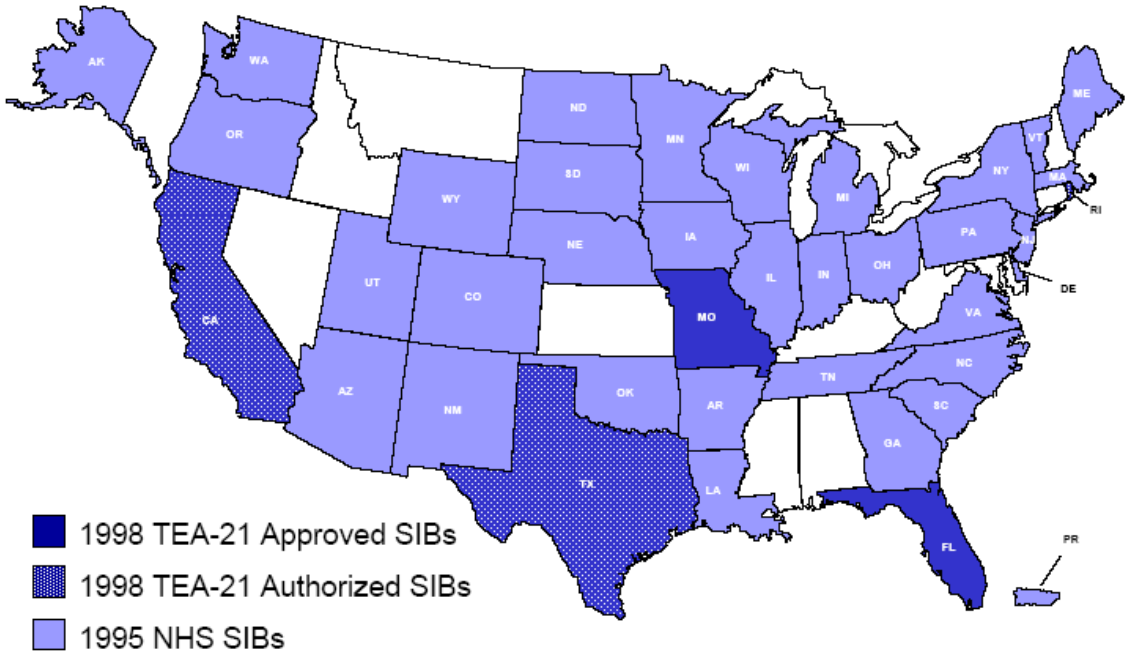
The President George Bush Turnpike Project in Texas exemplifies how a section 129 loan can play an essential role in the total financing package. This project links four freeways and the Dallas North Tollway to form the northern half of a circumferential route around the City of Dallas. Primary funding for this $940 million project included a low interest, long-term section 129 loan and revenue bonds. This $135 million loan was critical in ensuring the affordability of the project's senior bonds. Completion of this important beltway extension will be accomplished at least a decade sooner than would have been possible under traditional pay-as-you-go-financing. This project is the only project that has utilized a loan under 23 U.S.C. 129.

2. State Infrastructure Banks (SIBs)

State Infrastructure Banks (SIBs) are revolving funds administered by States that support surface transportation projects. A SIB functions much like a bank by offering loans and other credit products to public and private sponsors of title 23, United States Code, highway construction projects or title 49, United States Code, transit capital projects. Federally capitalized SIBs were first authorized under the provisions of the NHS Act.[18] The pilot program was originally available to only 10 States, and was later expanded to include 38 States and Puerto Rico (See Figure 2.5).[19] The TEA-21 established a new pilot program for the States of California, Florida, Missouri, and Rhode Island. Texas was subsequently added to the TEA-21 pilot program.[20] The initial infusion of Federal funds and State matching funds was critical to the start-up of a SIB, but States have the opportunity to contribute additional State or local funds to enhance capitalization. For the two SIBs authorized by TEA-21, Federal funds do not lose the Federal character when reused or revolved to a subsequent project. Retaining their Federal character means that Federal grant requirements apply to loans made from these reused or revolved funds. For the 39 federally-approved SIBs under the NHS Act, Federal grant requirements do not apply to reused or revolved funds.

[18] National Highway System Designation Act of 1995, Pub. L. No. 104-59, §350, 109 Stat. 568, 618-622 (1995).
[19] California, Florida, Missouri, Rhode Island, and Texas are the only States with SIBs authorized under both the NHS Act and TEA-21.
[20] Department of Defense and Emergency Supplemental Appropriations for Recovery from and Response to Terrorist Attacks on the United States Act, 2002, Pub. L. No. 107-117, § 1108, 115 Stat. 2230, 2332 (2002).

Figure 2.5
State Infrastructure Banks: Pilot Program Participation as of March 2004



SIB assistance may include loans (at or below market rates), loan guarantees, standby lines of credit, letters of credit, certificates of participation, debt service reserve funds, bond insurance, and other forms of non-grant assistance. As loans are repaid, a SIB's capital is replenished and can be used to support a new cycle of projects.
SIBs can also be structured to leverage additional resources. A "leveraged" SIB would issue bonds against its future revenues, increasing the amount of funds available for loans.

SIBs complement traditional funding techniques and serve as a useful tool to meet project financing demands, stretching both Federal and State dollars. The primary benefits of SIBs to transportation investment include:

- Flexible project financing, such as low interest loans and credit assistance that can be tailored to the individual projects;
- Accelerated completion of projects;
- Reduced congestion and travel delays;
- Incentive for increased State and/or local investment;
- Enhanced opportunities for private investment by lowering the financial risk and creating a stronger market condition; and
- Recycling of funds to provide financing for future transportation projects.

Additionally, using SIB funding increases efficiency in investment because it loosens Federal constraints on a State's choice of projects, because the Federal funds used to capitalize the SIB are available to fund any project eligible under title 23, United States Code.[21] With fewer restrictions on its decisions, a State is free to choose projects with the highest overall economic returns and not just the highest returns within each category of Federal aid, as traditional financing would require.[22]

While the authorizing Federal legislation establishes basic requirements and the overall operating framework for a SIB, States have customized the structure and focus of their SIB programs to meet State-specific requirements.

A variety of types of financing assistance can be offered by a SIB, with loans being the most popular form of SIB assistance. As of March 31, 2004, 32 States had entered into 373 loan agreements with a dollar value of almost $4.8 billion.

3. Transportation Infrastructure Finance and Innovation Act (TIFIA)

The TIFIA program, which was enacted in 1998 as part of TEA-21, allows U.S. DOT to provide direct credit assistance to sponsors of major transportation projects.[23] The TIFIA credit program offers three distinct types of financial assistance—direct loans, loan guarantees, and standby lines of credits. These instruments are designed to address the varying requirements of projects throughout their life cycles. The amount of Federal credit assistance may not exceed 33 percent of total eligible project costs. The TIFIA project sponsors may be public or private entities, including State and local governments, special purpose authorities, transportation improvement districts, and private firms or consortia.

Any type of project eligible for Federal assistance through existing surface transportation programs (both highways and transit) is eligible for TIFIA assistance. In addition, the following types of projects are eligible: international bridges and tunnels; intercity passenger bus and rail facilities and vehicles; and publicly-owned intermodal freight transfer facilities on or adjacent to the National Highway System.

Projects must meet certain threshold criteria to apply for TIFIA assistance. The project's estimated eligible costs must be at least $100 million or 50 percent of the State's annual Federal-aid highway apportionments, whichever is less, or at least $30 million for intelligent transportation systems (ITS) projects. The project must be supported in whole or part from user charges or other non-Federal dedicated funding sources and be included in the State's Transportation Improvement Plan. The project is subject to all Federal requirements.

---

[21] Congressional Budget Office, *Innovative Financing of Highways: An Analysis of Proposals*, January 1998, xi. http://www.cbo.gov/showdoc.cfm?index=320&sequence=0.
[22] Ibid.
[23] 23 U.S.C. §§181-189 (2004).

Qualified projects are evaluated and selected based on eight criteria. Before TIFIA assistance can be committed, the project must receive an investment grade rating on its senior obligations and have completed the Federal environmental review process.

TIFIA assistance provides improved access to capital markets, flexible repayment terms, and potentially more favorable interest rates than can be found in private capital markets for similar instruments. The TIFIA can help advance expensive projects that otherwise might be delayed or deferred because of size, complexity, or uncertainty over the timing of revenues. While TIFIA has been a valuable tool in developing projects, some TIFIA recipients have expressed concern that the credit approval process is too long and cumbersome.

The ability to use the TIFIA to partner with the Federal government for essential and costly projects improves access to the capital markets. Large, complex projects frequently encounter market resistance as a result of investor concerns about risk, particularly in the case of subordinate and secondary sources of capital. However, with the TIFIA, the government can be a flexible, patient investor by providing subordinate capital that may not be available through the capital markets on attractive terms. The flexibility provided by the TIFIA can then enable the senior debt to demonstrate higher coverage margins and attain investment-grade bond ratings. By facilitating the borrower's access to the capital markets through the TIFIA, major projects that might be delayed or accomplished with less efficiency can be advanced. Because TIFIA funding or credit assistance comes directly from U.S. DOT, projects built with TIFIA funding are subject to the Federal requirements applicable to regular Federal-aid projects. These Federal requirements also apply because of specific provisions in the TIFIA statute.[24]

Approved TIFIA projects range in cost from a $217 million intermodal facility improvement project to a $3.7 billion start-up toll road project. The TIFIA assistance is also being provided to transit and ferry systems, as well as bridge and rail corridor projects. Two of the approved projects are new toll facilities, including the 9.2-mile SR 125 South Toll Road in southern California and the toll road in central Texas that will span 122 miles. For these projects, the TIFIA credit assistance offers the project sponsors a way to boost debt service coverage and enhances senior obligations at an affordable cost. Also, flexible repayment terms will facilitate these toll financings, enabling a better match of loan repayments to expected revenue flows.

Because of their size, many of the approved TIFIA projects would have been either unfunded in the near term or had large funding gaps without TIFIA funding. For some projects, the TIFIA assistance enhanced market access and reduced borrowing costs; for others, it provided an alternative to grant funding, enabling the project sponsor to conserve regular Federal funds for smaller projects that could not be supported through user charges or dedicated revenue streams.

As of June 2004, $3.5 billion in TIFIA credit assistance has been made available to 11 projects, supporting over $15 billion in project costs.

[24] 23 U.S.C. § 182(c) (2004).

vi. Workshops and Conferences

In order to educate and discuss public-private partnerships, the FHWA has periodically held workshops to bring all partners—Federal, State, local, and private—together. Not only have these workshops helped to focus attention on public-private partnerships, they also have presented an opportunity to discuss lessons-learned and to explore improvements that can be made to assist the formation and success of public-private partnerships.

In November 1991, about one month prior to the enactment of the first post-Interstate highway act, the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), the FHWA convened a policy workshop about public-private partnerships. The purpose of the workshop was to focus attention on the broad range of issues and tradeoffs that may be associated with changes in public and private roles in the provision of transportation facilities and services.

The FHWA's dialogue on public-private partnerships explored a very broad array of opportunities and challenges, with discussion ranging from "how-to" issues, such as the public sector's role in overseeing subcontracts, to visionary possibilities of the private sector building and operating most projects and the public sector taking a subordinate role. Perspectives of a diverse group of workshop participants were shared with others in the FHWA's 1992 report, "Exploring Key Issues in Public-Private Partnerships for Highway Development."[25]

In November and December 2003, the FHWA sponsored three "Partnerships in Transportation Workshops" in Washington State, Minnesota, and Texas. A final report was issued on March 17, 2004, summarizing workshop discussions and conclusions.[26] Workshop participants included State and local elected officials, State and local transportation officials, and private sector representatives who have been involved in public private-partnerships. At the workshops, State transportation departments indicated the need for Federal leadership to forge and implement successful public-private partnerships. Despite significant experience with public-private partnerships since the 1991 workshop, some State transportation agency staff remained uncertain about public-private partnership basics, including how to select and define candidate projects, develop project solicitation documents, and negotiate with private entities. While some participants saw great revenue potential, others perceived public-private partnerships as the public sector abdicating its infrastructure responsibilities to private companies.

---

[25] Federal Highway Administration, *Exploring Key Issues in Public-Private Partnerships for Highway Development, Searching for Solutions: A Policy Discussion Series, No. 2*, (FHWA-PL-92-023), June 1992 .
[26] National Council for Public Private Partnerships, AECOM CONSULT, and Parsons Brinckerhoff, Ltd., "Partnerships in Transportation Workshops, Final Report" prepared at the request of the Federal Highway Administration, March 17, 2004.

Given the complexities that can emerge with public-private partnerships, many felt that States should start with less complex projects involving simpler partnership and financing arrangements. Other conclusions and recommendations from workshop participants included holding additional educational workshops and training, creating a series of case studies on successful public-private partnerships, and developing model State enabling legislation for public-private partnerships.

Annually, the FHWA co-sponsors with the American Road and Transportation Builders Association the annual Public-Private Ventures in Transportation Conference. The conference includes presentations of interest to public-private partnerships, and, as part of the conference, FHWA conducts a transportation finance workshop.

The FHWA also periodically sponsors a comprehensive Transportation Finance Conference with the Transportation Research Board. To date, three conferences have been held in 1997, 2000, and 2002. The objectives of these conferences are: (1) to educate Federal, State and local officials in new transportation infrastructure and operations financing mechanisms, their structure, and the benefits and costs of implementing such techniques; and (2) to explore the development of additional new funding mechanisms and sources. As part of these conferences, the FHWA holds pre-conference workshops on the state of the practice of transportation finance. Additionally, each year the FHWA conducts a transportation finance workshop during the annual meeting of the Transportation Research Board.

vii. Safe, Accountable, Flexible, and Efficient Transportation Equity Act of 2003 (SAFETEA)

On May 14, 2003, the Administration transmitted the Safe, Accountable, Flexible, and Efficient Transportation Equity Act of 2003 (SAFETEA) to the Congress for consideration.[27] This legislation included several proposals that would encourage the formation of public-private partnerships. Subsequently, both the House of Representatives and the Senate introduced their own surface transportation reauthorization proposals.[28] These Congressional proposals included several concepts that were part of the Administration's SAFETEA proposal. At the time of this report, Congress was still considering these surface transportation reauthorization bills. These provisions are discussed in greater detail in Chapter VI, U.S. DOT Recommendations.

viii. FHWA Public-Private Partnership Task Force

In October 2003, the FHWA formed a Public-Private Partnership Task Force, headed by the FHWA's Chief Counsel, to explore ways the FHWA could address impediments to the formation of public-private partnerships and actions the FHWA should take to encourage their formation. The Task Force consists of representatives from FHWA program offices and the policy office, and it has explored opportunities to assist States

[27] H.R. 2088, 108th Cong. (2003) and S.1072, 108th Cong. (2003).
[28] H.R. 3550, 108th Cong. (2003). The Senate amended S.1072 by striking the Administration's bill and substituting the Senate proposal.

interested in developing the use of public-private partnerships to meet growing demands for highway infrastructure.

State departments of transportation and the FHWA are structured generally to oversee highway contracts developed and bid under the traditional design-bid-build model. The vast majority of highway construction continues to be carried under this contracting model. Although this model is very efficient in monitoring traditional procurement methods, it allows little flexibility for projects that do not fall within the standard project requirements, and thus does not encourage innovation. The FHWA is rethinking its approach to innovative contracting and how it should oversee projects that are not procured under the traditional model. Issues that have been identified by the Task Force as potential impediments to public-private partnership formation that the FHWA should address include:

- Federal procurement rules that discourage the use of proprietary products;
- The requirements of FHWA's Design-Build regulation that prevent States from issuing requests for proposals until after the signing of a record of decision or other documents including the NEPA process;
- The organizational structure of the FHWA that does not provide a single point of contact for States advancing a public-private partnership;
- Improving training and communication to FHWA Division Administrators regarding the innovations allowed under current law and regulations, especially regarding the financing of projects and the environmental permitting and review process; and
- The need for high-level Federal support and endorsement of public-private partnerships to encourage States to experiment with these concepts.

The Task Force continues to explore ideas for improving the FHWA's support for public-private partnerships and plans on developing several new products by the end of 2004.

D. FTA Initiatives to Promote Public-Private Partnerships

Public-private partnerships in transit have taken three basic forms: private contracting of transit service; joint development; and turnkey procurements such as design-build or design-build-operate-maintain. Grant Anticipation Notes (GANs) or Bonds also have been used by public transit agencies to finance projects.

i. Private Contracting

Private contracting has supported public transportation service since the inception of the Urban Mass Transportation Administration (now the Federal Transit Administration (FTA)) in 1964. Although public transportation is now provided almost entirely through municipal and State funded entities, these same public transportation services could not

function without the private sector. Public transportation agencies regularly contract for revenue service, vehicle and non-vehicle maintenance, administrative and support services, and systems development.

1. Revenue Service

The private sector often bids for the provision of park and ride services, particularly for start-up commuter rail or commuter bus operations. In large urban systems peak-hour express services may be contracted out. Today, most paratransit services for the elderly and persons with disabilities are provided under contract, as are van-pool services. Finally, some cities contract for their fixed-route, local service. In some cases, this includes commuter rail services, such as in Dallas/Ft. Worth or South Florida. In rural public transportation service, over 57% of obligations ($48.9 million) were expended for contracted service in 2003.

2. Vehicle Maintenance

In some transit agencies the opportunity may exist to contract out the entire vehicle maintenance function, particularly in a start-up transit service or when the number of vehicles is too low to make a full maintenance function economic. Some of the most typical contracted functions include engine and component rebuilds, rehabilitation services including seat repair and body work, tire maintenance, and routine vehicle servicing (vacuuming, washing, etc.)

3. Non-vehicle Maintenance

As non-vehicle equipment and facilities have become more sophisticated, they have required more specialized service. Also, with the advent of modularized components, off-site or contracted maintenance of these items has become economically attractive. These systems include fare collection equipment, radio and communications systems, data processing and intelligent traveler information systems.

4. Administrative and Support Services

Computerization has led to remote processing of many functions, including accounting and payroll, employee benefits management, marketing, risk management, auditing, and other support services.

5. Systems Development

Beginning with the 1970's, some of the municipal transit agencies faced rising demand for service and had to consider system expansions and even entirely new services such as a light rail or commuter system. For even a major, multi-year project it may not be economically viable to employ and train all of the skill sets necessary to implement a new transit operation. Services that are contracted include planning, environmental analysis, architecture/engineering, and construction. In a few cases, this has included the entire

range of activities—Design, Build, Operate and Maintain (DBOM). This is described further under innovative procurement mechanisms.

ii. Joint Development

Joint Development is the use of public transportation property originally acquired with Federal grant dollars for transit-related development. This may occur in the form of development in air rights above a transit station, or it may involve the use of land area adjacent to the station. A 1992 study commissioned by the Federal Transit Administration identified 117 projects nationwide, involving a combination of air-rights and ground lease arrangements.[29] These projects have generated ground rent, lease, or one-time access rights revenues for the public transportation provider. In these projects, the public transportation agency makes land or air rights available to a developer. In some instances, the agency is not able, under its charter, to participate in development activity (which would produce lease revenue), so it undertakes a cost-sharing agreement with the developer, who agrees to perform certain functions such as station maintenance, security, or access control, in exchange for the development opportunity. In most cases, however, the transit agency has collected substantial revenues. The Washington Metropolitan Area Transit Authority (WMATA) air rights agreement in Bethesda, Maryland for example, produces $1.6 million in rents annually.

A survey undertaken in 2003 by Robert Cervero for the Transportation Research Board[30] revealed that, among 29 transit systems responding, over 100 joint development projects were identified. Of the respondents, 17 were rail systems and 12 were bus only systems. While the rail system projects predominated, nevertheless, 18 joint development projects were identified around bus facilities. These included mixed-commercial development, office, institutional, residential, and civic facilities. One such example is the Center Station at John Deere Commons in downtown Moline, Illinois. Developed around the MetroLINK bus transfer center, it includes offices, a convention center, hotel, parking structure, and various pedestrian amenities. MetroLINK receives a ground rent, as well as a negotiated private contribution, and construction and operating cost sharing.

Another, more complex example, is the Memphis Area Transit Authority's (MATA) Central Station redevelopment on South Main. This began as one of two exemplary train stations in Memphis, then a major railroad hub. However, by the end of the 1950's one station—Union Station—had been torn down and Central Station was in severe decline. It was not until the early 1990's that the station, the last structure designed by Daniel Burnham, finally became the focus of a major redevelopment effort. Using a

---

[29] Robert Cervero, Peter Hall, and John Landis, *Transit Joint Development in the United States, Monograph No. 42*, August 1992, Institute of Urban and Regional Development, National Transit Access Center, University of California, Berkeley. Also released as *Transit Joint Development in the United States: A Review and Evaluation of Recent Experiences and an Assessment of Future Potential*, Urban Mass Transit Administration (now the Federal Transit Administration), U.S. Department of Transportation.

[30] Ibid.; and "Transit Oriented Development: State of the Practice, Future Benefits," Transit Cooperative Research Program (TCRP) Report No. 102, Federal Transit Administration, to be published in 2004.

combination of Federal transit grant funds, investment from a tax credit corporation, and a contribution from Amtrak, MATA undertook an historic preservation project. An integral part of the financing came from historic preservation tax credits. As a public agency, MATA could not realize these credits. It therefore created a limited liability partnership that would own and develop the station and other historic buildings on its 17-acre site. The developer for the project was the Alexander Company.

The Central Station project produced 63 one- and two-bedroom apartments, 12,000 square feet of storefront commercial space, a restored Main Hall and conference space which is offered for rent, a new station for the Main Street Trolley, and an eight-bay, canopy-covered bus transfer center for MATA. Amtrak received a new, canopy-covered platform for the City of New Orleans train, as well as state of the art ticketing and baggage facilities. The apartments were fully rented before the refurbishment was completed, and the project has led the revival of the South Main historic district. Rents and development revenues generated by the MATA subsidiary return to MATA as part of its local funding base.

The public-private partnerships do not always involve the public transportation agency directly. In Washington, DC, for example, the Union Station redevelopment took place through an act of Congress, under the leadership of the U.S. Secretary of Transportation. In 1981, Congress enacted the Union Station Redevelopment Act of 1981, which called on Transportation Secretary Elizabeth Dole to develop an ambitious plan for the commercial development of the station with the goal of making it financially self-sufficient. A unique public-private partnership was formed to faithfully restore the building to its original state and create a viable mixed use transportation center.

Following three years of renovation at a cost of $160 million, Union Station reopened on September 29, 1988. Union Station was redeveloped as a bustling retail center and intermodal transportation facility, connecting the Washington Metro with Amtrak, the Maryland Area Rail Commuter, the Virginia Railway Express, intercity buses, and Metro bus service. In addition to over 130 unique shops and restaurants, Union Station is the hub for Amtrak's headquarters and executive offices.

Today, Union Station is one of the most visited destinations in the nation's Capitol with over 25 million visitors a year. World-class exhibitions and international cultural events are hosted here for the public to enjoy. Private special events such as the Presidential Inaugural Ball and citywide galas are celebrated in the grand halls. In 2003, the Union Station operation generated over $1 million in lease revenues from the retail and food establishments within its confines. WMATA’s involvement is in the form of a fee simple ownership of the ground-level entrance to the subway station, and a connection agreement from within Union Station.

iii. Turnkey Procurement

Although it has been used for public works and private construction for many years, turnkey procurement has rarely been used in public transportation. This is partly the

result of a pay-as-you-go process that has developed because public transportation agencies are generally dependent upon annual appropriations. It is also a result of the lack of successful prior examples of design-build. While many light rail and rapid rail systems were built on a turnkey basis in the 1890's and early 1900's, this was based upon concurrent land speculation on the part of the system owner and the system builder. In the current environment, the system owner is a municipal entity—which cannot own or control significant amounts of land except by public procurement—and the system builder is a private sector contractor who by definition cannot speculate in the land or development rights that may accrue to the land near the new transit system.[31]

Nevertheless, there have been some recent partnerships in the public transportation sector, of which three are summarized below:

- *Tren Urbano*: This project, in downtown San Juan, Puerto Rico, is a rapid rail (Metro) system of 11 miles in extent with 17 stations. It has been in planning and development since 1972, and was originally proposed as a light rail system. By the time FTA signed a Full Funding Grant Agreement for the project, it had evolved into a rapid rail system, with projected ridership of over 100,000 per day in its opening year. The project was procured by the Puerto Rico Highway and Transportation Authority as a Design-Build contract. Siemens Corporation is the prime contractor, responsible for 60 percent of the total project, including right-of-way, track, systems, and vehicles. The 17 stations, accounting for 40 percent of the project, are the responsibility of several local subcontractors to Siemens. The project was originally scoped at $1.375 billion. However, weather, lawsuit, Federal requirement, and funding issues have delayed the project significantly. The current estimate to complete the initial 17-station segment is now over $2.3 billion.

- *Hudson-Bergen Light Rail*: A two-phase, $1.1 billion light rail startup system, this was a Design-Build-Operate-Maintain or DBOM project. The partnership between New Jersey Transit and Washington Group International (formerly Raytheon Infrastructure) resulted in early completion of the project at substantial cost saving. The combination of the DBOM contract with Grant Anticipation Bonds ensured consistent progress on construction and realized cost savings of over $300 million, as the following comparison shows (*see* Figure 2.6). The first segment of the Hudson-Bergen Light Rail went into revenue service in April of 2000—nearly five years ahead of projections.

[31] The contractor or builder cannot speculate in the land around the proposed new transit alignment because it may not win the bid. And, even if it took the chance of buying property in advance of making a bid, and the locally selected right-of-way went through the purchased property, the contractor would have to declare this in its bid for the project. Federal grant rules would prevent the contractor from gaining an unfair advantage through prior acquisition of the right-of-way.

Figure 2.6 **Hudson-Bergen Light Rail DBOM Example**		
Project Component	**Actual DBOM Cost**	**Design/Bid/Build Cost**
Engineering & Design	$ 75 M	$ 86 M
Construction	430 M	475 M
Agency Cost	25 M	65 M
Vehicles	93 M	99 M
Claims	0	20 M
(Subtotal)	($ 623 M)	($ 745 M)
Inflation	0	45 M
Cost of Capital	$ 107 M	$ 285 M
Total Cost	**$ 730 M**	**$ 1,075 M**

- *Las Vegas Monorail*: In May of 2000, the Governor of Nevada created the Las Vegas Monorail Corporation (LVMC) by appointing members to its board of directors. LVMC was responsible for the issuance of $650 million in revenue bonds to finance the construction of the first phase of the Las Vegas Monorail, running 3.7 miles from Sahara Avenue to Tropicana Avenue and serving seven stations in downtown Las Vegas. Design, construction, maintenance and operation are the responsibility of the Master System Developer. The actual project sponsor is the Regional Transit Commission (RTC), which is the transit provider for Clark County and the city of Las Vegas. This project is the first totally privately financed public transportation project in the U.S., although it is seeking Federal funds for its second phase. The project went into revenue service in July of 2004, within budget although several months late.

iv. Grant Anticipation Notes or Bonds

Grant Anticipation Notes (GANs) or Bonds have been used by public transportation agencies in the same way as States have used GARVEEs. The mechanism was first used in the early 1990's, when the Tri-County Metropolitan Transit District (Tri-Met) in Portland, Oregon leveraged a $1 million loan with the anticipation of a $35 million grant for its new light rail system. Due to its relatively high cost and complexity, the mechanism was not used again until TEA-21 was enacted. Minimum Guaranteed Funding Levels and mass transit account funding provided the economic security that financial markets demanded. Since 1997, over $2.5 billion in GANs have been issued for mass transportation, as shown in Figure 2.7.

Figure 2.7
Transit Grant Anticipation Bond Issuances

Issuer	Series	Amount (Million)	Security	Underlying Rating	Term
New Jersey Transit	1997A	139.0	FFGA - $604 mm	AA	
New Jersey Transit	2000A	284.9	FFGA - $604 mm*	A-	2000-2004
New Jersey Transit	2000B	450.0	FFGA - $500 mm		2004-2011
New Jersey Transit	2000C	110.0	FFGA - $142 mm		2002-2005
New Jersey Transit	COP1999A	160.0	Sec. 5307	A, A1	2001-2008
New Jersey Transit	COP2000A	234.0	Sec. 5307		2000-2014
New Jersey Transit	COP2000B	493.0	Sec. 5307		2000-2013
New Jersey Transit	COP2002B	94.0	Sec. 5307		2002-2015
City of Phoenix	2000	18.3	Sec. 5307 & 5309	AA	2000-2012
Bay Area Rapid Transit (BART)	2001	385.0	FFGA - $750 mm		
Port Authority Pittsburgh	1999	70.0	Sec. 5309 fgm		
Chicago Transit Authority	2003A	128.8	FFGA - Blue line	A-	2003-2006
Chicago Transit Authority	2003B	78.5	FFGA - Blue line	A-	2003-2005
Total To Date		**$2,506.4**			

*Note: These bonds refinance the 1997A for Hudson-Bergen I
The 1997A bonds are not included in the Total to Date.

The interesting characteristic of these GANs is that they are being issued on a sole pledge basis. That is, the public transportation agency is pledging solely the anticipated Federal grant receipts. In most cases, the agency has no authority to pledge the full faith and credit of the State, and there are often restrictions on the use of dedicated local revenues such as sales taxes. Thus GANs have represented a significant increase in capability for public transportation agencies as they seek to complete major capital projects as close to on-time and on-budget as possible.

CHAPTER III. VALUE OF PUBLIC-PRIVATE PARTNERSHIPS

"In a time of funding shortages at all levels of government, it is particularly important that we look to opportunities for the private sector to participate in funding transportation infrastructure improvements." – FHWA Administrator Mary Peters[32]

An increasing number of States are discovering the many advantages of public-private partnerships. This chapter begins by highlighting the cost and time savings of projects built using public-private partnership. It then explores the factors that contribute to these savings. These factors include the flexibility to use private sector financing and intellectual capital, the allocation of risk to the party best able to manage it, and the incorporation of life-cycle costs in the price of the project.

Public-private partnerships provide greater flexibility in the design, construction and maintenance of transportation facilities through the use of innovative financing, design, and contracting techniques. As a result, they have the potential to deliver higher quality transportation projects faster and cheaper than through traditional contracting and financing methods. Importantly, public-private partnerships can facilitate the construction of projects that have been sidelined due to fiscal constraints. These advantages are discussed in detail below.

Public-private partnerships are not without risks. The traditional method of financing and developing transportation projects was designed to protect public interest by providing substantial oversight by the public sector and by standardizing competition for contracts to avoid waste, fraud or abuse of public funds. Changing this traditional approach raised concerns that some of these protections will be less effective. These are discussed at the end of this chapter.

A. Public-Private Partnerships Can Result in Significant Project Cost Savings

"Limited private sector involvement [in road building] has shielded the industry from market forces and discouraged the type of innovation that brings efficiency and cost savings." – FHWA Administrator Peters[33]

Public-private partnerships can result in significant project cost savings to States and local governments. For purposes of this report, cost-savings is defined as the difference between an engineer's estimate and the actual cost of an individual project. Data gathered to date indicate that projects built using a public-private partnership almost always save taxpayer dollars. The following discussion highlights the overall project cost savings

[32] Mary E. Peters, Federal Highway Administrator, speech, Canal Road Intermodal Connector Meeting, Gulfport, Mississippi, October 21, 2003, http://fhwa.dot.gov/pressroom/re)31021.htm.
[33] Mary E. Peters, Federal Highway Administrator, excerpts from remarks as prepared for delivery to Associated General Contractors of America (AGC), 85th Annual Convention Highway and Transportation Contractors Division Meeting, Orlando, Florida, March 12, 2004. http://www.fhwa.dot.gov/pressroom/re040312.htm.

associated with public-private partnerships and explores the financial benefits of the innovative contracting method of design-build, the use of warranties, and long-term performance contracts for maintenance and rehabilitation.

i. Measuring Cost Savings From Innovative Contracting Methods

Quantifying specific costs savings on transportation projects is a difficult undertaking and not often attempted. However, at least two studies have examined costs of projects using innovative contracting techniques supporting public-private partnerships and found they resulted in significant cost savings. In addition, estimates from individual projects provide specific examples of costs savings from these techniques.

In February 2003, Battelle, on behalf of Koch Industries, compared the use of traditional methods of contracting to the use of innovative contracting methods.[34] Although data comparing the use of innovative contracting with traditional procurement is rare, the case studies reviewed by Battelle found that the use of performance-based contracting, a form of public-private partnership, can result in cost savings ranging from 6 to 40 percent.[35] Appendix A includes a chart, prepared by Battelle, providing examples of construction and maintenance projects built by public-private partnerships and the cost savings for each. It should be noted that there are a lot of variations in the accuracy and quality of engineer estimates, so this may limit the utility of this comparison. FHWA is working to improve the accuracy and quality of engineer's estimates. Additionally, Appendices B and C provide additional information about projects built by public-private partnerships and any time and cost savings for these projects.

Evidence of the financial benefits of public-private partnerships has also been collected by the Florida Department of Transportation (Florida DOT), one of the States actively utilizing innovative contracting methods. The Florida DOT compared traditional low-bid contracts with those awarded using seven different nontraditional methods. In every case, the nontraditional method had lower cost overruns and was delivered closer to schedule than the average traditional low-bid contract.[36]

Although Florida DOT acknowledged that there are cost and time overruns with projects executed under innovative contracting methods, the magnitude of these overruns is significantly reduced. Traditional low-bid contracts on average had 12.4 percent cost overruns while nontraditional contracts on average had only a 3.6 percent cost overrun.[37] See Figure 3.1.

---

[34] Battelle, *Performance-Based Contracting for the Highway Construction Industry: An Evaluation of the Use of Innovative Contracting and Performance Specifications in Highway Construction, Final Report* prepared at the request of Koch Industries, Inc., February 2003, 2. http://www.ncppp.org/resources/papers/battellereport.pdf.

[35] Ibid., 44.

[36] Ibid., Battelle, *Performance-Based Contracting for the Highway Construction Industry: An Evaluation of the Use of Innovative Contracting and Performance Specifications in Highway Construction, Final Report* prepared at the request of Koch Industries, Inc., *Executive Summary*, February 2003, 1.

[37] Ibid., 21.

Figure 3.1
Florida Cost and Time Overruns (1997-98)[38]

Non-Traditional Contracting Technique	Number of Contracts	Construction Award ($)	Percent Cost Overrun	Contract Days	Percent Time Overrun
A+B (cost-plus-time)	9	48,527,280	3.5%	2,283	8.1%
No Excuse Bonus	8	30,991,918	7.2%	2,110	1.5%
Incentive/Disincentive	12	28,577,800	8.4%	2,835	5.8%
Lane Rental	8	16,847,048	-4.1%	1,535	5.7%
Liquidated Savings	9	18,174,776	-1.8%	1,171	13.2%
Bid Averaging	2	17,205,296	4.5%	790	7.2%
Lump Sum	8	7,703,934	-0.7%	915	16.0%
All Non-Traditional Contracts	**56**	**168,028,054**	**3.6%**	**11,639**	**7.1%**
Traditional Low-Bid Contract	**375**	**1,162,868,676**	**12.4%**	**87,861**	**30.7%**

[38] Ibid. FDOT defines the nontraditional contracting techniques presented in Figure 3.1 as follows: A+B (cost-plus-time): The cost or "A" component is "the traditional bid" for the contract items and is the dollar amount of work to be performed under the contract. The A+B bidding concept is designed to shorten the total contract time by allowing each contractor to bid the number of days in which the work can be accomplished. The time or "B" component is a "bid" of the total number of calendar days required to complete the project, as estimated by the bidder. In the A+B bidding method, a dollar value for each contract day is established by FDOT prior to the project being advertised. The contractor will receive an incentive for each day the work is completed ahead of his original contract time bid. If the contractor completes the project late, a disincentive will be assessed as well as appropriate liquidated damages are applied as per the contract.
No Excuses Bonus: This concept is designed to provide the contractor with a substantial bonus to complete a project within a specified time frame regardless of any problems or unforeseen conditions (no time extensions allowed for the purpose of the bonus.) The bonus is tied to a drop-dead date (time frame) that is either met or not met.
Incentive/Disincentive: This concept is designed to reduce the overall contract time by giving the contractor an incentive for every day that the contract is completed early and a disincentive for failure to complete a project on time.
Lane Rental: A fee is established during design and placed in the contract to be assessed for each day or half-day of lane closure(s) in "excess" of the number of total lane rental days originally bid by the contractor. Once the lane rental exceeds the total number of lane rental days bid the predetermined lane rental fee will be multiplied by the excessive time and the result will be deducted from the monthly estimate's payment. The contractor shall only be charged lane rental days on chargeable workdays.
Liquidated Savings: This is a concept to reward the contractor for each calendar day the contract is completed and accepted prior to the expiration of allowable contract time. Contract time is adjusted for time extensions under this concept. The amount of incentive or reward will be based on the direct saving to the FDOT related to construction engineering inspection and contract administration costs.
Bid Averaging Method (BAM): BAM is designed to get contractors to bid a true and reasonable cost for a project. The BAM bidding process is as follows: If 5 or more bids are received, the Department will exclude the low and high bids, average the rest and select the contractor whose bid is closest to the average. If 3 or 4 bids are received, the Department will average all bids and select the Contractor whose bid is closest to the average. If fewer than 3 bids are received, then the Department will reject all bids and readvertise. Upon award of the project, the Department's normal contract administration processes are used. *See*, www.dot.state.fl.us/construction/Design%20Build/ALTERNATIVE%20CONTRACTING.pdf

There are also many examples of cost savings on projects using innovative contracting methods to facilitate public-private partnerships. Cost savings from innovative contracting methods were estimated by project sponsors on the following projects:

- *Pocahontas Parkway (Route 895)*: The Commonwealth of Virginia experienced the cost-saving benefits that can be achieved by the use of a public-private partnership on the Pocahontas Parkway (Route 895), the first project constructed under Virginia's Public-Private Transportation Act of 1995 (VPPTA). According to VDOT, through the use of an innovative design-build-finance contract, the project came in $10 million below the original $324 million estimated cost of the project.[39]

- *Route 288*: Another Virginia construction project, the completion of the western loop around Richmond (Route 288), was estimated by State engineers to cost $283 million. However, by using the VPPTA, the efficiencies of design-build, and a long-term warranty, the State realized a savings of $47 million.[40]

  However, Virginia qualified its estimates of cost savings by pointing out that different contracting methods do not allow for direct comparisons of equivalent items. In addition, innovative contracting requires a significant dedication of time by senior staff, as well as consulting fees for legal services and an independent evaluation of the project's financial plan. These additional hours and fees are not reimbursed by the private sector partner and add to the cost of a project under the VPPTA.

- *The Denver E-470 Toll Road, Segments II, III, and IV*: These projects also generated significant cost savings. This design-build-finance project for a 47-mile beltway along the eastern edge of the Denver metro area links together metro arterials and the new Denver International Airport. The design-build arrangement allowed for reduced project and capital costs; interim and long-term financing enhancements; accelerated project delivery; a single source of responsibility; and risk sharing. The project, constructed for $408 million, would have cost $597 million under the design-bid-build approach.[41]

Lump Sum: The purpose of Lump Sum projects is to reduce the costs of design and contract administration associated with quantity calculation, verification and measurement. This contracting technique requires the contractor to submit a lump sum price to complete a project as opposed to bidding on individual pay items with quantities provided. The contractor will be provided a set of bid documents (plans, specification, etc.) and will develop a Lump Sum bid for all work specified in the contract drawings. *See*, www.dot.state.fl.us/rddesign/updates/files/ls010404.pdf

[39] Virginia Department of Transportation, "VDOT Opens Final Portion of the Pocahontas Parkway, Route 895," press release, October 22, 2002. http://www.virginiadot.org/infoservice/news/RICH10232002-poca-ramp.asp.

[40] Virginia Department of Transportation, "Route 288 Is In Full Gear – Construction Begins on Completing the Western Loop around Richmond. Public-Private Partnership Saves Money and Time on High Profile Road Project," press release, May 31, 2001. http://www.virginiadot.org/infoservice/news/CO05312001-rt288.asp.

[41] Washington Group International, "New Ways of Doing Business in the 21st Century," (power point presented to the FHWA) September 23, 2003.

More detail on these projects is contained in Appendix D.

ii. Cost Savings from Design-Build Contracts

Cost savings from design-build contracts are generally attributed to a closer working relationship between the designer and contractor, who are the "design-build team." The team approach allows the designers and contractors to resolve design and constructability issues before they arise in the field. Thus, the team is able to incorporate greater construction efficiencies throughout the entire construction process, including more economical design features and cost-saving construction methods.[42]

From the vantage point of a State agency, design-build contracts have an added advantage in that they can be procured with greater price certainty than traditional low bid contracts. This is because State agencies negotiate fixed prices for these contracts based on the design-build team achieving a particular result within a set period of time. The design-build team is given greater latitude to control the timing and cost of completion. Traditional low bid procurement is based on pre-established contract specifications. The contractor must build to these specifications. When the specifications change or are found to be inadequate the State, not the contractor, bears the responsibility for increased cost and delay. As a result, some contractors file a flurry of change orders requesting additional fees for designing and building around unanticipated problems. Under a design-build contract, the design-builder is responsible for the design and any necessary changes as the project develops. This responsibility includes the risk associated with the determination of final quantities. The lump-sum, fixed-price approach for most design-build contract eliminates virtually all change orders because the design-build team is responsible for adapting and solving most unanticipated challenges.

The increased collaboration allowed by design-build also generates benefits in the area of value engineering. Design-build's better use of systematic value planning programs initiated early in the development period allows for a more detailed value engineering process during preliminary engineering. Having the design-builder lead this effort provides a greater opportunity to incorporate construction cost efficiencies, and optimize life-cycle costs for the project.

State DOT's experience with design-build projects under the FHWA's SEP-14 program varies widely. Some projects noted significant cost savings while other experienced increased costs.

In 1998, the Transportation Equity Act for the 21st Century (TEA-21) became the new funding legislation for the nation's surface transportation programs. Included in TEA-21 was section 1307(f) which required that a comprehensive national study be conducted to evaluate the effectiveness of design-build contracting in the Federal-aid highway program, with the results subsequently reported to Congress. FHWA contracted with

[42] National Society of Professional Engineers, "Design/Build in the Public Sector (#1726),", July 1995, http://www.nspe.org/govrel/gr2-ps1726.asp.

Science Application International Corporation (SAIC) and AECOM Consult, Inc. to perform this study, whose objectives are to:

- Compare the effect of design-build contracting on project quality, project cost, and timeliness of project delivery vis-à-vis the traditional design-bid-build approach, based on SEP-14 and other related reports;
- Determine the appropriate level of design for design-build procurements given such project criteria as nature and complexity of project, total project cost, and environmental sensitivity;
- Assess both the positive and negative impacts of design-build contracting on small businesses, particularly small contractors and design firms;
- Assess the variation, use, and fairness of cost and non-cost factors used in the award of design-build contracts; and
- Develop recommendations concerning design-build contracting procedures and implementation approaches.

The FHWA anticipates that a final report will be available in late 2004.

iii. Cost Savings from Warranties

Warranty clauses provide an assurance to the owner that the product will serve its useful life without failure, and if it does fail, the contractor will repair or replace the product.[43] Warranties have been used for years in a wide variety of consumer products to protect consumers from inferior workmanship. Historically, State DOTs have not used warranties for road construction but have internalized the risk of poor workmanship. Under a warranty approach the maintenance of the product is the responsibility of the contractor. And, as a result, the contractor is more likely to deliver a high quality product in order to reduce future maintenance and repair costs.[44] Thus, the major potential benefit of warranties for owners is a higher quality project with lower costs over the life of the product (life-cycle cost).[45] Warranties may have a higher initial cost, because contractors may increase their initial bids to include contingency funds for correcting problems during the warranty period. However, warranties may result in lower life-cycle costs than those of traditionally contracted projects because there is an improvement in the quality of the initial project. Some industry experts believe that in practice, even the initial cost of a warranted contract is comparable to that of a non-warranted contract, allowing the DOT to obtain a warranty at no additional cost.[46]

---

[43] Battelle, *Performance-Based Contracting for the Highway Construction Industry: An Evaluation of the Use of Innovative Contracting and Performance Specifications in Highway Construction, Final Report,* prepared at the request of Koch Industries, Inc., February 2003, 6. http://www.ncppp.org/resources/papers/battellereport.pdf.

[44] Ibid., 8.

[45] Texas Comptroller of Public Accounts, *Paving the Way: A Review of the Texas Department of Transportation*, January 2001,. Chap. 4.1, *citing* Utah Technology Transfer Center, "Warranty Best Practices Guide," 5 (http://www.ic.usu.edu/IC-Overview/Warranty/warranty%20implimentation%20best.htm). http://www.window.state.tx.us/txdot.

New Mexico Corridor 44, a primary trade and tourist route into northwest New Mexico, is an example of a public-private partnership that incorporated a warranty as part of the construction contract. Mesa, LLC, a subsidiary of Koch Industries, was hired by the State to manage the design and the construction and to provide a 20-year warranty for the pavement. The State realized considerable savings from the life-cycle cost approach taken by this approach. The 20-year warranty transferred the risk of poor quality to the private sector. According to the New Mexico government, the State is expected to save $89 million in maintenance costs over the next 20 years. [47]

NMSHTD's use of a warranty is a means for the State to capture the true, long-term cost of highway infrastructure and to ensure the long-term maintenance of the highway. Maintenance is the responsibility of Mesa, LLC and is not dependent on the availability of future State funds. This arrangement avoids the temptation of deferring spending on maintenance so that funds can be used for construction or other higher priority needs. The deferral of maintenance is a significant problem because it allows for the premature deterioration of pavements, leading to significantly more expensive repairs and the waste of taxpayer dollars.[48]

On NM 44, both preventive and corrective maintenance will be scheduled as needed. Measurements will be taken every spring and at the end of the 20-year warranty period. Preventive maintenance will be performed either by contractors obtained through New Mexico's procurement procedures or will be performed by NMSHTD's maintenance crews and reimbursed for the expense by Mesa, LLC. Corrective maintenance will be performed by contractors who win bids through the State's traditional procurement process.[49]

A 20-year research agreement has been executed between U.S. DOT's Research and Special Programs Administration (RSPA) and NMSHTD to validate cost savings to the government by determining the advantages of this innovative approach of providing warranted highway improvements. The agreement is called New Mexico's Road-Lifecycle Innovative Financial Evaluation (LIFE).[50]

---

[46] Ibid.
[47] New Mexico State Highway and Transportation Department New Mexico Corridor 44 Project: A New Paradigm in Highway Construction, July 1998.
[48] "Technical Corner: New Mexico Corridor 44 Project Warranty," *FHWA's Innovative Finance Quarterly*, Vol. 5, No. 2, Summer/Fall 1999, http://www.fhwa.dot.gov/innovativefinance/ifq52.htm#tech.
[49] Ibid.
[50] Ibid.

iv. Cost Savings from Long-term Performance Contracts for Maintenance and Rehabilitation

One form of public-private partnership is emerging in the area of highway maintenance. As noted in the 2002 AASHTO "Guide for Methods and Procedures in Contract Maintenance," States are procuring maintenance and preservation services in a variety of ways. Two distinct contracting methods are typically employed by the States. The most common type specifies the means and methods to be used to accomplish specific maintenance activities. This type of contract is referred to as specification-based. The other type of contract is performance-based, in which all risks for the maintenance of certain assets are transferred from the agency to the contractor in accordance with level-of-service requirements outlined in the contract. This form of procurement is often referred to as asset management. Although contracting out asset management may be new to many transportation agencies, a number of State agencies have been using these techniques for more than ten years. One example is the long-term contract for maintenance of 250 miles on several interstate routes in Virginia over a 5.5 year performance period.

B. Public-Private Partnerships Enable States to Build Projects Sooner

The benefits of public-private partnerships are not limited to cost savings. By providing access to alternative financing sources, public-private partnerships can facilitate the construction of projects that might otherwise have been delayed or not built at all. In addition, the same efficiencies that produce cost savings often enable projects to be constructed faster.

Completing a project faster minimizes public inconvenience and traffic disruption. In addition, a project constructed earlier than scheduled produces public safety benefits. Work zones are removed faster and the public is able to benefit from the additional capacity and safety improvements sooner. This section discusses the benefits a public-private partnership contributes to design and construction time-savings.

The Battelle Report showed that innovative contracting methods can result in as much as a 50 percent time reduction in project duration when compared to the traditional design-bid-build approach.[51] For some projects this time-savings is a result of the innovative financing methods brought to the project by the private sector member of the team. The public-private partnerships can bring additional capital to a project and enable States to build transportation projects that they want and need to build, but are prevented from

[51] Battelle, *Performance-Based Contracting for the Highway Construction Industry: An Evaluation of the Use of Innovative Contracting and Performance Specifications in Highway Construction, Final Report,* prepared at the request of Koch Industries, Inc., February 2003, 44; *see also*, ibid., 11, "Generally design-build projects in the construction industry have shown substantial schedule reductions over traditional design-bid-build. Sanvido showed in a Construction Industry Institute research report that design-build projects were completed 33 percent earlier than design-bid-build projects based on 351 U.S. building projects from 1992-1997. Other advantages include a single point of responsibility for the project and the increased opportunity to use innovative designs, materials, and construction methods and techniques." http://www.ncppp.org/resources/papers/battellereport.pdf.

doing so due to fiscal constraints. Following is a discussion of public-private partnership methods and specific examples of projects built using public-private partnerships that realized significant time-savings as a result of innovative financing.

i. *Time Savings through Private Sector Investment and Sponsorship*

A recent General Accouting Office (GAO) report on private-sector participation in major projects found that transportation projects involving private investment or sponsorship were built sooner than they would have been had the private sector not become actively involved.[52] For example, the GAO studied five private-sector toll-road projects and one monorail project, each of which had been on their respective federally-approved State transportation plans for periods ranging from 7 to 30 years.[53] But for a public-private partnership, some of these projects might not have been built at all in light of other State transportation priorities.

State, local, and Federal officials described these projects to GAO 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;[54] without private sector investment, some of these projects might never have been built.

- *Dulles Greenway:* In 1993, the Toll Road Investors Partnership, L.P. (TRIP II) was formed to build the Dulles Greenway, a four-lane 14-mile private toll road extending from the Dulles Toll Road to the Dulles International Airport. Under the franchise agreement, TRIP II owns the franchise for the Dulles Greenway and developed it as a private, for-profit venture. The partnership is responsible for all costs associated with operating and maintaining the road, including the costs of State troopers assigned to the toll road.[55]

- *The South Carolina Southern Connector:* In 1998, after a proposal in the General Assembly to increase the motor fuel tax did not pass, the State authorized a private consortium to build the Southern Connector, which had been on South Carolina's transportation plans since 1968.[56]

  The Connector 2000 Association financed the project costs of $217.7 million through the sale of tax-free toll revenue bonds, which will be repaid by toll revenue over a 35-year term.[57] The Connector 2000 Association is a local not-for-profit corporation set up to finance and operate a facility and is the first public-private transportation project in the United States to be financed using a

[52] U.S. General Accounting Office, *Highways and Transit: Private Sector Sponsorship of and Investment in Major Projects Has Been Limited*, (GAO-04-419), March 25, 2004, 15. http://www.gao.gov/new.items/d04419.pdf.
[53] Ibid.
[54] Ibid.
[55] Ibid., 39.
[56] Ibid.
[57] Ibid., 48.

63-20 (not-for-profit, as defined by the IRS) corporation.[58] The bonds included $66.2 million in tax-exempt senior current interest bonds, $87.4 million in tax-exempt rated senior capital appreciation bonds, $46.6 million in tax-exempt unrated subordinate capital appreciation bonds, and a $17.5 million contribution from the South Carolina Department of Transportation.[59]

Standard and Poor lowered the rating on the bonds from "stable" to "negative" in 2002 because of significantly lower traffic performance than had been expected. This lowered revenue to the point where the debt service reserve account had to be used to meet debt service requirements. At the time of the downgrade, average daily traffic stood at 10,000 transactions, 64 percent less than the 28,000 originally forecasted.[60]

- *SR 91 and SR 125 South projects:* In 1989, the California legislature passed AB 680, which allowed for the creation of highway franchises. AB 80 amended State law to permit the State of California to award franchise agreements for the design, construction, operations and maintenance of highway facilities. This created two of the most innovative road procurements in the Nation. The toll financing for these procurements allowed these projects to be built far sooner than scheduled. A California Department of Transportation (Caltrans) official told GAO 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.[61] State Road 91 was privately financed at a cost of $125.6 million, paid for mostly through a combination of equity and bank and institutional debt.[62] The project generates revenue through tolling, with the toll prices varying by time of day though "congestion management pricing." Revenue has increased steadily in recent years, as the volume of traffic increased from 7.3 million trips in 1999 to 9.5 million in 2002, and revenue increasing from $19.5 million in 1999 to $29 million in 2002.

  After signing a noncompete clause with project developers, California was barred from making improvements on competing roadways. But when public pressure forced California to make improvements to the nontolled lanes of SR 91, the Orange County Transit Authority (OCTA) reached an agreement to purchase SR 91 for $207.5 million. OCTA took possession of the road in January 2003. The sale was contingent on State legislation authorizing OCTA to buy and operate the toll road, eliminating the noncompete clause from the agreement.[63]

---

[58] Internal Revenue Service Web site, "IRS Module D Governmental and Private Activity Bonds," D-7, http://www.irs.ustreas.gov/pub/irs-tege/ph1modd.pdf. "63-20 Corporations are formed under State nonprofit laws for purposes of issuing obligations on behalf of a political subdivision."
[59] Ibid.
[60] Ibid., 49.
[61] Ibid., 16.
[62] Ibid., 42.
[63] Ibid., 44.

In the case of the SR 125 South Toll Road project, a $140 million TIFIA loan is an essential element of the project's financial plan, which also includes senior bank debt as well as private equity. This project demonstrates how innovative finance can attract private investment to transportation projects. Over $150 million in private at-risk equity was invested in this project. In addition, local real estate developers are donating approximately $48 million of land for right-of-way. If the SR 125 South project had not been advanced as a private financed facility under AB 680, operation would have been delayed to 2020 or later, according to Caltrans.

- *New Mexico State Route 44*: In this project, the NMSHTD worked with the private sector to develop an alternative financing mechanism for this project. Instead of using the traditional pay-as-you-go method of finance, which would have taken 27 years, the State issued GARVEE bonds backed by future Federal-aid payments. This financing combined with the contracting approach cut the total project time from 27 years to within 3 years.[64]

- *Eastern Toll Corridor*: In Southern California, the Transportation Corridor Agencies had similar reasons for opting for a public-private partnership for the Eastern Toll Corridor. The design-build project was constructed 16 months ahead of schedule. The more notable savings in time, however, was a result of the decision to finance the facility with bonds backed by toll revenues. The funds needed to build the project were available immediately. It has been estimated that the project would have taken 20-30 years to complete had it been financed using traditional means.[65]

Similar to the California and South Carolina projects, a public-private partnership enabled the Pocahontas Parkway in Virginia to be built 15 years earlier than it would have been by relying solely on State funds.[66]

Another benefit of private investment in transportation projects is that the debt issued by the partnerships is generally not considered debt of the State. It is not backed by State tax revenues and consequently does not jeopardize the State's ability to issue bonds for other purposes.[67] Debt repayment is typically through revenues from tolls, although the State may use tax revenues to enhance the quality of the credit or to cover other expenses. Bond buyers voluntarily purchase bonds on the basis of the contribution they expect the bonds to make to their portfolios, considering returns, risk, diversification, maturity, tax status, and other factors.[68]

---

[64] Ibid., 31.
[65] Comment provided by CH2M Hill, Inc.
[66] Pocahontas Parkway Web site, "What's New: Dedication of the Vietnam Veterans Memorial Bridge," http://www.PocahontasParkway.com/new.html.
[67] Congressional Budget Office, *Innovative Financing of Highways: An Analysis of Proposals*, January 1998, Chap. 5, 6. http://www.cbo.gov/showdoc.cfm?index=320&sequence=0.
[68] Ibid.

For example, when the Dulles Greenway partially 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 no effect on either Virginia's or South Carolina's credit ratings.[69] But, States that expect to utilize public-private partnerships as part of their long-term financial management strategy have an interest in not letting private bond ratings fall to the point where investors will not purchase future issues. Both the private and public sectors have much to learn about the public's willingness to pay tolls in different situations, and how to manage the risks of short-term revenue shortfalls.

ii. Time Savings from Design-Build

As mentioned above, innovative contracting approaches can also save considerable time. One innovative contracting technique that has been used frequently by public-private partnerships is design-build. There are a number of features of design-build that contribute to the expedited delivery of a transportation project.

As discussed in the section on innovation and savings, design-build allows a collaborative process between those designing the facility and those who will be responsible ultimately for its construction. Under a traditional design-bid-build model the State determines the alignment of the project and the type of project to be built. This preliminary information is then provided to a design firm, which designs the facility according to the State's standards. The State then takes the design, divides the construction work, and solicits bids on individual portions. This approach has long been favored by highway agencies because it was thought to favor price competition and thus lowers the overall cost because project designers are no longer involved at the construction phase. Allowing the designer and builder to work together throughout the process avoids opportunities for miscommunication that inevitably result in delays.

Another time-saving benefit of design-build is that it allows the design to be tailored to the strengths of the construction firm instead of having to develop a design suitable for bidding by multiple firms.[70] From a designer's perspective, traditional procurement places a premium on developing a design to the lowest common denominator in order to maximize the number of bids. Under a design-build model, the designer can develop a design that is both cost and time efficient because it will recognize the strengths of the construction firms involved in the design-build team.

From the owner's perspective, design-build is attractive because the risk associated with both the design and construction of the project rests with the design-build team. When a project fails under traditional procurement, designers can blame contractors for building

[69] U.S. General Accounting Office, *Highways and Transit: Private Sector Sponsorship of and Investment in Major Projects Has Been Limited*, (GAO-04-419), March 25, 2004, 15. http://www.gao.gov/new.items/d04419.pdf.

[70] Deborah S. Ballati, ed., *Surface Transportation: "Tools" in the Privatization "Tool Box,"* (New York: American Lawyer Media, Inc. Law Journal Press, 2001), Ch. 6, Sec. 6.03.

it poorly and contractors can claim the design was inadequate. The owner gets caught in the middle and projects can be delayed. Design-build avoids this finger pointing and the potential litigation that can follow. Transferring responsibility for quality and delivery to the design-build team can also significantly reduce the number of change orders in a project and the time and effort it takes to handle them.

There are many examples of design-bid contracts that have been successfully used to save time on project construction:

- *Utah I-15:* This reconstruction project serves as an excellent example of the potential for time savings when using design-build. The I-15 project would have taken an estimated 7 years under traditional design-bid-build contracting, but was actually completed in 4.5 years using the design-build method.[71] The Utah Department of Transportation selected the design-build method in order to accelerate the reconstruction of I-15 before the opening of the 2002 Winter Olympic Games in Salt Lake City. The project required the reconstruction of 16.3 miles of highway, including the demolition and reconstruction of 142 bridges. The I-15 project was opened to traffic in May 2001, five months before the scheduled completion date of October 2001.[72]

- *Alameda Corridor:* Design-build was chosen by Alameda Corridor Transportation Authority (ACTA) because of the time-savings offered by this innovative contracting method. The finance plan required the Alameda project to be completed within a specified number of months after bond issuance. The ACTA determined that a design-build approach would save both project time and costs.[73] The project, a rail system connecting the ports of Los Angeles and Long Beach to downtown Los Angeles, was completed approximately twelve months earlier than under a fast track design-bid-build process.[74]

- *State Route 288:* For Virginia's State Route 288, the State chose a design-build-warranty approach for the construction of 10.5 miles of new highway, expansion of 7 miles of existing highway, building of six new interchanges, modification of two interchanges, and construction of 23 bridges along the roadway in order to

[71] Battelle, *Performance-Based Contracting for the Highway Construction Industry: An Evaluation of the Use of Innovative Contracting and Performance Specifications in Highway Construction, Final Report,* prepared at the request of Koch Industries, Inc., February 2003, 9. http://www.ncppp.org/resources/papers/battellereport.pdf.
[72] Ibid., 10.
[73] Alameda Corridor Transportation Authority, "Alameda Corridor Readies Mid-Corridor Design-Build Contract for Approval," press release, Oct. 1, 1998, http://www.acta.org/Releases/releases_18.html.
[74] Deborah S. Ballati, ed., *Surface Transportation: "Tools" in the Privatization "Tool Box,"* (New York: American Lawyer Media, Inc. Law Journal Press, 2001), Ch. 6, Sec. 6.03.

finish the road quickly and with minimal delays. The project was completed 3.5 years earlier than if a traditional approach was used.[75]

- *The SR 500 Thurston Way Interchange:* This project, Washington State's first design-build project, was completed within the contractually mandated time. It has been estimated that the design-build process saved at least 5 months, or 16%, from the comparable design-bid-build process.[76]

- *Route 3 North:* In August 1999, the Massachusetts Legislature authorized $385 million for Route 3 North to make a number of improvements to this highway, The design-build-operate delivery method of the project was the first of its kind in the State and allowed the Route 3 North project to be completed in 42 months, rather than the initially estimated 9 years—cutting the delivery time by more than half. [77]

- *New Mexico State Route 44:* Although not technically a design-build contract, the innovative use of professional services contracting allowed the NMSHTD to enjoy many of the benefits of a design-build project approach without requiring the State to abandon the traditional low-bid method of procurement. Almost all of the time-savings, however, were a result of the private sector working with the State to develop an alternative financing mechanism for this project. Instead of using the traditional pay-as-you-go method of finance, which would have taken 27 years, the State issued GARVEE bonds backed by future Federal-aid payments. This financing combined with the contracting approach cut the total project time from 27 years to within 3 years.[78]

More information about these projects is contained in Appendix D.

iii. Time Savings from Cost-Plus-Time (A+B Bidding)

Cost-Plus-Time, also known as A+B bidding, is a contracting method that not only considers the initial construction cost in the bidding process, but also takes into account the time needed to complete the project.[79] This shifts the risk of project delays from the

---

[75] Battelle, *Performance-Based Contracting for the Highway Construction Industry: An Evaluation of the Use of Innovative Contracting and Performance Specifications in Highway Construction, Final Report,* prepared at the request of Koch Industries, Inc., February 2003, 32. http://www.ncppp.org/resources/papers/battellereport.pdf.

[76] Dr. Keith Molenaar, *The Design-Build Pilot Project Evaluation: A Measurement for the Process, Time, Cost, and Quality, SR 500 Thurston Way Interchange in Vancouver, WA*, prepared at the request of the Washington State Department of Transportation, January 2003, Executive Summary. http://www.wsdot.wa.gov/biz/InnvContract/pdf/finalrptDBUofCo.pdf.

[77] "Innovation Paves the Way for the Massachusetts Route 3 North Project," *FHWA's Innovative Finance Quarterly*, Vol. 6, No. 3, Fall 2000, http://www.fhwa.dot.gov/innovativefinance/ifq63.htm.

[78] Battelle, *Performance-Based Contracting for the Highway Construction Industry: An Evaluation of the Use of Innovative Contracting and Performance Specifications in Highway Construction, Final Report,* prepared at the request of Koch Industries, Inc., February 2003, 32. http://www.ncppp.org/resources/papers/battellereport.pdf.

[79] Ibid., 11.

public sector to the private contractor. In order to estimate the cost of time, a road user cost ($/day) is determined and multiplied by the required number of days for completion.[80] The contract is then awarded based on the combined cost of time and construction material and services.[81] An incentive/disincentive provision is typically used to encourage the contractor to finish the project earlier than the contract bid time.[82]

A major benefit of cost-plus-time over the traditional low-bid approach is a reduction in project completion time. This is partly due to the incentive available to the contractor for early completion. Contractors rarely pay disincentives due to missing the stated project completion date.

One example of A+B contracting is the $50 million Interstate 10 – Loop 410 project in San Antonio, Texas, where the contractor faces $22,500 a day in potential liquidated damages for each day over the 805 days allotted for the project. The contractor could also win the same amount in bonuses for early completion of up to 45 days. A vice-president for the contracting firm stated that the A+B method would save 25 percent off the estimated project schedule.[83]

The A+B contracting method is regularly used by the FHWA Federal Lands Division. A sample of three Federal Land projects that were constructed under an A+B contract are presented in Figure 3.2. Each project realized significant time-savings, as well as tangible savings in construction engineering costs.

[80] Ibid.
[81] Ibid.
[82] Ibid.
[83] Texas Comptroller of Public Accounts, *Paving the Way: A Review of the Texas Department of Transportation*, January 2001,. Chap. 4.2, 5, *citing* "Work Thrives in San Antonio," *Engineering News-Record*, June 5, 2000, 16. http://www.window.state.tx.us/txdot.

Figure 3.2
Eastern Federal Lands Highway Division
Projects Constructed Pursuant To The A+B Bidding Process[84]

Savings Formula: (Actual time or amount / engineers estimate time or amount)= x, then 1 - x = percent savings

Project	Contractor Time Bid	Engineers Estimate - Time	Actual Time	Time Savings	Contractor Bid Amount	Engineers Estimate – Amount	Final Contract Amount	Tangible Savings of budgeted Construction Engineering Costs
George Washington Memorial Parkway Project PRA-GWMP 1A66	500 days	680 days	436 days	244 days / 36%	$6,045,439.44	$6,292,480	$5,844,806.37	$447,674 / appx. 7%
MacArthur Boulevard Washington DC, Project STP 9999 (983)	330 days	760 days	301 days	459 days / 60%	$7,859,246.46	$8,000,000	$6,868,965.95	$1,131,034 / appx. 14%
Delaware Water Gap Project PRA-DEWA 14(4)	420 days	665 days	401 days	264 days / 40%	$5,023,827.90	$5,620,000	$4,864,378.87	$755,622 / appx. 13%

[84] These Federal Lands Highway projects also had additional benefits due to the use of the A+B bidding process. These benefits included opening the roadway sooner, reducing traffic disruption, reducing traffic control, and reducing the risk of accidents.

C. Cost and Time Savings From Innovative Project Management

Innovative ways to manage projects can also result in access to alternative funding and project efficiencies that will result in significant time savings. South Carolina and Louisiana have each developed nontraditional programs to deliver much needed transportation facilities sooner than could be achieved through conventional contracting methods. Through the use of innovative financing mechanisms and private sector management resources, these two States have been able to drastically cut the construction time for transportation projects. In South Carolina, the South Carolina Department of Transportation (SCDOT) is advancing 27 years of road and bridge projects in just seven years. Similarly, the Louisiana Department of Transportation and Development (DOTD) is scheduled to deliver 16 specific transportation projects by 2010.

i. South Carolina "27 in 7" Peak Performance

The SCDOT set-aside conventional ways of doing business, and launched an ambitious $5 billion program of highway construction known as "27 in 7" Peak Performance. This accelerated program is making a reality of projects that otherwise would not have been built for many years.

Expecting to complete nearly 200 construction projects in seven years, which is at least 20 years sooner than the agency's average workload, the SCDOT selected the assistance of Construction and Resource Managers (CRM). A CRM is a firm, or a group of firms, that has experience and expertise in highway/bridge design and construction. After a detailed evaluation process, the SCDOT Commission voted to ask the staff to negotiate a contract with two firms, Fluor Daniel and Parsons Brinckerhoff/LPA. The plan calls for the State to be divided approximately in half, with each firm assigned to one-half of the State.[85]

The two CRMs act as an extension of SCDOT, and both report to SCDOT on the projects they have been assigned to help manage. The firms serve as assistants to the SCDOT Program Managers, who will continue to oversee every project.[86]

The contract, signed by SCDOT in July 1999, calls for each CRM to assist SCDOT in more than $760 million worth of road and bridge work to be completed within seven years. By partnering with the CRMs, the SCDOT avoided having to hire an estimated 500 employees to handle the additional workload. This is the first public-private partnership of this magnitude in the United States. The FHWA has worked closely with SCDOT to administer this partnership and a number of other innovative financing programs.[87]

---

[85] South Carolina Department of Transportation Web site, "SCDOT 27 in 7 Peak Performance: How South Carolina is Building 27 Years of Road and Bridge Projects in Just 7 Years," http://www.dot.state.sc.us/inside/pdfs/27in7.pdf; and, Federal Highway Administration, *FHWA Innovative Finance Primer*, (FHWA-AD-02-004), April 2002, 45-46. http://www.fhwa.dot.gov/innovativefinance/ifp/ifprimer.pdf.
[86] Ibid.
[87] Ibid.

Key innovations, integral to implementation of this program are financial assistance through a State infrastructure bank (SIB), public-private partnerships, and new ways of leveraging Federal dollars. New toll roads and a TIFIA loan were also part of the original financing package for the 27 in 7 program.[88]

ii. Louisiana "TIMED"

In an effort to enhance economic development through investment in transportation projects, the State of Louisiana created the Transportation Infrastructure Model for Economic Development (TIMED). The program is the single largest transportation program in the history of the State of Louisiana. The $3.5 billion program includes 16 specific transportation projects that include four-laning 500 miles of State highways, widening and /or new construction on the three major bridges and improvements to both the Port of New Orleans and Louis Armstrong International Airport.[89]

Initially, it was anticipated that the 16 specific projects included in the TIMED program would all be let for construction by 2005 before a $.04 per gallon tax would expire. However, in light of higher project costs, the Louisiana Department of Transportation and Development (DOTD) estimated that the TIMED program would not be completed until at least 2031 using traditional pay-as-you-go funding. Recognizing that completion of the TIMED projects was vital to the State's economic development, DOTD commenced a plan to accelerate completion of the remaining projects of the TIMED program. The goal of this stepped-up plan is to complete the TIMED program in 10 years. It is estimated that the remaining cost of the TIMED program from April 2003 is approximately $2.5 billion in 2003 dollars.[90]

As part of its implementation strategy to accelerate the remaining TIMED projects, the DOTD in December 2001 selected the Louisiana TIMED Managers (LTM) as the consultant team to assist with management of the program. LTM, serving as an extension of the DOTD staff, is a joint venture of Parsons Brinckerhoff, Gulf Engineers and Consultants, and the LPA Group. The multidisciplinary team is responsible for the financial management of the entire program as well as design management, right-of-way acquisition and relocation, construction engineering, and inspection. LTM is contractually obligated with incentives to achieve the TIMED program objectives and expedite completion of the TIMED program.[91]

The accelerated implementation of the remaining $2.5 billion TIMED program will be funded through a combination of revenue bonds and pay-as-you-go funding. About 83 percent of the program costs will be funded from revenue bond proceeds with pay-as-

[88] Federal Highway Administration, *FHWA Innovative Finance Primer*, (FHWA-AD-02-004), April 2002, 45-46. http://www.fhwa.dot.gov/innovativefinance/ifp/ifprimer.pdf.
[89] Louisiana TIMED Program Web site, "TIMED Program Fact Sheet," February 2004, http://www.timedla.com/upload/files/programoverview/program%20fact%20sheet.pdf.
[90] "Technical Corner: Accelerating Highway and Bridge Projects in Louisiana," *FHWA's Innovative Finance Quarterly*, Vol. 9, No. 2, Spring 2003, http://www.fhwa.dot.gov/innovativefinance/ifq92.htm#tech_corner.
[91] Ibid.

you-go funding accounting for the remaining 17 percent. The sources of the pay-as-you-go funds are the monthly collections of the Act No. 16 taxes and interest earnings on the TIMED fund balance. Legislation passed in 1998 extended the $.04 per gallon tax until all TIMED projects are complete and all outstanding bonds or other indebtedness issued for the TIMED projects have been paid in full, whichever is later.[92]

DOTD and LTM continue to work closely to move the completion of the TIMED program forward. By bonding and taking advantage of low interest rates, this program is saving money and delivering critical infrastructure projects to the people of Louisiana much sooner. The optimal mix of pay-as-you-go financing and debt financing is enabling completion of the remaining TIMED projects within a 10-year timeframe, and helping to drive Louisiana's economic development.[93]

D. Public-Private Partnerships Allow for the Allocation of Risk to the Party Best Able to Manage Risk

Traditionally, much of the risk associated with the design and construction of a transportation project is borne by the government. However, public-private partnerships allow for some of the project risk to be borne by the private sector. The goal of project developers should be to allocate risk to the party best able to manage it.

Proper allocation of risk will result in lower overall risk for the project.[94] And lower overall risk will allow the public-private partnership to save costs and accelerate delivery of a project. The key to proper risk allocation is determining which risks are best carried by the public sector and which should be transferred to the private sector.

Risks can be determined and allocated using a myriad of methods. One approach is through the use of performance specifications for warranty and design-build projects. Performance specifications allow the State highway agency to establish desired quality and outcomes and to allocate risk sharing and liability issues between the contractor and the State Highway Agency (SHA).[95] For example, by using a warranty, a State can shift the responsibility and risk for maintaining an acceptable level of pavement quality over a specified period to the contractor.[96] Warranties also lower the owner's risk by providing assurance that the contractor will correct early failures from material or workmanship that

---

[92] Ibid.
[93] Ibid.
[94] "One big advantage of PPPs is risk transfer, but one tenet of emerging PPP and D/B universe is that it is best and most cost effective to distribute the risk to the team member most able to mitigate the risk. The fact is that on the private side, those above are seeking to transfer as much additional risk as possible to those below contractually." Comment provided by Christopher Lloyd,. Senior Vice President and Director Business Expansion Services, McGuire Woods Consulting.
[95] Battelle, *Performance-Based Contracting for the Highway Construction Industry: An Evaluation of the Use of Innovative Contracting and Performance Specifications in Highway Construction, Final Report,* prepared at the request of Koch Industries, Inc., February 2003, 22. http://www.ncppp.org/resources/papers/battellereport.pdf.
[96] Ibid.

may have escaped notice during construction.[97] When private road builders are also responsible for subsequent operations and maintenance, they have incentives to build roadways that are designed to meet the specific demands and characteristics of users.[98] Assigning risk to the appropriate party enhances the ability of the public-private partnership to deliver a project sooner than under the traditional contracting method. Proper allocation of risk allows for acceleration of projects with schedule and budget assurance.[99]

When the public sector builds a project under the traditional design-bid-build approach, the public sector makes all decisions regarding the provision, production, and financing of assets as well as the operation and maintenance of the services.[100] As a result, very little opportunity exists for the private sector to assume project risk. In contrast, a public-private partnership allows the private sector greater control over the design, construction, operation and maintenance of the facility. With this additional control over the facility comes increasing ability to absorb risk. When considering risk and negotiating a risk allocation position, the public sector entity should prefer to contract with a single party which is fully accountable to government for all contracted services.[101] From a government point of view, risk transfer is most effective if there is a 'whole of cycle' contract with a single private party, to give that party the strongest incentive to ensure that the design and construction phases convert into a highly effective operation for delivery of a project.[102]

Regardless of the contracting method a State selects for the construction of a project, there are certain risks that will always remain with the public sector. These include:

- Deciding as the collective purchaser of public services, on the level of services that are required, and the public sector resources which are available to pay for them;
- Setting and monitoring safety, quality, and performance standards for those services; and
- Enforcing those standards and taking action if they are not delivered.[103]

---

[97] Mark A. Ehlen, "Life-cycle Costs of New Construction Materials," *Journal of Infrastructure Systems*, Vol. 3 (December 1997), 129.
[98] Congressional Budget Office, *Innovative Financing of Highways: An Analysis of Proposals*, January 1998, Chap. 5, 13. http://www.cbo.gov/showdoc.cfm?index=320&sequence=0.
[99] Steve Lockwood, *Public and Private Roles in Highway Network Development: An Agenda for Future Research on Institutions and Regulations*, STELLA Conference on Transport and Sustainability , Athens, Greece, 2004, 2.
[100] Mervyn K. Lewis, "Risk Management in Public-Private Partnerships," Center for Globalization and Europeanization of the Economy, Discussion Paper No. 12, CeGE Research Workshop at the George-August-University in Gottingen, Germany, June 2001, 9. http://www.cege.wiso.uni-goettingen.de/Dokumente/Diskussion/discuss_12.pdf.
[101] Ibid.
[102] Ibid.
[103] *Public Private Partnerships: The Government's Approach*, published with the permission of the HM Treasury on behalf of the Controller of Her Majesty's Stationary Office, 2000, 11 http://www.hm-treasury.gov.uk/media/1D111/80.pdf#page=1.

The following matrix (see Figure 3.3) is taken from Professor Mervyn K. Lewis's (University of South Australia , National Australian Bank) paper on "Risk Management in Public-Private Partnerships" and was developed to summarize the allocation of risk for public-sector and private-sector infrastructure investments. It is helpful because it identifies some of the types of risks, sources of the risks, and which party usually bears the risk. It is important to note that the allocation of risk varies from project to project.

Figure 3.3
Risk Matrix for Public-Private Partnerships[104]

Type of Risk	***Source of risk***	***Risk taken by***
Site risks		
Site conditions	Ground conditions, supporting structures	Construction contractor
Site preparation	Site redemption, tenure, pollution/discharge, obtaining permits, community liaison	Operating company / project company
	Pre-existing liability	Government
Land use	Native title, cultural heritage	Government
Technical Risk	Fault in tender specifications	Government
	Contractor design fault	Design contractor
	Construction Risk	
Cost overrun	Inefficient work practices and waste of materials	Construction contractor
	Changes in law, delays in approval, etc.	Project company/investors
Delay in completion	Lack of coordination of contractors, failure to obtain standard planning approvals	Construction contractor
Failure to meet performance criteria	Quality shortfall/defects in construction / commissioning tests failure	Construction contractor/project company

[104] Mervyn K. Lewis, "Risk Management in Public-Private Partnerships," Center for Globalization and Europeanization of the Economy, Discussion Paper No. 12, CeGE Research Workshop at the George-August-University in Gottingen, Germany, June 2001, 13. http://www.cege.wiso.uni-goettingen.de/Dokumente/Diskussion/discuss_12.pdf.

Type of Risk	*Source of risk*	*Risk taken by*
Operating Risk		
Operating cost overrun	Project company request for change in practice	Project company / investors
	Industrial relations, repairs, occupational health and safety, maintenance, other cost	Operator
	Government change to output Specifications	Government
Delays or interruption in operation	Operator fault	Operator
	Government delays in granting or renewing approvals, providing contracted outputs	Government
Shortfalls in service quality	Operator fault	Operator
	Project company fault	Project company / investors

The proper allocation of risk is sometimes confused with trying to get the other team member (public or private) to assume as much risk as possible. An example of this is third-party tort liability. Some States have tried to get the private sector to assume third party tort liability as part of a public-private partnership road project. Under this scenario, if an accident occurred on a State highway procured under a public-private partnership model, the private sector would be liable if the accident was a result of poor design or workmanship. Yet the State has sovereign immunity and would be shielded from most lawsuits. Transferring the risk of tort liability to the private sector increases the overall risk of the public-private partnership, increasing its cost and providing taxpayers with a less than optimal deal.

E. Public-Private Partnerships Encourage Innovations and Incorporation of Life-Cycle Costs which Leads to the Delivery of a Higher Quality Transportation Facility

In contrast to traditional contracting methods, public-private partnerships have more flexibility to maximize the use of innovative technologies that will lead to increases in quality and the development of faster and less expensive ways to design and build highway facilities. This section examines the benefits that can occur when contractors are given greater flexibility to employ innovative materials and techniques.
The traditional contracting approach has limited opportunities for contractors to incorporate innovative materials and techniques in the design and construction of

transportation projects. The Federal government and many State governments have constraints on their procurement methods that have the unintended result of limiting access to new technologies and techniques. "Lowest price" on bids is often required, even when "best value" would be a more effective approach. Restrictions on the participation of Federal funds in payment for premiums or royalties on patented or proprietary material limits a State's ability to use newer technologies on projects.[105] Outside of government procurement, the private sector is not constrained by these laws and regulations.[106] The private sector also has access to product and trade secrets available to the public sector, and these can be quickly and easily incorporated into public-private partnerships.[107]

Innovative contracting methods often give the contractor additional freedom to decide the best method and material for the project, while the State highway agency provides the direction on the performance, schedule and cost.[108] Greater flexibility and less rigid prescriptive specifications give the contractor freedom in other areas of the project.

The departure from the traditional contracting approach allows designers and builders to take advantage of the advances in technologies and techniques relating to construction materials, equipment, and design methods.[109] These innovative techniques and materials improve the quality and reduce the duration of the construction project, and normally result in lower life-cycle costs.[110]

Quality is difficult to measure in highway construction because of the unusually long life of the asset being constructed. Public-sector partners can measure quality over the life of an asset but quality is difficult to gauge immediately after the road is constructed. Both the Wisconsin DOT and the Construction Industry Institute have studied innovative contracting and its impact on quality. The Wisconsin DOT explored the relationship between quality and whether or not the project had a warranty. As Figure 3.4 demonstrates, warranted pavements performed significantly better.

---

[105] *See*, 23 C.F.R. § 635.111(2003).
[106] Richard Norment, "PPPs - American Style," *The PFI Journal*, 39 (October 2002), 27. http://www.ncppp.org/howpart/PFIArticle.pdf.
[107] Comment provided by Minnesota.
[108] Battelle, *Performance-Based Contracting for the Highway Construction Industry: An Evaluation of the Use of Innovative Contracting and Performance Specifications in Highway Construction, Final Report,* prepared at the request of Koch Industries, Inc., February 2003, 15. http://www.ncppp.org/resources/papers/battellereport.pdf.
[109] Ibid., 4.
[110] Ibid., 5; *see also* Mervyn K. Lewis, "Risk Management in Public-Private Partnerships," Center for Globalization and Europeanization of the Economy, Discussion Paper No. 12, CeGE Research Workshop at the George-August-University in Gottingen, Germany, June 2001, 11. http://www.cege.wiso.uni-goettingen.de/Dokumente/Diskussion/discuss_12.pdf , "Drafting the delivery specifications for a project in a manner that accurately and clearly communicates the requirements of the project that minimize any prescription as to how the service is to be delivered or the asset maintained encourages innovation among the bids concerning the range of service delivery options and pricing proposals, which should in turn provide government with value for money."

Figure 3.4
Quality between Warranted and Non Warranted Projects in Wisconsin[111]

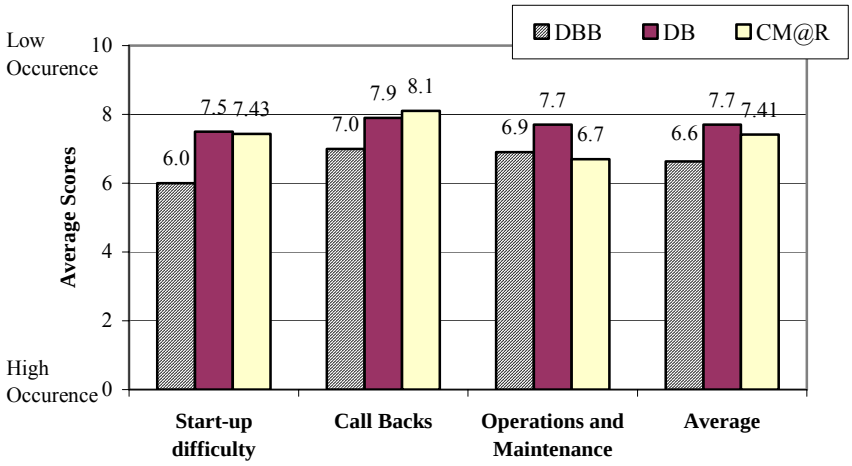
PERFORMANCE INDICATORS	Pavement Age			
	New	1 year	2 years	3 years
State Average IRI – Non Warranted	1.00	1.12	1.29	1.36
Average IRI – Warranted	0.80	0.83	0.79	0.80
State Average PDI – Non Warranted	0	4	11	18
Average PDI – Warranted	0	2	5	8

The Wisconsin DOT study indicates the warranted pavements are performing better than similar non-warranted pavements based on the measured International Rough Index (IRI) and Performance Distress Index (PDI). The IRI is an indication of surface smoothness and is measured in inches per mile or meters per kilometers.[112] A PDI of "0" indicates a pavement in perfect condition and "100" represents the worst condition.

A study by the Construction Industry Institute compared three project delivery systems for the construction of several different types of buildings and measured their quality.[113] The first was the traditional design-bid-build (DBB) system and the next two were innovative approaches giving the contractor greater flexibility (design-build (DB) and construction management at risk (CM@R)). Construction management risk is similar to the traditional design-bid-build method in that there is a separate design and construction firm; however, there is an intended integration of effort between these entities.[114] Figure 3.5 shows the results of this study in which innovative building approaches consistently scored higher for quality than traditional procurement.

[111] Battelle, *Performance-Based Contracting for the Highway Construction Industry: An Evaluation of the Use of Innovative Contracting and Performance Specifications in Highway Construction, Final Report,* prepared at the request of Koch Industries, Inc., February 2003, 8. http://www.ncppp.org/resources/papers/battellereport.pdf.
[112] Ibid.
[113] Ibid., 34. The Construction Industry Institute is a research institute for engineering and construction.
[114] Ibid.

Figure 3.5
Innovative Building Approaches v. Traditional Procurement[115]



F. Risks and Challenges of Public-Private Partnership Procurement

Most of the studies and literature on public-private partnerships highlight the benefits of using public-private partnerships for government procurement. As discussed throughout this chapter, innovative procurement methods can result in a variety of benefits, including significant savings in time and cost. However, not all projects fit a public-private partnership model and the increased complexity of public-private partnership procurement can create unusual challenges. States and localities interested in pursuing public-private partnerships should consider some of the shortcomings of public-private partnerships before engaging in this type of procurement.

Public-private partnerships do not always result in cost savings. As demonstrated in Figure 3.1, Florida's use of innovative contracting resulted in cost overruns more often than they resulted in cost savings. Another example of cost overruns is Washington State's first design-build project, the SR 500 Thurston Way Interchange, in Vancouver, Washington. The actual design-build project costs were approximately 23% more than the estimated costs for the project under the traditional design-bid-build methods ($25,610,004 vs. $20,878,121). This comparison is based primarily upon a Washington State Department of Transportation (WSDOT) engineer's estimate used to construct an

[115] Battelle, *Performance-Based Contracting for the Highway Construction Industry: An Evaluation of the Use of Innovative Contracting and Performance Specifications in Highway Construction, Final Report,* prepared at the request of Koch Industries, Inc., February 2003, 36. http://www.ncppp.org/resources/papers/battellereport.pdf. The scores represent the frequency of occurrence of each negative event. A high source represents a low frequency of occurrence and they are an overall higher quality, while a low score represents a high frequency and they are an overall lower quality.

equivalent design-bid-build cost model.[116] Dr. Keith Molenaar with the University of Colorado at Boulder, Department of Civil, Environmental, and Architectural Engineering, evaluated the use of design-build on the SR 500 Thurston Way Interchange on behalf of WSDOT. In his report, in his view, the risk of cost increases in this case outweighed the potential benefits.[117]

Public-private partnerships do not always create time savings. Again, Figure 3.1 shows that innovative procurement methods, including those directly providing incentives for on-time delivery, often failed to be completed when required. And when public-private partnerships do create time savings on a project basis, it can be at the expense of other projects. A+B contracting is designed to focus contractors on the importance of completing projects in a timely manner. Even when effective, however, this type of procurement can produce an increased burden on the resources of State agencies.[118] Extended work hours may be required to provide appropriate inspection of the project and training of personnel.[119]

Concerns have also been expressed about the impact procurement methods like design-build might have on the quality of a project. The shortened schedule and the increased control of the contractor could lead to lower quality because the public sector partner typically has less of an opportunity to design and inspect the project.[120]

As a new approach to procurement, public-private partnerships create significant challenges to both the public and private sector partners. States using public-private partnerships have experienced an initial sharp increase in workload as they adapt their procedures for guaranteeing the timeliness, efficiency, and safety of a project to fit the unusual requirements of public-private partnerships. Virginia, for example, experienced a noticeable increase in the amount of time senior officials spent on projects built under the Public-Private Transportation Act of 1995. The private sector can also experience difficulties with public-private partnerships. Smaller contractors and designers have expressed concern that it is difficult for them to bid on public-private partnership work because the projects tend to be larger than their firms can manage. Public-private partnerships also tend to shift risks away from the public sector and toward the private sector. This shift in risk can frequently be so significant that smaller firms are not able to absorb it, and as a result, cannot bid on the work.

---

[116] Dr. Keith Molenaar, *The Design-Build Pilot Project Evaluation: A Measurement for the Process, Time, Cost, and Quality, SR 500 Thurston Way Interchange in Vancouver, WA*, prepared at the request of the Washington State Department of Transportation, January 2003, Executive Summary. http://www.wsdot.wa.gov/biz/InnvContract/pdf/finalrptDBUofCo.pdf.

[117] Ibid.

[118] Battelle, *Performance-Based Contracting for the Highway Construction Industry: An Evaluation of the Use of Innovative Contracting and Performance Specifications in Highway Construction, Final Report,* prepared at the request of Koch Industries, Inc., February 2003, 13. http://www.ncppp.org/resources/papers/battellereport.pdf.

[119] Ibid.

[120] Ibid., 11.

In addition, private sector funding does not always ensure financial solvency when the project financing is secured by tolls or other revenue streams from the project. Sometimes public use is not as high as projected, resulting in revenues that are inadequate to pay off the debt on the project. An example of this is the Dulles Greenway, a project that was initially financed with equity contributions from the TRIP II partnership, bank loans, and long-term, fixed rate notes. After construction costs of roughly $340 million, the project ran into financial troubles. Traffic and revenues were initially lower than expected, in part due to improvements made by the State to a competing road, State Route 7. As a result, TRIP II went into default on its loans and note agreements in 1996. Refinancing occurred in 1996, allowing it to create project reserve funds and issue $370 million in senior bonds and $76 million in subordinate bonds. While the project is still yet to make a profit for its investors, development in the area is increasing and bringing with it increased usage of the Greenway.[121]

Although TRIP II had to refinance its debt, neither VDOT nor Virginia taxpayers were incurred any additional debt or financial obligation because of the shortfall in anticipated toll revenue. From a public-sector perspective, one of the key benefits of including private equity in a public-private partnership is the protection from financial risk private equity may incur. In the case of the Greenway, a future, unexpected drop in toll revenue or a large, unforeseen expense could trigger the need for another restructuring of the debt. However, even in the worst-case scenario, VDOT and the Commonwealth of Virginia incur no additional liability. If all project sponsors abandoned the project, VDOT would be left with a toll highway that did not cost them anything.

G. International Public-Private Partnerships and Private Finance Initiatives

The value of public-private partnerships is also recognized internationally. Public-private partnerships have been used to a great extent outside of the United States, primarily in Europe. Though the United Kingdom currently implements the most partnerships, other countries such as Norway, New Zealand, Australia, South Africa, Ireland, Portugal, the Netherlands and Finland have also taken the international lead in implementing these programs.[122] Of all highly developed nations, the United States is among those in the earliest stages of public-private partnership implementation. This section examines examples of the value added by public-private partnerships used in other countries.

Obstacles still remain for those attempting to implement international public-private partnerships. In both Germany and Romania, public-private partnership proponents have stressed the need for legislative reform and the creation of a more flexible legal framework to encourage partnerships. Another obstacle has been unsatisfactory outcomes in limited public-private partnerships countries like Romania. The Romanian Ministry of Transport has stated that "the simple association between public authorities or

[121] Ibid., 40.
[122] The International Project Finance Association Web site, "PFI & PPP's: Frequently Asked Questions," http://www.ipfa.org/mediafiles/library254.pdf. Other countries implementing PPP's include Canada, Italy, Australia, Japan, France, Spain and Germany.

public entities and private investors has led neither to major infrastructure upgrading nor to spectacular increase[s] in the quality of services delivered.…"[123] Regardless, Romania points out that the "positive experience of other states has proved the viability of real public-private partnership."[124]

i. The United Kingdom

The United Kingdom has used public-private partnerships to build or improve a vast array of infrastructure including roads, museums, office buildings, and prisons. The Head of Private Finance for Her Majesty's Treasury has said that public-private partnerships and the private finance initiative have "deliver[ed] on time and to budget, on major capital projects to which the Government is committed, in a way that has never previously been seen."[125]

Public-private partnership first became popular in Great Britain when launched by the Conservative Party in the early 1990's. British infrastructure, most notably highways, had become plagued with delays as local governments were burdened with the cost of maintenance and renewal. The prohibitive costs of renewal meant that improvements were often critically delayed, resulting in massive declines in infrastructure quality. When construction finally began, limited public funds often meant that completion was delayed and, as a result, costs increased.

In the past decade, the use of public-private partnerships in the United Kingdom has proved a remarkable remedy. A recent survey by Her Majesty's Treasury shows that out of 61 public-private partnership projects, nearly 90 percent were completed early or on time.[126] Projects that were not completed on time were completed within three months of the scheduled completion date.[127] As a result of these successes, Britain has sought to utilize public-private partnerships to a much greater extent; in 2003-2004 investment is projected to make up 11 percent of total investment in public services (approximately $61.3 billion). A total of 451 public-private partnership projects have been completed, including 34 hospitals and 239 new and refurbished schools.

ii. Norway

Norway's widely distributed population and long distances results in an extensive network—approximately 27,000 kilometers of State roads and 64,000 of regional and local roadways. Facing risings costs of maintaining existing roadways and constructing

[123] Romania: Ministry of Transport, Constructions and Tourism, *Public Private Partnership: Opportunities for Major Investments in Romania*, December 10, 2003, http://www.mt.ro/forum%20ppp/Bota%20final%20Dec%202003.pdf.
[124] Ibid.
[125] Anthony Fine and Simela Karasavidis, *Public Private Partnerships/Private Finance Initiative: An Overview of the United Kingdom Experience and Trends for the Future*, (Kilpatrick Stockton LLP).
[126] Spence, G, Head of Private Finance Unit, HM Treasury, "HM Treasury's Recent Proposals in Relation to Financing: A Practical Guide to the Latest Financing Issues in PFI/PPP", transcript of City and Financial Conference, December 9, 2003, 29.
[127] Ibid.

new ones, the Norwegian parliament began discussing the use of public-private partnerships in February 2001.[128] The parliament then selected three road projects to test if the public-private partnership model will lead to greater efficiency through time and cost savings.

Under the Norwegian public-private partnership model, the private partners receive annual unitary payments based upon performance against a number of criteria related to accessibility, safety, and traffic levels. The model differs from that of other nations in the degree of independence and responsibility given to private partners in certain matters, including independence in choosing the method of construction and responsibility for maintaining aesthetic and environmental standards over the life of the contract.

In April 2003, the Norwegian Public Roads Administration signed the first public-private partnership contract in Norwegian history, partnering with a private company that will build, operate, and maintain the "E39 Klett-Bardshaug," situated in the middle of Norway. The company will be responsible for the road for a period of 25 years. Under the contract, tolling will be run by a State-owned, non-profit company, and the private partner will be paid solely based upon the terms of the public-private partnership contract. The Ministry estimates that the construction period has been reduced by 50 percent—from 4 years to 2 years.

iii. New Zealand

New Zealand Transport Minister Paul Swain recently stated that "PPPs will help New Zealand tackle its shortage of transport infrastructure, which could hold back economic growth if not addressed."[129] The government of New Zealand believes that the use of private sector financing and expertise in the development of large-scale transportation projects will also "speed up improvements to our land transport system, and encourage further innovation," and "spread the cost of infrastructure over time."[130]

Under the recently passed Land Transport Management Bill, projects constructed through public-private partnerships must comply with a list of requirements and regulations. Under the law, management of infrastructure must revert to the government after a period of no more than 35 years, and ownership of the infrastructure must remain public at all times. Also, as long as traffic numbers remain below forecast for the life of the project, the government cannot be held liable to any party during the partnership.

Currently, Transit New Zealand is working with the Ministry and Transfund New Zealand to determine which highway projects are best suited for the public-private partnership approach.

---

[128] Torlid Skogsholm, Minister of Transport and Communications, welcoming address, the Fourth Annual PPP Forum, Oslo, Norway, October 20, 2003, http://odin.dep.no/sd/engelsk/aktuelt/nyheter/028051-990009/dok-bn.html.

[129] Nevil Gibson, "Long, winding road, Editor's INSIGHT, " *The National Business Review*, December 3, 2002. http://www.nbr.co.nz/print/print.asp?id=4580&cid=14&cname=Editor's+insight.

[130] Beehive: New Zealand Government Official Web site, "Land Transport Management Bill Public/Private Partnerships, "ehttp://www.behive.govt.nz/nzts/facts-ltmb-partnerships.cfm.

iv. Australia

The Australian Bureau of Transport and Communications Economics (BTCE) reports that contracting out roadwork will help to reduce the public costs of road construction and maintenance.[131] While private investment in roads is a relatively recent development in Australia, the government has reported that "[p]rivate toll roads appear to be built with fewer delays and at lower cost, compared to public untolled roads."[132] By 1995, private contractors were already performing 27 percent of the maintenance on public roads and 42 percent of the construction.[133] Both numbers have been increasing since.

Several examples from Australia serve to highlight the benefits of public-private partnerships in road construction and maintenance. In Sydney's Liverpool region, the responsibility for roadway maintenance switched during the years of 1991 and 1992 from the Road and Traffic Authority to a private contractor, Boral. During the same time, maintenance costs fell by 40 percent. The BTCE reports that the cost reduction was accomplished mainly though Boral's flexible employment practices such as subcontracting and shifting work hours. Another example comes from the Clare District Council in rural South Australia. There, the Council divided its road grading work between public employees and private contractors as part of a pilot test. For the public employees, the cost per kilometer graded was about $60. For the private contractor, cost was a low $30. Finally, the governments of Queensland and the Northern Territory took different approaches to maintenance work on the Barkly Highway. Maintenance work on the Queensland stretch was done by public employees, while work on the Northern Territory portion was done by private contractors. For the public employees, the cost per kilometer of road maintained was $3,356, while for the private contractors costs were only $690.

v. Germany

Recognizing the need to improve and maintain highway infrastructure despite limited public funds, Germany began updating its laws in 1994 and is now moving towards implementing public-private partnerships. Faced with nearly a half-trillion deutschmarks in needed improvements and only 20.8 billion deutschmarks budgeted toward improvements, Germany has recognized that it is no longer in a position to carry out all needed road improvements from its tax revenues.[134]

As a result, the German government has recognized the need to legally clear the way and facilitate public-private partnerships in transportation infrastructure.

---

[131] Bureau of Transport and Communications Economics, *Working Paper 33: Benefits of Private Sector Involvement in Road Provision: A Look at the Evidence*, 1996, http://www.bte.gov.au/docs/wp33.pdf.
[132] Ibid.
[133] Ibid.
[134] Clifford Chance, LLP, *Public Private Partnerships in Germany: The Private Financing of Transport Infrastructure Projects*, March 2001, http://www.cliffordchance.com/uk/pdf/PPPinGermany.pdf.

The Act Concerning the Private Financing of the Construction of Certain Parts of Highways came into force in 1994, providing the legal basis for privately financing highways and establishing the right of investors to charge toll fees. Yet the limited scope of the legislation only allowed such partnerships to be utilized in the construction of bridges, tunnels, and mountain roads. Proponents of public-private partnerships in Germany have called for the relaxation of laws so that private funding can finance more projects, and private entities can not only construct highways, but operate them as well. The private contractor could then either charge a toll for road use, or be paid by the State on a "shadow toll" basis.[135]

As last reported, two public-private partnership projects have already been procured, and a third is under construction: the river crossway for the rivers Warnow and Trave. The feasibility of 13 projects, valued at nearly 6 billion Deutschmarks, was still being examined.

[135] Ibid.

CHAPTER IV. IMPEDIMENTS TO THE FORMATION OF PUBLIC-PRIVATE PARTNERSHIPS

Despite notable successes in such projects as the Alameda Corridor and the groundbreaking of SR 125S near San Diego . . . public-private partnerships (PPPs) are still viewed by many in transportation as unique and fraught with legal, financial, and administrative hurdles. Abundant experience in the use of PPPs in other areas, and the growing experience in transportation illustrate that these hurdles can be overcome.[136]
—FHWA Administrator Mary Peters

All large-scale highway investments face financial, technical, and political barriers; however, several additional challenges must be overcome to implement a public-private partnership project in highway and transit development.[137] The Federal system for funding and constructing transportation projects is premised on the use of government funds and State or local development and ownership of the system. Since public-private partnerships are not the usual way of developing, funding, or even operating surface transportation projects, the use of these partnerships often encounters obstacles including legal, financial, political, and cultural hurdles despite the benefits that such partnerships may bring to a project.

This chapter will explore the major impediments to the formation of public-private partnerships, including State laws and policies, local opposition, private sector concerns, Federal funding concerns, and Federal financing concerns. Through the examination of these impediments, solutions to facilitate the formation of public-private partnerships can be ascertained.

A. State Laws and Policies

Public-private partnerships primarily focus on a business relationship between the State department of transportation and a private entity. State laws and policies are important factors to the ease or difficulty of forming public-private partnerships. This section will examine impediments that must be overcome at the State level, including centralized procurement, design-build laws and regulations (or lack thereof), State enabling laws, and political leadership.

i. Traditional Procurement

State departments of transportation have relied predominately on the low-bid approach to award highway and transit construction contracts. This procurement process involves using detailed plans from the design phase, providing specifications and estimates for the

[136] Mary E. Peters, Federal Highway Administrator, speech, Canal Road Intermodal Connector Meeting, Gulfport, Mississippi, October 21, 2003, http://fhwa.dot.gov/pressroom/re)31021.htm.
[137] Apogee Research, Inc., *Implications of Change in Procedures and Laws to Advance Public-Private Partnerships*, prepared at the request of the Federal Highway Administration , (FHWA-PL-95-026), April 30, 1995, vi.

work involved, soliciting of bids through public advertisement, and awarding the contract to the lowest responsible responsive bidder.[138]

Although the main intent of the low-bid approach is to save costs and protect the public interest, contractors also benefit since this approach eliminates most unknown conditions by defining all requirements of the project in the request for proposal.[139] Any errors and omissions in the plans or unforeseen work are the responsibility of the State.[140] Quality is controlled through prescriptive plans and specifications coupled with construction oversight and inspection by the State department of transportation.[141] Competitive bidding among contractors controls cost by awarding the contract to the lowest responsive bidder.[142] This traditional system is used throughout the country. Because of its predominant use, most contractors are comfortable with the procedure and understand its risks and rewards and consider it equitable.[143]

While most contractors are comfortable with the traditional procurement system, it is not conducive to the use of public-private partnerships. The system is slow and does not favor a life-cycle cost approach to projects.[144] Innovation is stifled because prescriptive specifications and low-bid pricing result in little reward for design and construction innovations.[145] However, some States increasingly are using value engineering to allow for some innovation in the process. Under traditional procurement, value engineering is used during both the design and construction phases to allow the owner to take advantage of creative ideas that may arise later in the process. Even with value engineering, the traditional system is relatively inflexible. Additionally, since the design and construction are done by two different entities, there is little, if any, opportunity for contractor input into design.[146]

Current State procurement laws restrict the flexibility of the public sector in selecting contractors and equipment suppliers, imposing rules that ensure that the State acquires services and supplies fairly and at the lowest price.[147] These rules are based on projects for which the State bears all financial responsibilities and seeks fair competition. Elaborate steps safeguard public funds against waste and fraud by contractors whose primary interest is securing a one-time contract.[148] In projects where the private company is bearing risk, if the State's procurement process is modified, the private risk bearer

---

[138] Battelle, *Performance-Based Contracting for the Highway Construction Industry: An Evaluation of the Use of Innovative Contracting and Performance Specifications in Highway Construction, Final Report,* prepared at the request of Koch Industries, Inc., February 2003, 3. http://www.ncppp.org/resources/papers/battellereport.pdf.
[139] Ibid.
[140] Ibid.
[141] Ibid.
[142] Ibid.
[143] Ibid.
[144] Ibid.
[145] Ibid.
[146] Ibid.
[147] Ibid., 17.
[148] Ibid.

would be offered the flexibility to hold down costs and share risks among its subcontractors.[149]

ii. Restrictions on Design-Build

As previously discussed, traditionally, a State department of transportation enters into separate contracts for the design and construction of a project.[150] After approving the design, the agency solicits bids through an open competition for construction.[151] It generally awards the contract to the qualified bidder who offers to complete the project according to the exact specifications at lower cost.[152] The FHWA and some State governments have begun to move away from the traditional competitive bidding process and allow the use of design-build in certain circumstances.

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.[153] (See Appendix F) However, 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.[154] Florida is a specific example of a State that has adopted changes to its procurement and licensing statutes so that design-build by public agencies is legal.[155] A Florida statute also provides specific agencies, such as the Department of Transportation, the express authority to use design-build, at least for certain projects.[156] New York is an example of a State in which design-build has been found to be incompatible with the State's procurement and/or licensing statutes; however, legislation has been proposed to address the issue.[157]

Despite the fact that 28 States have taken legislative action to accommodate the use of design-build, State procurement laws continue to be an impediment to using the design-build project delivery method in the public sector. In ZweigWhites's 2003 Design-Build Survey of Design and Construction firms, nearly half (46 percent) of the survey respondents report that procurement laws in their States have effectively shut them out of

---

[149] Ibid.
[150] Congressional Budget Office, *Innovative Financing of Highways: An Analysis of Proposals*, January 1998, 37. http://www.cbo.gov/showdoc.cfm?index=320&sequence=0.
[151] Ibid.
[152] Ibid.
[153] U.S. General Accounting Office, *Highways and Transit: Private Sector Sponsorship of and Investment in Major Projects Has Been Limited*, (GAO-04-419), March 25, 2004, 21, *citing* information provided by Nossaman, Guthner, Knox, and Elliott, LLP. http://www.gao.gov/new.items/d04419.pdf.
[154] Ibid.
[155] National Society of Professional Engineers, "Design/Build in the Public Sector (#1726),", July 1995, http://www.nspe.org/govrel/gr2-ps1726.asp.
[156]Ibid.
[157]Ibid.

acquiring public-sector design-build work.[158] This percentage is the highest in the six years that ZweigWhite has conducted the Design-Build survey.[159]

In the 1997 edition of the survey, firms projected a median 80 percent increase in the gross revenue they would derive from design-build projects in the following three years.[160] However, the 2000 survey found that firms see a more moderate 25 percent increase in the gross revenue they expect to derive from design-build work in the next three years.[161] The 2000 survey attributed these results to design-build's sluggish expansion into public sector work, an area that many companies consider to be a source of future growth for design-build.[162] The percentage of firms that reported procurement laws in their State effectively shut them out of acquiring public sector design-build work increased from 35 percent in 1998 to 41 percent in 2000.[163]

iii. State Enabling Laws

To facilitate the formation of public-private partnerships, States should create the right climate to attract, encourage, and facilitate the participation of the private sector in the development, financing, and operation of public-private transportation projects.[164] Not all States allow this flexibility. In States that do not allow expansive private-sector participation, new enabling legislation generally will help to encourage private investment in traditional highway programs.[165]

To date, the private sector has had limited opportunities to partner with States 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, as of February 2004, 23 States have legal authority for private sector participation in transportation projects.[166] (See Appendix G) Of these 23 States, however, only 21 have legal authority to utilize private-sector

---

[158] "Study Finds State Procurement Laws Impeded Design/Build Use," *Concrete Products*, April 1, 2003, http://concreteproducts.com/mag/concrete_study_finds_state/index.html. "Firms based in the Mid-Atlantic (63%), Mountain (57%), and North Central (45%) regions of the United States are most likely to report being shut out of public-sector design/build projects due to state procurement laws."
[159] Ibid.
[160] "Survey Results Show Design/Build Is No Panacea," *Plumbing and Mechanical Magazine*, March 2001, http://www.pmmag.com/pm/cda/articleinformation/features/bnp__features__item/0,,21876,00+en-uss_01dbc.html.
[161] Ibid.
[162] Ibid.
[163] Ibid.
[164] Apogee Research, Inc., *Summary of the Federal Highway Administration's Symposium on Overcoming Barriers to Public-Private Partnerships*, prepared at the request of the Federal Highway Administration, (FHWA-PL-94-026), May 1994, 11.
[165] Apogee Research, Inc., *Implications of Change in Procedures and Laws to Advance Public-Private Partnerships*, prepared at the request of the Federal Highway Administration , (FHWA-PL-95-026), April 30, 1995, 11.
[166] U.S. General Accounting Office, *Highways and Transit: Private Sector Sponsorship of and Investment in Major Projects Has Been Limited*, (GAO-04-419), March 25, 2004, 20. http://www.gao.gov/new.items/d04419.pdf.

participation in highway projects.[167] The law authorizing California to enter into public-private partnerships for transportation projects was repealed in 2004 and New Jersey let its authority expire in 2002.[168]

Virginia was one of the first States to enact a comprehensive public-private partnership law. The Public-Private Transportation Act of 1995 enables Virginia to enter into contracts authorizing private entities to acquire, construct, improve, maintain, and operate certain transportation facilities. According to Virginia's implementation guidelines, the intent of the legislation is to "encourage public/private ventures for transportation facilities which may result in the availability of facilities in a more timely or less costly fashion and to facilitate to the greatest extent possible the federal pooling and funding mechanisms to the end that transportation financing be expanded and accelerated and have the greatest possible flexibility in contracting between public and private entities."[169] The Act allows private entities to submit both solicited and unsolicited project proposals, and the steps involved in evaluating, selecting, and implementing the projects are similar for both types. Private entities also may propose innovative financing methods, such as user fees or service payments.

In 2003, Texas enacted House bill 3588, which provides a myriad of new tools to assist in the delivery of transportation projects and in the formation of public-private partnerships. House bill 3588, among other things, allows the formation of Regional Mobility Authorities (RMAs), expands the tolling authority of the State, authorizes Comprehensive Development Agreements (CDAs), and provides flexibility in funding the Trans Texas Corridor. The RMAs allow individual or multiple counties to develop a regional approach to transportation needs. RMAs may issue bonds or collect tolls, including converting an existing segment of the State's highway system to a toll road with the approval of the Texas Transportation Commission. RMAs have the authority to purchase rights-of-way and may lease portions of the land for non-transportation related purposes. The RMAs also may use surplus revenue for other transportation projects.[170]

House bill 3588 also provides greater tolling authority. Texas may co-mingle toll revenue with State highway funds to build public and private toll roads. Pass-through toll agreements, also known as "shadow" tolls, are allowed. Under a pass-through toll agreement, a local or private entity makes highway improvements using its own funds and is then reimbursed by the State based on the number of vehicles that use the highway.[171]

---

[167] Illinois limits such authority to high speed rail and magnetic levitation transportation. Indiana limits such authority to the Indiana Port Commission.
[168] Information provided by Nossaman, Guther, Knox and Elliott, LLP.
[169] Virginia Department of Transportation, "Public-Private Transportation Act of 1995 Implementation Guidelines," April 2001,http://www.virginiadot.org/business/resources/PPTA-overview.pdf.
[170] Texas Department of Transportation, "Drafting the Future," August 2003, http://www.dot.state.tx.us/dtf/DraftingtheFuture.pdf.
[171] Ibid.

The legislation also allows the use of the design-build approach to highway construction through CDAs. A CDA may include project design, construction, and financing, right-of-way acquisition, and highway operation and maintenance.[172]

Under House bill 3588, the Trans Texas Corridor is authorized to finance the corridor through bonds and sets funding caps to reserve funding for other transportation projects.[173] This authority will provide the financial flexibility to construct the Trans Texas Corridor without sacrificing funds for other highway projects.

Georgia also enacted legislation in 2003 allowing the formation of public-private partnerships. Senate bill 257 allows private entities to bypass the State's typical bid procedures and instead to submit unsolicited, sealed proposals for projects already in the State's transportation plan. The State then is required to ask for competing proposals on the project. In early 2004, the GA DOT announced that it had received the first proposal under the new law to turn Ga. 316, which runs from Atlanta to Athens, into a toll road.[174] The project would include HOV lanes, new interchanges and overpasses, and miles of access roads.[175]

iv. Public-Sector Leadership

Public-sector leadership is an important factor for public-private partnership projects, both for championing the approval of the project and overseeing the project through completion. Political problems are inherent in high-cost projects and especially in high-cost, public-private partnerships.[176] The problem is further aggravated by the fact that political champions may enter and leave office throughout the course of the project.[177] This discontinuity creates uncertainty for private partners, and can discourage private entities from pursuing public-private partnerships.[178] However, continuous, effective communication may help reduce uncertainty.[179]

Because highways are public goods, highway construction will have government oversight. Public oversight may take the form of regulations on toll rates, or rates of return, specification of construction standards, enforcement of safety, and the supervision of operation and maintenance. The direction and intensity of public oversight may change with the change of administrations. Risks of adverse changes at the political level

[172] Ibid.
[173] Ibid.
[174] Duane D. Stanford, "Ga. 316 Expected to Be First Fast-Tracked Toll Road," *The Atlanta Journal-Constitution*, January 5, 2004, E2.
[175] Duane D. Stanford, "A GA 316 Makeover: Toll Road to Athens? Contractors Pay Now, Collect Later," *The Atlanta Journal-Constitution*, January 22, 2004, A1.
[176] Apogee Research, Inc., *Summary of the Federal Highway Administration's Symposium on Overcoming Barriers to Public-Private Partnerships*, prepared at the request of the Federal Highway Administration, (FHWA-PL-94-026), May 1994, 13.
[177] Ibid.
[178] Ibid.
[179] Ibid.

can make it impossible to finance some highway projects.[180] A private entity will be more willing to enter into a partnership agreement in a State where there is a solid political support as opposed to a State where the political support for a public-private partnership may be fleeting.

B. Local Opposition

A common type of alternative financing is tolls.[181] Generally, the public resists toll projects and opposes the tolling of pre-existing tax-supported roads. The public views the roads as "free" and believes that the construction and maintenance of these roads has already been paid for through Federal and State gas taxes, as well as other fees. Tolls are often viewed as an additional charge for a road for which the public believes it has already paid through taxes and other fees. However, when roads must be expanded to handle peak travel demands, existing taxes paid by motorists are inadequate to cover the costs, as discussed below.

State and Federal officials have a long history of commitment to "free" roads and have had difficulty generating enthusiasm for toll facilities, particularly in the face of public resistance.[182] Political and cultural resistance to tolling is reflected in the Federal-aid highway program, which as early as 1916 prohibited the use of tolls on federally funded roadways. Even today, tolling on the Interstate Highway System is prohibited except for two pilot programs that allow tolling of Interstates in limited situations—the value pricing pilot program established in 1991 and reauthorized in 1998, and the Interstate System reconstruction and rehabilitation pilot program authorized in 1998.[183] The public view towards tolls must change before the private sector will feel confident enough to pursue public-private partnerships and be able to gain financing and community support.[184]

While gasoline taxes may be a proven time-tested method of raising transportation revenue, a "utility" type system of financing, such as tolls, has multiple benefits and

---

[180] Apogee Research, Inc., *Summary of the Federal Highway Administration's Symposium on Overcoming Barriers to Public-Private Partnerships*, prepared at the request of the Federal Highway Administration, (FHWA-PL-94-026), May 1994, 22.
[181] U.S. General Accounting Office, *Highways and Transit: Private Sector Sponsorship of and Investment in Major Projects Has Been Limited*, (GAO-04-419), March 25, 2004, 21-22. http://www.gao.gov/new.items/d04419.pdf.
[182] Apogee Research, Inc., *Summary of the Federal Highway Administration's Symposium on Overcoming Barriers to Public-Private Partnerships*, prepared at the request of the Federal Highway Administration, (FHWA-PL-94-026), May 1994, 9.
[183] U.S. General Accounting Office, *Highways and Transit: Private Sector Sponsorship of and Investment in Major Projects Has Been Limited*, (GAO-04-419), March 25, 2004, 21-22, http://www.gao.gov/new.items/d04419.pdf; Intermodal Surface Transportation Efficiency Act of 1991, Pub. L. No. 102-240, §1012(b), 105 Stat. 1914, 1938 (1991); and Transportation Equity Act for the 21st Century, Pub. L. No. 105-178, §1216, 112 Stat. 107, 211-214 (1998) as amended by the TEA 21 Restoration Act, Pub. L. No. 105-206, §9006(b), 112 Stat. 685, 848 (1998).
[184] Apogee Research, Inc., *Summary of the Federal Highway Administration's Symposium on Overcoming Barriers to Public-Private Partnerships*, prepared at the request of the Federal Highway Administration, (FHWA-PL-94-026), May 1994, 9.

purposes. Such benefits and purposes include raising additional revenue, managing congestion, providing an opportunity for the market to work, and giving investors in the transportation system a direct cost-benefit correlation. As previously stated, in the past, there was political and cultural resistance to tolling. In today's political environment, support for additional gasoline taxes has waned and is likely to become even more difficult in the future.

With this decreased support for additional gasoline taxes and as public finances remain constrained as demand for improved transportation facilities continues to grow, opposition to the concept of tolling may be diminishing. Recent experience with toll roads suggests that motorists are willing to pay tolls if they see a clear benefit—such as having additional capacity available that enables them to avoid congestion and save time getting to their destinations.[185] Local polls suggest that the public opposition to the use of tolls to finance transportation improvements may be diminishing.

For example, a poll conducted in January 2004 by the *Star Tribune* in Minnesota found that those surveyed would be more willing to finance new highway construction with tolls, rather than an increase in the gas tax.[186] Of those polled, 69 percent indicated a preference for tolling to finance highway construction, rather than an increase in the State gas tax.[187] Only 23 percent of those polled indicated a preference for an increase in the State gas tax rather than tolls.[188] This poll was conducted by the newspaper to determine public opinion about the proposed regional "Fast Lane" network in the Twin Cities area. Tolls would be charged on new capacity added to existing freeways.

Another example is a poll conducted by the *Chicago Tribune* in 2001 in response to the Governor's proposal to phase-out toll roads in Illinois.[189] The poll indicated that a majority of those polled opposed the plan to eliminate tolls. Statewide, 41 percent of those persons surveyed disapproved of the Governor's proposal and 37 percent supported it. [190] Among those polled that use the Illinois toll roads on a regular basis 54 percent opposed the proposal, whereas 41 percent supported the proposal.[191] One of the more significant findings of the poll was the overwhelming opposition to an increase in the State's gas tax—almost 75 percent of those surveyed opposed such an increase.[192] Furthermore, 80 percent of those surveyed who live outside the Chicago area and 70 percent of those surveyed who live in the Chicago area opposed using gas tax revenue to compensate for lost toll revenue.[193]

---

[185] Congressional Budget Office, *Toll Roads: A Review of Recent Experience,* February 1997, 20. http://www.cbo.gov/showdoc.cfm?index=4014&sequence=0.
[186] Laurie Blake, "Minnesota Poll: 69% Comfortable with Toll Roads" *Star Tribune*, January 28, 2004, 1A.
[187] Ibid.
[188] Ibid.
[189] Rick Pearson, "Tolls Not a Big Issue, But the Traffic Is, *"Chicago Tribune*, May 16, 2001, 1.
[190] Ibid.
[191] Ibid.
[192] Ibid.
[193] Ibid.

Completed toll projects also demonstrate the importance of local community support. In the case of the SR 91 Express Lanes in Southern California, project sponsors clearly understood that public acceptance of the toll lanes was critical if the effort was to succeed.[194] As the first privately owned and variably tolled high-occupancy toll (HOT) facility in the country, the SR 91 Express Lanes depended on public approval and a supportive clientele to make the project viable.[195] Critics dubbed the proposed toll lanes as "Lexus Lanes" in reference to their concern that only the wealthy could afford to use the lanes.

Public outreach was a critical component during the project start-up phase as well as throughout the project. Once the decision was made to construct the HOT lane facility, project sponsors contacted the national media and public policy makers in an effort to garner support for the project.[196] Customers and non-customers are surveyed periodically to assess customer satisfaction, the need for improvements, and needed incentives to encourage road use.[197] A study of the SR 91 Express Lanes indicates that commuters of all incomes used the lanes.[198] Although the study did reveal that persons with annual incomes greater than $100,000 utilized the lanes at greater rates than lower income individuals, lower and moderate income individuals also make substantial use of the lanes.[199]

However, even the general public support for SR 91 was limited. A non-compete clause was included in the project agreement for SR 91 to protect the investment of the private investor—the California Private Transportation Company (CPTC).[200] In the non-compete clause, the California Department of Transportation (Caltrans) agreed not to make improvements or add capacity to the existing general-purpose lane on SR 91 without consulting CPTC.[201] When Caltrans sought to add capacity to the existing lanes in 1999, CPTC objected.[202] This objection raised public opposition and ultimately led to a lawsuit seeking nullification of the non-compete clause.[203] In public-private partnership projects, it is important to ensure that the public does not perceive the private partner as maximizing profits through excessive peak tolls, while the public agency does nothing to relieve congestion on free facilities.

The I-15 toll lanes in San Diego, California, also illustrate the importance of local support. Based on the growth of vehicles using I-15 over the last decade and the success of the HOT lanes, the San Diego Association of Governments (SANDAG) and Caltrans

---

[194] Parsons Brinckerhoff and the Texas Transportation Institute, *A Guide for HOT Lane Development*, prepared at the request of the Federal Highway Administration (FHWA-OP-03-009), 2003, 82.
[195] Ibid.
[196] Ibid.
[197] Ibid., 82-83.
[198] Ibid., 28, *citing* State of California, Department of Transportation, *Continuation Study to Evaluate the Impacts of SR 91 Value-Priced Express Lanes: Final Report*, December 2000.
[199] Parsons Brinckerhoff and the Texas Transportation Institute, *A Guide for HOT Lane Development*, prepared at the request of the Federal Highway Administration (FHWA-OP-03-009), 2003, 28.
[200] Ibid., 85.
[201] Ibid.
[202] Ibid.
[203] Ibid.

have broken ground on a project to expand capacity in the I-15 corridor.[204] An 800-person telephone survey of I-15 users conducted in fall 2001 indicated that the majority of motorists supported the lanes, and that motorists with the most extensive experience with the FasTrak lanes were the most ardent supporters.[205] Ninety-one percent of users supported having a time-saving option on I-15, and 66 percent of I-15 users who did not use the FasTrak lanes supported them.[206] Moreover, I-15 users overwhelmingly supported the facility's expansion with HOT lanes, and tolling of new lanes was preferred over providing new free lanes. The tolling option was preferred over adding regular lanes by a wide margin (37% for priced lanes vs. 26% for regular lanes). It appears that a large share of the public in San Diego have grown to understand the value of priced lanes, and that simply providing new general purpose lanes, without fees or other restrictions, will not help much in relieving congestion due to continuing increases in traffic.

Both the SR 91 and I-15 HOT lanes continue to operate successfully because two key strategies were employed to get public and political support. First, there was an effective information campaign early in the process. Second, both projects involved an integrated package of mobility strategies that benefit all income groups.

Effective public outreach is essential in garnering support for the use of alternative financing and must continue throughout project planning, implementation, and operation.[207] Trends suggest that traditional local opposition to toll roads is waning. The public is willing to pay a toll if they can foresee clear benefits to using the toll facility.

C. Private-Sector Concerns

Up to this point, this chapter has focused on public-sector impediments to public-private partnerships. Private-sector concerns also will affect the ability to form public-private partnerships. Uncertainty at many levels is a major factor in discouraging private investment in transportation facilities. This section will discuss private-sector impediments, including financing, land acquisition, environmental expertise, tort liability, and contractor concerns.

Mixing public and private financial interests presents attractive possibilities for expanding the range of transportation projects constructed, leveraging limited public funds, and injecting a private-sector test for financial reality and cost effectiveness into project decisionmaking.[208] However, because of public-private partnership complexity, the most frequently mentioned and apparently most significant private-sector barrier is obtaining financing.[209] The financial risks include start-up financing problems, unknown

[204] Ibid., 89.
[205] Ibid., 90.
[206] Ibid.
[207] Ibid., 101.
[208] Apogee Research, Inc., *Implications of Change in Procedures and Laws to Advance Public-Private Partnerships*, prepared at the request of the Federal Highway Administration , (FHWA-PL-95-026), April 30, 1995, 7.
[209] Ibid.

and hard-to-predict traffic levels and income streams, uncertain completion costs, general uncertainty about the economy, questions about tax treatment and depreciation, exposure to tort liability, unfavorable tax laws, and the ability to obtain non-toll revenue.[210]

i. Financial Viability

The question of financial viability for an individual highway project presents some special dilemmas.[211] Attracting private investment requires the prospect of profit.[212] A key question in highway projects is whether revenues from tolls or other user fees will be sufficient to repay debt to bondholders and provide an attractive return on investors' equity.[213] A highway system is composed of individual roadway links.[214] Projects serving each individual link may or may not be able to generate revenues that cover facility costs and yield a return on investment, as required by the private sector, even though unmet highway needs are evident.[215]

Toll roads are the typical way the private sector recoups investments in highway projects. These roads also have a unique set of initial financial impediments to overcome. Although transportation project costs are subject to overruns, the revenues for toll roads are generally more difficult to project because they entail more uncertainties about human behavior—such as if enough motorists are willing to pay tolls to use the road—and because the revenue stream extends farther into the future and thus is subject to more unpredictable events that may affect the demand for the road.[216] Most toll-road projects proposed for public-private financing have been for new construction with no traffic patterns established for the facility.[217] Revenue forecasts rely exclusively on predictions of traffic; realize traffic levels vary with the pace of local and national economic growth and may be influenced by environmental restrictions and technological change.[218] These revenue forecasts for toll roads, although critical to the evaluation of whether to invest in a proposed project, have not been reliable and add to the uncertainty about the financial viability of public-private partnerships.[219]

---

[210] Ibid.
[211] Ibid., 12.
[212] Congressional Budget Office, *Innovative Financing of Highways: An Analysis of Proposals*, January 1998, 50. http://www.cbo.gov/showdoc.cfm?index=320&sequence=0.
[213] Ibid.
[214] Apogee Research, Inc., *Implications of Change in Procedures and Laws to Advance Public-Private Partnerships*, prepared at the request of the Federal Highway Administration , (FHWA-PL-95-026), April 30, 1995, 12.
[215] Ibid.
[216] Congressional Budget Office, *Toll Roads: A Review of Recent Experience,* February 1997, 18. http://www.cbo.gov/showdoc.cfm?index=4014&sequence=0.
[217] Apogee Research, Inc., *Implications of Change in Procedures and Laws to Advance Public-Private Partnerships*, prepared at the request of the Federal Highway Administration , (FHWA-PL-95-026), April 30, 1995, 22.
[218] Ibid.
[219] Cherian George, William Streeter, and Scott Trommer, "Bliss, Heartburn, and Toll Road Forecasts," *Fitch Public Finance*, November, 12, 2003, http://www.fitchibca.com/corporate/reports/report.cfm?rpt_id=189364&sector_flag=8&marketsector=1&detail.

In addition to forecasting revenue streams, there are other uncertainties concerning financial viability of toll roads. Other modes of transportation and new parallel roads may divert traffic and affect income streams.[220] Limits placed on revenue sources and pricing policies imposed by State or local government also will restrict the potential for profit and incentive for private investment.[221] Furthermore, other external factors, such as high fuel prices and air quality restrictions, may reduce toll road usage. These uncertainties make investors less willing to sponsor toll road projects.[222]

Furthermore, the U.S. highway network is an extensive, mature system built over a long time, yet relatively few miles in the network are high-volume, primary or Interstate-type routes.[223] New, financially feasible projects are most likely to be for high-capacity facilities.[224] While inadequacies exist, few obviously crucial highway links have been left unbuilt, narrowing the candidates for public-private partnership development.[225] Despite this fact, major opportunities remain within major metropolitan areas as existing high-capacity facilities get congested due to economic and demographic growth and resulting increases in travel demand. However, metropolitan area highway expansions are also extremely expensive to provide, due to the high costs for additional rights-of-way and freeway interchange modifications. Costs for supply of new road space are significant. Recent construction cost data suggest that average costs for providing additional peak period capacity on urban freeways amount to as much $10 million per lane mile, which equates to about 30 cents per mile driven on the added lane in peak periods. On the other hand, motorists pay only 2 cents in fuel taxes per mile driven, based on combined Federal and State fuel taxes amounting to 40 cents per gallon and fuel efficiency of 20 miles per gallon. [226]

Due to these high costs, private proposals cannot in most cases be self-financed using toll revenue alone, and need to get an infusion of tax support from the public sector. For example, the State of Maryland has found that the proposed Inter-County Connector (ICC) project in Montgomery County can recover a relatively small portion of its construction costs from tolls, and will need tax support for more than half of its costs. Similar assessments have been made for the "Express Toll Lanes" proposed to be built on several major highways in Maryland. Recently, the Virginia Department of Transportation determined that a private proposal to build high-occupancy toll (HOT) lanes on the Capital Beltway in Washington DC metropolitan area would require about $200 million in tax support for construction, and additional public funds would be needed for operation and maintenance.

---

[220] Apogee Research, Inc., *Implications of Change in Procedures and Laws to Advance Public-Private Partnerships*, prepared at the request of the Federal Highway Administration, (FHWA-PL-95-026), April 30, 1995, 22.
[221] Ibid., 7.
[222] Ibid., 22.
[223] Ibid., 12.
[224] Ibid.
[225] Ibid.
[226] *Highway Economic Requirements System, Volume IV: Technical Report,* Federal Highway Administration, December 2000.

Start-up financing problems represent a serious barrier to public-private partnerships because of the high risk involved in planning, developing, and constructing a highway partnership project.[227] The initial phases of a transportation project involve unique and significant risks that are difficult to estimate.[228] They include the time and cost to obtain environmental and other permits and the costs and uncertainties of land acquisition.[229] Further, after much time and money have been invested in a project, the State DOT may not approve a project.[230] Even if the project is approved, there is the risk of losing the intellectual property (i.e., the possibility that the State DOT will undertake a traditional development approach).[231]

Initial evaluation of a public-private partnership project is not the only uncertainty in assessing the financial viability of a project. Substantial risks are involved in the highway construction process. Large projects face possible unforeseen and uncontrollable design and engineering changes, which can undermine the financial viability of an otherwise sound project.[232] Completion delays alone can add substantially to completion costs and defer the receipt of user revenues.[233] These uncertain completion costs for a highway facility are a barrier because the construction phase spans several years and market conditions may change, labor and materials costs may increase, interest rates may fluctuate, and unexpected delays occur.[234] Construction cost overruns can consume a developer's capital budget and undermine the coverage of debt service.[235] Additionally, construction risks will be reflected in the higher yields required by investors.[236] The yields will not be known until financing is completed, raising further uncertainties about the overall costs of the project.[237]

Traditional public highway construction projects use funds allocated from State transportation budgets and request bids for project completion.[238] If the bids are within the budget, the project is likely to proceed; if not, it is deferred, redesigned, or rebid.[239] Public-private partnership projects normally seek financing for some portion of construction costs beyond the equity or public investment, yet these costs are relatively difficult to predict before contracting and thus pose a barrier.[240]

---

[227] Apogee Research, Inc., *Implications of Change in Procedures and Laws to Advance Public-Private Partnerships*, prepared at the request of the Federal Highway Administration , (FHWA-PL-95-026), April 30, 1995, 22.
[228] Ibid.
[229] Ibid.
[230] Ibid.
[231] Ibid.
[232] Ibid., 13-21.
[233] Ibid., 13.
[234] Ibid., 21.
[235] Ibid.
[236] Ibid.
[237] Ibid.
[238] Ibid.
[239] Ibid.
[240] Ibid.

The structure and marketability of these financing arrangements require reasonably precise and definite knowledge of project costs; thus, new approaches to control and allocate construction risks are necessary.[241]

ii. Land Acquisition

The ability to assemble rights-of-way at a reasonable cost is critical to the development of a highway project.[242] Land acquisition is another impediment to private-sector participation. While private-sector acquisition methods may allow the private developer to negotiate lower acquisition costs and even obtain right-of-way donations at no cost, the concern here is the timeliness or certainty.[243] Private methods may not be enough to ensure timely acquisition of needed property.[244] The public-private partnership may have to be able to take advantage of the governmental power of eminent domain.[245]

Acquiring land for the right-of-way can be very difficult, especially in built-up areas where numerous property owners are involved.[246] A single landowner who does not want to sell can stop a project or cause its costs to escalate.[247] Governments generally have the right of eminent domain, which allows them to buy a property from an unwilling seller at a price deemed to reflect the fair market value, although exercising that right may be more costly politically than local officials are willing to bear.[248] Without the right of eminent domain, acquiring land for rights-of-way in some cases may be exceedingly difficult, unreasonable, or even impossible.[249]

The eminent domain process of States is generally more than broad enough to be available even for the use of private toll road projects. The public benefit of a toll road open to the public is clear. Private toll roads cannot be built without governmental approval or a public franchise. In some cases the toll road even reverts to the State DOT after a period of years. All these factors, either individually or collectively, are enough to support use of the eminent domain power should the State government decide to make the land available.

Another technique that has been used is an allowance. Under this technique, the private-sector partner takes responsibility for acquiring rights-of-way and doing utility adjustments up to a certain dollar amount.

---

[241] Ibid.
[242] Ibid., 18.
[243] Ibid.
[244] Ibid.
[245] Ibid.
[246] Congressional Budget Office, *Toll Roads: A Review of Recent Experience,* February 1997, 17. http://www.cbo.gov/showdoc.cfm?index=4014&sequence=0.
[247] Ibid.
[248] Ibid.
[249] Congressional Budget Office, *Innovative Financing of Highways: An Analysis of Proposals*, January 1998, 51. http://www.cbo.gov/showdoc.cfm?index=320&sequence=0.

After that amount is reached, the public-sector partner assumes responsibility for the costs related to utilities and land acquisition. This technique would lessen the risk to the private-sector partner, particularly if a condemnation case is brought as a result of the land acquisition.

The public and private partners also could involve landowners and local government as equity holders.[250] This can be facilitated through a trade of right-of-way privileges for equity in the proposed toll road project.[251] For example, land acquisition for a proposed toll road in Maricopa County, Arizona, would have cost about $800 million—a formidable barrier.[252] It was suggested that by trading right-of-way for equity in the project, two barriers might be removed at one time: excess cost and right-of-way acquisition.[253]

Another possible solution is to utilize rights-of-way already owned by the State. For example, the enabling legislation for SR 91 authorized the California Department of Transportation (Caltrans) to lease rights-of-way, grant easements, and issue permits to enable private entities to construct transportation facilities supplementing existing State-owned facilities.[254] This type of arrangement, at least for projects expanding existing facilities, gives private entities a high degree of certainty and reduces the costs associated with land acquisition.

iii. Environmental Expertise

Although all construction projects are required to obtain environmental permits under State and Federal laws, environmental clearance constitutes a particular barrier to public-private partnerships.[255] Substantial time and financial resources are required to obtain the proper clearances and permits.[256] Much of this cost occurs during the financially volatile early stages of a project.[257] Uncertainties abound about how many permits are required, whether the private franchise must meet the varying requirements of numerous overlapping jurisdictions, and whether other State or Federal agencies may exert jurisdiction unexpectedly.[258]

---

[250] Apogee Research, Inc., *Summary of the Federal Highway Administration's Symposium on Overcoming Barriers to Public-Private Partnerships*, prepared at the request of the Federal Highway Administration, (FHWA-PL-94-026), May 1994, 13.
[251] Ibid.
[252] Ibid.
[253] Ibid.
[254] Parsons Brinckerhoff and the Texas Transportation Institute, *A Guide for HOT Lane Development*, prepared at the request of the Federal Highway Administration (FHWA-OP-03-009), 2003, 82.
[255] Apogee Research, Inc., *Implications of Change in Procedures and Laws to Advance Public-Private Partnerships*, prepared at the request of the Federal Highway Administration , (FHWA-PL-95-026), April 30, 1995, 19.
[256] Ibid.
[257] Ibid.
[258] Ibid.

The risk to private highway projects is greater because these private projects have no revenues until operations begin and usually cannot access the State's revenue flow from highway fees.[259] Environmental risk drives up the required rate of return, adding to the difficulty in securing financing.[260] There is substantial risk of failing to obtain environmental permits resulting in a loss of the entire investment.[261] State, local, or Federal agencies may veto the project on environmental grounds, after the private sector has expended large sums and extensive time for detailed environmental studies.[262] Judicial challenges to the NEPA process and other environmental requirements, the risk of injunction, and new application of law imposing added requirements also present significant barriers.[263]

The SR 125 South project in San Diego, California, is an example of how the environmental process can cause significant delays in the development of a public-private partnership project. Although the California Department of Transportation (Caltrans) and California Transportation Ventures entered into a partnership agreement in 1989, challenges from environmental interests delayed the start of construction on the project until July 2003.[264] It was not until March 2003 that litigation challenging the final record of decision on the environmental impact statement for the project was resolved in favor of Caltrans.[265]

This road was primarily designed to serve planned development in the Chula Vista area of southern California, and anticipated traffic needs due, at least in part, to the close proximity of a major border crossing point with Mexico. Opposition to the SR 125 South project came from local opponents of the planned development, public agencies concerned with increased urban sprawl, and concern about loss of wildlife habitat. The road developer was subject to repeated delays as these issues, many of which were also related to the surrounding development, were debated and resolved. Actions by the developer to protect additional habitat and make design modifications did much to move the project along. Nevertheless, the delays were expensive and ultimately were a significant contributing factor to a major restructuring of the investor interests before the project could proceed to construction.

To alleviate the uncertainty, the public sector could obtain the project's environmental permits before substantial private equity has been put at risk.[266] Some in the private sector suggest that the environmental barrier could be obviated or reduced by having the

---

[259] Ibid.
[260] Ibid.
[261] Ibid.
[262] Ibid.
[263] Ibid.
[264] Amy Oakes, "Work on Part of Route 125 Under Way: The Southern Portion Has Been Much Delayed," *San Diego Union-Tribune*, September 13, 2003, B7.
[265] U.S. General Accounting Office, *Highways and Transit: Private Sector Sponsorship of and Investment in Major Projects Has Been Limited*, (GAO-04-419), March 25, 2004, 46. http://www.gao.gov/new.items/d04419.pdf.
[266] Apogee Research, Inc., *Implications of Change in Procedures and Laws to Advance Public-Private Partnerships*, prepared at the request of the Federal Highway Administration , (FHWA-PL-95-026), April 30, 1995, 19.

public sector assume the full responsibility, cost, and risk of securing environmental permits.[267] Once environmentally cleared, the private developer, as a condition of being awarded that project, would reimburse the State for all costs incurred in obtaining the permits.[268] In other words, the governmental costs are treated as a contingent loan and repaid with project revenues.[269] Alternatively, the public partner could reimburse the private partner for costs incurred for obtaining environmental permits, prior to the issuance of a record of decision (ROD). The environmental process, however, is not merely an analysis and documentation exercise. It is a phased decisionmaking process along the path of which key decisions must be made about the project. These decisions have significant impacts on costs, usage, and financial return. Thus, it is problematic to attempt to completely distance environmental review and decisionmaking from the interests of those with a financial stake in the process.

iv. Tort Liability

Another large risk for private investors is tort liability.[270] The Congressional Budget Office, in its 1997 memorandum on toll roads, noted that potential tort liability poses a significant risk to private investors in road projects.[271] Transportation projects are prone to incidents involving personal injury.[272] Accidents involving deaths, injuries, and damage to the environment (as might happen in multi-vehicle collisions or crashes with trucks carrying hazardous materials) may result in sizeable financial losses to the private partner.[273] Concerns about tort liability can affect the structuring of public-private partnerships. For example, the Government Accountability Office found that ownership of SR 91 was returned to the State because the private partner did not want to assume the tort liability for operating the toll road.[274] Because of tort liability, transactions may have to be structured in a way that does not produce the greatest public advantage.

Tort liability may be a barrier to public-private partnerships because the private sector is not shielded from tort liabilities in the same fashion as the public sector.[275] The private partner may be subject to claims for damages related to flaws in the design and operation

---

[267] Ibid.
[268] Ibid.
[269] Ibid.
[270] Congressional Budget Office, *Innovative Financing of Highways: An Analysis of Proposals*, January 1998, 51. http://www.cbo.gov/showdoc.cfm?index=320&sequence=0.
[271] Congressional Budget Office, *Toll Roads: A Review of Recent Experience,* February 1997, 19. http://www.cbo.gov/showdoc.cfm?index=4014&sequence=0.
[272] Apogee Research, Inc., *Implications of Change in Procedures and Laws to Advance Public-Private Partnerships*, prepared at the request of the Federal Highway Administration, (FHWA-PL-95-026), April 30, 1995, 23.
[273] Congressional Budget Office, *Innovative Financing of Highways: An Analysis of Proposals*, January 1998, 51. http://www.cbo.gov/showdoc.cfm?index=320&sequence=0.
[274] U.S. General Accounting Office, *Highways and Transit: Private Sector Sponsorship of and Investment in Major Projects Has Been Limited*, (GAO-04-419), March 25, 2004, 23. http://www.gao.gov/new.items/d04419.pdf.
[275] Apogee Research, Inc., *Implications of Change in Procedures and Laws to Advance Public-Private Partnerships*, prepared at the request of the Federal Highway Administration , (FHWA-PL-95-026), April 30, 1995, 23.

of the partnership facility.[276] Such claims pose a substantial risk to the finances of the enterprise.[277] Since the public partner is usually protected by sovereign immunity, liability is typically limited by State tort claims law. Additionally, the public partner is protected because it operates a large system of roads over which to spread the risk, and has the general revenues of the State as reserve against any potential judgment.[278]

Ways to help mitigate these risks range from broad options, such as some form of State or Federal sponsorship or the use of State maintenance and police services, to build transfer operate (BTO) agreements, to insurance.[279] The California toll roads have dealt with this problem by turning ownership and operation of the roadway over to the State once the road was open to traffic under a BTO agreement.[280] That way, responsibility for unsafe conditions or other factors leading to the crashes falls on the State—not on the private investors.[281] If subject to damage claims, the private partner also can seek protection by insurance.[282] However, the insurance costs can be significant and could undermine the project's financial feasibility.[283] Private companies have a strong incentive to avoid bearing the risk of tort liability, and this crucial barrier must be overcome through negotiation and risk sharing.[284]

v. Contractor Concerns

The structure of public-private partnerships and the use of innovative contracting methods require all parties (public and private) to a transportation construction project to shift to a different way of doing business. Contractors, including prime contractors and subcontractors, often have concerns about how changes in procurement laws, the business market, and work demand will affect their business. These contractor concerns can be an impediment to public-private partnership formation, especially for smaller contractors.

Bonding capacity, warranty requirements, financial risk, and project expertise all can impede small businesses from engaging in public-private partnerships.[285] There are several reasons why these barriers exist. Many public-private partnerships are utilized

---

[276] Ibid.
[277] Ibid.
[278] Ibid.
[279] Apogee Research, Inc., *Summary of the Federal Highway Administration's Symposium on Overcoming Barriers to Public-Private Partnerships*, prepared at the request of the Federal Highway Administration, (FHWA-PL-94-026), May 1994, 23.
[280] Congressional Budget Office, *Toll Roads: A Review of Recent Experience,* February 1997, 19. http://www.cbo.gov/showdoc.cfm?index=4014&sequence=0.
[281] Ibid.
[282] Apogee Research, Inc., *Implications of Change in Procedures and Laws to Advance Public-Private Partnerships*, prepared at the request of the Federal Highway Administration , (FHWA-PL-95-026), April 30, 1995, 23.
[283] Ibid.
[284] Ibid.
[285] Comment provided by Associated General Contractors of America.

for mega-projects (defined as projects with an estimated cost of $100 million or more[286]) that attract national and regional contractors, which leaves local, smaller contractors at a competitive disadvantage. Mega-projects involving a public-private partnership usually involve financing by the private partner. Even if a smaller contractor had the financing to support a large-scale project, the level of financial risk would negatively affect the smaller contractor's bonding capacity.

Mega-projects may involve a maintenance component, such as a warranty. These projects also use the design-build method of procurement. Such a method would require smaller contractors to carry professional liability insurance and have in-house design capability. All of these requirements involve financial burden and risk, which in turn affect bonding capacity.

Additionally, smaller contractors may lack expertise and the ability to gain expertise on these mega-projects. National and large regional contractors have the resources to move around the country to where these large-scale projects are located. Smaller local contractors may have limited opportunities to work on such projects, and therefore do not tailor their businesses to such projects. However, experience to date indicates that subcontractors perform a significant amount of the work, even if they are not the prime contractor. Figure 4.1 depicts what proportion of work was done by subcontractors on some select projects.

Figure 4.1
Subcontractor Cost Analysis March 2004[287]

Project	Current JTD* Total Cost	Current JTD Subcontractor Cost	Percent Subcontracted	Dollars of Self-Performed
SR-125	$41,670,189	$21,306,534	51%	$20,363,655
E-470	227,418,308	88,265,490	39%	139,152,818
Gold Line	288,126,490	178,507,757	62%	109,618,733
I-895	298,210,707	256,743,766	86%	41,466,941
New River Bridge	52,000,000	37,000,000	71%	15,000,000
I-15	1,250,904,303	621,239,244	50%	629,665,059

[286] This definition of "mega-project" is based on section 1802 of the Administration's surface transportation reauthorization proposal (Safe, Accountable, Flexible, and Efficient Transportation Equity Act of 2003 or "SAFETEA") that would amend 23 U.S.C. §106 to include, among other things, a $100 million threshold for financial planning and reporting requirements.
[287] Figure from the Washington Group International, "New Ways of Doing Business in the 21st Century," power point presented to the FHWA, March 2004.

Hudson Bergen LRT**	1,104,000,000	992,000,000	90%	112,000,000
Total Cost	$3,262,329,997	$2,195,062,791	67%	$1,067,267,206
Total Highway Work	$1,818,203,507	$987,555,034	54%	
Total Transit Work	1,444,126,490	1,207,507,757	84%	

Legend:

*JTD = Job to Date
All items listed at 100% of contract value
**Hudson Bergen LRT numbers include some Material POs (e.g. Signals & Comm), but excludes vehicles and O&M

Several sources consulted for this report addressed the contractor concerns previously discussed in this chapter. One suggestion is that the Federal procurement regulations attempt to strike a balance between full and open competition and the need to increase efficiency in government contracting. Although the competition may inhibit the ability of smaller contractors to compete successfully, market forces should compensate as firms form suitable joint ventures or other partnering arrangements.[288]

Also, relatively small construction firms can contract jointly with engineering firms to provide the expertise required under a design-build contract, which may result in greater competition. Experience indicates that large projects are in reality done by local subcontractors. When the E-470 Authority in Colorado entered into a $321 million design-build contract in 1995 with Morrison Knudsen and Fluor Daniel, they subcontracted all of the construction work to local contractors.[289]

D. Federal Funding

While the Nation's roads are owned, operated, and maintained primarily by State and local governments, a substantial source of funding for highway construction is the Federal highway program. Federal highway funding can take one of two forms—grant funding or credit assistance. With Federal funding comes Federal requirements that apply to any project utilizing Federal dollars. Appendix H focuses on the grants provided to States for highway construction and the requirements that accompany those funds.

---

[288] John R. Heisse II, "'Best Value' Procurement: How Federal and State Governments Are Changing the Bidding Process," April 29, 2002, 9, http://www.constructionweblinks.com/resources/Industry_Reports__Newsletters/April_29_2002/best_value_procurement.htm.

[289] Texas Comptroller of Public Accounts, *Paving the Way: A Review of the Texas Department of Transportation*, January 2001,. Chap. 4.2, 8, *citing* a telephone interview with Steve Richards, project manager, Morrison Knudsen, August 18, 2000. http://www.window.state.tx.us/txdot.

Additionally, Appendix H discusses Federal procurement requirements and contract administration, the FHWA design-build regulation, and the Freedom of Information Act .

E. Federal Financing Concerns

In recent years, some long-standing restrictions on highway aid have been removed and States have been given greater latitude in their use of it.[290] Those reforms, which help States stretch the value of Federal aid, have provided greater flexibility in sponsoring toll roads and engaging in debt financing.[291] This section will examine issues relating to Federal financing of highway projects; namely, tolling, private activity bonds, Federal credit policies, and limitations on commercialization.

i. Limitations on Tolling

Section 301 of title 23, United States Code, requires that all roads constructed with Federal-aid funding be free from tolls of all kinds, except as provided under 23 U.S.C. 129 and two pilot programs. Section 129 of title 23 U.S.C. establishes a restrictive basic program to permit Federal participation in certain toll highways, bridges, or tunnels. The basic program authorized under section 129 includes restrictions on ownership of the facility. To be eligible to participate in the program, the facility must be publicly owned, or it may be privately owned provided the public authority having jurisdiction over the facility enters into a contract with the private entity and retains responsibility for compliance with all applicable title 23 requirements. Section 129 also restricts the use of toll revenues by the owner, by requiring that revenues generated by the toll facility be used first for debt service, then for a reasonable return on any private investments, and then for the costs necessary for the proper operation and maintenance of the facility.[292] Among other things, 23 U.S.C. 129 does not permit a toll-free Interstate System highway to be converted into a toll facility, except bridges and tunnels. Nevertheless, two other provisions of Federal law provide limited opportunities for such tolling.

Section 1216(b) of the TEA-21 established the Interstate Reconstruction and Rehabilitation Pilot Program.[293] This program allows three Interstate facilities (one facility in three different States) to be tolled for purposes of reconstructing or rehabilitating existing Interstate facilities that cannot be functionally maintained or adequately improved without the collection of tolls. Under this program, toll revenues may only be applied toward debt service, reasonable return on investment of private parties financing the project, and operation and maintenance of the facility.

---

[290] Congressional Budget Office, *Innovative Financing of Highways: An Analysis of Proposals*, January 1998, x-xi. http://www.cbo.gov/showdoc.cfm?index=320&sequence=0.
[291] Ibid.
[292] 23 U.S.C. §129(a)(3) (2004).
[293] Transportation Equity Act for the 21st Century. P.L. No. 105-178, 112 Stat. 107, 212-214 (1998).

In addition, section 1012(b) of the ISTEA, as amended by section 1216(a) of TEA-21 established what is now called the Value Pricing Pilot Program (VPPP).[294] Under the VPPP, the Secretary may enter into cooperative agreements with up to 15 States, local governments, or public authorities to implement projects aimed at reducing congestion with variable tolls. This program permits entities to enter into an unlimited number of pilot facilities within that State (budget-permitting). This provision includes the authority to toll an Interstate highway. Toll revenues under this program must first be used to implement the project, and excess revenues may be used only on title 23 eligible projects. The Administration's SAFETEA proposal would establish a variable toll pricing program that would permit tolling on any highway, bridge, or tunnel, including the Interstate System to manage congestion or reduce emissions. This proposal is discussed in more detail in Chapter VI.

The private sector needs a non-governmental revenue stream to recoup an investment in a highway project. As discussed, the sections of highways that could generate the most revenue, highways on the Interstate System, are prohibited from being tolled, with limited exceptions. Lifting or further easing this restriction would encourage public-private partnership formation since the private sector would be investing in projects with better and greater revenue potential.

ii. No Tax Exemptions for Private Activity Bonds

In most parts of the world, tax codes do not differentiate between government and private bonds for infrastructure projects.[295] However, in the United States, the financing of public works projects by State and local governments has traditionally enjoyed a unique advantage.[296] Tax-exempt bonds may be issued for projects that are owned and operated solely by State and local governments. [297] Conversely, the availability of tax-exempt bonds is sharply limited if private for-profit companies are involved in the ownership or operation of the very same types of facilities, even when such projects serve a traditional public purpose, such as public transportation.[298] Current tax law sharply restricts the ability of private developers to finance construction of public infrastructure facilities via tax-exempt bonds.[299] As a result, the Internal Revenue Code tends to favor public development of infrastructure facilities over private development, because public development of infrastructure can reduce financing costs by 20-25 percent due to the ability of the public sector to issue tax-exempt bonds.[300] This Federal tax benefit can reduce interest rates as much as two-percentage points below rates on comparable taxable

---

[294] Intermodal Surface Transportation Efficiency Act of 1991, P.L. No. 102-204 § 1012 9 (b), 105 Stat. 1914, 1938 (1991); Transportation Equity Act for the 21st Century , P.L. No. 105-178, § 1216 (a), 112 Stat. 107, 211-212 (1998); and TEA-21Restoration Act, P.L. No. 105-206 § 9006 (b), 112 Stat. 685, 848 (1998).
[295] Karen J. Hedlund, *The Case for Tax-Exempt Financing of Public-Private Partnerships*, 1998, 5. http://www.reason.org/HEDLPDF.PDF.
[296] Ibid., 1; *citing* Federal Reserve Board of Governors Statistical Release G. 13, March 13, 1998.
[297] Ibid., 2.
[298] Ibid.
[299] Ibid., 1.
[300] Ibid., 1-2.

bonds.[301] For example, on a $100 million bond, this differential would mean a debt service cost savings of $2 million per year.[302] The Administration's SAFETEA proposal would expand the use of private activity bonds to include highway and freight transfer facilities. This proposal is discussed in more detail in Chapter VI.

The two-tiered tax structure, involving private taxable bonding and public tax-exempt bonding, is a disincentive for public-private partnerships.[303] Highway development costs are substantial and mostly incurred early in the life of a project, while revenue streams tend to develop slowly but come in over long periods of time.[304] Thus, higher taxable rates impose an extra disincentive for public-private transportation projects.[305]

Another reason that the two-tiered tax structure is a disincentive is that the level of user fees required to support taxable debt service may have to be raised beyond the point of diminishing returns; thus, that the project is simply not financially feasible on a stand-alone basis.[306] If other public subsidies or capital contributions are available to support the project, the lack of tax-exempt financing merely serves to shift the increased cost to the State and local level.[307] Without tax-exempt bonds, some projects will not be built at all; others will only be built in later years at a higher cost.[308] For example, during the competitive procurement phase of California's AB-680 program, several other projects, in addition to SR-91, were evaluated, but dropped because of the high taxable debt payment hurdle.[309] To overcome this problem, tax provisions should be amended to allow the issuance of tax-exempt debt for public highways and intermodal transportation facilities developed through public-private partnerships.[310]

iii. Federal Credit Policies

In some cases, subordinated debt or a local government guarantee of debt may make a difference between a project's success and failure.[311] For example, the Orange County Transportation Authority's financial commitment to the SR 91 project, in the form of subordinated debt representing approximately six percent of total financing, was

---

[301] Karen J. Hedlund, *The Case for Tax-Exempt Financing of Public-Private Partnerships*, 1998, 4, citing Federal Reserve Board of Governors Statistical Release G. 13, March 13, 1998. http://www.reason.org/HEDLPDF.PDF.
[302] Ibid.
[303] Apogee Research, Inc., *Implications of Change in Procedures and Laws to Advance Public-Private Partnerships*, prepared at the request of the Federal Highway Administration , (FHWA-PL-95-026), April 30, 1995, 8.
[304] Ibid.
[305] Ibid.
[306] Karen J. Hedlund, *The Case for Tax-Exempt Financing of Public-Private Partnerships*, 1998, 4-5. http://www.reason.org/HEDLPDF.PDF.
[307] Ibid.
[308] Ibid.
[309] Apogee Research, Inc., *Summary of the Federal Highway Administration's Symposium on Overcoming Barriers to Public-Private Partnerships*, prepared at the request of the Federal Highway Administration, (FHWA-PL-94-026), May 1994, 12.
[310] Ibid.
[311] Ibid., 20.

important to the project.[312] The risk acceptance signaled to private lenders that the public sector was committed to the project.[313] The Federal highway program has three programs that have helped to leverage Federal and State funds as discussed in Chapter III of this report. As discussed in the previous section regarding Federal funding (Section D), Federal requirements imposed on these programs do discourage the use of Federal funding, including Federal credit programs, by private entities. While two of these three programs, the Transportation Infrastructure Finance and Innovation Act (TIFIA) and State Infrastructure Banks (SIBs), provide benefits that can facilitate public-private partnerships, some limitations and concerns have been identified as discussed below.

1. TIFIA

The TIFIA program's pragmatic challenge is to balance the objective of advancing transportation projects with the equally important need to lend prudently and protect the Federal interest in getting repaid. The objective is not to minimize its exposure but to optimize its exposure—that is, to take prudent risks in order to leverage Federal resources through attracting private and other non-Federal capital to projects. The procedural and negotiating requirements for securing TIFIA credit assistance, however, is seen by some States and private contractors as being overly burdensome.

The TIFIA program's most notable departure from typical senior/subordinate debt structures stems from the statute's provision that, although the U.S. DOT can accept a junior lien on revenues, its claim must be on parity with senior bondholders "in the event of bankruptcy, insolvency or liquidation of the project obligor."[314] This non-subordination feature, giving the U.S. DOT the status of a senior creditor upon occurrence of unlikely circumstances, is often termed in the financial community as the "springing lien." The non-subordination requirement has generated much discussion regarding TIFIA's ultimate benefit to a project's senior debt rating and some States believe the non-subordination requirement reduces the value of the credit support.

Generally, investors focus on a project's future cash flows rather than its liquidation value. On this basis, the credit analysis will acknowledge that U.S. DOT's secondary claim on ongoing project revenues affords senior bondholders additional debt service coverage and diminished probability of payment default. By and large, projects with investment grade ratings reflect the likelihood that the borrower can meet scheduled debt service payments from pledged revenues, without regard to the collateral or liquidation value of the project. However, for weaker projects where the credit analysis must take into account the break-up or liquidation value of a failed enterprise, there would be a co-equal sharing of claims against the pledged security between the senior bondholders and the U.S. DOT.

---

[312] Ibid., 12.
[313] Ibid.
[314] The two provisions are that the DOT: "may have a lien on revenues…subject to any lien securing project obligations" (23 U.S.C. §183(b)(3)(B) (2004)), and that the DOT "shall not be subordinated to the claims of any holder of project obligations in the event of bankruptcy, insolvency, or liquidation of the obligor" (23 U.S.C. §183(b)(6) (2004)).

Reports from the credit rating agencies reflect this tension in the TIFIA program design. A recent report from Moody's Investor Services indicates that the non-subordination feature can be accommodated within project financings:

> Although limited to a default scenario leading to issuer bankruptcy, insolvency and liquidation, the 'springing lien' feature poses some potential risks for issuers/project sponsors and investors—particularly for stand-alone or 'non-recourse' projects. Nevertheless, Moody's believes that project fundamentals and structural and procedural safeguards could moderate this risk substantially. [315]

The issue of early repayment of TIFIA is one that U.S. DOT has encountered in the course of specific project negotiations. Federal credit policy suggests that the TIFIA investment should not be long-term when resources are available to replace it. Although the TIFIA statute permits long-term financing (up to 35 years after substantial completion), it also encourages early repayment. Specifically, the statute permits prepayment at any time without penalty and speaks of using "excess revenues" for that purpose. Further, Committee Print 105-550 states the following in its analysis of the TIFIA provision: "The Conference would like the Secretary to encourage Federal borrowers to prepay their direct loans or guaranteed loans as soon as practicable from excess revenues or the proceeds of municipal or other capital market debt obligations."[316] However, from the standpoint of the equity investor, long-term participation by TIFIA may be critical to profitability because TIFIA's low-cost funds can be leveraged to multiply the equity returns. The challenge is to determine the appropriate balance between being patient so investors can build needed transportation infrastructure vis-à-vis being patient so investors can maximize financial returns. TIFIA's policy position, consistent with Congressional direction, is that it should withdraw its investment more rapidly via loan prepayments, should the project achieve solid financial success.

Another concern about TIFIA from the public-partnership perspective is that the program must compete with both public borrowing and private borrowing. In essence, there exists a niche between public and private borrowing where TIFIA can have significant benefit to public-private projects. Florida DOT suggests that the program should be tailored to fit this need without an extensive overhead burden, in order to make private borrowing more efficient and practical.

Finally, the TIFIA program is an innovative example of using public-sector financial participation to leverage private capital. However, few transportation projects are undertaken in many States that meet the current $100 million threshold for the TIFIA program. Some suggest that the project cost threshold be reduced to at least $50 million to broaden the range of projects eligible for TIFIA.[317] Such a reduction in the project cost threshold was proposed by the Administration in the surface transportation

---

[315] Moody's Investors Service, "Moody's Analytic Approach To TIFIA: The Credit Impact Of The Springing Lien," *Municipal Credit Research*, January 2002.
[316] Committee Print 105-85, 105th Congress; 2nd Session; Transportation Equity Act for the 21st Century as amended by the TEA-21 Restoration Act Together with Explanatory Materials, 543 (October 1998).
[317] Comment provided by Arizona.

reauthorization bill – the Safe, Accountable, Flexible, and Efficient Transportation Equity Act of 2003 or SAFETEA.

2. SIBs

By providing flexibility, SIBs can help States get projects underway sooner. As loans are repaid, the proceeds are available to fund additional projects.[318] The SIBs may also aid States in another aspect of highway ventures.[319] However, besides the financial rules of the Federal highway program, the law imposes conditions on Federal aid that may increase the cost of a project funded by a SIB loan.[320] For example, a project built with Federal-aid must meet the prevailing-wage requirements of the Davis-Bacon Act.[321] Federal requirements apply to all projects financed by federally approved SIBs under the TEA-21 SIB program.[322] Federal requirements do not apply to projects financed through repayments for 39 federally approved SIBs authorized under the NHS Act. Federal requirements do apply to projects financed through repayments for SIBs authorized under TEA-21. Only two States have SIBs operating under the authority granted in TEA-21. The application of Federal requirements to all projects, even those financed through repayments, may have discouraged the other three States from operating their SIBs under the TEA-21 authority.

iv. Limitations on Commercialization

Commercialization of the highway right-of-way is attractive to the private sector. The two most popular ideas concerning privatization focus upon advertising signs on the right-of-way and commercial utilization of Interstate rest areas. Since current law prohibits such use, a public-private partnership would not be allowed to advance such proposals without changes in statute and regulation.

The FHWA has consistently denied proposals to allow advertising on highway rights-of-way for safety and other reasons. Under 23 CFR 1.23(b), rights-of-way of public highways must be devoted "exclusively to public highway purposes" unless the FHWA Administrator approves the use of the right-of-way for any other use. This purpose is reiterated in the Manual on Uniform Traffic Control Devices (MUTCD), which prohibits the placement of advertising on traffic signs and signals. The Highway Beautification Act (HBA) is a law largely aimed at limiting outdoor advertising signs adjacent to, but not on, the right-of-way of Interstates and primary highways.[323] The HBA also expressly provides for some types of right-of-way advertising and specifically allows advertising on the right-of-way only for LOGO signs on Interstate rights of way and tourist-oriented

[318] Congressional Budget Office, *Innovative Financing of Highways: An Analysis of Proposals*, January 1998, xi. http://www.cbo.gov/showdoc.cfm?index=320&sequence=0..
[319] Ibid.
[320] Ibid.
[321] Ibid.
[322] In some States, the SIB or a portion of the SIB is funded with State funds and is therefore not subject to Federal requirements. A federally approved SIB is a SIB that has been wholly or partially capitalized with Federal funds.
[323] 23 U.S.C. §131 (2004).

directional signs (special signs in the interest of travelers, limited to rural roads).[324] Such signs are thus permitted by the MUTCD. The HBA also allows motorist information centers to be placed on highway rights-of-way.[325] In addition, on Interstate System rights-of-way, Congress allowed call boxes sponsored by commercial companies to display company logos (23 U.S.C. 111(c)(2)).

The FHWA has determined, based on the above, that Congress did not intend to allow advertising signs on the right-of-way. If there were not a general prohibition on the use of logos in the right-of-way, there would be no reason for Congress to allow it in three specific instances in the United States Code. Thus, the agency has concluded that there must be some direction from Congress to allow broad scale advertising on the right-of-way.

The FHWA does permit State or local agencies to allow acknowledgment signs on the highway rights-of-way to recognize that highway services at a particular location were provided by a particular person or entity. Such acknowledgment signs include sponsorship signs for the adopt-a-highway program, sponsorship of an interchange or landscape planting, and similar programs. These programs have the potential for generating revenue for highway purposes through public-private partnerships based on sponsorship services. The prohibition against advertising in the right-of-way, however, remains in effect and limits the information that may be presented on an acknowledgement sign.

Section 111 of title 23, United States Code, generally prohibits commercial use of rest areas located on the rights-of-way of the Interstate System, except for the sale of items through vending machines operated by the State.[326] Additionally, the FHWA regulations on rest areas forbid any charge to the public for goods and services except charges for telephones or articles dispensed through vending machines.[327] Such vending machines may only dispense such food, drink, and other articles as the State department of transportation determines are appropriate and desirable.[328] For highways not on the Interstate System, the States have latitude to commercialize rest areas. In its surface transportation reauthorization proposal, the Administration proposed the creation of a pilot program to permit States to commercialize rest areas along the Interstate System; private operators could be allowed to run the projects, States would be required to ensure that the net income from the commercial venture is used to maintain the facility or for other title 23, United States Code, purposes.

[324] Ibid.
[325] Ibid.
[326] Former toll roads on the Interstate System that existed prior to the prohibition on tolling are "grand-fathered" and can have commercialized rest areas along the Interstate.
[327] 23 C.F.R. §752.5(g) (2003).
[328] 23 U.S.C. §111(b) (2004).

CHAPTER V: COMMENTS ON PUBLIC-PRIVATE PARTNERSHIPS

The FHWA asked several States, construction companies, law firms, and consulting firms that specialize in innovative contracting for their views on whether and how laws, regulations, or practices should be changed to remove impediments to the formation of public-private partnerships. Below is a compilation of the suggestions we received regarding changes that should be made to Federal laws, regulations, and practice. Although the need for changes to State law were mentioned in the section on impediments, they are not covered in this chapter because the focus of this chapter is the Federal influence on the formation and use of public-private partnerships.

Although the U.S. DOT supports a number of changes similar to those listed below, the recommendations listed in this section are recommendations of those engaged in pursuing public-private partnerships, not the Administration.

Overall, the recommendations from a number of States reflect a common opinion that current Federal regulations are too restrictive and impede wider use of public-private partnerships on transportation projects. States would prefer the Federal government serve as more of a partner in advancing the use of public-private partnerships and not as an entity overseeing State decisions. In addition, it was suggested that the Federal requirements that apply to a project should be reduced if the level of Federal financial involvement is minimal.

The majority of comments received focus on measures to further streamline the environmental review process. The remainder of the comments address Federal financing and contracting regulations that impede the formation of public-private partnerships.

A. Environment

The environmental review process was singled out as one of the most significant impediments to private sector participation in the development of transportation projects. Commenters believe that the current process is fraught with delay and uncertainty, both of which serve as a deterrent to private investors. As a result, some private investors have made a blanket decision not to invest in a project prior to the completion of the environmental review process.

To overcome this obstacle, two commenters suggested revising the Federal environmental regulations dealing with conflict of interest. Current regulations are perceived to limit severely the involvement of the private sector or public-private partnership team in the development and compilation of the environmental document. A change in regulation and practice to permit the involvement of the private sector in the preparation of environmental documents would allow the public-private partnership team to share in the inherent risks at this project decisionmaking stage and costs for the environmental review. Another commenter noted the involvement of the public-private partnership team with the preparation of the environmental document would allow for

those designing and building the facility to have a better understanding of the project's environmental needs.[329]

A number of comments suggested streamlining the process by changing the way Federal agencies address the environmental permitting process. It was suggested that the process could be further streamlined if Federal resource agencies would work with the private sector and develop a coordinated streamlined review strategy that takes into account the estimated costs and time to deliver a project.

Specific suggestions on improving the environmental process are set forth below. These suggestions are organized by the degree of change they require, i.e., administrative, regulatory, or statutory.

i. Recommended Administrative Changes

1. Commenters suggested that FHWA should adopt a new National Environmental Policy Act (NEPA) and Section 404 and Endangered Species Act (ESA) memorandum of understanding (MOU). According to commenters, the current MOU was executed to provide for coordination of three environmental review processes, but in practice the MOU has not been as helpful as anticipated in streamlining the Federal environmental process. Accordingly, it is suggested that the MOU be improved by revising the agreement as follows:

- Clearly restrict the jurisdictional role of the resource agencies and limit their participation to issues within their respective areas of expertise;
- Define information needs for the different stages based on a level of information appropriate to the decision to be made and an appropriate expenditure of time and resources rather than a set definition that is not appropriate for all projects;
- Impose enforceable time limits on various elements of NEPA, 404, and ESA processes; and
- Establish workable procedures to allow those involved in the process to elevate issues naturally. Elevation should be done within a couple of weeks (as opposed to the several month process of the existing elevation procedures.)[330]

2. Commenters suggested projects could be expedited if the FHWA and State transportation agencies developed programmatic approaches to compliance with the ESA and Section 404. Many private landowners and local governments have developed programmatic approaches to the resolution of ESA and wetland issues.[331]

3. Commenters also suggested that the FHWA should develop data-standardized approaches to analysis of cumulative effects and growth-inducement. The absence of sophisticated approaches to the analysis of cumulative impacts and growth can delay a

[329] Comment provided by Texas and Virginia.
[330] Comment provided by Nossaman, Guthner, Knox, & Elliott, LLP.
[331] Comment provided by Nossaman, Guthner, Knox, & Elliott, LLP.

project due to opposition from Environmental Protection Agency (EPA) and the environmental community.[332]

4. Commenters suggested that State transportation agencies should be authorized to compile the administrative record for a project. Federal environmental litigation is often delayed by several months while the administrative record is compiled by the FHWA. To reduce this delay, State transportation agencies should be authorized to compile the administrative record in advance of completion of the environmental process.[333]

5. At risk activities, such as real estate acquisition and procurement of design and contracting services should be allowed prior to, but conditioned on, the completion of NEPA review.[334]

ii. Proposed Regulatory Changes

1. Commenters proposed amending the design-build regulations to authorize design-build procurement and design work prior to record of decision. TxDOT was especially focused on the need for this change. In its opinion, the design-build rule precludes agencies from issuing an RFP until after NEPA approval has been obtained. This causes unnecessary delays to projects. As an example, the SH 130 Project in the Austin area was delayed because of TxDOT's inability to get special approval to issue the RFP prior to issuance of the record of decision. For programs, such as the Trans-Texas Corridor, that rely on the private developer to support the NEPA process, this requirement creates a major obstacle to implementation.[335]

2. Commenters also suggested that the CEQ and the FHWA NEPA regulations could be revised to provide that subsequent tiered NEPA documents shall not consider issues addressed in prior NEPA documents concerning the project or action.[336]

3. The CEQ and the FHWA regulations should be amended to allow the private developer to supply engineering studies, technical information, and other support to the transportation agency during the NEPA process. Because the NEPA analysis requires the design to be taken to a relatively high level, design choices made during this process are likely to close the door to innovative ideas and solutions proposed by the design-build contractor. The proposed amendments will make it clear that the contractor can be selected prior to completion of the NEPA process and can provide support for that process. This will allow concepts proposed by the contractor to be considered as part of the original NEPA analysis--instead of requiring the project owner to determine whether a supplemental analysis is needed in order to allow the contractor's ideas to be implemented. [337]

---

[332] Comment provided by Nossaman, Guthner, Knox, & Elliott, LLP.
[333] Comment provided by Nossaman, Guthner, Knox, & Elliott, LLP.
[334] Comment provided by Marion C. Pulsifer Consulting.
[335] Comment provided by Texas and Virginia.
[336] Comment provided by Nossaman, Guthner, Knox, & Elliott, LLP.
[337] Comment provided by Texas, Virginia, and Marion C. Pulsifer Consulting.

4. Commenters suggested that the FHWA adopt "safe harbor" rules that would provide safe harbor for environmental documents that incorporate FHWA-approved approaches to environmental review such as growth-inducement, cumulative effects, alternatives and project purpose and need.[338]

iii. Proposed Legislative Changes

1. Commenters suggested legislation could authorize FHWA to certify State environmental review programs to operate in lieu of NEPA and other Federal environmental requirements.[339]

2. Commenters suggested that limiting the type of section 4(f) resources that are subject to section 4(f) requirements would reduce delays to the environmental process.[340]

3. Many delays during the environmental review process occur as a result of disputes between the FHWA and the resource agencies. To limit such disputes, commenters proposed legislation to limit resource agency comments to issues within the jurisdiction and expertise of the resource agency and could require agencies to accept the evaluation of the FHWA on traffic, engineering and cost issues.[341]

4. The NEPA/404 MOUs have not been as helpful in expediting the NEPA process as anticipated.[342] The MOUs do not impose any enforceable limit on resource agency reviews. Legislation could impose deadlines on resource agency review and require the FHWA to process the NEPA document where the resource agencies failed to submit timely comments.[343]

5. Commenters stated that legislation could establish a variety of safe harbors for NEPA documents that meet certain standards. For example, an alternatives analysis could be deemed adequate if it includes two alternatives that minimize significant effects of the project.[344]

[338] Comment provided by Nossaman, Guthner, Knox, & Elliott, LLP.
[339] Comment provided by Nossaman, Guthner, Knox, & Elliott, LLP and Florida.
[340] Comment provided by Nossaman, Guthner, Knox, & Elliott, LLP.
[341] Comment provided by Nossaman, Guthner, Knox, & Elliott, LLP. The Administration included such a proposal in SAFETEA.
[342] FHWA and FTA have facilitated the drafting and execution of MOUs among Federal, State, and local agencies responsible for implementing the NEPA process and the process for obtaining Section 404 permits under the Clean Water Act. These agreements were designed to better integrate and thereby streamline the separate procedures dictated under NEPA and under Section 404 of the Clean Water Act.
[343] Comment provided by Nossaman, Guthner, Knox, & Elliott, LLP.
[344] Comment provided by Nossaman, Guthner, Knox, & Elliott, LLP.

6. Financing and construction of projects are subject to extensive litigation delays. Commenters suggested that a shorter statute of limitations, such as 30 days established under California law, could reduce environmental litigation delays.[345]

iv. Planning

Current law does not include private operators in the list of parties to be included in the policy board of a metropolitan planning organization. As the number of privately financed projects increases, there will be private owners or operators of modes of transportation that could be equivalent in importance to the modes operated by public entities represented on the metropolitan planning organization policy boards.[346]

v. Mitigation

One commenter suggested Federal reimbursement for land or other assets (such as mitigation bank credits) acquired for mitigation prior to contemplated use on a specific transportation project (and prior to Federal authorization for a project) would be financially and environmentally advantageous for States. Suitable areas for environmental mitigation are becoming difficult to locate within States and more flexibility to acquire these lands or obtain mitigation credits when they are available would make mitigation of future Federal projects easier as well as help to avoid unexpected increases in mitigation land costs. Under this proposal, a State would acquire land or other mitigation assets with State funds that would be held for mitigation for future and, at the time of acquisition unidentified State and Federal projects. If the land or asset is used on a future Federal-aid project, the cost of the land or asset would become eligible for Federal reimbursement as part of the total cost of said future Federal-aid project, even though the mitigation land or asset was acquired prior to the date Federal-aid funds would be authorized for said future project. Federal law currently does not allow reimbursement of project costs incurred prior to the authorization of Federal funds.[347]

vi. Right-of-Way

The right-of-way acquisition process was identified as causing project delay, thereby discouraging public sector involvement. To reduce the delay, it was suggested that the Federal right-of-way regulations be revised to streamline the process and give States greater flexibility in this area. For example, in the area of advance acquisition, it was suggested that FHWA relax Federal regulations to create more opportunities to acquire properties at or below the market value when these properties are offered for sale on the open market. Similar streamlining examples could be provided for right-of-way

[345] Comment provided by Nossaman, Guthner, Knox, & Elliott, LLP. In SAFETEA, the Administration proposed a statute of limitation of 180 days for legal challenges to Federal agency decisions made in connection with the issuance of permits, licenses, or approvals for highway construction or public transit projects.
[346] Comment provided by Macquarie Infrastructure Group, a wholly-owned subsidiary of Macquarie Bank Limited.
[347] Comment provided by Florida.

acquisition, appraisal, appraisal review, relocation assistance, property management, and right-of-way certification.[348]

B. Financial Flexibility

States and localities investigate the use of public-private partnerships because of the financial flexibility such arrangements offer. Not surprisingly, we received a number of comments and recommendations for improving the way projects are financed.

i. Private Activity Bonds

Most of those offering comments suggested the need for Private Activity Bonds. Frequently they pointed out the benefits and additional flexibility that would be available to project sponsors if they could include private, tax-exempt debt as part of their financing package.

ii. TIFIA

TIFIA is seen as a very valuable tool in helping public-private partnerships get off the ground financially. There were a number of suggestions, however, on how TIFIA could be modified to make it a more useful tool for those seeking to form public-private partnerships. These suggestions include:

- Eliminating the policy of requiring a TIFIA loan to be repaid on an accelerated basis from "surplus funds." This requirement can discourage the use of TIFIA in connection with equity investment.[349]
- Not requiring all Federal requirements to apply to an entire project simply because some parts of the project are part of the "eligible costs" pool.[350]
- Eliminating the "springing lien" clause in TIFIA agreements. This is the TIFIA requirement that DOT be elevated to the status of a senior creditor upon occurrence of the unlikely event of insolvency.
- Reducing the project threshold from $100 million to $50 million to broaden the range of projects eligible for TIFIA.[351]
- Modifing the program to be less cumbersome for applicants.

iii. SIB

Commenters suggested that the TEA-21 provisions that limit the State Infrastructure Bank (SIB) program to a few States be expanded to allow all States to participate and capitalize a SIB.

---

[348] Comment provided by Florida.
[349] Comment provided by Macquarie Infrastructure Group, a wholly-owned subsidiary of Macquarie Bank Limited.
[350] Comment provided by Texas.
[351] Comment provided by Arizona. The Administration proposed lowering the eligibility for TIFIA from $100 million to $50 million in SAFETEA.

iv. Tolling

Many States are in favor of expanding the toll pilot programs (both the Interstate Reconstruction and Rehabilitation Pilot Program and the Value Pricing Pilot Program) and giving the States flexibility to decide how to incorporate tolls into their highway programs. Restricting the number of eligible States or projects, limiting the types of projects for which tolls may be utilized (e.g., only for additional lanes), restricting tolls to congestion relief or automated-only lanes, and limiting the uses for which toll revenues may be applied will unnecessarily constrain State and regional agencies and their private sector partners in applying innovative solutions to transportation problems. Decisions regarding the advisability of using tolls to finance a proposed project are best left to the local level, rather than being predetermined by the Federal government.

Comments were also received encouraging expanding toll credits. Toll credits allow States to count toll revenues collected as part of the non-Federal match they need to receive Federal funding. Current law prevents States from taking toll credits for toll roads that have been constructed with Federal funding, regardless of how little funding was involved. [352]

v. Other Financial Suggestions

Commenters made a number of other suggestions for reducing financial impediments to the formation of public-private partnerships including:

- Eliminate Federal matching requirements on public-private partnerships using Federal funds.
- Qualify early engineering and development costs for Federal participation.[353]
- Encourage State and Federal participation in the funding of development expenses incurred by those pursuing public-private partnerships by creating Federal guidelines for a mechanism that would reimburse the private sector for development and other related costs.[354]
- Allow for Federal funds to participate in privately-owned parking facilities. [355]
- Allow for a private sector return on investment significant enough for the private sector to take on the increased risks of public-private partnerships.[356]
- Provide greater flexibility to the "Public Trust Doctrine," which enables State DOTs to take an easement for right-of-way and use it for a public purpose. With the most recent budget crisis that plagued many State DOTs, it may be helpful to broaden the definition of "public benefit" to cover those cases where a non-

[352] Comment provided by Macquarie Infrastructure Group, a wholly-owned subsidiary of Macquarie Bank Limited.
[353] Comment provided by Macquarie Infrastructure Group, a wholly-owned subsidiary of Macquarie Bank Limited and Florida.
[354] Comment provided by Macquarie Infrastructure Group, a wholly-owned subsidiary of Macquarie Bank Limited; Hayes, Seay, Mattern and Mattern, Inc.; and CH2M Hill, Inc..
[355] Comment provided by Macquarie Infrastructure Group, a wholly-owned subsidiary of Macquarie Bank Limited.
[356] Comment provided by Tom Warne and Associates, LLC.

transportation project within the right-of-way produces a funding stream for the State DOT. An example would be to lease right-of-ways to entities that provide services to the transportation industry. The entities would provide the motoring public with a service with easy access and also provide the State DOTs with an additional stream of funding.[357]

C. Procurement

i. Design-Build

As mentioned earlier, many States do not have legislation allowing for the use of design-build. Yet the use of design-build is the first step toward public-private partnerships and can lead toward more expansive public-private partnerships, which include financing options. The lack of design-build authorization can be a serious impediment to the formation of any public-private partnership in a State. Commenters have suggested that the Federal government encourage States to enact legislation that would allow State DOTs to use this procurement tool.[358]

ii. Competition

Federal procurement guidelines are designed to encourage competition. Yet, according to the comments received, these same requirements can limit some of the advantages of public-private partnerships.

1. Flexibility in Design

One State suggested that public-private partnership proposals should allow flexibility for context sensitive designs rather than the hard "one size fits all" concepts. Public-private partnerships should be able to propose innovative design concepts with a reasonable expectation of implementation, provided the proposal is acceptable to the State highway departments. The same consideration should be provided for the procurement means and methods. For example, the public-private partnership provider should be able to propose nontraditional contractual relationships, engineering and inspection techniques, etc. The focus should be on the performance of the overall project rather than how the project is constructed. [359]

2. Subcontracting

Another State noted that the regulations applicable to "traditional" Federal-aid projects do not include any procurement requirements relating to subcontracts. The need to allow the prime contractor flexibility in subcontracting is even more critical for public-private partnerships because of the likelihood that the developer will want to enter into contracts with its team members. However, the design-build rule requires developers to follow the

[357] Comment provided by South Carolina.
[358] Comment provided by Marion C. Pulsifer Consulting.
[359] Comment provided by Florida.

same procurement rules that apply to State highway departments procuring prime contracts, with exceptions that may not be applicable to certain projects. As a result, special approval is required in order to allow these projects to proceed.[360]

3. Pre-Award Restrictions

Concern was also raised regarding restrictions on pre-award negotiations, which may reduce the ability to obtain the best deal for taxpayers. For example, the SH 130 Project in Austin, Texas realized significant savings due to pre-award negotiations to incorporate the unsuccessful proposers' concepts into the final contract. Other planned Texas DOT projects will not be able to benefit from the same process without special approval. Texas DOT provided a synopsis of current law and offered suggested changes, which are discussed in the following sections.[361]

4. Unsolicited Proposals

The State's inability to accept unsolicited proposals may result in a critical project falling by the wayside if only one firm is interested in pursuing it. The requirement to engage in competition might also delay emergency projects. The inability to accept unsolicited proposals has not been a problem to date, but, commenters suggest, likely will be a problem in the future, as new laws enable innovative infrastructure delivery. Under current law the following steps are necessary if no competing proposals are received: (1) receive proposal; (2) consider whether to proceed; (3) issue request for competing proposals; (4) if no other responses are received, drop the procurement or seek special approval to proceed with negotiations with the proposer; (5) solicit and receive a detailed proposal from the proposer, (6) negotiate terms and conditions acceptable to DOT, and (7) award.

A suggested change was proposed that would allow State DOTs to accept unsolicited proposals as permitted by State law. The following steps would be followed if no competing proposals are received: (1) receive proposal; (2) consider whether to proceed; (3) issue request for competing proposals; (4) if only one response is received, proceed with analysis to determine whether it is in the public interest to proceed; (5) solicit and receive a detailed proposal from the proposer, (6) negotiation of terms and conditions acceptable to DOT, and (7) award.

In the view of the State DOT, the private sector will be discouraged from submitting proposals if they know that the agency will be allowed to proceed only if a second proposer can be found. Faced with a myriad of business opportunities to choose from, contractors will consider many different factors in deciding whether to participate in a competition for a particular project. The factors considered in making the decision to provide an unsolicited proposal will include the level of effort involved in preparing the initial proposal and participating in a competition, the likelihood of success, and the level of potential profits if successful. Public-private partnerships require a higher level of

[360] Comment provided by Texas.
[361] Comment provided by Texas.

effort than other types of projects, thus decreasing the likelihood that a contractor will participate. In order to encourage the likelihood that such proposals will be submitted, it is advisable to establish a procedure that ensures the proposers that their ideas will not die an untimely death merely because no other proposers are interested in competing.

In addition, the unsolicited proposal process encourages the private sector to evaluate projects "in the works" and propose options that can greatly accelerate project delivery. The proposed change will make it more likely that proposals will be made.

5. Exclusive Rights

The Government should consider providing exclusive rights to certain private companies. Government agencies are hesitant to give full and exclusive rights to private companies because of the idea that the public good is served by making certain products and services generally available to all. In certain public-private partnership situations, however, it might be advantageous for the government, and taxpayers, to convey exclusive rights. For example, for certain intelligent transportation systems services, some exclusivity may be in order.[362]

iii. Proprietary Property

Public-private partnerships provide an opportunity for and encourage the use of innovative design, contracting, and construction methods. The use of these methods benefits both the public and private parties to such agreements. However, under current law, this opportunity is restricted by Federal procurement guidelines, which discourage the use of proprietary products and techniques.[363]

Freedom of Information Acts present another concern for potential private sector partners with proprietary or confidential material they want to include in a proposal. These laws were enacted to ensure citizen access to important government information. However, these laws can have the unintended effect of discouraging the sharing of information between the private sector and State DOTs. Private firms will be rightfully hesitant to include creative ideas in proposals if their competitors will have access to those proposals. Retaining the confidentiality of public-private partnerships proposals and private-sector financial information contained in such proposals is always a concern to the private entity.[364]

iv. Special Experimental Project No. 14

SEP-14 has provided much needed flexibility to the States. Commenters suggested that U.S. DOT should consider expanding SEP-14 for use by public-private partnerships.

[362] Comment provided by Tom Warne and Associates, LLC.
[363] Comment provided by Florida.
[364] Comment provided by Nossaman, Guthner, Knox, & Elliott, LLP.

This expansion would encourage and allow innovative procurement practices to be incorporated into public-private partnerships.[365]

D. Miscellaneous Comments

i. Delegation

Several States suggested delegating more authority from U.S. DOT/FHWA to the States. These delegations would take the following forms:

- Federal regulations should authorize the State Highway Agencies to approve innovative contracting techniques, e.g., SEP-14, to streamline the approval process.[366]

- Federal regulations should not require any additional reporting requirements for public-private partnerships.[367]

- The involvement of the FHWA Division Offices in policy issues such as use of Designer of Record for the Construction Engineering and Inspection (CEI) services or the negotiation of Lump Sum contracts for CEI services could be suspended for agencies with a history of sound contracting practices.[368]

ii. De Minimis Rule for Federal Funding and Reimbursements

Public-private partnerships are likely to use far less Federal funding than the traditional 80 percent used on federally funded facilities. Some commenters suggested that the Federal requirements that attach to a project be somewhat proportional to the Federal funds involved in the project. Under current law, any Federal funding makes a project a Federal project. It was suggested that the Federal government create a de minimis rule that would allow projects below a certain threshold of funding to still be considered State or local projects. [369]

Similarly, it was suggested that activities undertaken during the development phase, including environmental approvals, be eligible for Federal reimbursement even if the project is not a Federal project.

iii. Public-Private Partnership Pilot Program

The lack of experience with public-private partnerships and the amount of effort it takes for a State to explore them has led some to suggest that Congress establish a pilot project

[365] Comment provided by Florida.
[366] Comment provided by Florida.
[367] Comment provided by Florida.
[368] Comment provided by Florida.
[369] Comment provided by Macquarie Infrastructure Group, a wholly-owned subsidiary of Macquarie Bank Limited and Arizona.

program to demonstrate the effectiveness of public-private partnerships as a way to reduce costs and speed project delivery for certain types of capital projects.[370]

iv. Public Education

Some commenters noted that one significant hurdle to the formation of public-private partnerships is the public's misperception that roads are "free."[371] A failure to understand the cost and inefficiency of the current system based on fuel and sales taxes leads some to conclude that roads financed with alternative means (even means that are significantly more efficient) "cost" more. It was suggested that the Federal government take a role in letting the public know that the roads they drive on are not free and that the roads being proposed under public-private partnerships are not likely to get built at all with current funding mechanisms.

In addition, the Federal government can play an important role in signaling acceptance of public-private partnerships to reassure local policy makers of the legitimacy of the process.[372] Suggestions included having U.S. DOT take the lead in setting an environment (working with the U.S. Conference of Mayors, National League of Cities, etc.) in which political leaders can feel more comfortable advocating the use of public-private partnerships.[373] Others suggested including a statement of policy in the surface transportation reauthorization bill declaring public-private partnerships and negotiated procurements are an advantageous method of funding and procuring transportation improvements.[374]

v. State Enabling Legislation

What States should include in any public-private partnership legislation will vary, according to a previous FHWA review of the literature on public-private partnerships. The literature suggested that legislation should, at a minimum, provide an operating environment that allows a State department of transportation to enter into partnerships and to approve specific activities associated with that partnership.[375] To be effective, State enabling legislation should designate a lead agency, such as the State department of transportation or a toll authority, to implement highway partnerships.[376] The literature also indicated that the lead agency should have the authority to act on behalf of the State; therefore, it should have certain statutory powers.[377] For most projects, these powers

[370] U.S. General Accounting Office, *Highways and Transit: Private Sector Sponsorship of and Investment in Major Projects Has Been Limited*, (GAO-04-419), March 25, 2004, 15. http://www.gao.gov/new.items/d04419.pdf.
[371] Comment provided by CH2M Hill, Inc.
[372] Comment provided by Minnesota.
[373] Comment provided by AECOM CONSULT.
[374] Comment provided by Virginia.
[375] Apogee Research, Inc., *Implications of Change in Procedures and Laws to Advance Public-Private Partnerships*, prepared at the request of the Federal Highway Administration , (FHWA-PL-95-026), April 30, 1995, 11.
[376] Ibid.
[377] Ibid.

should include the power to procure projects through negotiation; to acquire right-of-way through eminent domain (or otherwise) and transfer use of it to a private developer; to acquire and confer environmental permits; to confer exclusive franchises; to establish a geographic non-compete zone; to enter into binding concession agreements and lease arrangements; to regulate tolls or rates of return; to accept unsolicited proposals; and to blend or lend State and Federal funds to a project.[378] The literature noted that without some of these powers, it would be difficult for a State to undertake public-private investment initiatives.[379]

E. Evaluation

These stakeholder comments do not reflect the position of the Administration, although many are worthy of further investigation. The U.S. DOT will evaluate these comments in more detail, discuss them with other stakeholders, and consider whether future changes in policies, procedures, and regulations are necessary and appropriate to facilitate the formation of public-private partnerships.

[378] Ibid.
[379] Ibid.

CHAPTER VI. U.S. DOT RECOMMENDATIONS

On May 14, 2003, the Administration sent to Congress its surface transportation reauthorization proposal—SAFETEA. SAFETEA included a number of provisions to increase State and local flexibility and the efficiency of project delivery. At the time of writing, Congress was considering the surface transportation reauthorization legislation. The U.S. DOT believes that its SAFETEA proposals would help to overcome some of the impediments to the formation of public-private partnerships identified in Chapters IV and V of this report.

A. Tolling

To mainstream the value pricing program, SAFETEA includes a proposal to establish a variable toll pricing program to allow all States to use variable pricing to manage the congestion on their Interstates or to reduce emissions in a nonattainment or maintenance area. SAFETEA also would allow States to permit single occupancy vehicles on high occupancy vehicle lanes so long as time-of-day variable changes are assessed (so called HOT lanes). In addition SAFETEA proposes the expansion of the pilot program that permits States to toll Interstate System facilities for the purpose of financing their reconstruction or rehabilitation. Under current law, States must show that collecting tolls is the only way to improve the facility. Under the proposal, this strict financial analysis requirement would be replaced with a requirement that the State must show that financing the improvements to the facility through tolls is the most efficient economical or expeditious way to advance the project. Increased opportunity for tolling on the Interstate System could translate into more private sector involvement with such projects.

B. Private Activity Bonds

The SAFETEA proposal would allow State and local governments, in the aggregate, to issue up to $15 billion in private, tax-exempt bonds to pay for highway facilities or surface freight transfer facilities.[380] The purpose of this proposal is to encourage greater private-sector participation in the financing of surface transportation infrastructure projects. This change would allow private entities to maintain tax-exempt status of bonds issued to finance surface transportation infrastructure projects. Under the proposal, the bonds also would be excluded from States' private activity bond volume caps, so that other types of projects eligible for tax-exempt facility bonds would not be displaced. This provision would help level the playing field for private entities interested in financing these types of projects.

[380] Currently, tax-exempt private activity bonds may be issued for certain privately developed and operated facilities, including airports, docks and wharves, water, sewage and solid waste disposal facilities, mass commuting facilities, qualified hazardous waste facilities, qualified residential rental projects, high-speed intercity rail facilities, and environmental enhancements of hydro-electric generating facilities.

C. Environmental Streamlining

The private sector is reticent to invest in highway projects early in the project's life because of the vagaries of the environmental permitting process. SAFETEA includes a number of proposed changes that would streamline the environmental process and make it more predictable; thus, making investment in surface transportation infrastructure more attractive to the private-sector. Specifically, SAFETEA would:

- Strengthen the provisions of current law that provide for setting timeframes for environmental reviews and decisions on permits.
- Allow some of U.S. DOT's responsibilities concerning Categorical Exclusions to be assumed by States.
- Clarify the legal standard under "section 4(f)" applicable to determinations as to whether a possible project alternative is feasible and prudent.
- Resolve the current overlap between Section 106 of the National Historic Preservation Act and "section 4(f)".
- Provide for timely resolution of outstanding legal disputes by establishing a six-month statute of limitations for appeals on the adequacy of projects' environmental impact statements and other environmental documents.
- Expand authority for States to use Federal funds to pay for new positions to expedite reviews.

The changes proposed in SAFETEA are designed not only to make the processing of documents more efficient, but also to avoid changing the substantive requirements concerning environmental protection.

D. Transportation Infrastructure Finance and Innovation Act (TIFIA) Amendments

A number of changes were proposed to TIFIA to make the program easier to use. Most notably, the Administration proposed lowering the project cost threshold amount from $100 million to $50 million. It is hoped that by lowering this threshold, more projects will have the option to utilize the program.

E. Design-Build

Approximately 85 percent of the design-build projects that have been evaluated under SEP-14 are too small to meet the current definition of "qualified project."[381] Based on this experience, SAFETEA included a proposal to eliminate the $50 million threshold for

[381] 23 U.S.C. §112 (2004).

design-build projects and to allow States to use design-build on smaller Federal-aid projects. Once again, increasing the opportunity for the design-build method to be used on highway infrastructure projects could increase the number of opportunities for the private-sector to participate in such projects.

F. Commercialization of Rest Areas

The proposed legislation would establish a pilot program allowing States to permit commercial operations at existing or new rest areas on Interstate System highways as long as the State uses the net income to maintain the facility or for other eligible purposes under title 23, United States Code. Such commercial operations could include providing goods, services, and information that are of interest to the traveling public; State promotional or tourism-oriented items; and commercial advertising and displays (visible only in the rest areas). Under the proposal, States could permit private operators to run the projects under the pilot program.

G. Debt Service Reserve

Federal transit grant funds can currently be used to repay debt and capital lease obligations, including issuance costs, at the allowed rate for capital reimbursements. SAFETEA includes a proposal to allow grantees to use Federal funds to create a debt service reserve. This proposal would allow public transportation agencies to issue bonds secured by local resources (such as a sales tax or other dedicated local revenue), but also credit-enhanced with a Federal debt service reserve. The grantee would obligate (but not draw) grant funds for the debt service reserve, allowing the bond issue to be as much as ten percent smaller than otherwise. The presence of the debt service reserve could raise the underlying rating of the bonds, thus lowering their cost significantly. If the debt service reserve was never actually drawn upon, once the bonds were repaid the grantee would de-obligate the debt service reserve and use the funds for another eligible transit project.

CHAPTER VII: CONCLUSION

This report intended to accomplish three goals: (1) examine the value of public-private partnerships as they are used to build large, capital-intensive transportation projects, (2) uncover some of the impediments in current law, regulations, and practice that discourage the formation of public-private partnerships; and (3) compile a list of recommendations from States, trade associations, private law firms, consultants, designers, and contractors regarding the changes that should be made to encourage the formation of public-private partnerships.

Although not extensive, virtually all of the literature on the use of public-private partnerships to provide transportation infrastructure finds that they are effective in building projects quicker and at a lower cost. The ability of public-private partnerships to encourage innovation and produce improved quality is less well studied, but preliminary indications are that those benefits accrue to these types of projects as well.

Public-private partnerships have been viewed as a more effective way to build a project and have typically been used on a project by project basis. However, several States have used these partnerships in a variety of innovative ways. Virginia, Florida, Texas, and the District of Columbia have used public-private partnerships to better manage maintenance on whole sections of their highway systems. States also have used these partnerships to manage a number of projects, e.g., Louisiana's TIMED effort and South Carolina's "27 in 7" program.

Public-private partnerships, however, do have their disadvantages. States not accustomed to this method of procurement can find it difficult to oversee these types of projects. Although public-private partnerships can be used to reduce the amount of staff time required to monitor the cost, quality, and timeliness of a project, the different nature of this type of procurement usually results in staff spending considerable time developing new systems. In addition, concerns have been raised that public-private partnerships weaken some of the safeguards found in more traditional financing and procurement methods.

Current transportation law, regulations, and practice are designed to protect the integrity of the design-bid-build method of procurement. This traditional method separates the design and construction of facilities into two separate and distinct steps. While effective for traditional procurement, the current system of regulation and oversight creates a number of unintended problems for States interested in exploring more innovative ways to improve and expand transportation infrastructure. The report details a number of these problems but does not represent that this is an exhaustive list.

Additional challenges are raised when a project receives Federal funding and becomes a Federal project. Although the Administration does not recommend any changes to these laws aside from those noted in the U.S. DOT Recommendations Chapter (Chapter VI), those exploring public-private partnerships should be aware of this dynamic.

The previous two chapters on Comments and U.S. DOT Recommendations suggest a number of areas that can be explored to improve opportunities for public-private partnerships. As is mentioned above, many of the comments included in the report do not reflect the position of the Administration but are included to be responsive to the request for comments from States and localities.

In exploring the value of public-private partnerships, the impediments to their formation, and the suggested changes, it is hoped that this report will respond to the questions raised in the House Report and serve as a resource document for States and others interested in exploring the benefits of public-private partnerships.

We look forward to continuing to work with Congress on the issue of the use of public-private partnerships in highway and transit projects.

APPENDIX A: EXAMPLES OF TIME AND FINANCIAL SAVINGS ON CONSTRUCTION AND MAINTENANCE PROJECTS WITH INNOVATIVE CONTRACTING APPROACHES[382]

Project Name	Project Description	Contracting Type	Contract Award (millions)	Actual Schedule	Time Reduction	Finished Ahead of Schedule	Length of Warranty or Maintenance Record	Cost Savings	Project Management Companies
Virginia 288	10.5 miles of new highway expanding 7 miles of existing highway, 6 new interchanges, modifying 2 interchanges and constructing 23 bridges – Richmond, VA	Design-Build Warrant	$236	3 years	3 years[383]	*	20 years on pavement 5 years on all other aspects	$47 million	Koch Performance Roads; CH2MHill
New Mexico Route 44	Reconstruction and widening 120 miles of two-lane state highway – Northwestern NM	Design-Bid-Builder-CM-Maintain	$314	3 years	24 years[384]	*	20 years on pavement 10 years on structures	$89 million over life cycle (+9 million during const.)	Mesa (Koch); CH2MHill; Flatiron Structures Co.
NJ Turnpike Exit 13A Interchange	Design and construction of NJ turnpike exit 13A Interchange	Design-Build	$85	2 years	*	3 months	N/A	*	Slattery Skanska Inc.

[382] Battelle, *Performance-Based Contracting for the Highway Construction Industry: An Evaluation of the Use of Innovative Contracting and Performance Specifications in Highway Construction, Final Report*, prepared at the request of Koch Industries, Inc., February 2003, 25-28. http://www.ncppp.org/resources/papers/battellereport.pdf.

[383] It was determined by the State that the project would have taken 6 years to build under the traditional design-bid-build contracting method.

[384] It was determined by the State that the project would have taken 27 years to build under the traditional design-bid-build contracting method.

San Joaquin Hills Transportation Corridor	17-miles, six-lane controlled access toll road, 85 bridges, and 10 interchanges constructed, 5 miles widened of I-5 – Orange County, CA	Design-Build	$790	5 years	*	3.5 months	N/A	On-budget	Kiewit; Granite
Dulles Greenway Toll Road	14-mile extension of the Dulles Toll Road – Dulles to Leesburg, VA	Build-Operate-Transfer	$145	2 years	*	6 months	N/A	*	TRIP II (Kellogg Brown & Root, Inc.; AIE, LLC; Bryant/Crane)
I-15 Corridor	Reconstruction of 16.3 miles of I-15 and 142 bridges – Salt Lake City, UT	Design-Build	$1,376	4 years	*	5 months	N/A	On-budget	Kiewit; Washington Group; Granite

Project Name	**Project Description**	**Contracting Type**	**Contract Award (millions)**		**Actual Schedule**	**Time Reduction**	**Finished Ahead of Schedule**	**Length of Warranty or Maintenance Record**	**Cost Savings**	**Project Management Companies**
SR-91 Express Lanes	10 miles of express lanes, 2 new flyover bridges, widening of 6 additional bridges, and building a temporary bridge at a major interchange – Orange County, CA	Design-Build	$60.4		2 years 5 months	*	10 months	N/A	*	Granite
Southern Connector Toll Road	17.5 miles of a four-lane highway around Greenville, SC – Greenville, SC	Design-Build-Finance-Operate	$191		3 years	*	9 months	N/A	*	Interwest Carolina Transportation Group (Thrift Brothers, Florence & Hutcheson)
Conway	28.5 miles of fully	Design-Build	$386.3		6 years	*	7 months	N/A	*	Fluor Daniel

Bypass	controlled access highway (4-6 lanes), six interchanges, and 17 bridges – outside Conway, SC				1 month					
Eastern Toll Road	27 miles of new roadway, 69 bridges, 3 tunnels, 10 toll plazas and a 10 acre wetland – Orange County, CA	Design-Build	$780		3 years 8 months	*	10 months	N/A	*	Flatiron; Ways $ Freitag; Sukut; Obayashi
Route 895 Connector	8.8 miles of divided highway, 2 interstate interchanges, several bridges – Richmond, VA	Design-Build-Finance	$323		3 years 11 months[2]	*	*	N/A	*	Fluor Daniel; Washington Group
Route 3 North	Widen Route 3 from Route 128 to NH border, replace 47 bridges, construct visitor center – Massachusetts	Design-Build-Operate-Maintain-Finance	$385		3 years[2]	*		30 years	*	Modern Continental; Roy Jorgenson

Project Name	**Project Description**	**Contracting Type**	**Contract Award (millions)**		**Actual Schedule**	**Time Reduction**	**Finished Ahead of Schedule**	**Length of Warranty or Maintenance Record**	**Cost Savings**	**Project Management Companies**
Carolina Bays Parkway	20 miles of new six-lane divided highway, 5 interchanges, 20 bridges – South Carolina	Design-Build-Warrant	$226		34 months[2]	*	*	3 years	*	Flatiron; Tidewater
Hudson-Bergen Light Rail	24.5 miles of light rail – NJ	Design-Build-Operate-Maintain	$1,120		6 years[2]	5 years	Yest	15 years	$300 million	Washington Group; Slattery Skanska; Itochu: Perinin
O'Fallon, Missouri	Construct streets in Winghaven Research Park – O'Fallon, Missouri	Finance-Design-Build-Warrant	$9.5		2 years[385]	3 years	*	15 years	$1.5 Million[3]	Koch Performance Roads and Koch Financial Services

[385] It was determined by the State that the project would have taken 5 years to build under the traditional design-bid-build contracting method.

Aspen, CO	Pavement rehabilitation of more than 30% of Aspen's city streets – Aspen, CO	Design-Build-Warrant	$2.7		1 year[386]	4 years	N/A	15 years	$625,000[4]	Koch Performance Roads
Maintenance										
Virginia Interstate Project	Maintain 1,250 lane miles on I-95, I-77, I-81, I-381 – Virginia	Asset Management	$131.6		5.5 years	N/A	N/A	5.5 years	$16-23 million	VMS
Texas Interstate Projects	Maintain 1,400 lane miles on I-20 and I-35 along with 4 rest areas and 8 picnic areas – Texas	Asset Management	$31		5 years	N/A	N/A	5 years	*	VMS
DC Asset Preservation Project	Maintain 75 miles of major urban streets and highways – Washington, DC	Asset Management	$70		5 years	N/A	N/A	5 years	*	VMS

Project Name	**Project Description**	**Contracting Type**	**Contract Award (millions)**		**Actual Schedule**	**Time Reduction**	**Finished Ahead of Schedule**	**Length of Warranty or Maintenance Record**	**Cost Savings**	**Project Management Companies**
Orlando-Orange County Expressway Authority	Maintain more than 50 lane miles of roadway, bridge, and toll facilities along State Route 429 between Florida's Turnpike and US 441 – Orange County, FL	Asset Management	*		*	N/A	N/A	*	*	VMS
Chipley District Project	Maintain and improve 920 lane miles of urban and rural roadways and interstates including 271 bridges – Wakulla, Jefferson, Gulf, Liberty and Franklin counties in FL	Asset Management	*		*	N/A	N/A	*	*	VMS
John Kilpatrick Turnpike	Maintain 17 miles (72 lane miles) of the John Kilpatrick Turnpike (toll road) – Oklahoma City, OK	Asset Management	*		*	N/A	N/A	*	*	VMS

[386] It was determined by the State that the project would have taken 5 years to build under the traditional design-bid-build contracting method.

Whittier-Portage Tunne	Operate and maintain 2.6 mile train and vehicle tunnel – near Anchorage, AK	Asset Management	*		*	N/A	N/A	*	*	VMS

NOTES
[1] 27-year estimate based on completion of one four-to-five mile project per year.
[2] This project is ongoing. The completion time is estimated.
[3] The cost savings result from economy of scale, construction cost savings, and reduced pavement maintenance. The savings does not include the benefit of opening the industrial park sooner to tenants and the resulting increased revenues to the city.
[4] The cost savings result from economy of scale, construction cost savings, and reduced pavement maintenance costs.
N/A = Not Applicable
* = data not available

Appendix B: Transportation Projects In Or Through Implementation Phase As Of May 2004[387]

Project Amount	Project Name	Owner	Finance/ Funding Plan	Financing Comments	Contract Amount	Nature of Contract	Procurement and Selection Method	Notice to proceed	Lead Contractor	Status
$150-185 billion	**Trans Texas Corridor** Multi-decade program to create 4,000 miles of 1,200-foot wide integrated passenger and truck highway, rail and utility corridors that will connect major cities in Texas with Mexico and other states.	Texas DOT				Comprehensive Development Agreement. (Franchise / Concession)	RFQ/RFP. Best value.		TBD	Legislature has passed additional enabling legislation to expand CDA/DB use for rail and other corridor uses.
	Contracting Comments:									

[387]Provided by Nossaman, Guthner, Knox & Elliott, LLP. In this instance, "in or through implementation stage" means that the State has initiated the procurement process.

Project Amount	Project Name	Owner	Finance/ Funding Plan	Financing Comments	Contract Amount	Nature of Contract	Procurement and Selection Method	Notice to proceed	Lead Contractor	Status
$4.3 billion ($3.7 billion for the first phase)	**Central Texas Turnpike Project** A new 122-mile contiguous turnpike facility in the Austin-San Antonio corridor. Consists of four distinct, but interconnected elements: **SH 45** (16.1 miles; $480 million) **Loop 1** (4.1 miles**;** $125 million) **US 183A** (12.1 miles; $190 million) **SH 130** (90 miles; $1.3 billion)	Texas DOT	Financing for the first phase (the 2002 project): -$2.3 billion in toll revenue bonds ($1.4 billion in senior bonds and $900 million in bond anticipation notes) -$917 million U.S. DOT TIFIA direct loan -$512 million from local cities -$700 million from Texas Transportation Commission -$10 million Developer Note plus interest earnings	State of Texas' largest bond issue.	$1.3 billion	For Loop 1 and SH 45: Traditional Design-Bid-Build. For SH 130: Exclusive Development Agreement. Design-Build-Maintain-Finance.	RFQ/RFP. Best long-term value.	7/02	Fluor Daniels /Balfour Beatty.	Contract executed and NTP 1 issued 6/02. Scheduled for completion in 2008.
	Contracting Comments: First Design-Build highway contract in Texas. Completion expected 1 year ahead of plan. Contract prices below engineer's estimate.									

Project Amount	Project Name	Owner	Finance/ Funding Plan	Financing Comments	Contract Amount	Nature of Contract	Procurement and Selection Method	Notice to proceed	Lead Contractor	Status
$3 billion	**Dulles Corridor Rail Project** *Virginia* Extension of Metrorail along the 23-mile Dulles Corridor between the existing Metrorail Orange Line near the West Falls Church station in Fairfax County, Virginia, to Route 772 in Loudoun County, Virginia.	Virginia Department of Rail and Public Transportation	Federal and state funds for PE; plus local taxing district taxes and excess toll revenue funding proposed for construction		TBD	Comprehensive Agreement; Design-Build Agreement	Unsolicited proposal. Sole source price negotiation.	NTP for PE expected Spring 2004; NTP for DB, 2005	Bechtel / Washington Group	Awaiting FTA approval to begin PE.
	Contracting Comments:									
$2.4 billion	**Alameda Corridor** *Los Angeles, CA* 10-mile, 33' deep trench for freight rail grade separation, extending from north of State Route 91 to near 25th Street.	Alameda Corridor Transportation Authority	-$1.2 billion in revenue bonds -$400 million U.S. DOT loan -$394 Million in grants from Ports of Long Beach and Los Angeles -$347 million from LACMTA sales taxes -$120 million in interest/other sources	First U.S. transportation project financed with federal loan.	$712 million	Design-Build.	RFQ/RFP. Lowest ultimate cost. Limited negotiations.	1/99	Tutor-Saliba / O & G Industries / PTG / HNTB	Project opened April 15, 2002.
	Contracting Comments: Contract price less than engineer's estimate. Project completed on schedule and under budget.									

Project Amount	Project Name	Owner	Finance/ Funding Plan	Financing Comments	Contract Amount	Nature of Contract	Procurement and Selection Method	Notice to proceed	Lead Contractor	Status
$1.9 billion	**Hudson-Bergen Light Rail** *New Jersey* 20-mile LRT along Northern New Jersey's Hudson River waterfront.	New Jersey Transit Corporation	-Grant Anticipation Notes (GAN) -Full Funding Grant Agreement (FFGA)		$800 million	Design-Build-Operate-Maintain.	RFQ/RFP. Low price, technically acceptable.	10/96	Washington Group/ Tochu/ Perini/ Slattery	Initial Operating Segment opened April 2000. Construction of second segment expected to be complete in 2005.
	Contracting Comments: First Design-Build-Operate-Maintain transit contract in U.S. Completion accelerated 11 years ahead of plan. Completed ahead of contract schedule and under original budget due to value engineering.									
$1.67 billion	**T-REXProject** *Denver, CO* Combined highway/light rail project including 16.6 miles of highway improvements to I-25 and I-225 and 19.1 miles of new double-tracked light rail transit.	Colorado DOT/Denver RTD	**Transit**: FTA Full funding grant agreement of $525 million -$30 million of local funds -$324 million of bonds backed by future sales tax revenues **Highway**: -$680 million GARVEE bonds of future federal allocations -$115 million state sales & use tax revenue	First federal highway grant anticipation notes to pledge revenues beyond the current authorization period.	$1.186 billion	Design-Build.	RFQ/RFP. Best value.	5/01	Kiewit / Parsons Transportation Group	Under construction. Scheduled to be fully operational by September 2006.
	Contracting Comments: First Design-Build-type contract in country combining major highway and transit elements. Completion expected 1 year ahead of plan. Proposal price below Agency's upset price.									

Project Amount	Project Name	Owner	Finance/ Funding Plan	Financing Comments	Contract Amount	Nature of Contract	Procurement and Selection Method	Notice to proceed	Lead Contractor	Status
$1.6 billion	**Coalfields Expressway** *Virginia* 51-mile highway from Pound in Wise County, through Dickenson and Buchanan counties, linking with the West Virginia Coalfields Expressway near Paynesville, West Virginia.	Virginia DOT	TBD.	First phase (preliminary engineering) jointly funded with state and private funds.	$345 million	Comprehensive Agreement. Design-Build.	Unsolicited proposal.		Kellogg, Brown & Root	First phase in preliminary engineering.
	Contracting Comments:									
$1.6 billion	**I-15 Reconstruction** *Salt Lake City, UT* Reconstruction of approximately 17 miles of I-15, including adding "general purpose" lanes.	Utah DOT	Tax revenue bonds; some federal funds.		$1.376 billion	Design-Build-Maintain.	RFQ/RFP. Best value.	3/97	Kiewit/ Granite/ Washington Group	Opened May 2001.
	Contracting Comments: Largest Design-Build contract in U.S. history for non-toll highway, and first Design-Build-Maintain contract for U.S. highway. Completion accelerated by 10 years over original program. Completed ahead of contract schedule and under budget. Contractor earned a significant early completion incentive.									

Project Amount	Project Name	Owner	Finance/ Funding Plan	Financing Comments	Contract Amount	Nature of Contract	Procurement and Selection Method	Notice to proceed	Lead Contractor	Status
$1.3 billion	**Seattle Monorail** *Seattle, WA* 14-mile, 19 station initial segment of monorail system linking downtown with Ballard, West Seattle and major sports arenas.	Seattle Popular Monorail Authority	Voter-approved motor vehicle registration. F & C dedicated to Authority; tax-exempt bond financing anticipated.	TBD	TBD	Design-Build-Operate-Maintain.	RFQ/RFP. Best Value.	Ant. last quarter 2004	TBD	PPI plan approved by city voters in November 2002. RFQ issued Spring 2003. First segment scheduled for completion in 2007.
	Contracting Comments:									

Project Amount	Project Name	Owner	Finance/ Funding Plan	Financing Comments	Contract Amount	Nature of Contract	Procurement and Selection Method	Notice to proceed	Lead Contractor	Status
$1.1 billion	**San Joaquin Hills Toll Road** *Orange County, CA* 15-mile, six-lane, divided, limited-access highway.	Transportation Corridor Agencies	-$1.079 billion Senior-lien Revenue Bonds -$91 million Junior-lien Revenue Bonds -$120 million standby federal line of credit (through direct appropriation) -$38 million Project Revenue Certificates -$31 million Advance-funded Development Impact Fees -$40 million California Transportation Commission Grant -$71 million State and Local Transportation Partnership Program -$106 million Interest Earnings	First start-up toll road financed with tax-exempt bonds on stand-alone basis including construction and environmental risk. $120 million federal line of credit.	$813 million	Design-Build.	IFB. Lowest present value.	3/93	Kiewit / Granite	Opened in 1996.
	Contracting Comments: First Design-Build highway contract to commence in United States and first U.S. transportation project financing enhanced with federal line of credit. Completion accelerated 18 years ahead of plan. 1% cost growth over contract price, despite 14-month injunction mid-construction. Opened several months ahead of contract schedule.									

Project Amount	Project Name	Owner	Finance/ Funding Plan	Financing Comments	Contract Amount	Nature of Contract	Procurement and Selection Method	Notice to proceed	Lead Contractor	Status
$998 million	**River Line** *New Jersey* 34-mile diesel LRT system connecting Camden and Trenton.	New Jersey Transit Corporation			$615 million	Design-Build-Operate-Maintain.	RFQ/IFB. Price and other factors.	6/99	Bechtel / Bombardier / Conti / LB Foster	The system opened for revenue service on March 14, 2004.
	Contracting Comments: Engineer's estimate confidential. Cost and schedule status to be verified.									
$840 million	**Tacoma Narrows Bridge** *Tacoma, WA* New suspension bridge over Puget Sound connecting Tacoma and Pierce County.	Washington State DOT	General obligation bonds.	Toll revenues to reimburse vehicle license fund.	$615 million	Design-Build.	Call for projects. Qualifications based selection. Negotiation of all terms.	9/02	Bechtel Infrastructure Corp./Kiewit Pacific Co.	Bonds and notice to proceed were issued in September 2002. Currently under construction.
	Contracting Comments: First new suspension bridge in U.S. in 30 years and first major Design-Build transportation contract in Washington State. Completion expected to be accelerated by 15 years.									
$780 million	**Las Vegas Monorail** *Las Vegas, NV* 4-mile fixed guideway system serving the world's largest convention center and 9 major resorts.	Transit Systems Development LLC and Las Vegas Monorail Company	Tax exempt revenue bonds, issued by Nevada Dept. of Business and Industry on behalf of special purpose non-profit corporation.		$343 million	Franchise Agreement. Design-Build-Operate-Maintain-Finance.	Sole source negotiation.	9/00	Bombardier/ Granite	Expected completion Summer 2004.
	Contracting Comments: First privately developed urban transit system in United States. Sole source price negotiated on "open book" basis. To date, project on schedule and below budget.									
$780 million	**Eastern Toll Road** *Orange County, CA* 24-mile, four-lane, divided, limited-access highway.	Transportation Corridor Agencies	Toll revenue bonds.	Credit was enhanced by federal line of credit.	$678 million	Design-Build.	IFB with possibility of BAFO's. Low present value.	6/95	Flatiron/ Wayss & Freitag / Sukut/ Obayashi	Completed October 1998.

Project Amount	Project Name	Owner	Finance/ Funding Plan	Financing Comments	Contract Amount	Nature of Contract	Procurement and Selection Method	Notice to proceed	Lead Contractor	Status
	Contracting Comments: Project accelerated 20 years. Price well below engineer's estimate. Completed under engineer's estimate and ahead of schedule.									
$675.4 million	**Hiawatha Light Rail** *Minneapolis, MN* Hiawatha Light Rail links downtown Minneapolis with Minneapolis-St. Paul International Airport and the Mall of America. Project scope includes 11.6 miles, 17 stations including subway station at MSP International and up to 26 light rail vehicles.	Minnesota DOT (contracting entity); Metropolitan Council (owner/operator)	-$334.3 million FTA Section 5309 New Starts -$43 million Federal Surface Transportation Program -$6.8 million Federal Congestion Mitigation Air Quality -$100 million State of Minnesota -$20.2 million State of Minnesota In-Kind -$70 million Hennepin County -$14.1 million Hennepin County In-Kind -$87.0 million Metropolitan Airports Commission		$291 million	Design-Build.	Request for Preliminary Proposals / Best Value Negotiation	9/00	Granite / C.S. McCrossan	Service scheduled to begin May 2004.
	Contracting Comments: First Design-Build transportation contract in Minnesota. To date, on schedule and within budget.									

Project Amount	Project Name	Owner	Finance/ Funding Plan	Financing Comments	Contract Amount	Nature of Contract	Procurement and Selection Method	Notice to proceed	Lead Contractor	Status
$644 million	**Foothill-South Toll Road** *Orange County, CA* 16-mile project connecting Rancho Santa Margarita with I–5 in San Clemente.	Transportation Corridor Agencies	TBD		$645 million	Design-Build.	RFP. Best value for proposals with prices w/in 5% of low price.	TBD	Flatiron / Wayss & Freitag / Sukut / Fluor Daniel	Awaiting environmental approval. Construction estimated to begin in 2005 with completion expected in 2008.
	Contracting Comments: Phase 1 work recently re-started. Pricing for subsequent phases to be determined upon completion of phase I design, to be escalated when final environmental approval is obtained..									
$642 million	**SR 125 Toll Road and GAP/Connector** *San Diego, CA* 11-mile, four-lane highway with the south 9.2 miles operated as a toll road.	San Diego Expressway LP (Macquarie), under franchise to Caltrans.	GAP/Connector: - Federal grant funds-$138 million Toll Road: Senior bank loans-$321 million TIFIA loan- $140 million Equity-$120 million Donated R/W-$48 million	Closing May 2003. First private TIFIA borrower.	$330 million	Franchise Agreement. Design-Build-Maintain-Finance.	Call for projects. Qualifications based developer selection. RFP for Design-Builder. Best value.	5/03	Franchise: Macquarie Infrastructure Group Contractor: Washington Group / Fluor Daniel	Contract executed and limited NTP for design issued June 2002. Financing closed May 2003. Anticipated Completion Spring 2006.
	Contracting Comments: Construction of Gap/Connector started in Fall 2002; NTP for toll road construction issued May 2003; toll road opening expected in Octber 2006.									
$457 million	**Arroyo Seco Blue Line LRT Segment** *Pasadena, CA* 13.7-mile light rail project from Union Station in downtown Los Angeles to Pasadena.	Los Angeles to Pasadena Metro Construction Authority	State and local funds.		$262 million Arroyo Seco contract. $22 million Chinatown Arial Structure.	Design-Build.	A.S.: RFQ/RFP. Best Value. Chinatown: RFQ/IFB low bid.	4/00	A.S.: Kiewit / Washington Group Chinatown: Modern/ HNTB	Opened in July 2003.
	Contracting Comments: Project accelerated by years. Time extension granted for delay in grade crossing permits required to be obtained from Public Utilities Commission. Within budget.									

Project Amount	Project Name	Owner	Finance/ Funding Plan	Financing Comments	Contract Amount	Nature of Contract	Procurement and Selection Method	Notice to proceed	Lead Contractor	Status
$451 million	**Legacy Parkway** *Utah* 19-mile, four-lane, limited access, divided highway.	Utah DOT	State Funding		$330 million	Design-Build.	RFQ/RFP. Best value.	1/01	Fluor Daniel/ Ames/ Ed Kraemer	Construction suspended pending resolution of environ-mental litigation.
	Contracting Comments: Contract price close to engineer's estimate.									
$450 million	**Las Vegas Monorail Extensions** *Las Vegas, NV* 2.3 mile dual guideway in downtown Las Vegas, which extends the 3.7 mile first phase to serve the central business district of the Las Vegas Valley.	Las Vegas Monorail Company	Est. Funding sources: -Fare-box backed bonds -TIFIA loan -Regional transit funds -Local contributions	First transit project to match federal new-start funds with project revenues for construction financing.	$462 million	Franchise Agreement. Design-Build-Operate-Maintain-Finance.	RFQ. Qualifications based selection of master systems developer. Sole source price negotiation.	Ant. mid 2004	Granite / Bombardier	Franchise awarded. Negotiation of Design-Build contract underway.
	Contracting Comments: If NTP target date met, project will be accelerated 10 years. Design-Build-Operate-Maintain project under negotiation less than engineer's estimate.									
$438 million	**SR-22 HOV Project** *Orange County, CA* Improvements to SR-22 that include HOV and auxiliary lanes and interchange and connector improvements.	Orange County Transportation Authority	Sales tax revenues; possible federal funding.	State funding covering approx. Half of project cost was diverted and agency is currently seeking replacement funding.	TBD	Design-Build.	RFQ/RFP. Best Value.	Exp. March 2004	TBD	RFP issued September 2003, award scheduled for August 2004 and substantial completion in March 2007.
	Contracting Comments:									

Project Amount	Project Name	Owner	Finance/ Funding Plan	Financing Comments	Contract Amount	Nature of Contract	Procurement and Selection Method	Notice to proceed	Lead Contractor	Status
$385 million	**Route 3 North** *Boston, MA* Widen 21 miles of existing two-lane highway, most congested corridor in state after Central Artery.	Massachusetts Highway Department	Long-term capital lease agreement between governmental and non-profit corporation, "subject to appropriations."		$350 million	Design-Build-Maintain-Finance.	RFQ/RFP. Best value.	8/00	Modern Continental/ Roy Jorgenson	Partial opening expected May 2004.
	Contracting Comments: First Design-Build highway contract and first "subject to appropriations" financing in the state. Project accelerated 12 years ahead of original program, in middle of Central Artery environment.									
$358 million	**E-470 Toll Beltway** *Denver, CO* 47-mile beltway along the eastern edge of the Denver metro area. Links metro arterials and new Denver International Airport.	E-470 Public Highway Authority	Toll revenue bonds and real estate developer shadow toll commitments.		$232 million	Design-Build.	RFP.	1/00	Washington Group / Kiewit	Completed and opened January 2003.
	Contracting Comments: Project completed ahead of schedule and within budget.									

Project Amount	Project Name	Owner	Finance/ Funding Plan	Financing Comments	Contract Amount	Nature of Contract	Procurement and Selection Method	Notice to proceed	Lead Contractor	Status
$330 million	**Atlantic City-Brigantine Connector** *Atlantic City, NJ* 2.5-mile route includes a 2,000-foot cut and cover tunnel, 10 new bridges and 2.3 miles of new highway.	Atlandia Design & Furnishings, Inc. (developer); New Jersey DOT and South Jersey Transportation Authority (owners)	-$125 million South Jersey Transportation Authority (bond sales with $65 million reimbursement from new casino parking fees) -$95 million from New Jersey State Transportation Trust Fund -$110 million Mirage Resorts, Inc. ($55 million bond purchase with in lieu of taxes credits)		$190 million	Design-Build.	IFB Low Bid.	10/97	Yonkers / Granite	Completed July 2001.
	Contracting Comments: Contract price less than engineer's estimate. Project completed one month behind schedule.									

Project Amount	Project Name	Owner	Finance/ Funding Plan	Financing Comments	Contract Amount	Nature of Contract	Procurement and Selection Method	Notice to proceed	Lead Contractor	Status
$323 million	**Route 895 Connector-Pocahontas Parkway** *Virginia* New 8.8-mile toll facility four-lane road will connect Chippenham Parkway at I-95 in Chesterfield County with Interstate 295 south of the Richmond International Airport in Henrico County.	Virginia DOT	-$354 million in tax exempt toll revenue bonds sold by 63-20 corporation -$9 million in federal funds for design costs -$18 million SIB loan		$324 million	Development Agreement. Design-Build-Finance.	Unsolicited proposal. Sole source price negotiation.	7/98	Fluor Daniel/ Washington Group	Project is complete and open as of Fall 2002.
	Contracting Comments: First project under Virginia's Public-Private Act and state's first Design-Build contract. Sole source price negotiated to owner's satisfaction. Five-month schedule delay covered by liquidated damages. Within budget.									

Project Amount	Project Name	Owner	Finance/ Funding Plan	Financing Comments	Contract Amount	Nature of Contract	Procurement and Selection Method	Notice to proceed	Lead Contractor	Status
$314 million	**New Mexico 44 Highway (renamed US 550)** 120-mile stretch of SR 44 from San Ysidro to Bloomfield will be expanded from two to four lanes.	New Mexico DOT	-$100 million in GARVEE bonds (long term), insured & tax exempt -$214 million State highway revenue bonds (tax exempt)	First federal highway grant anticipation notes to pledge revenues beyond the current authorization period. First GARVEEs to pledge solely Federal revenue with no state back-up. Public/private partnership and four separate contracts used to deal with state Design-Build prohibitions.	$295 million	Design-construction-manage. 20-year performance guarantee.	RFQ/RFP.	9/98	Mesa, PDC (Koch Materials) is the project developer and provided long-term warranty. CH2M Hill was the designer and Flatiron the construction manager.	Completed November 30, 2001.
	Contracting Comments: First long-term highway performance warranty in U.S. and first innovative highway contract in New Mexico. On schedule and under budget.									
$200-250 million	**SH 45 Southeast** *Austin, TX* 7 mile SH 45 SE turnpike in Central Texas.	Texas DOT	TBD.		$150-200 million	Comprehensive Development Agreement. (Design-Build.)	Unsolicited proposals. RFQ/RFP. Best value.	TBD.	TBD.	Proposals due June 1, 2004.
	Contracting Comments:									

Project Amount	Project Name	Owner	Finance/ Funding Plan	Financing Comments	Contract Amount	Nature of Contract	Procurement and Selection Method	Notice to proceed	Lead Contractor	Status
$231 million in 2002 dollars	**Reno ReTRAC Project** *Reno, NV* 2.25 miles of depressed open trainway trench generally along existing Union Pacific Railroad.	City of Reno, NV	-$113.2 million municipal bond issue -$73.5 million TIFIA direct loan -$81.3 million cash, grants, or investment income	Local sales tax, hotel room tax and property sale revenues, and TIFIA loan.	$171 million	Design-Build.	RFQ/RFP. Best value.	9/02	Granite.	Contract awarded July 2002. Targeted completion by 2005 Fall/Winter.
	Contracting Comments: First public sector Design-Build contract in Nevada. Currently on schedule and within budget.									
$130 million	**SR-91 Express Lanes** *Orange County, CA* Four lane automated high occupancy / toll lane project.	Orange County Transportation Authority (Previously owned by California Private Transportation Company, under Caltrans franchise.)	-$65 million in 14-year variable rate bank loans -$35 million in longer term loans (24 years) -$20 million private equity -$ 9 million subordinated debt to OCTA to purchase previously-completed engineering and environmental work	First privately-financed toll road in the U.S. in the last 50 years. The first fully automated toll road in the world, and the first variably-priced (value pricing) toll road in the United States.	$50 million	Franchise Agreement. Design-Build-Operate-Maintain-Finance.	Call for projects. Qualifications based developer selection. Sole source Design-Build negotiation.	7/93	Franchise: Level 3 / Cofiroute / Granite	Opened in December 1995.
	Contracting Comments: Contract price less than engineer's estimate. Completed for contract price and ahead of schedule.									

Project Amount	Project Name	Owner	Finance/ Funding Plan	Financing Comments	Contract Amount	Nature of Contract	Procurement and Selection Method	Notice to proceed	Lead Contractor	Status
$111 million	**I-494 Design-Build Project** *Hennepin Count, Minnesota* Located on I-494 and I-394, includes improvements to approximately 8.9 miles of interstate highway in the cities of Minnetonka and Eden Prairie in Hennepin County.	Minnesota DOT	Federal aid, State and local funds.		$110 million	Design-Build.	RFQ/RFP. Best value.	Ant. June 11, 2004	TBD.	Proposals received on April 19, 2004. Proposal selection anticipated on May 14, 2004.
	Contracting Comments:									
	Trunk Highway 212 Design-Build Project *Hennepin and Carver County, Minnesota* The project limits extend a total of 11.75 miles from the intersection of existing TH 312 and Eden Prairie Road (CSAH 4) to 0.75 miles west of the intersection of existing 212 and Carver county road 147.	Minnesota DOT	State and Federal-aid.		$245 million	Design-Build.	RFQ/RFP. Best value.	Ant. Jan. 22, 2005.	TBD.	RFQ issued on March 26, 2004.

APPENDIX C: TRANSPORTATION PROJECTS IN PRE-PROCUREMENT PHASE[388]

Contract Amount	Project Name	Owner	Nature of Contract	Procurement and Selection Method	Lead Contractor	Status
$27 billion	**Los Angeles – San Francisco High Speed Rail** *California*	California High Speed Rail Authority	Design-Build-Operate-Maintain-Finance.	RFQ/RFP. Best Value.	TBD	Legislature recently signed a bill that places a nearly $10 billion general obligation bond on the November 2004 ballot to fund planning and construction. The Authority is preparing a program-level EIR/EIS which will be available to the public in August 2003.
$4.7 billion	**Alaskan Way Viaduct** *Seattle, WA*	Washington State DOT	TBD	TBD	TBD	Potential funding sources may include: regional tax-federal; regional, state or city sources; other potential beneficiaries; toll revenue; other user fees. WSDOT and the City have identified a favored plan. More detailed engineering and environmental analysis will need to be completed before a final plan is selected mid 2004.
$3.5-4.2 billion	**Maglev Project** *Maryland* 40-mile project connecting D.C.'s Union Station, BWI and Downtown Baltimore.	Maryland Transit Administration	Design-Build-Operate-Maintenance.	RFQ/RFP. Best Value.	TBD	Environmental review complete (funds authorized for additional consultant work in 2003). Awaiting selection by FRA.

[388] Provided by Nossaman, Guthner, Knox & Elliott, LLP.

Contract Amount	Project Name	Owner	Nature of Contract	Procurement and Selection Method	Lead Contractor	Status
$1.5-2.7 billion	**710 Reconstruction and Widening** *Southern California* Ports of Long Beach and Los Angeles	Ports of Long Beach and Los Angeles/ Gateway Cities Council of Governments (29 cities)	TBD	TBD	TBD	Project in environmental review. PPI strategy paper submitted to Gateway Cities and Long Beach.
$985 million	**SR-509/I-5 Freight and Congestion Relief Project** Extension with 6 lanes, two general use and one HOV lane in each direction. Will connect SR 509 at South 188th Street in SeaTac to I-5 near South 211th Street. Also a four-lane access road that links directly to SeaTac International Airport from the south.	Washington State DOT				$800,000 in Federal funding through the Puget Sound Regional Council (PSRC) in late February, which will be used to continue project design work through November 2003.The Regional Transportation Investment (RTID) District is developing a Puget Sound tri-county transportation tax package which may be included on the November 2003 ballot. FEIS issued to January 2003. Record of Decision (ROD) signed by FHWA March 2003. First stage of construction to begin 2005.
$600 million - $1 billion	**LBJ/I-635 HOV/Managed Toll Lanes** *Dallas, TX*	Texas DOT	Comprehensive Development Agreement. Design-Build.	RFQ/RFP. Best Value.	TBD	Procurement strategy development underway.
$500 million	**Eastside Light Rail Project** *Los Angeles, CA* 7-mile light rail transit line, including 9 stations and a 1.8-mile mid-section tunnel, from Union Station along Alameda Street through the East Los Angeles communities.	Los Angeles County Metropolitan Transportation Authority	Design-Build for street running segment; Design-Bid-Build for tunnel portion of project.	Low bid from pre-qualified teams.	TBD	Project under construction. Forecasted to open 2009.

Contract Amount	Project Name	Owner	Nature of Contract	Procurement and Selection Method	Lead Contractor	Status
$42.2 million	**I-405 Corridor Project** *Washington State* Widening of the I-405 and 7 bridges between the SR 527 interchange and the I-5 interchange.	Washington State DOT	Design-Build and Design-Bid-Build.			$10.5 million from the State as implementation seed money, $2.2 billion over next 10 years allocated in 2002 transportation budget.
	SR 520 Trans-Lake Washington Project *Washington State* HOV lanes added and bridge replacement across Lake Washington.	Washington State DOT				Legislative appropriations passed in May 2003. Regional Transportation Investment District (RTID) is developing a potential funding package for approval by the voters. Additional money will likely come from tolls and other user fees. Alternative project plans are being evaluated. Analysis underway to develop first phase.
TBD	**Wilmington Monorail** ***Wilmington, DE*** Regional monorail system to serve Wilmington, Delaware area.	Wilmington, Delaware Area Planning Council	TBD	TBD	TBD	Feasibility study underway.
TBD	**Southern California Maglev Project** 92-mile, 8 station project connecting Los Angeles International Airport, former March Air Force Base, Orange County and Downtown Los Angeles transportation center.	Southern California Association of Governments	Design-Build-Operate-Maintain-Finance.	TBD	TBD	Consultant team has been selected.

Contract Amount	Project Name	Owner	Nature of Contract	Procurement and Selection Method	Lead Contractor	Status
N/A	**State-Wide Design-Build Program** *New York*	New York State Department of Transportation	Design-Build.	RFQ/RFP. Best Value.	N/A	Legislation is pending that would allow the Department to use Design-Build. Program management consultant has prepared a best practices survey and is currently developing a Design-Build Practices Manual and standard procurement and contract documents for the Department's future program.

APPENDIX D: CASE STUDIES OF COMPLETED TRANSPORTATION PROJECTS

Alameda Corridor[389]

The Alameda Corridor is a 20-mile freight rail expressway between the neighboring ports of Los Angeles and Long Beach and the transcontinental rail yards and railroad mainlines near downtown Los Angeles. The centerpiece is the Mid-Corridor-Trench, a below-ground railway that is 10 miles long, 30 feet deep and 50 feet wide. By consolidating 90 miles of branch rail lines into a high-speed expressway, the Alameda Corridor eliminated conflicts at more than 200 at-grade railroad crossings where cars and trucks previously had to wait for long freight trains to slowly pass. It also cut by more than half, to approximately 45 minutes, the time it takes to transport cargo containers by train between the ports and downtown Los Angeles.

The project was constructed at a cost of $2.4 billion by the Alameda Corridor Transportation Authority—a joint powers agency known as ACTA and governed by the cities and ports of Los Angeles and Long Beach and the Los Angeles County Metropolitan Transportation Authority. The Alameda Corridor opened on time and on budget on April 15, 2002. It was funded through a unique blend of public and private sources, including $1.16 billion in proceeds from bonds sold by ACTA; a $400 million loan by the U.S. Department of Transportation; $394 million from the ports; $347 million in grants administered by the Los Angeles County Metropolitan Transportation Authority and $130 million in other state and federal sources and interest income. Debts are retired with fees paid by the railroads for transportation of cargo on the Alameda Corridor and for cargo transported into and out of the region by rail even if the Alameda Corridor is not used.

Denver E-470 Beltway[390]

The E-470 highway, one of the first roads in the nation built with a public-private partnership, was completed on January 3, 2003. At 47 miles in length, the toll highway runs along the eastern perimeter of the Denver metropolitan area from State Highway C-470 at I-25 south, running north along the western edge of the Denver International Airport, and eventually intersecting with I-25 North. The highway is managed by the E-470 Public Highway Authority, a consortium of local governments having jurisdiction over areas the highway passes through.

Faced with an uncertain international borrowing market in the early 1990s, the E-470 Authority partnered with the contractor Morrison Knudsen (now Washington Group

[389] Alameda Corridor Transportation Authority Fact Sheet, http://www.acta.org/newsroom_factsheet.htm.
[390] Cathy Proctor, "Final Leg of E-470 Nears Completion," *Denver Business Journal*, December 12, 2002. http://www.bizjournals.com/denver/stories/2002/12/16/story1.html).

International)—one of the first agreements of its kind. Under this agreement, Morrison Knudsen designed and built segments 2 and 3 of E-470. Morrison Knudsen also agreed to secure millions of dollars to keep the project moving forward and worked with the E-470 authority through difficult political, legal, and environmental issues.

Segment 1 of E-470, consisting of 5.13 miles, was completed for $115 million ($22.4 million/mile), Segment 2 and 3, totaling 29.3 miles, was completed for $663 million ($22.6 million/mile), and segment 4, 12.24 miles long, was completed for $453 million ($37 million/mile). The total cost for the 46-mile long highway was $1.2 billion, bringing the project within budget, despite several setbacks and legal battles.

Despite those setbacks, the road was also completed ahead of schedule. The final segment of the project was completed on January 3, 2003, a full five weeks ahead of schedule.

Colorado Governor Bill Owens called the E-470 highway "the father of the new tolling authority," and noted that, "[w]e learned a lot from the E-470, and its contributions aren't finished."[391] The completed road contains many innovations, such as technology built into the highway system that allows commuters to pay tolls electronically. This has allowed about 60 percent of all tolls to be paid electronically, saving time and costs to both drivers and local governments. The Transportation Finance Task Force has cited the project as a "model" which should be "replicated to the extent practicable."[392]

Massachusetts Route 3 North Project[393]

In August of 1999, the Massachusetts Legislature authorized $385 million for Route 3 North to make a number of improvements to this busy highway, which stretches from Burlington, Massachusetts to the New Hampshire border. These improvements included an additional travel lane in each direction, improvements on 13 interchanges, the replacement of 40 bridges, and the addition of a median shoulder and 30-foot clear zone. The design-build-operate delivery method of the project was the first of its kind in the State.

The authorizing legislation allowed the contracting team to form "a special purpose entity" to finance the Route 3 North Project, enabling the team to secure private financing. The developer was then selected on a "best value" basis, which looked at a number of factors other than just the design-build bid price. These factors included project schedule, approach to maintenance of traffic, quality of design, approach to construction quality assurance, proposed plan of finance, and approach to addressing environmental permitting issues.

---

[391] Ibid.
[392] Transportation Finance Task Force, *Report to Governor Bill Owens* , March 2004, http://www.dot.state.co.us/TransportationFINANCETASKFORCEREPORT040204.pdf.
[393] The National Council for Public-Private Partnerships Web site, "Case Study: Massachusetts Route 3 North Project," http://ncppp.org/cases/route3.html.

Due to Massachusetts' commitments to the Central Artery/Tunnel Project in Boston, a project of this magnitude would not have been possible through traditional financing options. Had the project been publicly financed, roughly 25 percent of the annual statewide highway budget would have had to be diverted to pay for the improvements. With the innovative design-build-operate strategy, however, the contracting firm was able to develop its own financing strategy and secured privately funded bonds to fund construction on the project. The Commonwealth also benefited from lower interest rates when the Route 3 North Transportation Improvements Associated purchased bond insurance, resulting in insured ratings of AAA by Fitch and Standard & Poor's (compared to the Commonwealth's general obligation bond rating of AA-).

The bond size was reduced by an estimated $54 million due to three components of the financing plan. First, by scheduling annual lease payment due dates well into Massachusetts' fiscal year, it was possible to eliminate the need for a liquidity debt service reserve. Second, Salomon Smith Barney, the project's senior financing partner, made an up-front payment to the Association of nearly $9 million in connection with the forward purchase agreement. Third, the developer served as co-insurer for the project risk insurance, lowering the project's insurance costs.

The project finance plan allowed for the developer to generate non-project revenues through surface, sub-surface, and air rights. The developer also shares in the sale of fiber optic rights from the miles of fiber optic cable installed during construction. Other plans for non-project revenue include the construction and sublease of a service plaza, predicted to generate $500,000 per year.

The design-build-operate system also allowed the Route 3 North project to be completed in 42 months, rather than the initially estimated nine years, cutting the delivery time by more than half. By allowing the same company to design, build, and finance the project, the project was not burdened with the usual costs of information transfer and other problems associated with multiple contractors.

New Mexico State Route 44[394]

The State of New Mexico approached the need for widening a long corridor of NM 44 by issuing an RFP for a professional services contract. New Mexico law did not allow for design-build procurement at the time NM 44 was constructed. But Secretary Pete Rahn and the leadership of the NMSHTD were able to create many of the efficiencies of design-build through a professional services contract. This allowed the NMSHTD to outsource services it would have traditionally self-performed—design, construction management and long-term pavement management. Procurement of construction was done separately under the traditional low-bid system.

[394] Battelle, *Performance-Based Contracting for the Highway Construction Industry: An Evaluation of the Use of Innovative Contracting and Performance Specifications in Highway Construction, Final Report,* prepared at the request of Koch Industries, Inc., February 2003, 31-32. http://www.ncppp.org/resources/papers/battellereport.pdf.

By using a professional services contract to outsource design and construction management to the same company (the Project Development Contractor or PDC), the State was able to gain many of the efficiencies found in design-build projects—flexibility, quicker construction, cost savings, and streamlined decisionmaking. The PDC contract was awarded to Mesa, LLC, a division of Koch Materials Company, in the summer of 1998. Project design was outsourced to CH2M HILL by Mesa, while Flatiron Structures Company managed the project construction.

The NMSHTD required the road and pavement design to meet the NMSHTD and FHWA standards. However, the PDC's designer and construction manager were given the flexibility to adapt the design to address the varying conditions along the 118-mile project. The flexibility in design and construction management granted to the PDC was balanced by a requirement in the professional services contract that the PDC guarantee the quality of the pavement condition over time.

This guarantee took the form of a 20-year, long-term, fixed price performance-based rehabilitation and reconstruction agreement covered by $114-million bond. During the challenging design phase and rapid construction phase of NM44, this long-term responsibility ensured that the private sector would act like an owner and the State would receive the quality it demanded. This pavement warranty agreement provides preventive maintenance and rehabilitation to keep the road above the contractually agreed specifications. These specifications include objective measurable criteria such as IRI, cracking and rutting.

The agreement also states that the warranty requirements will be waived if the level of traffic for the warranty period exceeds a cumulative 10-year design level, in this case, 4 million Equivalent Single Axle Loads (ESALs). The NMSHTD has determined that the initial warranty cost of $62 million will save the taxpayers $89 million in maintenance cost over a 20-year period.

The innovative use of professional services contracting allowed the NMSHTD to enjoy many of the benefits of a design-build project approach without requiring the State to abandon the traditional low-bid method of procurement. This innovative approach has been called Design-Bid-Construction Management-Maintain (D-B-CM-M). It is estimated that innovative financing combined with the contracting approach has cut the total project time from 27 years to within 3 years. In this case, the total project time is considered the period from initial planning to completion.

Virginia State Route 895[395]

The Pocahontas Parkway is the first construction project implemented and completed under Virginia's innovative *Public-Private Transportation Act of 1995* (PPTA). The Act allows for both private and public funding to meet the growing transportation needs of the State. VDOT can consider proposals from private entities to build highways or other

[395] Virginia Department of Transportation, "VDOT Opens Final Portion of the Pocahontas Parkway, Route 895," press release, October 22, 2002.

transportation facilities when they are needed using private money rather than waiting until they can be funded with State or Federal funds.

The Route 895 project, the first ever constructed under Virginia's Public-Private Transportation Act of 1995, was completed in September 2002, $10 million below its original $324 million contract.

The new 8.8-mile parkway connects I-95 at Chippenham Parkway in Chesterfield County with I-295 in Henrico County near Richmond International Airport. Commuters from Chesterfield and Eastern Henrico can save 12 minutes of travel time and 8 miles traveling in each direction. This roadway significantly reduces motorist's daily commute for a $1.50 toll and offers a congestion-free ride.

The massive bridge on the Pocahontas Parkway became the Vietnam Veterans Memorial Bridge on Sept. 20, the same day the remaining westbound lanes were opened to traffic; eastbound lanes and a portion of the westbound lanes opened in May. This bridge offers the area's third major James River crossing.

Traffic and revenues for this project have been lower than expected. Demand is not quite half of that expected and the road's builder, Fluor Corp., is having difficulty paying off its bonds.[396] In November 2002, Fitch placed its rating of the parkways bonds on a negative watch. In December 2002, Standard and Poor's lowered its rating of the bonds to below investment grade. In August 2004, State officials agreed to raise tolls from $1.50 to $2.00 to generate more revenue. Fluor is also seeking approval to build an interchange to a new development to increase demand.[397]

Virginia State Route 288[398]

In December 2000, Virginia DOT (VDOT) entered into a public private partnership with APAC-Virginia Inc. of Danville, Virginia to complete Route 288. This arrangement was made possible by the PPTA.

VDOT originally projected that Route 288 would cost more than $283 million and take 36 months to complete. But with the efficiencies of the PPTA, the project will cost $236 million and take only 29 months to build. This is a savings of more than $47 million and the road is scheduled to open to traffic seven months sooner.

Under the PPTA, APAC-Virginia is managing, designing and building the project. APAC will extend Route 288 by building a four-lane interstate-quality road, including a bridge over the James River, from the Chesterfield/Powhatan County line to I-64 in Goochland County. APAC will also widen portions of Route 288 under construction in Chesterfield

[396] Steven Ginsberg, "Virginia Courting Private Sector to Plan, Fund Road Projects; Partnerships Are a Trend," *The Washington Post*, July 5, 2004, B1 and B5.
[397] Ibid.
[398] Virginia Department of Transportation, "About the Project," http://www.route288.com/abouttheproject.htm.

County. VDOT is managing part of the project between Powhite Parkway and the Chesterfield/Powhatan County line.[399]

Under the PPTA, the Virginia Department of Transportation awarded a $236 million contract to APAC-Virginia, Inc. of Danville for the completion of Route 288 around Richmond, Virginia. APAC formed a partnership with Koch Performance Roads, Inc. and CH2M HILL to assist with the project.

Approximately 17.5 miles of Route 288 will be built in three projects between the Powhite Parkway Extension (Route 76) in Chesterfield County and Interstate 64 in Goochland County. One VDOT-managed segment of Route 288 stretches from Route 76 to Charter Colony Parkway in Chesterfield County and the other VDOT-managed segment stretches from Charter Colony Parkway to the Powhatan County line. APAC-Virginia, Inc. oversees construction on the rest of Route 288, from the Powhatan County line to I-64 in Goochland County, funded under Virginia's PPTA. The Lucks Lane overpass and a portion of Route 288, from Route 76 to the Lucks Lane interchange, is already open to motorists. The rest of the project is expected to be completed in sections throughout 2004.

The entire Route 288 corridor from the Powhite Parkway in Chesterfield County to I-64 in Goochland County is expected to open to traffic by mid-2004; however, the project team plans to open the corridor in phases as segments are completed as follows:

- Phase 1: Segment linking I-64 to Route 250 (Broad Street) in Goochland Co. opened to traffic Dec. 2003;
- Phase 2: From Route 250 (Broad Street) to Route 6 (Patterson Avenue) in early 2004; and
- Phase 3: Route 60 (Midlothian Turnpike) to Route 76 (Powhite Parkway) in Chesterfield Co. in mid-2004.

Approximately 17.5 miles of Route 288 will be built in three projects between the Powhite Parkway Extension (Route 76) in Chesterfield County and Interstate 64 in Goochland County.

One VDOT-managed segment of Route 288 stretches from Route 76 to Charter Colony Parkway in Chesterfield County and the other VDOT-managed segment stretches from Charter Colony Parkway to the Powhatan County line. A portion of Route 288, from Route 76 to the Lucks Lane interchange as well as the Lucks Lane overpass are open to motorists.

The rest of the project, from Lucks Lane to the Powhatan County line is expected to be completed by mid-2004. APAC-Virginia, Inc. oversees construction on the rest of Route 288, from the Powhatan County line to I-64 in Goochland County. This segment, funded

[399] Virginia Department of Transportation, "Route 288 Is In Full Gear – Construction begins on completing the western loop around Richmond. Public Private Partnership saves money and time on high profile road project," press release, May 31, 2001.

under Virginia's Public-Private Transportation Act of 1995, is scheduling completion by mid-2004.

The overall project cost for Route 288, from Route 76 in Chesterfield County to I-64 in Goochland County, is estimated at $319 million. The cost per project on Route 288 follows:

1. $236 million (from Powhatan County line to I-64 interchange in Goochland County, in addition to the main line lanes for the entire corridor from Route 76 to I-64);

2. $31 million (Route 76 to Charter Colony Parkway in Chesterfield County, not including the main line lanes); and

3. $52 million (Charter Colony Parkway to Chesterfield/Powhatan county line, not including the main line lanes).

The Virginia Department of Transportation (VDOT) expects the project, completed using a public-private partnership, to save $47 million and seven months in construction time.

I-15 Test Bed, Salt Lake City, Utah[400]

On April 15, 1996, the Utah Department of Transportation (UDOT) requested approval from the Federal Highway Administration (FHWA) to use design-build for the I-15 Corridor Reconstruction Project under the provisions of SEP-14. By utilizing repetitive bridge design and components bridge construction, productivity was greatly increased. The cost of the proposal for the base price plus construction and maintenance options was $1.352 billion, making this the largest single highway contract (traditional or design-build) in the country. As a part of the requirements of SEP-14, this project had an evaluation component throughout the duration of the project. Annual evaluation reports are available since 1998.

As part of the evaluation of the I-15 Design/Build Project, the UDOT wanted to examine the use of performance specifications on the project. The UDOT had not used performance specifications on previous projects so their use was new to the Department. The 2000 evaluation report presents an analysis of the performance specifications used on the I-15 Design/Build Project through the end of the year 2000. The report is based upon interviews conducted with key UDOT staff members, their consultants, one representative of the contractor's team, and a review of the specifications included in the request for proposal (RFP) and used for the project.

The UDOT decided to use performance specifications for the following reasons:

---

[400] Battelle, *Performance-Based Contracting for the Highway Construction Industry: An Evaluation of the Use of Innovative Contracting and Performance Specifications in Highway Construction, Final Report,* prepared at the request of Koch Industries, Inc., February 2003, 33. http://www.ncppp.org/resources/papers/battellereport.pdf.

- Provide flexibility to the contractor to propose new methods and ideas for the design and construction of the project;
- Provide flexibility to the contractor to meet the time, cost, and quality constraints of the project;
- Assign appropriate responsibility and risk to the contractor for design and construction means and methods; and
- Allow the contractor to optimize its resources for the project and better match with its capabilities and let the designers' design to the strengths of the contractor.

To accomplish this, the UDOT established a review team to manage and direct the development of the specifications. Several teams were assigned specification sections to write for the RFP. The teams were led by UDOT staff personnel and consisted of UDOT staff, FHWA staff, consultants hired by UDOT, industry and association experts, and academia specialists. Drafts of the specifications were released to the three short-listed contractors during the RFP process. The contractors were given opportunities to comment on the content. As comments were received the specifications in some cases were revised, finalized, and released to the contractors in the final RFP.

As a result of the comments received from the contractors, changes were made to the specifications. One significant change was the maintenance period required in the contract. Originally UDOT had intended to require an extended warranty for performance of up to 20 years. Based on comments received from contractors, UDOT came to the conclusion that the 20-year warranty was not feasible. UDOT modified the requirements to include up to ten years of maintenance of specific elements by the contractor.

Minnesota – Hiawatha Light Rail

Metro Transit and the Metropolitan Council (local Metropolitan Planning Organization), in cooperation with the Minnesota Department of Transportation (MnDOT), Hennepin County and the Metropolitan Airports Commission (MAC), are constructing an 11.6-mile Light Rail Transit (LRT) line within the Hiawatha Corridor. The LRT line will operate on the Hiawatha Avenue/Trunk Highway 55 Corridor linking downtown Minneapolis, the Minneapolis-St. Paul (MSP) International Airport, and the Mall of America (MOA) in Bloomington. The Mall of America station is still under construction.

The project includes a 1.5-mile tunnel under the MSP airport runways and taxiways, 26 light rail vehicles, and a total of 17 stations, with 12 stations on the Hiawatha Corridor, three stations in Bloomington, and a station serving the Mall of America. The project expects to serve 24,800 average weekday boardings by 2020.

The total project cost under the FTA Full Funding Grant Agreement (FFGA) is $675.42 million. The Section 5309 New Starts funding share for this project is $334.28 million.

The project utilized the design-build method with separate contracts for light rail vehicles (24 to 26 cars) and airport tunnel. Two tunnels are being built adjacent to each other to carry northbound and southbound train traffic. Each tunnel is 7,400 feet (1.4 miles) in

length. Crews have completed boring both north and southbound tunnels, and are working on the Lindbergh Terminal and Humphrey Terminal stations. The Metropolitan Airports Commission is overseeing construction of the tunnels and both airport stations. The Hiawatha entered revenue service on July 1, 2004, and in its first week of revenue operation it carried 93,000 passengers. Early projections were for weekly trips to average 55,400. The week did include three home games by the Minnesota Twins, but this is estimated to have made a difference of just 12,000 trips.

Route 91 Express Lanes (Orange County, California)[401]

This $130 million privately financed, fully automated facility is a 10-mile, four-lane toll project is located within the median of an existing eight-lane freeway between State Route 55 in Orange County and the Riverside County line. This project connects rapidly growing residential areas in Riverside and San Bernardino counties with major employment centers in Orange and Los Angeles counties. The facility was opened to traffic on December 27, 1995, and is America's first toll road to employ variable congestion pricing. To maintain free-flow conditions, tolls vary during the day with traffic volumes, directional flow, and other factors. The facility is the world's first fully automated toll road utilizing electronic transponders to collect tolls.

This award winning project was developed in partnership with Caltrans by California Private Transportation Company (CPTC), an entity formed by subsidiaries of Level 3 Communications, Inc., Compagnie Financiere et Industrielle des Autoroutes (Cofiroute), the world's largest private toll road operator, and Granite Construction Inc. Prior to opening the project to traffic, CPTC formally transferred ownership of the facility to the State of California. Caltrans then leased the improvements back to CPTC for a 35-year operating period. The new lanes have been officially designated a part of the California State Highway System and the California Highway Patrol (CHP) is responsible for providing police services at CPTC's expense. Maintenance and operational costs for the facility are also the responsibility of CPTC. In addition to the initial $130 million capital cost savings to the State by private development and construction of the project, it is estimated that the State will also save $120 million in CHP, operations and maintenance expenses over the 35 year franchise period. Financial benefits also accrue to Orange County since CPTC, as a private entity, is subject to property taxes. In the first 6 years of operation CPTC has provided $6.8 million in tax revenues to the county.

The facilities debt financing was provided by a group of commercial banks and institutional lenders including Citicorp USA, Banque National de Paris, Societe Generale, Deutsche Bank and CIGNA Investments.

In April 2002, the Orange County Transportation Authority (OCTA) reached an agreement in concept to purchase the private toll road project for $207.5 M. In September 2002, AB 1010, Chapter 688 (2002) allowed OCTA to purchase the toll road from CPTC. OCTA took possession of the toll road on January 3, 2003.

[401] California Department of Transportation Innovative Finance Web site, "Private Investment Public Infrastructure – AB 680 Private Toll Road Program," May 2003, http://www.dot.ca.gov.

The Dulles Greenway[402]

In response to growing interest in private investment in transportation facilities, Virginia's General Assembly in 1988 authorized private development of toll roads in the commonwealth. A group of investors, the Toll Road Investors Partnership II, thought that a toll road linking Washington's Dulles International Airport and Leesburg, Virginia, would be a promising investment. Their analysis was based on residential and commercial growth in the area, which was causing increased congestion on existing arterial roads serving the corridor.

The product of its investment is the Dulles Greenway. The Greenway is a 14-mile, limited-access highway extending from the State-owned Dulles Toll Road, which carries traffic between Washington's Capital Beltway and Dulles Airport, to Leesburg. The two roads connect at a toll plaza. Drivers pay one toll, which the operators of the two facilities divide. Vehicles equipped with prepaid electronic tags may drive through "Fastoll" lanes without having to stop at a toll booth; their tags are read and their accounts debited automatically.

To finance the Greenway, investors put up $40 million in cash and secured $310 million in privately placed taxable debt. Ten institutional investors led by CIGNA Investments, Prudential Power Funding Associates (a unit of the Prudential Insurance Company of America), and John Hancock Mutual Life Insurance Company provided $258 million in long-term, fixed-rate notes (due in 2022 and 2026). Three banks (Barclays, NationsBank, and Deutsche Bank AG) agreed to provide part of the construction funding and $40 million in revolving credit. Loans are to be repaid with toll revenues, and the financing is secured by a first mortgage and security interest in the developer's right, title, and interest in the facility.

The Greenway opened to traffic in September 1995. Initially, the toll was $1.75 each way, but when traffic fell short of projected levels, the toll was reduced to $1.00. Lowering the toll attracted more users but not enough to increase total revenues. Consequently, in July 1997, the Greenway's operators raised the toll to $1.15.
The shortfall in toll revenues from the project has brought problems for its investors. They had projected toll revenues for the first year at $27 million; $7 million was to go for operating costs and $20 million toward the $30 million in annual interest. When those revenues did not materialize, the investors began to miss their quarterly interest payments of $7 million each. However, they won approval from lenders to skip the payments for the rest of the year, avoiding foreclosure through the end of 1997. In December 1997, the sponsors were discussing a further extension of their standstill agreement with the lenders.

---

[402] Congressional Budget Office, *Innovative Financing of Highways: An Analysis of Proposals*, January 1998, Chapter 5, 4-6. http://www.cbo.gov/showdoc.cfm?index=320&sequence=6. Citations within case study have been deleted.

The 1988 enabling legislation passed by the General Assembly prohibited the State from bailing out the Greenway or other such facilities. Nevertheless, after the disappointing results of the first few months of the toll road's operation, the Virginia legislature considered such action. In the end, it rejected a bailout; however, it voted to allow the speed limit on the Greenway to rise (from 55 to 65 miles per hour) in hopes of attracting more motorists.

The Greenway is a build/operate/transfer facility and becomes the property of the State after 42.5 years. Under that kind of arrangement, the people of Virginia get a road financed through tolls, not taxes, that is built sooner than otherwise would have been the case. The developers receive the profits (assuming that the market eventually provides profits) for a long enough period to recoup their investment. Virginia's State Corporation Commission limits the rate of return on the project to 18 percent, but profits appear unlikely to approach that level anytime soon.

Washington SR 500/Thurston Way Interchange[403]

In April of 1999, the Washington State Department of Transportation (WSDOT) began a project to build a new interchange at the intersection of Washington State Road 500 and Thurston Way. The new interchange was aimed at reconfiguring SR 500 traffic in an effort to improve safety, create better road conditions, improve pedestrian and bicycle connections, increase intersection capacity, and decrease congestion. This project became the first design-build endeavor in the State of Washington, allowing the WSDOT to accelerate the construction schedule and minimize construction costs.

WSDOT chose the Kuney/Entranco design-build partnership to construct the new interchange, consisting of the Max J, Kuney Company, a construction company, and Entraco, a civil engineering firm. The $26 million project was funded mainly through State and Federal funds.

Construction on the Thurston Way Interchange began in April 2001, and was completed by October 2002. The final project costs are estimated at $26.8 million, meeting the project targets and more than a year earlier than with the conventional design-bid-build method.

[403] Washington State Department of Transportation Web site, "SR 500, Thurston Way Interchange," http://www.wsdot.wa.gov/projects/SR500ThurstonWayInterchange.

APPENDIX E: CASE STUDIES OF PROJECTS IN PRE-PROCUREMENT OR UNDER CONSTRUCTION

California – 125 Toll Road and Connector[404]

State Route 125 is one of four different public-private partnerships authorized by the California legislature in 1991. SR 125 was designed as a toll road connecting the only commercial port of entry in San Diego to the regional freeway network, expanding international and regional trade in the area.

A 9.25-mile section of SR 125 is being constructed as a privately financed and operated toll road, featuring electronic toll collection. In accordance with legislation passed in 1989, San Diego Expressway LP holds a franchise with California and will finance and build the highway, then transfer ownership to the State. The partnership will then lease it back from the state, operating and maintaining the highway for 35 years. The 35-year franchise will allow the developer to set market rate tolls, with a maximum of 18.5 percent return on total investment. Control of the highway will then revert to the State. Other portions of the highway, providing connections to the toll road, are being through public funds.

The developers expect the project to be completed in October 2006, years ahead of when it would have been completed with traditional funding. The project is saving public monies with the infusion of investment by private entities acting in economic self-interest, such as local real estate developers who have donated $48 million of land for right-of-way, and the investors contributing more than $150 million in private at-risk equity. Private equity and financing have accounted for 78 percent of the project's costs.[405]

California – SR 22 HOV Project[406]

Crossing most of the major North/South freeways and arterial corridors in central Orange County, the SR 22 is a vital California road suffering from poor traffic flow due to increases in population and travel. To remedy this problem, Caltrans accepted a design-build option to rebuild the roadway on October 11, 2001. Included in the construction plans are the SR 22 HOV project, building High Occupancy Vehicle lanes in each direction between the Costa Mesa Freeway and Valley View Street.

---

[404] Innovative Finance Web site, "State Route 125 Toll Road – San Diego County, CA," http://www.innovativefinance.org/projects/highways/125.asp.

[405] "Federal Credit Program: Ground Breaks on SR 125 South Toll Road," *FHWA's Innovative Finance Quarterly*, Vol. 9, No. 3, Summer 2003. http://www.fhwa.dot.gov/innovativefinance/ifq93.htm#federal_credit finance.

[406] Orange County Transportation Authority Web site, "About the Project," http://www.octa.net/freeway/sr22/intro.asp.

Faced with a State budget crisis, Caltrans chose a design-build strategy to construct the project better, faster, and cheaper. This strategy allowed California to move ahead with procurement, and to take advantage of a slowed economy and a weak demand for freeway construction. The Orange County Transportation Authority hired the Parsons Transportation Group (Parsons), Nossaman, Guthner, Knox, & Elliott, LLP, and Cutler & Associates to provide right of way acquisition services, legal services, and project management for the design-build project.

Due to the design-build method of construction, the project is estimated to be completed a full 18-months sooner than traditionally planned and at substantial cost savings.

The project will add a High Occupancy Vehicle lane and an auxiliary lane in each direction, providing increased capacity to the most severely congested stretch of the SR 22. Construction is set to be complete in December of 2007.

California – San Joaquin Hills Toll Road[407]

The San Joaquin Hills Transportation Corridor is a limited-access, seventeen-mile, six-lane toll road running parallel with the Pacific Coast Highway and the San Diego Freeway. The project was designed to alleviate congestion along major arterials in Orange County, California.

The $1.4 billion project was financed primarily through senior-lien revenue bonds ($1.079 billion). Additionally, a $120 million in standby Federal line of credit, $91 million in junior-lien bonds, $38 million in project revenue certificates, and other sources helped fund the project. The project's sole sources of revenue are tolls, development impact fees, and interest earnings. Opening in 1996, the toll road is currently operating at 83 percent of projections.

The project was constructed on a design-build contract, with both a guaranteed maximum price and construction date. Despite an 18-month environmental delay, two severe rainstorms and a flood; the toll road was opened to the public three-and-one-half months early.

Colorado – T-REX Project[408]

The T-REX project is a collaboration between the Colorado Department of Transportation (CODOT), the Regional Transportation Board (RTB), the Federal Highway Administration, and the Federal Transit Administration, along with input from Colorado citizens, businesses, and motorists. Endorsed by Colorado voters, the design-build project aims to replace aging highways with more modern, efficient highways, as well as a light rail system. T-REX will widen 14 miles of I-25 and 4 miles of I-225. The

[407] Innovative Finance Web site, "San Joaquin Hills Transportation Corridor Agency – Orange County, California," http://www.innovativefinance.org/projects/highways/joachin.asp.
[408] T-Rex Project: Transportation Expansion Project Web site, "Introduction to TREX," http://www.trexproject.com/trex_channels/about/introduction.asp.

project also includes a new drainage system, the reconstruction of several interchanges and bridges, and improved pedestrian and bicycle access. Ultimately, the project will link the two largest employment centers in the region (the Southeast Business District and the Denver Central Business District). A design-build contract was awarded in June 2001, with construction beginning September 2001.

Financing for the project is provided by both CODOT and the RTB. CODOT will finance $671 million through GARVEE bonds, and approximately $117 million through sales and use tax revenue. The RTD, through a full funding grant agreement, will provide $525 million, as well as $320 million in bond proceeds and $34 million from local funds. A law signed by Governor Bill Owens in 1999 allowed Colorado to use Transportation Revenue Anticipation Notes (TRANS) for budgeting purposes, permitting the project to proceed without having to divert funds from the State's budget.

Construction on the T-Rex project will finish in September of 2006, being completed without any new or increased taxes.

Minnesota – Trunk Highway 212 Design-Build Project[409]

The Trunk Highway 212 will be built through a public-private partnership between the 212 Community Highway Association and private firms led by Interwest/DLR Group Infrastructure Corporation. The proposed highway would begin at the Minnesota-South Dakota border and stretch 160 miles to the I-494 interchange in Eden Prairie, traversing both agricultural and urban areas.

Once built, the project is likely to be Minnesota's first toll road. The $220-million project is to be financed through tax-exempt bonds, allowing the construction to be finished much quicker than it would be through a conventional pay-as-you-go program. The program still faces challenges, and must overcome legal obstacles before construction can begin.

Texas – Central Texas Turnpike Project[410]

The Central Texas Turnpike Project is a $4.3 billion project consisting of a new 122-mile turnpike facility in the Austin-San Antonio corridor consisting of a six-lane controlled access electronic toll highway. The project aims to relieve congestion, improve road safety, and enhance commerce and trade, and consists of four interconnected elements: SH 45 North, Loop 1, U.S. 183A, and SH 130). The different elements will be constructed through design-build public-private partnerships. Recently, the contract for SH 45 was awarded to Granite Construction Co. & J.D. Abrams after the partnership had

[409] Congressional Budget Office, *Innovative Financing of Highways: An Analysis of Proposals*, January 1998. http://www.cbo.gov/showdoc.cfm?index=320&sequence=0.
[410] "TIFIA Credit Program: Transportation Secretary Announces TIFIA Project Selections," *FHWA's Innovative Finance Quarterly*, Vol. 6, No. 3, Fall 2003, 43-44, http://www.fhwa.dot.gov/innovativefinance/ifq63.htm.

submitted bids that were 23 percent below the State's estimates. The highway is the first of the four elements to begin construction.

The first phase of the project, comprising SH 130, SH 45 North, and Loop, is estimated to cost $3.7 billion. This phase, involving construction of an approximately 65 mile limited access tollroad, is being financed through bonds and notes sold by the Texas Transportation Commission, as well as an $800 million TIFIA loan and a $700 million commitment in funding from the Texas Transportation Commission. The bonds and the TIFIA loan will be repaid from toll revenues.

Thus far, all construction projects have come in between 7 percent and 20 percent below the engineer's estimates. In January of 2004, all of the right-of-way required for the construction of SH 45 and Loop 1 was acquired. Phase I of the project, SH 130, is now due to be competed in 2007.

Virginia – Coalfields Expressway[411]

The Coalfields Expressway will be a four-lane highway totaling 116 miles in length, with 51 miles running in southwestern Virginia and 65 in West Virginia. The Expressway will provide a direct link from Interstates 64 and 77 through the heart of southern Appalachia. The Expressway has been designated as U.S. Route 121, and will run along the Virginia Route 83 corridor, from US 23 in Wise County, through Dickenson County, into Buchanan County crossing US 460, to Slate near the West Virginia border, then following along West Virginia Routes 83 and 16 through McDowell and Wyoming Counties, ending at Interstates 77 and 64 near Beckley.

Under the authority of Virginia's Public-Private Transportation Act (VPPTA), the Virginia Department of Transportation (VDOT) entered into an agreement with Kellogg, Brown & Root (KBR) to design and build the Virginia portion of the Coalfields Expressway. The VDOT later awarded a $30.6 million contract to KBR to perform the preliminary engineering for an initial segment of the Expressway, which includes environmental analysis, geotechnical testing, roadway design, and right-of-way acquisition plans.

The VDOT originally estimated the roadway to cost $1.6 billion. Thus far, the Congress has funneled $72.7 million in Federal dollars into the project.

Virginia – Dulles Corridor Rapid Transit

The Washington Metropolitan Area Transit Authority (WMATA) has been the operator and builder of the Metro system for our Nation's capital, which includes 103 miles of right-of-way in Maryland, the District of Columbia and Northern Virginia. However, for the long-anticipated extension to Dulles International Airport and beyond into Loudoun

[411] Roads to the Future Web site, "Coalfields Expressway," http://www.roadstothefuture.com/Coalfields_Expwy.html.

County, a design/build team may be used to build the next phase of the system. The 22-mile extension would be developed in three phases—Project development and Preliminary Engineering; design-build of the first part through Tyson's Corner to Whiele Road; and design-build from Whiele Road to Dulles International and on to Route 772 in Loudoun County. The extension will run primarily along the Dulles Access Road and the Greenway Toll Road.

The system contracting agency would be the Virginia DOT, Division of Rail and Public Transportation. It has contracted with WMATA, which will provide technical management and advisory services to the project. The private partner, a consortium including Bechtel Corporation and Washington Group, International, will participate in a negotiated procurement under Virginia's PPTA legislation. Funding for the project will come from a combination of special tax districts along the rail alignment, as well as possible use of excess toll revenues in the corridor. VDOT has contracted separately for the conceptual engineering and environmental report process.

A preliminary analysis by the private sector partners indicates that a traditional design/bid/build process for this project would take 117 months to complete, at a cost in excess of $1.3 billion. The negotiated public-private partnership is projected to work to a 67-month schedule and a cost of $886 million.[412]

Washington – Tacoma Narrows Bridge[413]

The construction of a second bridge along the Tacoma Narrows began in October of 2002, and is designed to significantly increase traffic flow and reduce congestion for commuters. The project includes the addition of a 3.4-mile segment of SR 16, along with the new suspension bridge being built parallel to the existing Tacoma Narrows Bridge, which will span 5,400 feet.

Building the first long-span suspension bridge in the United States since 1964, the $800 million project is a public-private partnership between the Washington State Department of Transportation (WSDOT) and Tacoma Narrows Constructors (TNC).
TNC, a joint venture of Bechtel and Kiewit Pacific, is responsible for carrying out the bridge design and construction project. This fully integrated team of international and local suspension bridge specialists and experts is providing engineering management, procurement, and construction under a design-build, fixed-price, and lump-sum contract with WSDOT. Under the agreement, WSDOT will pay TNC a fixed price of $615 million through monthly payments tied to construction progress.

About $800 million of tax-exempt bond financing is required to support the proposed Tacoma Narrows Bridge project. The state has funded $50 million and provided certain tax exemptions and tax deferrals that help to reduce the project costs. Upon opening, a

[412] Washington Group International, "Contemporary Transit Systems" presentation, June 2004.
[413] BridgePros Web site, "Tacoma Narrows Bridge," Web site last updated February 6, 2004 (last accessed July 15, 2004)
http://bridgepros.com/projects/TacomaNarrows/TacomaNarrows.htm.

toll will be charged to cross the new Tacoma Narrows Bridge in the eastbound direction. The toll will initially be set at $3.00. Future tolls will be set by the Transportation Commission with recommendations by the Citizen Advisory Committee appointed by the Governor. Citizen Committee members must reside within the project area. The project notice to proceed was provided to the design-builder in September 2002. The project is scheduled to be completed in early 2008.

West Virginia – King Coal Highway [414]

The King Coal Highway is a 93-mile portion of the I-73/74 Corridor running through West Virginia. Aimed at opening up mountainous southern West Virginia to faster and safer transportation, the four-lane highway has been designated "a high priority segment of a high priority corridor in the National Highway System."

The project is a public-private partnership between the Mingo County Redevelopment Authority and the mining company Premium Energy. As part of the partnership, the West Virginia Department of Transportation (WVDOT) has authorized shifts in a 12-mile portion of the highway to allow private companies to remove coal and place excess material generated by coal activity in designated areas, creating the roadbed for the future highway.

The WVDOT estimates that the partnership will save roughly $145 million, bringing the estimated costs from $300 million down to $155 million. This same section's start date may also be rescheduled, moving up from 2009 to sometime in 2004. Construction will also be shortened by one year.

[414] West Virginia Department of Transportation Web site, "King Coal Highway," http://www.wvkingcoal.com/index.asp.

APPENDIX F: 50 STATE SURVEY OF TRANSPORTATION AGENCY DESIGN-BUILD AUTHORITY AS OF FEBRUARY 2004[415]

State	*Transportation Agencies with Authority*	*Citation for Statutory Design-Build Authority*	*DOT Procurement Process*
1. AK	Authorization for all agencies for projects using state funds	ALASKA STAT. § 36.30.200	Competitive sealed proposals if appropriate findings are made; otherwise, competitive sealed bids.
2. AZ	Authorization for State Transportation Board; pilot projects by DOT	ARIZ. REV. STAT. §§ 28-7361, 7363, 7364 and 7365	Two phase process: pre-qualification then proposal; award is to lowest score when price is divided by technical score; time valued adjustments may be made to score.
3. CA	Authorization for transit agencies, certain cities and counties	CAL. PUB. CONT. CODE §§ 20209.5 and 20133	N/A.
4. CO	Authorization for DOT	COLO. REV. STAT. §§ 43-1-1401 *et seq*.	Two phase process: pre-qualification then proposal; any appropriate basis for award if basis is described in RFP; preference to Colorado residents, however if this may cause denial of federal funds then Department will suspend preference for residence 43-1-1406; adjusted scoring if commission approves; award is to proposal providing best value to Department.
5. DE	Public-private initiative authorization allowing authorization for Secretary to solicit design-build proposals	DEL. CODE ANN. tit. 2, § 2003	Proposals solicited through RFP; Department authorized to assess non-refundable proposal review fee not to exceed $50,000; each proposal weighed on its own merits and ranked according to selection criteria; only highest ranking proposal shall be selected.
6. FL	Authorization for DOT for buildings, major bridges and rail corridor projects	FLA. STAT. ANN. § 337.11(7)	Governed by rules adopted by Department (specifically allows shortlisting, request for proposals and award based on technical criteria)

[415] Provided by Nossaman, Guthner, Knox & Elliott, LLP.

7. HI	Authorization for all governmental bodies to use competitive sealed proposal procurement process	HAW. REV. STAT. § 103D-303	Allows discussions with offerors within competitive range; award to most advantageous offer
8. ID	Legislation stating that State agencies are not prohibited from using design-build	IDAHO CODE § 67-2309	None itemized
9. IL	Specific authorization for Regional Transportation Authorities	70 ILL. COMP. STAT. 3615/4.06(b)(2)	N/A
10. KS	Authorizes DOT to use design-build methodology for innovative pavement management demonstration projects	KAN. STAT. ANN. §§ 68-214a, §§75-5801 et seq.	Multi-phase evaluation process
11. KY	Authorizes all state agencies to enter into design-build contracts	KY. REV. STAT. §§ 45A.180 *et seq.*	Three-phase multi-factor selection process
12. LA	Authorization for DOT to implement a pilot program for one design-build project not to exceed $5 million	LA. REV. STAT. ANN. § 48:250.2	Pursuant to rules adopted by DOT
13. ME	Authorization for DOT	ME. REV. STAT. ANN. tit. 23, § 753-A	Low-bid award or best-value award. Best value award should be submitted to the Department in two components – technical and sealed price proposal
14. MD	Authorization for capital projects has been used for light rail	MD. CODE ANN., STATE FIN. & PROC. § 3-602(g)(1)	N/A
15. MA	Authorization for Department of Highways to enter into Development Agreement for Route 3 North Authorization for Mass Bay Transportation Authority	1999 Mass. Act 53 2000 Mass. Act 125	Pre-qualification, request for proposals, possibly oral presentation; award to developer who best meets the selection criteria for the benefit of the Commonwealth; selection of other than lowest-overall-cost is allowed if a written explanation of the reasons is given

16. MN	Authorization for streets, highways, bicycle paths, bicycle trails and pedestrian facilities, light rail transit facilities and DOT projects	MINN. STAT. ANN. § 473.3993 MINN. STAT. ANN. § 160.262 MINN. STAT. ANN. § 161.3410	DOT authorized to procure design-build contracts using either a two-step best value selection process or a low bid process, not to exceed 10% of DOT contracts each year; light rail contracts may be awarded on the basis of the RFQ or RFP without bids
17. MO	Authorization for the State Highways and Transportation Commission to enter into design-build contracts	MO. REV. STAT. § 227.107	Rules not yet adopted
18. MT	Authorization for DOT to use alternative procurement process	MONT. CODE ANN. § 60-2-111, 112, 135-137.	Award by means other than competitive bidding is allowed if special circumstances so require and are specified in writing. DOT may award up to $20 million in design-build contracts under the pilot program
19. NV	Authorization for public bodies and DOT for projects that exceed $30,000,000; may also be used for projects over $5,000,000 that meet certain criteria	NEV. REV. STAT. §§ 338.1711-338.1727 and 408.3875-408.3887	Request for preliminary proposals followed by issuance of request for final proposals to "finalists"; award based on most cost effective and responsive proposal using criteria and weight assigned to each factor. Preference for local contractors if not federally funded
20. NH	Projects authorized to use design-build by the State capital budget	N.H. REV. STAT. ANN. § 228:4(I)(f)	Selection to be based on objective standard, measurable criteria for evaluation
21. NM	Authorization for Highway Department pilot program	N.M. STAT. ANN. §§ 13-1-111 and 13-1-119.1	Two-phase process: shortlisting followed by evaluation of technical cost proposals schedule. Phase Two: proposals evaluated on technical concepts or solutions, costs and scheduling; awarded to highest ranking firm. Note: statute that allowed use of design-build for highway projects sunsetted on 7/1/03
22. NC	Authorization for DOT Authorization for Turnpike Authority to use alternative procurement process	N.C. GEN. STAT. § 136-28.11;N.C. GEN. STAT. § 136-89.180 et seq. (enacted by 2002 N.C. Sess. Laws 133, H.B. 644)	None itemized. Requires determination by the Department of Transportation that delivery of the projects must be expedited and that it is not in the public interest to comply with normal design and construction contracting procedures
23. OH	Authorization for DOT and counties	OHIO REV. CODE ANN. §§ 5517.011; § 5543.22.	Requires design-build procurements to be competitively bid

24. OR	Authorization for DOT toll-way projects	OR. REV. STAT. §§ 383.005 et seq.	Department may award any (tollway) contract under a competitive process or by private negotiation or any combination of competition and negotiation; factors considered are: cost, design quality, structural integrity/maintenance, aesthetics, traffic, safety, small business participation, financial stability & experience
25. PA	Authorization for Department of General Services	62 PA. CONS. STAT. §§ 103 and 322(2)	N/A
26. SD	General authorization for public corporations	S.D. CODIFIED LAWS § 5-18-26 et seq.	Performance criteria on a project by project basis (assuming the DOT is a "public corporation")
27. TN	Authorization for municipal building authorities	TENN. CODE ANN. § 12-10-124	N/A
28. TX	Comprehensive development agreement authorization for TxDOT, Texas Turnpike Authority (a division of TxDOT), and regional mobility authorities	TEX. TRANSP. CODE ANN. ch. 227, 370 & 361.	May solicit proposals or accept unsolicited proposals. Selection is based on "best value"
29. UT	Authorization for transportation agencies including the DOT	UTAH CODE ANN. § 63-56-36.1; UTAH ADMIN. CODE R916-3	Two phase process, pre-qualification then proposals; after considering price and other identified factors, award is to proposal which is most advantageous to the state
30. VA	Authorization for limited number of DOT contracts; general authorization for other state agencies	VA. CODE ANN. §§ 2.2-4303, 2.2-4306 and 33.1-12	Award to be based on objective criteria adopted by Commonwealth Transportation Board; objective criteria to include requirements for pre-qualification and competitive bidding
31. WA	Authorization for DOT for projects over $10 million; authorization for other public bodies for projects over $12 million	WASH. REV. CODE §§ 39.10.051 (effective until July 1, 2007) and 47.20.780	DOT to "develop a process for awarding competitively bid highway construction projects"
32. WI	Authorization for specific bridge projects	WIS. STAT. ANN. §§ 84.11(5n) *et seq*.	Two phase competitive selection process; pre-qualification then proposals; evaluation criteria must include qualifications, quality, completion time and cost

APPENDIX G: STATE ENABLING LAWS FOR TRANSPORTATION PUBLIC PRIVATE PARTNERSHIPS AS OF FEBRUARY 2004[416]

State	Statue	Comments
Alabama	Sec. 23-1-81	Authorizes County Commissions to license toll bridges, tunnels, roads. 3 private toll road/bridges operational.
Arizona	Sec. 28-7701 to 28-7758	Passed in 1990. Allows solicited/unsolicited proposals. 6-7 proposals submitted. None approved.
Arkansas	Ark. Stat. Ann. § 27-86-201	1923 statute authorizing counties to grant franchises for toll bridges, turnpikes and causeways over or along any watercourse, lake, bay or swamp.
Colorado	Title 43-3:-202.5 & 301-322	Provides PPP authority to Colorado DOT for specific projects including turnpikes and HOT lanes. Allows solicited and unsolicited proposals for PPPs.
Delaware	Title 2: Ch. 20	Passed in 2003. Authorizes solicited/unsolicited proposals. DelDOT to draft rules in Spring of 2004.
Florida	Sec. 334.30	Allows solicited/unsolicited proposals to FDOT. Project specific legislation approval required. Allows expressway authorities to accept unsolicited approvals.
Georgia	Sec. 32-2-78 & 32-20-79	Passed in 2003. Creates public-private initiative process. Allows GDOT to accept solicited/unsolicited proposals.
Illinois	20 Ill. Comp. Stat. § 2705-450.	Allows PPPs for high speed rail and magnetic levitation transportation.
Indiana	In. Code § 8-10-1	Allows Indiana Port Comm. To enter into PPPs.
Louisiana	La. Rev. Stat. § 48:2020. La. Rev. Stat. § 48:2072.	Allows parishes, municipalities and Louisiana Transportation Authority to enter into PPPs.

[416]"State Public-Private Partnership Legal Score Card: Enabling Laws for Transportation Partnerships," *Public Works Financing*, February 2004, 7; and information provided by Nossaman, Guthner, Knox & Elliott, LLP.

State	Statue	Comments
Maryland	Md. Ann. Code § 8-204	According to an Attorney General opinion referenced in the annotations to this statute, the Maryland Transportation Authority has authority to construct toll roads using PPPs
Massachusetts	Ch. 53: Sec. 6	Authorizes Route 3 North Project as a PPP. Requires Secretary to make recommendation within 3 months of its completion on extending PPV to other large projects
Missouri	Ch. 160.84-160.93	Creates a special purpose non-profit Transportation Corporation as a vehicle for PPVs. Lake of the Ozarks Bridge developed through this mechanism
Nevada	NRS Ch. 338	Passed in 2003. Legislation allows solicited/unsolicited proposals. Explicitly prohibits toll bridges and toll roads
North Carolina	Art. 6H. Sec. 136-89, 180 136-89.197	Passed in 2002. Legislation created North Carolina Turnpike Authority, among other things, to enter into partnership agreements with private entities. Authority is in the process of being organized in 2003-2004
Oregon	ORS 367.015 and 367.060	Passed in 2003. Directs ODOT to create the Oregon Innovative Partnership Program. Allows solicited/unsolicited proposals for toll-way projects. Rulemaking to begin in Spring 2004
South Carolina	Section 57-3-200	Authorizes SCDOT to enter into PPPs. Two projects have been completed: The Greenville Southern Connector and the Conway Bypass
Texas	TransTexas Corridor: Multiple	2003 legislation amended several sections of Texas statutes to allow implementation of TransTexas Corridor Plan. Allows both solicited/unsolicited development proposals to TxDOT, the Texas Turnpike Authority, and Regional Mobility Authorities
Utah	Ch. 72-6-118 & 72-2-120	Legislation set groundwork for PPPs and directs UDOT to draft rules. Rules never adopted
Virginia	Title 56-556 to 56-575	Virginia's Public-Private Transportation Act of 1995 authorizes PPPs. Allows solicited and unsolicited proposals. To date, there is 1 completed project, 5 active projects, and 5 pending proposals

State	Statue	Comments
Washington	RCW 47.46.010-47.46.900	Passed in 1995; authorizes WsDOT to solicit proposal for public-private initiatives for the development of up to six "demonstration" projects. To date only one project, the Tacoma Narrows Bridge, has moved forward
Wisconsin	Section 84.01 (30)	Authorizes the DOT to enter into build-operate-lease or transfer agreements for transportation projects

APPENDIX H: FEDERAL FUNDING

A. Project Federalization

For a public-private partnership, whether a transportation project will use Federal funds or need to seek Federal approval is a critical determination. This is because with Federal funding, or, to a more limited extent, Federal approvals, come the various Federal law conditions generally associated with normal Federal-aid highway projects. These conditions can affect both the cost of the project and the time to complete the project. This portion of the report will examine the threshold for a project to become a Federal project and the requirements that apply to Federal projects. For this part of the analysis, we will focus on those requirements or additional requirements that arise because of the Federal-aid highway funding or approvals required from the Department of Transportation. Although this report acknowledges these laws as impediments to public-private partnerships, the Administration is not proposing any changes to these laws.

i. When Does a Project Become a Federal Project and Why?

A project sponsor must determine what Federal funds, if any, will be used to construct a transportation project before determining what Federal requirements will apply.

1. Grant Funding

Grants to the States are the predominant type of Federal highway funding. These funds are largely apportioned to the States by statutory formulas. The majority of these grants fall into one of five general categories: Interstate Maintenance, National Highway System, Surface Transportation Program, Bridge Replacement and Rehabilitation Program, and Congestion Mitigation and Air Quality Improvement Program. Other categories have smaller levels of funding. Each of these programs has its own eligibility rules, and funds may be switched between categories.

Under the Federal-aid program, Federal requirements apply when Federal funds assist a project, but are generally not triggered on an entire project corridor, merely because there are Federal funds being used in other portions of the project corridor. The term project is defined in statute as "an undertaking to construct a particular portion of a highway, or if the undertaking so implies, the particular portion of a highway so constructed, or any other undertaking eligible for assistance under this title."[417] In other words, only that portion of a highway corridor project that uses Federal-aid funding becomes a Federal project. Only these Federal projects must comply with Federal requirements. The scope of the project agreement entered into under 23 U.S.C. 106 constitutes the project under which the Federal Government is contractually obligated for the payment of the federal share.

[417] 23 U.S.C. §101(21) (2004).

The concept of a State-run federally-assisted highway program is underscored by 23 U.S.C. 145, which provides that States have the right to determine which projects shall be federally financed. The States, not the FHWA, may decide where to use their Federal-aid highway funding. This right allows the States more flexibility in forming public-private partnerships, because the States can decide to form a public-private partnership without seeking Federal funds or by seeking Federal funds on only a portion of the particular corridor. For construction projects directly receiving Federal assistance, Title 23, United States Code, makes no distinction between grants and loans for most of these requirements.

While Federal conditions attach when a project is constructed with Federal funds, the operation of a number of Federal laws also results in these conditions applying to a much broader scope of projects. Most environmental laws, and particularly the National Environmental Policy Act, 42 U.S.C. § 4321, et seq., often apply to the entire action, even if only a small portion receives Federal funds. The reason is that actions must be analyzed between "logical termini" and cannot be segmented.[418] Moreover, environmental reviews must consider the "cumulative and secondary impacts" of actions.[419] "Connected actions" must be considered together.[420] Even when no funding is involved, these laws can come into play because they normally apply to approvals and permitting actions as well as to grant decisions. Some laws apply to recipients of Federal funds, no matter where those funds are used. The civil rights laws, and particularly title VI of the Civil Rights Act of 1964, as amended, apply in this way. Some highway safety requirements, such as the standards set forth in the *Manual on Uniform Traffic Control Devices*, normally must be applied on a system-wide basis.

2. Credit Assistance

Credit assistance raises several unique issues with respect to the conditions that apply to Federal grants. There are a number of specific provisions that extend certain requirements to projects funded under certain credit programs. Also, the scope of a Federal approval might be quite large for some loans because of the nature of the credit arrangement or instrument that is being approved by the USDOT.

Credit assistance is authorized for four types of programs in Title 23, and each of these programs have somewhat different consequences:

- Toll projects funded with a combination of grants and bonds (usually issued by a State, local government, or toll authority) under 23 U.S.C. 129. Section 129 covers bridges, tunnels, new construction and major reconstruction of highways (other than Interstate highways), and ferries. These types of projects are treated as regular Federal-aid projects. Toll revenues must be used for maintenance, debt service, and a reasonable return on investment. Excess toll revenues must be used for purposes eligible under title 23, U.S.C.

[418] 23 C.F.R. §711.111 (2003).
[419] Ibid.
[420] Ibid.

- Federal funds are available for loans for transportation projects under 23 U.S.C. 129(a)(7). Projects constructed with these types of loans are treated as normal Federal-aid projects.[421] However, the only condition that applies to projects funded by monies repaid on this initial loan is that such funds be used for projects eligible for Title 23, United States Code, assistance (but are not otherwise constrained by Federal requirements).[422]

- Funds made available through a State Infrastructure Bank. Two SIB pilot programs are authorized, the first under section 350 of the National Highway System Designation Act of 1995 (NHS Act) and the second under section 1511 of TEA-21.[423] Federal requirements do not apply to SIB assistance from repaid SIB loan funds for the 39 SIBs authorized under the 1995 National Highway System Act. Federal requirements do apply to SIB assistance from SIB repayments for SIBs authorized under the TEA-21 (2 currently in operation).

- Funds made available through TIFIA credit instruments. TIFIA is the most complex and most far reaching of the credit assistance programs. Because funds can be made available directly to a public-private partnership, it is often viewed as the most critical transportation program created by Congress that is aimed at the public-private partnerships discussed in this report. Certain Federal conditions apply comprehensively to an action that is the beneficiary of a TIFIA loan. These include Title VI of the Civil Rights Act of 1964, NEPA, and the Uniform Act. Other Federal requirements would apply to the same extent that would be the case if the TIFIA project were to be funded with grant funds (i.e., Davis-Bacon, DBE). Thus, the extent to which Federal conditions apply depends upon what types of funds are being applied to the specific construction project contract being undertaken by the recipient of the TIFIA loan.

ii. Federal Requirements for Federal-Aid Projects

Once it has been determined that a project has become a Federal-aid project, several Federal requirements will apply. These requirements will apply regardless of the amount of Federal funds that are used on a project.[424] For public-private partnerships, the application of these Federal requirements becomes an issue for the private-sector partner to consider because most of these requirements do not apply to a purely privately funded project.[425]

---

[421] 23 U.S.C. §129(a)(7)(B) (2004).
[422] 23 U.S.C. §129(a)(7)(H) (2004).
[423] National Highway System Designation Act of 1995, Pub. L. No. 104-59, § 350, 109 Stat. 568, 618-622 (1995) and Transportation Equity Act for the 21st Century, Pub. L. No. 105,-178, §1511, 112 Stat. 107, 251-255 (1998).
[424] Apogee Research, Inc., *Implications of Change in Procedures and Laws to Advance Public-Private Partnerships*, prepared at the request of the Federal Highway Administration , (FHWA-PL-95-026), April 30, 1995, 21.
[425] Ibid, 20.

Most of the conditions that accompany the Federal-aid highway program are intended to serve broad public policy objectives.[426] Although these requirements are meant to and do benefit society as a whole, they may also represent barriers for public-private partnerships. Specifically, the Federal requirements bring uncertainty, risk and additional cost. For example, before Federal funds can be made available to the public-private partnership project, the Federal government may have to broadly assess the environmental consequences of the project. Prevailing wage rules and other Federal mandates may also apply. Taken together, the highway construction industry asserts these requirements significantly increase the cost of building a project.[427]

Some suggest that a de minimis provision be added in title 23, United States Code, to limit the application of Federal requirements when Federal funding is below a certain threshold.[428] Traditional highway funding has comprised between 80 to 100 percent of the total cost of a project. With public-private partnerships, the Federal contribution typically will be less than the traditional percentage of the total project cost. As previously stated, any amount of Federal funding—even a dollar—can trigger the application of Federal requirements. A de minimis provision would limit the application of some or all Federal requirements when the level of Federal funding falls below a certain level on a project.[429] It is thought that such a provision would encourage a greater level of private-sector participation by reducing the time and costs that may be added by the Federal requirements. Furthermore, by encouraging the use of private-sector funds, Federal and State dollars could be spent on additional transportation projects.

As has been discussed, there are a number of Federal requirements that can apply to a Federal project. What follows is a brief discussion of some of these requirements.

1. Environmental Requirements

Over the years, more and more environmental laws have been enacted by States as well as the Federal government.[430] These various laws each have separate requirements, separate priorities, and separate processes. Additionally, the USDOT recently published a notice listing Federal environmental laws and Executive Orders applicable to the development and review of transportation infrastructure projects.

One of the major environmental laws that must be addressed is the NEPA. The NEPA establishes a national environmental policy and provides a framework for environmental planning and decisionmaking by Federal agencies.

---

[426] Congressional Budget Office, *Innovative Financing of Highways: An Analysis of Proposals*, January 1998, 9. http://www.cbo.gov/showdoc.cfm?index=320&sequence=0.
[427] Isaiah J. Poole, "Gas Tax Alternatives for a Nation on the Road," *CQ Weekly*, April 17, 2204, 919.
[428] Apogee Research, Inc., *Implications of Change in Procedures and Laws to Advance Public-Private Partnerships*, prepared at the request of the Federal Highway Administration , (FHWA-PL-95-026), April 30, 1995, 21; and comment provided by John Cline of the c2group.
[429] Comment received from John Cline of the c2group.
[430] Notice listing Federal environmental laws and Executive Order applicable to the development and review of transportation infrastructure projects, 69 *Fed. Reg. 25451* (May 6, 2004).

It also directs Federal agencies, when approving projects, making approvals, or issuing permits, to conduct environmental reviews to consider the potential impacts on the environment by their proposed actions.

Since transportation projects vary in type, size and complexity, their potential to affect the environment varies. To account for the variability of project impacts, there are three basic "classes of action," which determine how compliance with NEPA is carried out and documented. An Environmental Impact Statement (EIS) is prepared for major Federal actions where it is known that the action will have a significant effect on the environment. An Environmental Assessment (EA) is prepared for actions in which the significance of the environmental impact is not clearly established. Should environmental analysis and interagency review during the EA process find a project to have no significant impacts on the quality of the environment, a Finding of No Significant Impact (FONSI) is issued. Alternatively, after conducting an EA, the project sponsor may decide that an EIS is needed. Finally, Categorical Exclusions (CEs) are applied to actions that do not individually or cumulatively have a significant effect on the environment.

Significant time and financial risk are associated with obtaining the proper environmental clearances and permits, particularly if an EIS is required.[431] In FY 2003, the median time for completing EISs for highway projects was slightly over five and one-half years. However, court challenges concerning the EIS process for a particular project can add time and cost to a project. In addition to the length of time, the uncertainty surrounding the amount of time to complete an EIS discourages the private sector from pursuing public-private partnerships.

Part of the complexity of the NEPA process is due to the fact that it is also used to document compliance with the myriad of other environmental laws that apply to any given project. Also, in many ways, the NEPA process has become the vehicle through which broad scale project decisions are made and controversies about the project are identified and resolved. Thus, the NEPA process is a useful, even critical part of the project development process. This importance is why reform efforts have focused on making the NEPA process more efficient and streamlined, rather than advocating wholesale changes.

Many of the other environmental laws provide their own uncertainties that can discourage private sector interest in public-private partnerships. Although it is true that compliance with many of these laws is documented as part of the NEPA process, compliance with each of these laws can be complex. Whereas NEPA only requires adherence to a process and does not dictate an outcome, some other environmental laws have substantive requirements, which, if not met, can prevent the project from going forward. For example, any project sponsor that intends to construct a project affecting wetlands will need to obtain a Section 404 permit under the Clean Water Act from the U.S. Army Corps of Engineers. The Corps may deny a permit if the project does not meet standards

[431] Apogee Research, Inc., *Implications of Change in Procedures and Laws to Advance Public-Private Partnerships*, prepared at the request of the Federal Highway Administration , (FHWA-PL-95-026), April 30, 1995, 8.

set forth in the regulations implementing the Clean Water Act, effectively stopping the project from proceeding. A particular challenge in the context of public-private partnerships is that decisions on applications for environmental permits are often not ripe until the project is far enough along in development that the environmental impacts can be clearly ascertained. Appendix G provides a table of the major environmental laws applicable to the Federal-Aid Highway Program, and the basic requirements that each entails.

To alleviate this burden, it has been suggested that the public sector obtain all necessary environmental permits (pre-clearance) before the private sector invests substantial equity in a project.[432] Pre-clearance would add certainty to the process and help the private sector better assess the time and cost associated with a transportation project. This process would also reduce the risk of forfeiture of significant private sector funds should the project not survive the amendment phase.

2. Davis-Bacon Act

The application of Davis-Bacon to Federal-aid highway contracts is prescribed by 23 U.S.C. 113. The Davis-Bacon Act requires that each contract over $2,000, for the construction, alteration, or repair of public buildings or public works, to which the United States or the District of Columbia is a party, contain a clause setting forth the minimum wages to be paid to various classes of laborers and mechanics employed under the contract. Under the provisions of the Act, contractors and their subcontractors are required to pay workers employed directly upon the site of the project no less than the local prevailing wage rates, as determined by the Secretary of Labor, paid on projects of a similar character. Congress enacted Davis-Bacon to protect communities and workers from substandard earnings and to prevent the economic disruption caused by competition arising from non-local contractors coming into an area and obtaining Federal construction contracts by underbidding local wage levels.[433]

The impact of the Davis-Bacon Act varies from State to State. Many States have prevailing wage laws of their own, which often mirror or even exceed the Federal requirement. In such States, the impact of the Federal law could be limited. However, in States that have no prevailing wage law, or where such a State law does not apply, the application of the Federal law could have significant cost implications for the project. In addition, whenever the Davis-Bacon Act applies, it is accompanied by significant record keeping and auditing requirements.[434]

Opponents of the law contend that Davis-Bacon can increase project costs between 5 and 38 percent above what the project would have cost if it was competitively bid.[435]

---

[432] Notice listing Federal environmental laws and Executive Order applicable to the development and review of transportation infrastructure projects, 69 Fed. Reg. 25451 (May 6,2004).
[433] S. REP. NO. 332, 74th Cong., 1st Sess., pt. 2, at 7-8 (1931).
[434] 29 C.F.R. Part 3 (2003) and 23 C.F.R. §635.118 (2003).
[435] Associated Builders and Contractors Web site, "Associated Builders and Contractors Legislative Position of Prevailing Wage / Davis-Bacon Act," January 2004, http://www.abc.org/user-assets/Documents/Government%20Affairs/IssueBriefs/DavisBaconAct.pdf.

However, proponents of the law argue that studies indicate that Davis-Bacon is needed with respect to costs.[436]

The Administration is proposing no changes to the Davis Bacon Act.

3. Buy America

In section 165 of the Surface Transporation Assistance Act of 1982, Congress required that all steel, cement, and manufactured products used in a project funded with money made available from the Federal-aid highway program must be manufuctured in the United States.[437] Subsequently, Congress amended this provision to include iron products and to remove cement products from its application.[438] In enacting section 165, Congress sought to address the U.S. trade deficit and unemployment, and to ensure that revenues generated by the Federal gasoline tax will be spent on American products.[439] In interpreting this provision, the FHWA has stated that the manufacturing of a product begins with the initial melting and mixing, and continues through the coating stage. Any process which modifies the chemical content, the physical size or shape, or the final finish is considered a manufacturing process. These processes include rolling, extruding, machining, bending, grinding, drilling, and coating. An exception to the Buy America requirements may be made when the purchase of such materials would cost 25 percent more than foreign alternatives; if the cost of such materials does not exceed one-tenth of one percent of the total contract cost or $2,500, whichever is greater; or if the FHWA grants a waiver.[440]

The Buy America requirement can impede the formation of public-private partnerships because of the additional costs that may be added to a project. For example, the San Francisco Bay Bridge project received approval in 2002 for $237 million of Federal-aid highway funds.[441] However, the Buy America requirements would add $120 million to the cost of the project—almost half the amount of the Federal funding for the project.[442]

---

[436] Building & Construction Trades Department, AFL-CIO Web site, "Questions and Answers about Davis-Bacon: Protecting the American Standard of Living," http://www.bctd.org/political/davisbacon/pdfs/db_questions.pdf.

[437] Surface Transportation Assistance Act of 1982, Pub. L. No. 97-424, § 165, 96 Stat. 2097, 2136-2137 (1983).

[438] *See* An Act to apportion certain funds for construction of the National System of Interstate and Defense Highways for fiscal year 1985 and to increase the amount authorized to be expended for emergency relief under title 23, United States Code, and for other purposes, Pub. L. No. 98-229, § 10, 98 Stat. 55, 57 (1984); and Intermodal Surface Transportation Efficiency Act of 1991, Pub. L. No. 102-240, § 1048, 105 Stat. 1914, 1999-2000 (1991).

[439] *See* 128 D.C.R. H8985 (Dec. 6, 1982).

[440] 23 C.F.R. §635.410 (2003).

[441] Isaiah J. Poole, "Transportation Money Comes with Strings," *CQ Weekly*, April 10, 2004, 851.

[442] Ibid.

4. Proceeds from the Sale or Lease of Real Property

Section 156 of Title 23, U.S. Code, applies to any disposal of real property that was acquired with the participation of Federal-aid highway funds. It has two basic requirements. First, States or other acquiring entities must charge fair market value for the sale or lease of any such property, unless it is used by a utility or for another Title 23 eligible project. Exceptions may also be granted if the property is used for social, environmental, or economic purposes. Second, the Federal share of net income derived from the sale or lease of such property must be used by the State for projects eligible under Title 23. Implementing regulations are set forth in 23 CFR part 710, subpart D.

An example of the application of the 23 U.S.C. 156 requirments is the lease of airspace.[443] The airspace above highways may be used for several purposes and States may charge for airspace use, depending on the purpose of the use. Some uses are for valuable public services, such as utilities, and may involve no direct charges or rent as a public service to the taxpayers.[444] Another use is for project mitigation activities that may be accommodated at low or no charge. Private uses for airspace over the Interstate that are appropriate and not harmful to highway operations also are types of uses, for which the States are required to charge market-based rents.[445]

Under 23 U.S.C.156, States may retain all of the income that they obtain from leasing airspace to private parties, so long as the percentage of income equivalent to the amount of the Federal share on the project is used for projects eligible under Title 23, United States Code. Appreciation in property values associated with a highway or transit improvement could be a potential source of revenue for private sector investors.

5. Disadvantaged Business Enterprise (DBE) Program

All Federal-aid projects, regardless of system or State-approval status are subject to the legislative and regulatory Disadvantaged Business Enterprise (DBE) requirements. The FHWA must approve each State department of transportation's DBE program and approve the methodology for calculating the overall goal as part of the approval of the State DBE program. The main objective of the DBE Program is to ensure that small businesses owned and controlled by minorities, women, and other disadvantaged individuals have an equal opportunity to participate in DOT funded contracts. Goals for DBE participation are established to serve the public interest in creating a level playing field on which DBEs can compete fairly. State DOTs are required to use race-neutral means (i.e., the award of a contract to a DBE prime contractor through customary competitive procurement procedures) of achieving their goals to the maximum extent possible. When individual contract goals are set based on the existence of subcontracting opportunities for DBE participation, contractors must make good faith efforts to achieve the goal. A contractor cannot be denied award of the contract for failure to meet the DBE goal if adequate good faith efforts are documented. As noted during an FHWA

[443] *See* 23 C.F.R. §§1.23(c), 645.401, 710.405, and 710.407 (2003).
[444] *See* 23 C.F.R. §645.111 (2003).
[445] *See* 23 C.F.R §710.401. et seq. (2003).

symposium, the administration of the DBE program need not, but may conflict with private sector objectives for timely, low-cost delivery of highway projects.[446]

The requirements of the DBE program could be an impediment to the formation of public-private partnerships. DBE requirements may require contractors to subcontract a certain portion of the work. In addition, prime contractors may have to reach out to business entities with which they do not have a prior or on-going relationship. According to a 2001 GAO Report, 13 State departments of transportation and transit agencies reported incurring $250,000 in litigation costs attributable to the Federal DBE program.[447] Although it has been asserted that the DBE program may have contracting costs, 99 percent of the State departments of transportation and transit authorities surveyed by GAO in 2001 had not conducted surveys or analyses to determine the impact of the DBE program on contracting costs.[448] The USDOT has not conducted such an analysis and the DBE program has never been raised as a bar to the implementation of the projects by public-private partnerships.

6. FTA – 13(c)

In addition to the Davis-Bacon provisions, public transportation agencies must commit to existing labor protection agreements in their expenditure of Federal funding. This requirement, set out at 49 U.S.C. 5333(b), requires that expenditures that would result in new service or expansion of existing service must be made in a way that does not reduce existing labor protection agreements. Specifically, this provision requires such agreements to include information that may be necessary for —

- The preservation of rights, privileges, and benefits (including continuation of pension rights and benefits) under existing collective bargaining agreements or otherwise;
- The continuation of collective bargaining rights;
- The protection of individual employees against a worsening of their positions related to employment;
- Assurances of employment to employees of acquired mass transportation systems;
- Assurances of priority of reemployment of employees whose employment is ended or who are laid off; and
- Paid training or retraining programs.

These provisions do not act as major impediments to public private partnerships in public transportation, because the requirements apply primarily to the expenditure of Federal funds, and are thus under the control of the public transit agency. The public transit agency must apply Federal labor protection provisions to any contracted activity with the private sector if it intends to seek reimbursement from Federal funds. To the extent that

[446] Apogee Research, Inc., *Summary of the Federal Highway Administration's Symposium on Overcoming Barriers to Public-Private Partnerships*, prepared at the request of the Federal Highway Administration, (FHWA-PL-94-026), May 1994, 21.
[447] U.S. General Accounting Office, *Disadvantaged Businesses: Critical Information Is Needed to Understand Program Impact*, (GAO-01-586), June 2001. 36. http://www.gao.gov/new.items/d01586.pdf.
[448] Ibid.

these provisions increase the cost of the project, the cost is factored into the bidder's offer.

B. Federal Procurement Requirements and Contract Administration

In traditional public procurement, competitive bidding is the accepted process.[449] Contractors are selected after project design is completed, based on the lowest-priced qualified bid.[450] Title 23 provisions (23 U.S.C. 112) generally required competitive bidding on construction contracts using Federal aid, with award to the lowest responsive bidder.[451] Noncompetitive construction contracting or other innovative contracting may be used if the FHWA determines that the alternative contracting method is more cost effective or if an emergency exists and time is a critical factor. The purpose of the competitive bidding procurement process is to maximize public benefits, efficiently use available resources, and avoid the waste, fraud, and abuse of Federal funds.[452]

On the other hand, the private sector seeks to maximize profit and to expand markets by providing services to customers, outpacing competitors, and taking risks for commensurate rewards.[453] Selection of the low-cost proposal using the competitive bidding process often overlooks the bidder's solvency and work quality, shifting risk elements to the public sector.[454] Competitive bidding on public-private partnership projects eliminates the ability to achieve several desirable features: equity investment by the contractor, deferment of fees at a negotiated rate of return, turnkey supply of materials based on performance specifications (in lieu of completed design), and minority business participation at target levels.[455]

Another limitation of competitive bidding is that is stifles innovation. In developing a request for proposal (RFP) for a project, the State must be very prescriptive in its description of the project. Detail is needed to compare objectively the bids received. Although value engineering may be allowed after a bid is selected, there is still little opportunity for innovation early in the project development process.

In addition to protecting the public interest, the Federal procurement process also provides a standardized, objective process to evaluate bids. Each year, the FHWA administers approximately 147,000 contracts. A standardized, prescriptive process is

---

[449] Apogee Research, Inc., *Implications of Change in Procedures and Laws to Advance Public-Private Partnerships*, prepared at the request of the Federal Highway Administration , (FHWA-PL-95-026), April 30, 1995, 17.
[450] Ibid.
[451] Ibid.
[452] National Council for Public Private Partnerships, AECOM CONSULT, and Parsons Brinckerhoff, Ltd., *Partnerships in Transportation Workshops, Final Report* prepared at the request of the Federal Highway Administration, March 17, 2004, 10.
[453] Ibid.
[454] Apogee Research, Inc., *Implications of Change in Procedures and Laws to Advance Public-Private Partnerships*, prepared at the request of the Federal Highway Administration , (FHWA-PL-95-026), April 30, 1995, 17.
[455] Ibid.

needed to deal with this large volume of contracts systematically and efficiently. However, such a process does not allow for the flexibility needed to administer a public-private partnership. By definition, each public-private partnership presents a unique and innovative approach to highway construction. A process is needed that provides the flexibility for public-private partnerships and addresses the need for a standardized process.

C. Design-Build Regulation

Over the past decade, both the public and private sector have increasingly looked to design-build as the preferred project-delivery methodology because of its benefits of faster project delivery and reduced costs.[456] In recognition of this preference, the Transportation Equity Act for the 21st Century (TEA-21) authorized the use of design-build contracting for projects whose total project costs exceed $50 million ($5 million for Intelligent Transportation System (ITS) projects). TEA-21 also required the Secretary of Transportation to issue design-build regulations for the Federal-aid highway program.[457] Accordingly, the FHWA issued the design-build final rule on December 10, 2002, which took effect on January 9, 2003.[458]

Two major concerns were raised with the design-build regulation during the notice of proposed rulemaking stage.[459] These two concerns focused on restrictions on the procurement process and provisions related to the National Environmental Protection Act (NEPA).[460]

The design-build regulation requires that the State's request for proposals (RFP) must specify whether all evaluation factors other than cost or price, when combined, are: (1) significantly more important than cost or price; (2) approximately equal to cost or price; or (3) significantly less important than cost or price.[461] During the comment period for the notice of proposed rulemaking, some commenters stated that the underlying statute intended to permit States to use any procurement process authorized under State law. However, the FHWA disagreed with this position stating that section 1307(c)(2) of TEA-21 required the design-build regulations to identify the criteria to be used by the Secretary in approving the use by a State department of transportation or local transportation agency of design-build contracting, and to establish the procedures to be followed by a State or local transportation agency for obtaining the Secretary's approval of the use of design-build contracting by the department or agency. In others words, the statute required the FHWA to establish the procedures that States must use in obtaining Federal approval for a design-build project.

---

[456] Karen J. Hedlund, *The Case for Tax-Exempt Financing of Public-Private Partnerships*, 1998, 4. http://www.reason.org/HEDLPDF.PDF.
[457] Transportation Equity Act for the 21st Century, Pub. L. No. 105-178, §1307, 112 Stat. 107, 229-231 (1998).
[458] 67 Fed. Reg. 75902 and 23 C.F.R. pt. 636 (2003).
[459] 66 Fed. Reg. 53288, October 19, 2001.
[460] Nancy C. Smith, "A Critique of FHWA's Proposed Draft Design-Build Regulations," *Public Works Financing*, November 2001, 1.
[461] 23 C.F.R. §§636.211 and 636.302 (2003).

Although the design-build regulation represents a significant step in facilitating public-private partnerships, it also contains a provision that has been cited as an impediment to public-private partnerships. The design-build regulation prohibits a State from issuing a "request for proposals" (RFP) until the NEPA process is complete in accordance with 23 U.S.C. 112(b)(3)(B), which states that design-build projects "shall not commence before compliance with section 102 of the National Environmental Policy Act of 1969 (42 U.S.C. 4332).[462] States have criticized this provision as being a cumbersome restriction that discourages innovation and causes delays. Some States also believe that the NEPA process will be enhanced by having the private developer supply engineering studies, technical information, and other support to the transportation agency during the NEPA process. Because the NEPA analysis is typically accomplished as part of preliminary design, when many key, large scale design decisions are made by someone other than the design-build contractor, this process can discourage or prevent the use of innovative ideas and solutions proposed by the design-build contractor.

There are examples of the NEPA requirement of the design-build regulation causing delays. The Texas Department of Transportation (TxDOT) noted that the SH 130 Project in the Austin area was delayed because of TxDOT's inability to get special approval to issue the RFP prior to issuance of the record of decision. For programs, such as the Trans-Texas Corridor, that rely on the private developer to support the NEPA process, this requirement creates a major obstacle to implementation. The NEPA requirement also was a potential impediment to the I-81 project in Virginia. In particular, Virginia's process required the solicitation of proposals for the design and construction of the facility before it could select a private partner for the project. In order to address this situation, and to test the process's benefits in encouraging private investments and advancing transportation projects, Virginia and Texas are proceeding under the FHWA's SEP-14 program, rather than the design-build authority. The FHWA is reviewing its design-build regulation to see how these concerns could be addressed, particularly the practices that have been evaluated under the SEP-14 program.

D. Proprietary Techniques and Processes

A key benefit of public-private partnerships is the introduction of innovative solutions to technical and financial problems limiting the implementation of desirable transportation projects. When considering a proposal for a public-private partnership, the Federal government must have fairly detailed information about the proposal, the business and fiscal capability of the proponent, and the financial plan supporting the arrangement. Negotiations often require revelation of information about corporate finances, strategic business plans, and unique design and technology.[463] Often, this information will include proprietary information that the proponent may not wish to disclose publicly. Certainly, if a project is bid competitively before proprietary data is protected, private sponsors may

[462] 23 C.F.R. §636.109 (2003).
[463] Apogee Research, Inc., *Implications of Change in Procedures and Laws to Advance Public-Private Partnerships*, prepared at the request of the Federal Highway Administration , (FHWA-PL-95-026), April 30, 1995, 25.

choose not to develop truly innovative proposals.[464] Thus, protection of proprietary ideas, particularly at the stage where proposals are still being considered for approval, can be very important.[465] This section discusses how the Freedom of Information Act (FOIA) operates with respect to proprietary records that the Federal government may need to evaluate within public-private partnership proposals.

FOIA requires Federal agencies to disclose agency records upon request, by any person for any reason, unless the requested records fall under one of nine (9) applicable statutory exemptions.[466] The requestor need not state why the records are being sought. The determination of the applicability of a FOIA exemption is up to an agency's discretion and responses to FOIA requests are generally determined by an agency on a case-by-case basis. If the agency believes that the material is within the ambit of an exemption and concludes that it is in the agency's interest, the agency may deny a request for the information under FOIA.

One of the nine exemptions covers trade secrets and commercial or financial information that is obtained from a person and is privileged or confidential ("confidential business information").[467] In addition, the courts have ruled that the Trade Secrets Act (18 U.S.C. 1905) is co-extensive with the FOIA exemption for confidential business information. Therefore, Federal agencies have an additional basis for withholding trade secrets that form part of a private sector proposal. If, in response to a FOIA request, the agency determines that it may be required to release material submitted that may or may not fall under the definition of confidential business information, the submitter will be notified prior to the agency's final determination and given an opportunity to specify why these records should not be released. Pursuant to Executive Order 12600, this procedure is universally used across the Federal government and is an integral part of the U.S. DOT FOIA regulations.[468]

Similar concerns exist with respect to State laws. All 50 States also have public records laws, which allow members of the public (including non-residents) to obtain documents and other public records from State and local government bodies. State public records laws are not identical to FOIA nor are State court interpretations of similar language in State statutes necessarily the same as Federal court interpretation of FOIA (though many were modeled upon the Federal FOIA).[469] Many of these laws are similar to FOIA, but distinctions may arise in regard to the breadth of coverage of a disclosure exemption.[470] Virginia, Oregon, and Florida are among the States that have taken specific legislative action to ensure proprietary information submitted as part of the creation of a public-private partnership is protected from public disclosure.

---

[464] Ibid.
[465] Apogee Research, Inc., *Summary of the Federal Highway Administration's Symposium on Overcoming Barriers to Public-Private Partnerships*, prepared at the request of the Federal Highway Administration, (FHWA-PL-94-026), May 1994, 17-18 and 25.
[466] 5 U.S.C. §552(b) (2004).
[467] 5 U.S.C. §552(b)(4) (2004).
[468] 49 C.F.R. §7.17 (2003).
[469] FOIA Advocates Web site, "State Public Record Laws," http://www.foiadvocates.com/records.html.
[470] Ibid.