U.S. Department of Transportation

Federal Highway Administration

User Guidebook on Implementing Public-Private Partnerships for Transportation Infrastructure Projects in the United States

Final Report
Work Order 05-002

Prepared for:

Office of Policy and Governmental Affairs

Prepared by:

AECOM CONSULT
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User Guidebook on Implementing Public-Private Partnerships for Transportation Infrastructure Projects in the United States - Task Order 05-002

Dear Mr. March,

AECOM Consult, in association with DMJM Harris, FaberMaunsell, Maunsell of Australia, the National Council of Public-Private Partnerships, and the Ybarra Group, is pleased to provide the final ***User Guidebook on Implementing Public-Private Partnerships for Transportation Infrastructure Projects in the United States.*** This report provides a comprehensive set of insights for developing and implementing transportation infrastructure projects using PPP approaches. It is aimed at both the early practitioners of PPP projects as well as those agencies just beginning to consider the possibility instituting some form of PPP arrangement for a particular project currently stalled for lack of available resources.

This PPP User Guidebook describes the many participating groups, stages of development, and institutional factors associated with surface transportation PPPs. It considers the full life-cycle of PPPs, from development to execution to performance reporting. It identifies and discusses statutory, regulatory, financial, and institutional issues that should be addressed to successfully implement and manage a PPP project. The guidebook suggests a general process for developing transportation project PPPs and strategies for overcoming impediments faced by public and private sector partners during contract development and project implementation phases. The guidebook also offers general lessons learned from prior or current transportation PPP projects in the United States and other countries.

Two companion reports present PPP program descriptions and case studies and cameos of actual transportation PPP projects. One report focuses on transportation PPP projects in the United States while the other report focuses on transportation PPP programs and projects in other countries where modern PPPs evolved and have been used for many years.

We appreciate the opportunity to prepare this PPP User Guidebook. We acknowledge the support and assistance provided to the study team by members of the FHWA Office of Policy and Governmental Affairs, FHWA Office of the Administrator – PPP Unit, and FHWA Resource Center in San Francisco. We are especially grateful for your guidance and suggestions throughout this study effort.

Very truly yours,

Daniel L. Dornan

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USER GUIDEBOOK ON IMPLEMENTING PUBLIC-PRIVATE PARTNERSHIPS FOR TRANSPORTATION INFRASTRUCTURE PROJECTS IN THE UNITED STATES

PREFACE

Highway transportation agencies across the United States face fiscal challenges caused by the growing gap between the costs of providing and preserving highway infrastructure and available highway program funding. The inability of motor fuel taxes to provide adequate funds has prompted transportation policymakers to consider alternative ways to develop needed transportation projects. Public-private partnerships (PPPs) represent a wide variety of project financing and delivery approaches which offer the potential to expedite projects and cost-effectively operate and maintain the resulting facilities and services. By leveraging scarce public funds for transportation facilities, PPPs can help transportation agencies "do more with less." The common element of a PPP is that public sponsors of transportation projects engage the private sector to a greater degree in the performance of certain functions previously handled by the public sector. This can range from contract maintenance to life-cycle finance, development, operations, and preservation.

The U.S. Department of Transportation and its surface transportation administrations are encouraging their counterparts at the state and local government levels to consider the use of PPP approaches to accomplish more projects in their work programs. This document provides guidance in the application of PPPs to transportation projects based on the experiences of transportation agencies in the U.S. and other countries that have applied these delivery approaches. The guidebook is aimed at both early practitioners of PPP projects as well as those agencies just beginning to consider the possibility of instituting PPP approaches for projects currently stalled for lack of available resources.

The PPP User Guidebook describes the many participants, stages of development, and institutional factors associated with developing and implementing PPPs for transportation infrastructure projects. It considers the full life-cycle of transportation facilities, from development to execution to performance reporting. It identifies and discusses statutory, regulatory, financial, and institutional issues associated with implementing and managing PPP projects. It suggests a general process for developing transportation PPP programs and projects and strategies for addressing impediments and managing risks faced by public and private sector partners during contract development and project implementation phases. It also provides summary information on a sampling of prior or current PPP projects, including lessons learned from these projects.

The PPP User Guidebook on is intended to assist sponsors and providers of transportation projects take the necessary steps and precautions to promote successful delivery of PPP projects while protecting the public interest, especially the ultimate users of the facilities so developed.

Two companion reports present descriptions of PPP programs and case studies of transportation projects using PPPs. One report focuses on PPP projects in the U.S. while the other report focuses on PPP programs and projects in other countries where PPPs have a longer history of use. The report on international PPP programs and projects describes how PPP approaches continue to evolve and be introduced in additional countries seeking to expand their transportation networks to better participate in the growing global economy.

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1. INTRODUCTION

The growing interest and experience in using public-private partnerships (PPPs) to expedite transportation infrastructure projects in the United States has followed the efforts by transportation agencies in other countries to address funding shortages to meet urgent transportation expansion and replacement needs by engaging the private sector to a greater extent than in the past. This document provides guidelines for transportation agencies in the U.S. on institutional issues and strategies for developing, implementing, and managing PPP contractual arrangements to expedite transportation projects.

EXPERIENCE IN DEVELOPING AND IMPLEMENTING PPPs

Experience in various countries which have used PPPs to deliver transportation infrastructure projects for many years shows that the structure and delivery methods selected are highly dependent on a number of factors, including:

- Enabling statutes and regulations and underlying taxation policies;
- Capabilities of all members of the PPP to effectively execute their roles and responsibilities in a transparent and accountable manner;
- Contract flexibility and a proactive approach to identifying and resolving issues that arise during project development and implementation phases;
- Contract terms for developing and sharing revenues produced by the PPP project; and
- Ability of financial markets to deliver financing structured to suit each PPP project.

These issues vary from country to country and should be addressed on a project-by-project basis. Particularly important are potential political risks where the local or national economy and/or political environment are less stable.

As more states have begun to undertake PPPs, lessons are being learned about the opportunities and challenges of PPP approaches and how impediments to implementing PPPs once thought to be insurmountable can be addressed. Moreover, the U.S. is entering a new phase in surface transportation investment, and PPPs are likely to be increasingly relied upon by state and local governments to finance transportation infrastructure improvements. Understanding the PPP landscape and the lessons learned from prior or current PPP projects are valuable for transportation agencies considering or beginning to use PPP approaches to project delivery.

FOCUS OF GUIDEBOOK

The PPP Guidebook addresses the many participating groups, development phases, and institutional factors associated with transportation PPPs. It considers the full life-cycle of PPPs, from development to execution to performance reporting. It discusses statutory, regulatory, financial, and institutional issues that should be addressed to successfully implement and manage PPP projects. The guidebook suggests a general process for developing transportation project PPPs and strategies for overcoming impediments and managing risks faced by public and private sector partners during contract development and project implementation. The guidebook also offers lessons learned during prior or current PPP projects and commentary on possible developments that transportation project sponsors and providers may encounter as alternative project delivery approaches become more prevalent, diversified, and sophisticated.

In developing and implementing a PPP project, long-term and near-term issues should be identified and solution strategies developed and applied. These include:

- Long-range strategic decisions, such as regulatory structure or tolling strategy, that are generally undertaken by high-level policymakers; and
- Short-term tactical issues, such as maintenance schedules, reinvestment strategies, and contract administration and enforcement, that are usually handled by staff analysts.

Planning for PPPs should give substantive weight to the perspectives of both public and private sector partners, as well as project stakeholders and the general public. This will help each partner understand and accommodate the most important concerns of the other members of the partnership so that an acceptable arrangement is produced that balances public and private interests.

CONTENTS OF GUIDEBOOK

The contents of this PPP User Guidebook are intended to help practitioners and those contemplating the use of PPPs better understand what is involved in their development, implementation, and management. This will assist sponsors and providers of PPP projects identify and take the necessary steps and precautions to promote a successful project delivery experience for all parties to the partnership, including the ultimate users of the facilities so developed.

This document is composed of individual sections that discuss different aspects of the development, implementation, and management of PPPs for surface transportation projects sponsored by public agencies in the U.S. These include the following sections:

Section 2 - Rationale for Alternative Project Delivery Approaches

Section 3 - Public-Private Partnership Approaches

Section 4 - Criteria for Determining PPPs Opportunities

Section 5 - Program Framework for Developing and Managing PPPs

Section 6 - Impediments and Risk Management for Transportation PPPs

Section 7 - Domestic and Global Use of Transportation PPPs

Section 8 - Lessons Learned from Transportation PPP Projects

Section 9 - Conclusions

These sections are followed by five appendices, listed below:

Appendix A - Sample PPP Project Results from the U.S. and Other Countries

Appendix B - Statutory Authority and Key Provisions for PPP Projects by State

Appendix C - Glossary of Terms

Appendix D - List of Acronyms

Appendix E - PPP References

Appendix F - PPP Web Site Links

2. RATIONALE FOR ALTERNATIVE PROJECT DELIVERY APPROACHES

This section discusses the rationale for transportation agencies to consider developing and/or financing needed surface transportation projects using alternative approaches that have the potential to provide greater value than traditional approaches in the public interest. It begins by listing the key issues driving public sponsors or these projects to consider public-private partnerships as an alternative to the traditional approaches of design-bid-build project delivery and "pay-as-you-go" financing. It also provides an assessment framework for augmenting the traditional project development approach with a broader array of delivery and financing options.

ISSUES DRIVING INTEREST IN ALTERNATIVE PROJECT DELIVERY APPROACHES

Capital budgets for surface transportation facilities have flattened or been reduced while the needs for and costs of new facilities and rehabilitation of older infrastructure have grown well beyond available funding. Increased taxation is politically unpopular, yet the public demands continued improvements in the capacity, safety, and efficiency of its transportation facilities and services. The result is an ever-widening gap between available funding and needs of the nation's surface transportation program.

These issues and their underlying causes, as listed in Exhibit 1, are driving the growing interest by transportation agencies across the United States in alternative project delivery approaches and innovative finance techniques.

Exhibit 1 – Issues Driving Greater Interest in Alternative Project Delivery Approaches

- **Growing demand for U.S. transportation infrastructure**
  - Favorable economic conditions in U.S.
  - Lower long-term traffic and revenue risks
  - Relative safe haven for international investment – low political and economic risks
  - Heavily industrialized states in the northeast with extensive transportation facilities they cannot afford to rehabilitate or replace
  - Expanding states in the south and southwest with rapidly growing populations and expanding transportation capacity requirements
- **Widening funding gap between public revenues and surface transportation needs is leading to critical fiscal conditions for the nation's highway program**
  - Declining growth in traditional revenues, especially motor fuel tax proceeds
  - Increasing costs of renewal, replacement, or expansion as material and right-of-way costs escalate
  - Increasing use of the automobile and truck for mobility
  - Increasing levels of congestion on urban area roadways

Exhibit 1 – Issues Driving Greater Interest in Alternative Project Delivery Approaches - continued

- **Scarcity of federal funding is forcing project sponsors to seek alternative ways to finance and deliver projects**
  - State/local governments take on more program and funding responsibilities
  - State/local agencies lack resources and tools to efficiently address needs
- **Opportunity for increased transportation program revenues and cost-effectiveness**
  - Access to capital markets
  - Creative capital financing
  - Expedited project delivery and lower inflationary project costs
  - Application of best practices
  - Access to new technology
- **Liquidity of existing tolled facilities provides quick returns for current officials**
  - Address critical state and local budget issues
  - Address backlog of transportation reconstruction and expansion needs
  - Turn "paid for" assets into current sources of long-term program funding

The last driving issue listed above may turn out to be somewhat fleeting. The early examples of leasing existing tollways to concessionaires who offered substantial up-front funds in return for the proceeds of future escalating tolls have become increasingly controversial as their terms became better understood. Those deals in which windfall profits are likely to accrue to the concessionaire due to embedded toll rate increases (e.g., Chicago Skyway and Indiana Toll Road long-term concession leases) or where the up-front lease proceeds are used for non-transportation purposes (e.g., Chicago Skyway concession lease) have raised several important questions regarding:

- What is the value of these kinds of PPPs and how they are structured?
- Do sponsoring agencies have trained and experienced staff resources to adequately value long-term leased assets?
- Are long-term concession leases structured to be in the public's best interest, while also satisfying private partner feasibility criteria?

These questions and uncertainties reflect the importance that both public and private partners fully understanding the implications of PPP agreements and their relative allocation of responsibilities, risks, and value capture when drafting the Request-For-Proposal and negotiating the subsequent contract.

The purpose of this is to ensure there is provision for the following results of the PPP procurement process:

- Equity for all parties to the partnership;
- Fulfillment of feasibility criteria for the public and private partners, respectively; and
- Assurance that the public interest is best served by the project delivery approach selected.

When properly structured and executed, alternative project delivery approaches offer a variety of potential advantages for cash-starved transportation infrastructure programs, including those listed in Exhibit 2 below. These potential advantages will be more fully discussed in Section 3.

Exhibit 2 – Potential Advantages of PPPs Relative to Traditional Project Delivery

- **More rapid development -** of infrastructure assets and introduction of new technologies under a PPP project arrangement.
- **Improved efficiency -** in construction, operation, and maintenance of the infrastructure arising from:
  - Innovations in service delivery;
  - Incentives in the PPP contract;
  - Better institutional integration throughout the life-cycle of the facility; and
  - The potential for increased "value for money" relative to traditional approaches.
- **Access to new private capital** – including taxable equity and either taxable or tax-free debt to supplement scarce public funds.
- **Higher quality and customer satisfaction -** due to focus on performance-based standards, enhanced quality control and assurance, and contractual accountability.
- **Public agencies able to focus on their strengths** – including long-term service planning and management, environmental clearance, permitting, right-of-way acquisition, standards setting, and performance measurement and reporting - having turned over part or all of financing and/or day-to-day operating responsibility to their private partners.

Despite their potential advantages, public-private partnerships in transportation have been relatively slow to develop in the United States, especially when compared to many other countries, especially in Europe, Asia, and South America. The notable feature of a PPP is a sharing of risks and rewards that accompany the project. This sharing of risk and reward is foreign to most transportation agencies in the U.S., which are more accustomed to a strict delineation of public and private sector roles and responsibilities. In addition, numerous legal and institutional impediments have slowed early efforts to implement PPP approaches, even on a pilot basis.

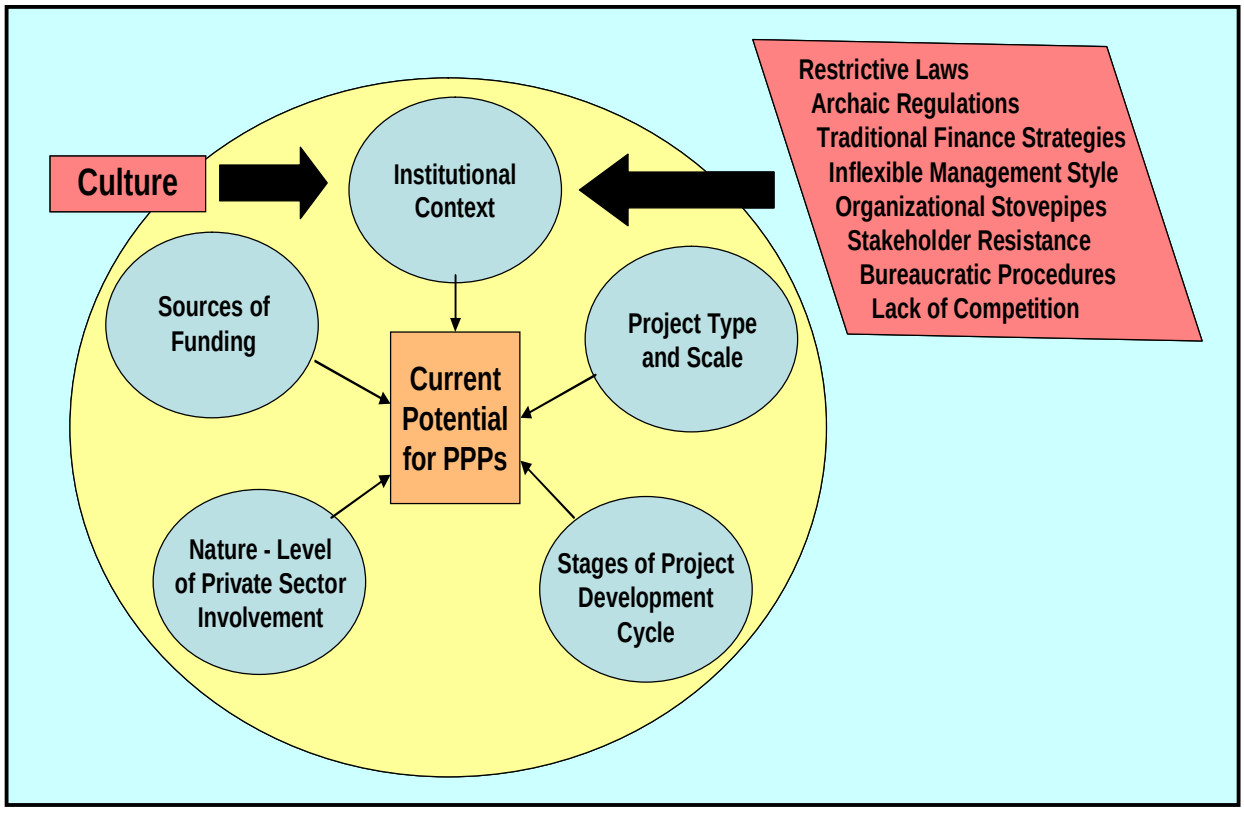
In most cases, enabling legislation has been required to allow state or local transportation agencies to enter into PPPs for highway or transit infrastructure projects. New business relationships are required, often with larger national or international firms that can handle the

increased risk and responsibility of a PPP contract which is often much larger than typical projects of the past. This, in turn generates competition and fairness concerns, both for sponsoring agencies which seek to attract a sufficient number of bids for the contracts, and for smaller contractors who may feel unable to compete in the new environment. In addition, the scope and complexity of negotiations between the sponsoring agency and its contractors can increase significantly, as the allocation of risk, the acceptable rate of return, and the contract incentives are carefully defined.

ASSESSMENT FRAMEWORK FOR CONSIDERING TRANSPORTATION PPPs

Exhibit 3 provides a framework for assessing the potential of a transportation project to be delivered as a PPP. This framework includes both the contextual factors and various institutional issues likely to be encountered in developing and implementing a PPP project.

Exhibit 3 – Context and Potential Institutional Issues of Using PPPs



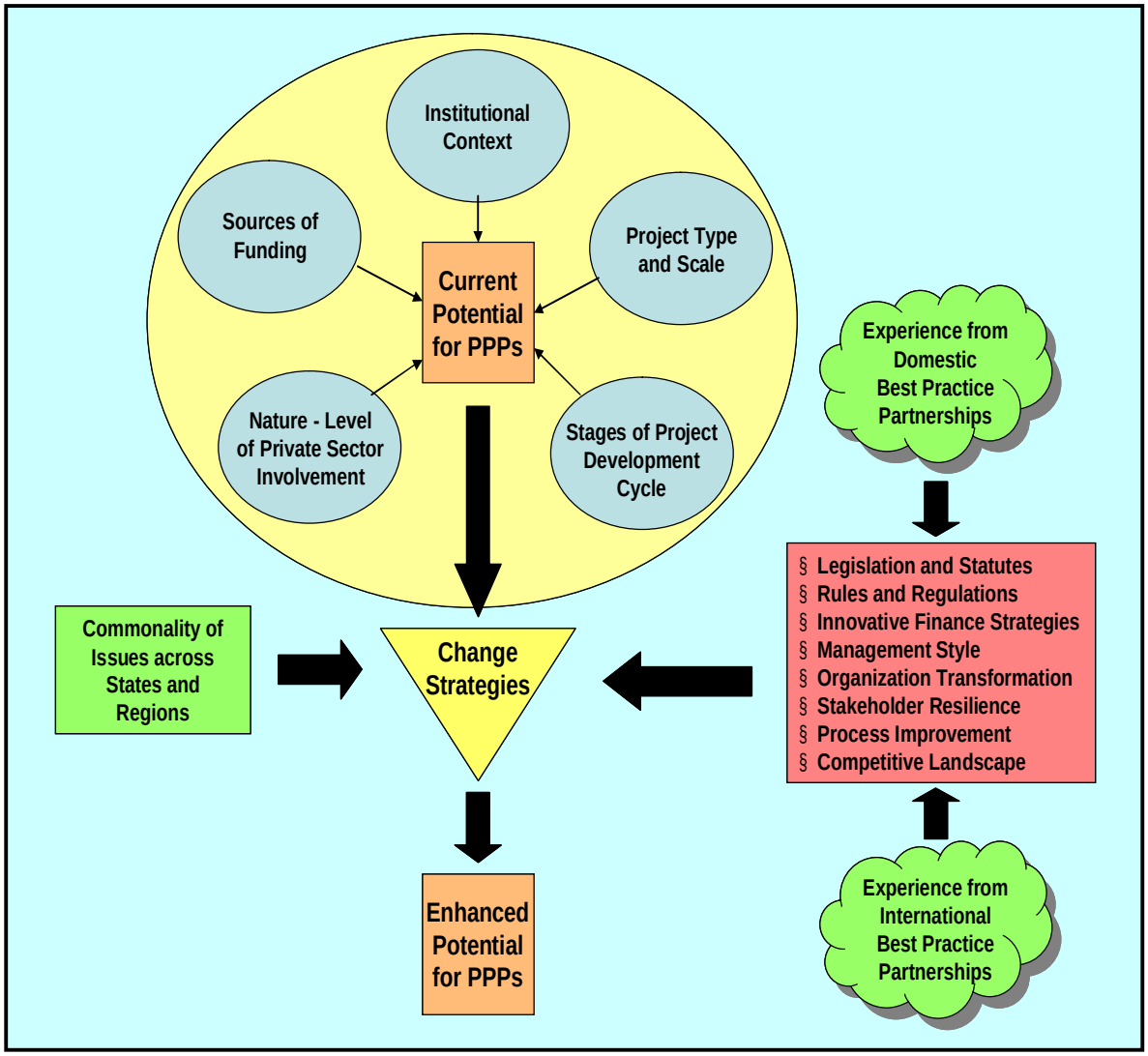
Among the items displayed in Exhibit 3, one of the most important factors to consider and the hardest to change is the underlying culture of the sponsoring organization - the set of values and beliefs that guide how the organization functions and responds to change. Another key factor in evaluating the potential of using a PPP approach is the legality of private sector involvement in the project relative to funding, project delivery, asset management, risk management, and value capture (whether through toll revenues or incremental taxes or fees on adjacent property whose value is increased due to the enhanced accessibility provided by the PPP project).

Exhibit 4 illustrates the elements of the change process needed to improve institutional willingness to consider using alternative project delivery approaches by:

- Enabling sponsoring agencies to gain insights from prior PPP efforts into best practices for addressing potential impediments to PPPs, listed below in the red box;
- Allowing flexibility in how PPPs can be structured and managed to maximize potential outcomes while protecting the public interest;
- Providing a balanced assessment of alternative project delivery approaches and traditional approaches; and
- Developing an objective basis for determining if a PPP approach provides the potential for greater benefits than the transitional project delivery approach.

The exhibit shows the importance of experience from successful PPP applications in the U.S. and other countries to enhance the potential for alternative project delivery approaches to be considered by project sponsors dealing with funding, congestion, and capacity issues.

Exhibit 4 – Change Process for Addressing Institutional Impediments to PPPs



FEDERAL TRANSPORTATION AGENCY LEADERSHIP SUPPORT FOR PPPs

There is strong support from US DOT leadership for the use of PPPs to expand the size and cost-effectiveness of the surface transportation program, and to leverage scarce public resources. The commitment of the federal transportation agencies to PPPs has been stated and restated by various senior members of U.S. DOT over the past five years. The following quotes demonstrate this continuing emphasis on PPPs as an important component of addressing the fiscal needs of the nation's surface transportation program.

In 2003, then FHWA Administrator Mary Peters (now Secretary of Transportation for the U.S. Department of Transportation) made the following comments that reflected the views of the Administration and U.S. DOT about PPPs for transportation infrastructure projects:

> ***"I want to be clear about where the Bush Administration stands, where US DOT and Secretary Mineta stand, and where FHWA stands. We are for public-private partnerships. We support them. We want to make them easier, much easier to do…. Despite notable successes…public private partnerships 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. We can lower costs and speed project completion. 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."***[1]

Later in 2004, former FHWA Administrator Mary Peters further reiterated:

> ***"In a time of funding shortages at all levels of government, it is particularly important that we allow -- unleash -- the private sector to participate in all elements of infrastructure improvements. We know public-private partnerships work. We can lower costs and speed project completion.***
>
> ***The time has come to let the free market and public-private partnerships deliver the innovation, cost savings, and quality they have brought to every other industry."***[2]

[1] Federal Highway Administrator Mary Peters address at: "Partnerships for Transportation and Real Estate: A Union Station Anniversary", Washington, D.C., September 24, 2003.

[2] Statements delivered by Federal Highway Administrator Mary Peters at the Partnerships in Transportation Workshop, Orlando, FL - October 6, 2004.

In his farewell address before the U.S. Chamber of Commerce on July 6, 2006, former Transportation Secretary Norman Y. Mineta noted:

> ***"We need 'a cultural change' to move from a government-monopoly model for transportation infrastructure toward acceptance of the private sector and market forces."***[3]

The inefficiencies and funding shortages in the country's transportation program underlie the current emphasis on the use of PPPs by federal transportation agency leaders at the US DOT, FHWA, and FTA. Other reasons include the opportunity to expedite badly needed transportation projects through the application of innovative project funding and financing, more cost-effective project development and delivery approaches based on best practices, and quicker introduction of enabling new technology, as noted earlier.

KEY QUESTIONS TO GUIDE CONSIDERATION OF PPPs

Given the impetus for considering PPPs, there are five related questions that should be addressed by project sponsors and prospective private partners before proceeding beyond merely considering PPPs as a delivery option:

1. **What legal, political, and institutional framework would enable a state or local government to undertake a PPP program for surface transportation projects?**
2. **Can or should an individual project be undertaken as a PPP?**
3. **What kind of PPP approach best suits a project or set of projects?**
4. **Does the PPP approach offer greater potential public benefits than traditional project delivery approaches?**
5. **Does the PPP approach provide a reasonable balance between public and private responsibilities, risks, and rewards?**
6. **Is the PPP approach in the public's overall best interest while meeting private feasibility requirements?**

The remaining sections of this document provide insights to help project sponsors and their prospective private partners answer these questions before deciding whether to commit to a particular PPP approach or contract agreement.

[3] Statement of Former Secretary Norman Y. Mineta in his farewell address before the Chamber of Commerce on July 6, 2006.

3. PUBLIC-PRIVATE PARTNERSHIP APPROACHES

This section defines the fundamental meaning of a public-private partnership and the many types of project partnership approaches that have been developed and applied to deliver transportation infrastructure. The section also describes the potential benefits public-private partnerships can provide to both public agency sponsors and private providers when the most appropriate approach is used that offers clear advantages relative to more traditional approaches.

BACKGROUND

The concept of public sector agencies and private sector firms working together in a partnership arrangement is not a new concept. For centuries this is how major infrastructure facilities such as roads, aqueducts, canals, and cathedrals were built. It was only in the early part of the last century that the advent of functional specialization, engineering sophistication, and efforts to prevent corrupt procurement practices did a virtual "steel wall" arise between public agencies which sponsored and often developed and maintained transportation infrastructure and private firms whose roles were limited to specialized services such as engineering design and construction. The result was the creation of the design-bid-build process of project development, in which design plans are produced prior to and independent of project construction.

This bifurcated process limited private sector involvement to these two primary roles which were kept contractually separate to avoid collusion and fraudulent claims. However, it also eliminated the opportunity for synergy between these two interrelated functions of design and construction. This often resulted in delayed design plans being rushed to meet inflexible construction bid letting schedules, leading to greater opportunities for errors and omissions frequently caused by site conditions not being adequately investigated prior to completing the plans. This left the contractor to discover and address these problems during the construction phase of the project, often delaying the project and driving up its cost.

The lack of trust by transportation agencies in the design and construction firms hired to execute these interrelated functions produced an inefficient project development approach that continued as long as transportation agencies had ample financial and staff resources to pay for these inefficiencies. However, as the growth in transportation infrastructure needs began to outpace the growth in transportation program resources, public agencies began to consider alternative project delivery approaches that involved private firms as project partners to help narrow the gap between transportation needs and public resources. This led to the development (or rediscovery) of various public-private partnering approaches involving different combinations of responsibilities and risk-taking for private and public partners working in collaboration.

DEFINITION OF PUBLIC-PRIVATE PARTNERSHIPS

In the 1990s and early 2000s, the looming fiscal crisis in the nation's surface transportation program resulted in statutory and regulatory changes that gave transportation agencies greater flexibility to involve the private sector to a greater extent in the delivery of transportation infrastructure. This resulted in various pilot and demonstration programs at the federal and state levels to enable selected transportation agencies to apply alternative approaches to project delivery and financing. These experiments and applications were described in the United State Department of Transportation's *Report to Congress on Public-Private Partnerships,* produced in 2004 by the Federal Highway Administration (FHWA).

In this seminal report, the FHWA defined PPPs as follows:

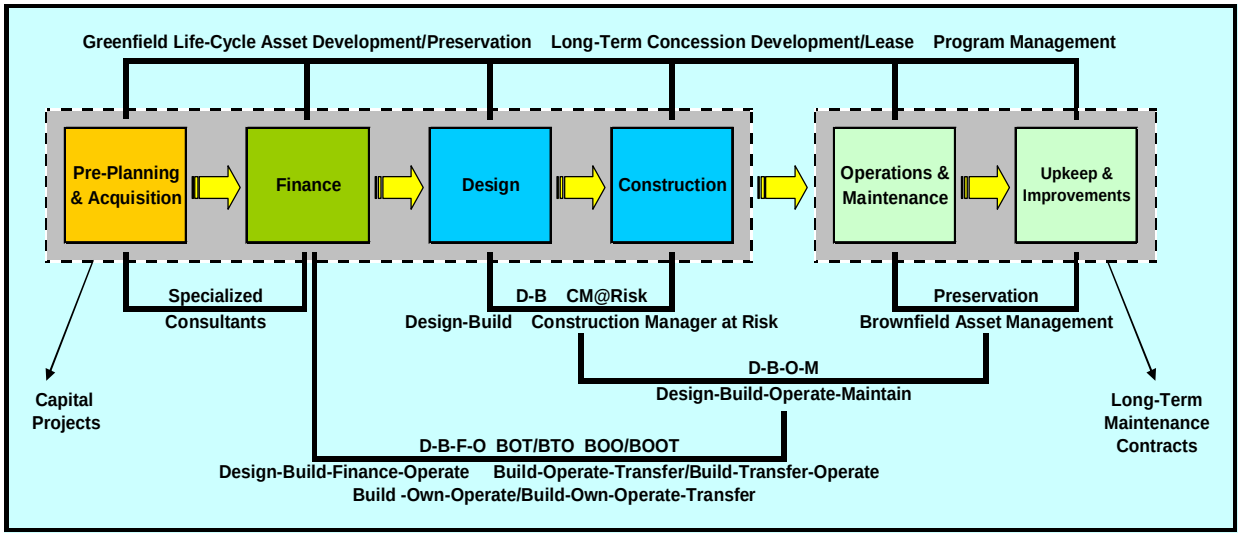
> ***"A public-private partnership is a contractual agreement formed between public and private sector partners, which allow more private sector participation than is traditional. The agreements usually involve a government agency contracting with a private company to renovate, construct, operate, maintain, 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."***[4]

PPPs are not the same as privatization in that both public sponsors and private providers function as partners throughout project development and delivery, and in certain instances operations and maintenance. PPPs enable public agencies which are responsible for surface transportation infrastructure to involve private firms to a greater extent than is traditional, performing various functions the private sector is better able to accomplish while retaining those functions the public sector is best at performing.

PUBLIC-PRIVATE PARTNERSHIP APPROACHES

Exhibit 5 summarizes the major phases that comprise the delivery of infrastructure projects. These phases form the building blocks for alternative project delivery approaches whereby the public and private sector take responsibility to certain aspects of each phase.

Exhibit 5 – Major Phases of Infrastructure Project Development and Delivery



Source: Adapted from Pekka Pakkala. *Innovative Project Delivery Methods for Infrastructure – An International Perspective*. Finnish Road Enterprise, Helsinki, 2002, p.32.

The primary combinations are discussed below, although several of the PPP approaches described are not yet in use in the United States. The first combination describes the traditional approach to delivering surface transportation projects used in the United States during the past century. It is included in this section for the purposes of comparison and completeness, though it is not considered an alternative project delivery approach or PPP.

[4] *Report to Congress on Public-Private Partnerships*. U.S. DOT, Federal Highway Administration, December 2004.

Design-Bid-Build (DBB)

This is the traditional form of project delivery where the design and construction of the facility are awarded separately and sequentially to private sector engineering and construction firms. As a result, the DBB process is divided into a two-step delivery process involving separate phases for design and construction. Under a DBB contract, the project sponsor, not the construction contractor, is solely responsible for the financing, operation, and maintenance of the facility and assumes all design risks. The DBB selection process is based on negotiated terms with the most qualified firm for the design phase while the award of the construction contract is typically based on the lowest responsible bid price.

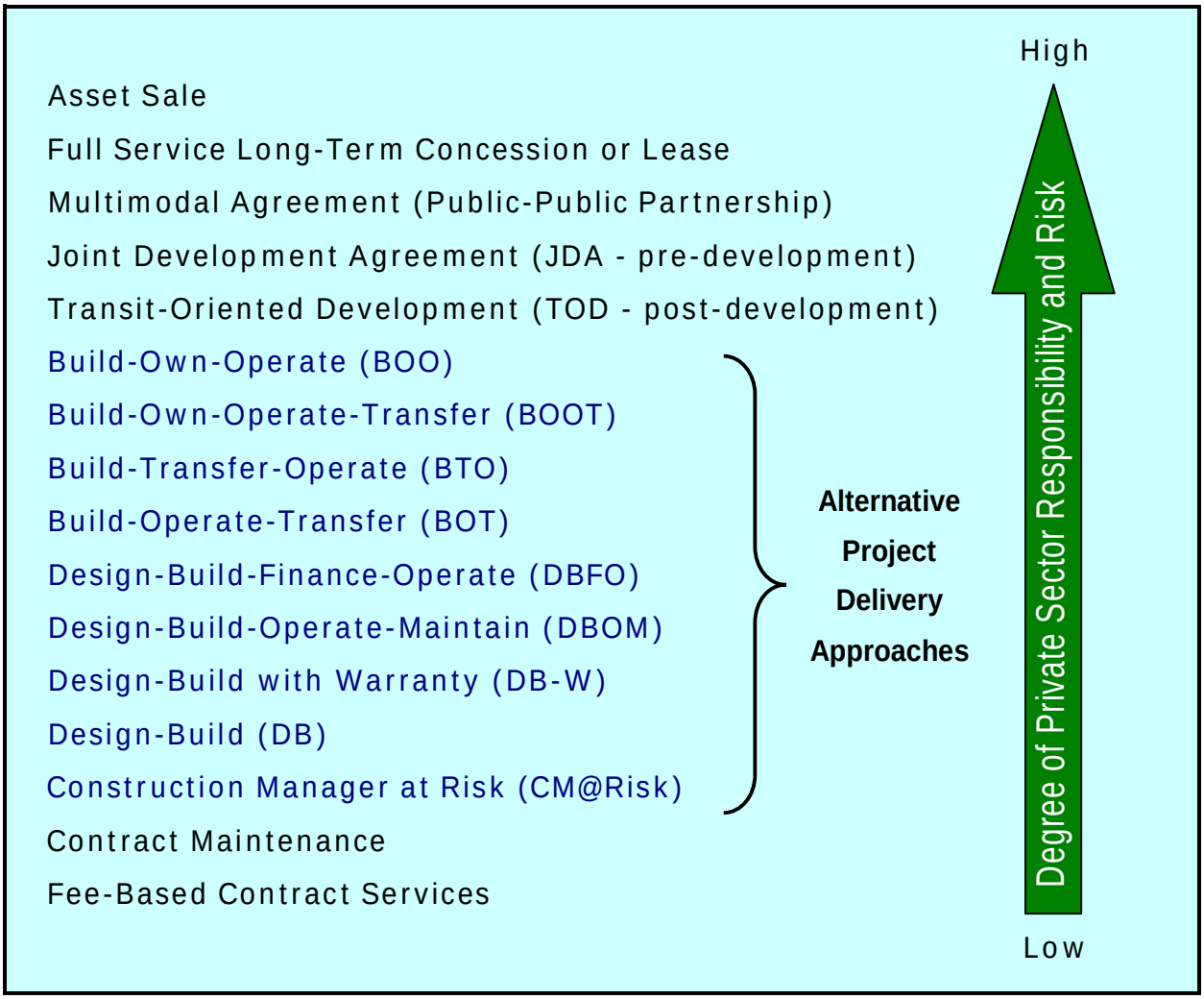
Most of the nation's highways have been delivered via the DBB delivery approach, especially since the Interstate Highway System program was launched in 1956. As the country's highway system evolved during the past fifty years, the traditional DBB project delivery approach became more inefficient due to the tendency for project sponsors to rush design plans to meet pre-determined bid letting schedules for construction contracts to be awarded. This promoted the introduction of design errors or omissions which were then passed along to the winning low-bid contractor, leading to subsequent change orders and extra work orders to deal with design problems and unfavorable site conditions. As a result, the low-bidder could often recoup discounts offered in the original bid price to win the contract by seeking additional funding to pay for design problems through change orders and extra work orders. By the end of the contract, the total contract cost often exceeded the original high-bid price.

To address the inflexibility and other shortcomings of the traditional DBB project delivery approach, a number of alternative project delivery approaches have evolved over the past two decades. These alternative approaches assigned ever-increasing roles, responsibilities, and risks to private sector teams able to develop and possibly finance the project. This has helped to expedite project delivery and lower project costs through the use of best practices and avoiding the effects of inflation on the cost of project materials. These alternative project delivery approaches are part of the group of contractual relationships referred to as public-private partnerships (PPPs).

Exhibit 6 displays the spectrum of PPP approaches that share the same basic characteristic, namely: ***greater private sector involvement and risk-taking in the development, financing, and/or operation of transportation infrastructure than has traditionally been the case.*** As illustrated in Exhibit 6, PPP approaches range from staff augmentation or maintenance contracts which involve limited private sector responsibilities, to long-term lease agreements or concessions which involve maximum private sector responsibilities short of outright sale to the private sector. Since PPP approaches often involve greater private sector responsibilities and risks, the resulting contract agreements often include the opportunity for greater value capture by the private partner.

It should be pointed out that the greatest potential involvement by the private sector involves the acquisition of the public-use transportation asset by a private partner or team, shown at the top of Exhibit 6. In the United States, asset sales or Build-Own-Operate (BOO) contracts are perceived as not in the public interest. That is because once the public sector transfers ownership of a public-use transportation asset to the private sector, it loses control over how the asset is preserved or priced to the user. This raises significant policy questions for elected and appointed officials that should be addressed in evaluating what form of PPP is best to use to advance a particular project.

Exhibit 6 – Major Types of Public-Private Partnerships



Each of these PPP approaches and their potential benefits are described below in order of increasing private sector responsibility, risk-taking, and potential for reward.

Private Contract Fee Services/Maintenance Contract

These are contracts between public agencies and the private sector for services that are typically performed in-house, such as planning and environmental studies, program and financial management, and/or operations and maintenance. These contracts are generally awarded on a competitive bid process to the contractor offering the best price and qualifications. The potential benefits of private contract fee services include reduced work load for agency staff, potential for reduced costs, and opportunities to apply innovative technologies, efficiencies, and private sector expertise.

Construction Manager at Risk (CM@R)

CM@Risk utilizes a separate contract for a construction manager (CM). The CM begins work on the project during the design phase to provide constructability, pricing, and sequencing analysis of the design. The project sponsor generally holds a separate contract with the design team through these initial phases of the CM contract. The CM becomes the DB contractor when a guaranteed maximum price is agreed upon by the project sponsor and CM. The potential benefits of CM@RISK delivery include the continued advancement of the project during price negotiations and the potential for more optimal teaming because the CM can negotiate will all firms, rather than having to select from a limited number under DB delivery.

Design-Build (DB)

Unlike DBB, where project design and construction functions are procured sequentially, DB (sometimes called Design-Construct) combines the design and construction phases into one, fixed-fee contract. Under a DB contract, the design-builder, not the project sponsor, assumes the risk that the drawings and specifications are free from error. While the design and construction phases are performed under one contract, the design-builder may be one company or a team of companies working together. The potential benefits of DB delivery compared to traditional DBB delivery include time savings, cost savings, risk sharing, and quality improvement.

Design-Build with a Warranty

Under the DB with a warranty approach, the design-builder guarantees to meet material, workmanship, and/or performance measures for a specified period after the project has been delivered. The warranties typically last five to 20 years. The potential benefits of the DB with a warranty approach include the assigning of additional risk to the design-builder and reducing the project sponsor's need for inspections and testing during project delivery.

Design-Build-Operate-Maintain (DBOM)

Under a design-build-operate-maintain delivery approach, the selected contractor is responsible for the design, construction, operation, and maintenance of the facility for a specified time. The contractor must meet all agreed upon performance standards relating to physical condition, capacity, congestion, and/or ride quality. The potential benefits of the DBOM approach are the increased incentives for the delivery of a higher quality plan and project because the design-builder is responsible for the performance of the facility for a specified period of time after construction is completed.

Design-Build-Finance (DBF) or Design-Build-Finance-Operate (DBFO)

These approaches are variations of DB and DBOM, respectively, except that the DB or DBOM team provides some or all of the project financing. The potential benefits of the DBF or DBFO approaches are the same as those under the DB and DBOM approaches and also include the transfer of the financial risks to the design-builder during the contract period. While the project sponsor retains ownership of the facility, the DBF and DBFO approaches attract private financing for the project that can be repaid with revenues generated during the facility's operation.

Build-Operate-Transfer (BOT) or Build-Transfer-Operate (BTO)

BOT is similar to the DBFO approach whereby the contract team is responsible for the design, construction, and operation of the facility for a specified time, after which the ownership and operation of the project is returned to the project sponsor. Under the BTO approach, the project sponsor retains ownership of the facility as well as the operating revenue risk and any surplus operating revenues. The potential benefits of using the BOT or BTO approaches are similar to the benefits associated with using a DBOM contract: increased incentives for the delivery of a higher quality plan and project because the contractor is responsible for the operation of the facility for a specified time period after construction.

Build-Own-Operate (BOO)

Under the BOO project delivery approach, the design, construction, operation, and maintenance of a facility is the responsibility of the contractor. Under the similar Build-Own-Operate-Transfer (BOOT) approach, asset transfer occurs after a specified operating period when the private provider transfers ownership to a public agency. The major difference between BOO and DBOM, DBFO, BOT, and BOOT approaches is that ownership of the facility remains with the private contractor in the case of the BOO approach. As a result, the potential benefits associated with a BOO approach are that the contractor is assigned all operating revenue risk and any surplus revenues for the life of the facility.

Transit-Oriented Development (TOD)

TOD is a special form of joint development which involves pedestrian-friendly, higher-density residential, commercial, and/or retail development near transit facilities. TODs may involve a partnership of private developers with local governments, development agencies, and transit agencies to enhance the land use surrounding a transit facility. With a TOD, the private developer is typically responsible for the financing and risks associated with constructing the development on publicly owned land. The potential benefits of TODs include revenue enhancement for the sponsoring agency from lease payments, ridership increases, capital or operating contributions, or one-time fees; increased economic development, higher land values, and increased rental income; increased property and sales tax revenues; and reduced congestion and sprawl.

Joint Development Agreements (JDA)

Joint development involves transit agencies working directly with private developers in planning and executing a specific project involving the development on, above, or adjacent to land owned by a transit agency for a negotiated payment by the developer. Developer payments may include an annual ground or air-rights lease payment for a specified period of time as well as the construction cost of transit-related facilities, such as portals to transit facilities, parking facilities, and station facility improvements. Other potential benefits of joint development PPPs include enhanced agency revenues from operations cost sharing, station connection fees, equity sharing or exchange, and negotiated private contributions.

Multimodal Partnerships

These arrangements provide opportunities to combine the development, financing, and/or operation of facilities that serve more than one transportation mode, including highway, transit, rail, and airports. Multimodal partnership projects do not have to be PPPs. However, the opportunities for private sector involvement in multimodal partnerships are an area of potential growth for transit-related PPPs, particularly when toll roads and airports are involved due to the

ability to leverage toll revenues and airport passenger facility charges for transportation investments.

Long-Term Lease Agreements/Concessions

Long-term lease agreements involve the lease of publicly financed facilities to a private sector concessionaire for a specified time period. Under the lease, the private sector concessionaire agrees to pay an upfront fee to the public agency in order to obtain the rights to collect the revenue generated by the facility for a defined period of time (usually from 25 to 99 years). In addition to the concession fee, the concessionaire agrees to operate and maintain the facility, which may include capital improvements in some instances. The potential benefits of long-term lease agreements include transferring responsibility for increases in user fees to the private sector; generating large up-front revenues for the public agency; transferring most project, financial, operational and other risks to the private concessionaire; and gaining private sector efficiencies in operations and maintenance activities.

OTHER TYPES OF PPP APPROACHES FOCUSED ON PROJECT FUNDING

The number and variety of PPP approaches is constantly evolving to meet the needs of project sponsors and the circumstances associated with specific projects, such as size, complexity, funding sources, and financing needs. Some of the recent attributes of change in PPP arrangements include the following:

- Level of participation by the sponsoring agency or government in the value capture associated with the project funding source (such as proceeds from tolls or other forms of direct user fees);
- Length of the contract;
- Substitution of availability payments or shadow tolls in lieu of direct user charges;
- Extent of private sector surety requirements; and
- Mixture of greenfield and takeover projects.

More variations are expected, particularly as political issues are being raised concerning the takeover of existing toll roads for short-term budget relief and the extent of foreign involvement in PPP contracts as concessionaires or financiers.

A number of related public-private funding arrangements are being used to augment project revenues by tapping the value capture associated with economic development in the vicinity of the proposed or current transportation facility. These innovative funding and financing approaches typically involve private entities which directly benefit from enhanced transportation accessibility. Several of these PPP funding/financing approaches are described below.

Business Improvement Districts (BID)

Business improvement districts assess properties located within a defined geographic area to finance a variety of enhanced services in the area including security, maintenance, marketing, economic development, parking, transportation, and special events. In some cities, BIDs have contributed to the financing of new or expanded transportation services in order to enhance the economic activity and growth in the district. The potential benefits of including BIDs in transportation infrastructure projects include providing access to property tax assessment revenues, increasing revenue diversification, creating partnerships with businesses and property

owners within the district, and coordinating transportation services with other services provided in the BID.

Tax Increment Financing (TIF)

Tax Increment Financing is a tool used by municipalities to help finance the redevelopment of areas within a community through increased property taxes from the enhanced value of property (both developed and undeveloped) resulting from the implementation of infrastructure and service improvements. TIFs use future increases in property tax revenues to finance current infrastructure investments (such as highway, transit, and other transportation facilities). A TIF directly relates infrastructure investments to increases in the value of existing property within the district. A TIF can also encourage new development to further expand the tax base. Project debt service is repaid through increased property tax revenues, provided the development materializes. The primary benefits of TIFs for transportation infrastructure funding include providing access to capital financing markets through a dedicated revenue stream for debt repayment and growing public tax revenues without increasing tax rates.

Appendix A provides illustrations of a representative sample of the various types of transportation PPP projects undertaken in the U.S. and around the world, including highways, bridges, tunnels, and transit rail lines. These projects are mostly large in scale and required significant contract administration skills by the public sponsoring agency and technological capabilities by experienced project delivery teams.

POTENTIAL BENEFITS OF PPPs FOR TRANSPORTATION PROJECTS

While each transportation project is unique in various ways, the use of PPPs to deliver transportation projects can offer a number of advantages to the sponsoring agency. The key advantage of PPPs for transportation projects is the ability to harness additional financial resources and operating efficiencies from the private sector to expedite development and preservation of public use infrastructure. This can produce the benefits listed in Exhibit 7 on the following page.

In considering the potential application of PPP approaches to public transportation, the primary opportunities come from joint development, transit-oriented development, and multimodal project development (also called a public-public-private partnership). Exhibit 8 lists potential primary and secondary benefits of transit-oriented development for public sector and private sector partners, respectively.

Realizing the benefits of partnering with the private sector requires a project of relative urgency, lack of adequate public resources to complete the project in a reasonable timeframe, and public sponsor ability to develop and administer a flexible PPP contract agreement which represents a win-win situation for both public and private partners. It is unrealistic to expect the potential advantages resulting from a PPP to automatically turn an infeasible project into a feasible project. It is also unrealistic to expect the private sector to be attracted by projects that do not have the potential to provide a reasonable rate of return on their investment in the project.

Exhibit 7 – Potential Benefits of PPPs for Surface Transportation Projects

Additional Resources and Capacity	Accelerated Project Delivery	Reduced Costs and Increased Efficiency	Transfer of Selected Risks to the Private Sector	Greater Access to Technology and Innovation	Increased Accountability for Performance
Leverage scarce public resources	Consolidate sequential functions through concurrent processing	Increase functional coordination to enhance project delivery efficiency	Transfer project cost, schedule, and quality risks to private sector if it can better manage them	Promptly introduce and apply most cost-effective technology to lower project delivery and operating costs	Apply performance-based, not prescriptive or quantity-based standards
Provide ready access to additional staff and specialized expertise on a cost-effective, as-needed basis	Improve coordination and communication among partners with aligned incentives	Accelerate project delivery schedule to reduce potential for increased material costs due to inflation	Public sector retains risks associated with environmental clearance, permitting, and right-of-way acquisition	Use asset management tools for infrastructure inventory, condition assessment, tracking, and reporting of asset preservation to reduce life-cycle costs at defined levels of service	Apply performance-based material and workmanship warranties
Expand access to private capital markets for debt and equity to increase capability to more promptly finance projects	Reduce potential for claims and extra work order requests	Apply business best practices from domestic and international industry experts with broad exposure to innovative approaches	Recognize risks for both public and private sectors relating to gaining public, political, and institutional support	Use innovative technology that best serves the public and is desired by user groups to improve pricing and operating efficiency	Apply performance-based standards, requirements, and milestones defined in PPP contract
Conserve limited public debt capacity by using private debt and equity in project financing	Provide monetary incentives for early project delivery or service initiation	Apply life-cycle asset management, with greater investment up front for long-term savings from reduced frequency of reconstruction or replacement	Avoid moral hazard risks relating to improper actions or corruption in procurement and performance reporting	Access specialized expertise and supporting technical tools in such items as tunneling, motorist alerts, maintenance of traffic, and longer-lasting highways	Apply performance-based incentives based on project completion schedule and cost, or project traffic and revenues

Exhibit 8 – Public and Private Sector Benefits of Transit-Oriented Development

Public Sector – Primary Benefits	Private Sector - Primary Benefits
• Increases in ridership	• Higher land values
• Potential for lease payments or other revenues	• Higher rents on commercial or residential development near transit facilities
• Potential for dedicated tax revenue	• Shared costs for building foundations
• Revitalized neighborhoods	• Reduced requirements for parking spaces
• Smart-growth development	• More affordable housing opportunities
Public Sector – Secondary Benefits	**Private Sector – Secondary Benefits**
• Reduced traffic congestion	• Increased retail sales
• Increased property and sales tax revenues	• Increased access to labor
• Reduced sprawl through smart growth	• Reduced parking costs
• Reduced expenses for roads and other infrastructure	• Increased productivity of employees not delayed by traffic congestion
• Reduced crime and increased safety in vicinity of transit facility	• Increased physical activity in vicinity of development near transit facilities

Source: Expanded from Robert Cervero, *TCRP Report 102: Transit-Oriented Development in the United States*, TRB, 2004, pp.120-131.

4. CRITERIA TO DETERMINE PPP OPPORTUNITIES

Whether a surface transportation project is suitable for delivery as a PPP depends on a number of factors that relate to the legal and institutional environment within which the project will be developed and the specific attributes of the project itself. As a partnership between public sponsors and private providers, certain criteria are used by both public and private sector members of the PPP while some are applicable to one or the other partner. This section discusses the criteria public and private partners deem essential for entering into a PPP and for determining whether the partnership is successful.

PROJECT SUITABILITY CRITERIA FOR PPP PROJECT DELIVERY

Experience from numerous transportation projects executed as PPPs suggest a number of criteria that both public and private partners deem critical to assessing the suitability of a project for development using a PPP approach and the likelihood of success for the PPP. The criteria listed in Exhibit 9 below should be used from the beginning of the project planning process to determine whether a project is suitable for a PPP and the kind of contract and project delivery arrangements would be most appropriate to the project.

Exhibit 9 – Key Criteria for Defining Projects as Candidates for Pursuit as a PPP

- **Legal authority and stakeholder desire** – to use various PPP approaches
- **Demonstrated transportation need** – congestion, safety, pollution, travel reliability
- **Sponsoring agency lacking resources** – to fund or deliver the project on its own
- **Strong commitment by key stakeholders** – political leaders (project champion), public agency officials, facility users, and the general public
- **Large and complicated project** – warranting substantial private participation and assumption of project risks – generally over $500 million in construction costs
- **Adequate funding potential** – tolls, availability payments, joint development, ROW
- **Strong partner relationships** – competence and trust among members of the PPP
- **Level playing field for bidding teams** – unbiased procurement process

Exhibit 10 shows the four key prerequisites for undertaking projects using a PPP approach and the relative priority of each prerequisite. All four categories are important to the decision process, but institutional support requires legal authority, which requires on-going political support, which will only remain as long as there is support from the public and private stakeholders to the project. Key stakeholder groups include the general public, facility users, economic development interests, shippers, transit and environmental advocates, and the business community.

Public sponsoring agencies have their own requirements and priorities for determining whether to pursue a project through a PPP that include those in Exhibit 10 but extend to other factors. The same is true for private project delivery firms, as shown in Exhibits 11 and 12.

Exhibit 10 – Key Prerequisites for Undertaking PPP Procurements

Public / Market Support	Political Champions	Legal Authority	Institutional Cooperation
Critical transportation needs unmet due to shortage of available public resources	Availability of one or more elected leaders to champion the project using PPP approaches and maintain support to help overcome obstacles as they develop during project development	State constitutional authority to use PPP approaches for transportation projects and the ability to gain public or legislative support to enact a constitutional amendment if constitutional language would otherwise prevent or restrict the use of PPP approaches to expedite delivery of needed transportation infrastructure and services	Cooperation of public agency sponsors of surface transportation projects and their capability to manage the PPP procurement and contract administration functions involving highly sophisticated project delivery teams
Public understanding of how surface transportation projects are funded and the precarious nature of the current funding situation	Strong public support to encourage elected officials to support and champion PPP projects throughout development and delivery	State legislative authority to use PPP approaches for surface transportation projects	Capability of public agency sponsors of surface transportation projects to effectively manage the procurement and contract administration functions for PPP projects involving highly sophisticated private finance and delivery teams
Public understanding of the tradeoffs between expediting needed transportation projects by applying PPP approaches or using traditional project funding and delivery approaches	Extent to which proposed PPP approaches for a project provide shared value capture by both public and private partners	Local legal authority to apply various PPP approaches to local transportation initiatives, including both highway and transit projects	Presence of a competitive private sector market to provide required services under various PPP approaches
Public support for PPP approaches and the funding sources needed to support these approaches, such as tolling and variable user pricing	Degree to which private provider teams in a project PPP are dominated by foreign-based companies versus domestic-based companies	Ability of state laws to provide adequate confidentiality of private partner proposals while retaining transparency in procurement process	Degree to which project sponsor agencies feel threatened or enabled by partnering with private providers of finance, development, O&M, and/or preservation functions
Support from key user groups that may feel their competitive positions threatened by the introduction of PPP delivery and user pricing approaches to fund the project and manage demand to avoid congestion on the facility, including truckers, shippers, and logistics firms	Perception of PPPs as a tool of one political ideology versus another, of innovation versus tradition, or risk sharing versus risk transfer and the relative strength of the prevailing view	Breadth and flexibility of state and local laws to provide discretion by project sponsors regarding the use of PPP approaches and the terms of PPP agreements	Cooperation of traditional program institutions that may feel their competitive positions threatened by the introduction of PPP delivery approaches to finance and deliver projects

* Order of columns defines prioirty and prerequisites for successful PPP procurements indicated by arrows between column headings.

Exhibits 11 and 12 provide separate lists of criteria applicable to prospective public and private members of a PPP arrangement, respectively. These criteria are generally used by each prospective partner to evaluate PPP opportunities for proposed projects.

Exhibit 11 – Public Sector PPP Project Selection Criteria

- **Enabling legislation in place**
- **Urgent transportation need**
- **Political and institutional support**
- **Lack of internal resources, staff/financial, to deliver project in a timely manner**
- **Leverage public resources and transfer cost/schedule risks to the private sector**
- **Expedite schedule through access to capital markets and innovative project delivery**
- **Transfer cost, schedule, and quality risks to capable private partner**
- **Increased cost-effectiveness through best practices and access to new technology**
- **Competitive market environment based on firms with proven experience**
- **Capability to manage transparent procurement/contract administration processes**
- **Public accountability through monitoring of contract performance standards**

Exhibit 12 – Private Sector PPP Project Selection Criteria

- **Enabling legislation in place**
- **Pressing transportation need**
- **Reasonable development timeframe**
- **Financially feasible (adequate funds to satisfy required rate of return on investment)**
- **Manageable risks consistent with responsibilities and rewards as reflected in contract**
- **Supportive political climate**
- **Defined procurement path providing equal opportunity to all interested parties**
- **Comprehensive market evaluation to assure reasonable traffic & revenue risks**
- **Commitment to public sector sponsorship of environmental clearance and permitting**
- **Commitment by public sector acquisition of necessary rights-of-way**
- **Partnership philosophy demonstrated by project sponsor in flexible contract terms**
- **Opportunity to apply innovative approaches to reduce project costs and risks**

In reviewing both public sector and private sector selection criteria contained in Exhibits 11 and 12, there is consistency in some areas while each side clearly has its own set of priorities. It is important for both sides to understand each other's priorities in evaluating projects as candidates for PPPs and determining whether to pursue them through some kind of partnering arrangement.

Exhibit 13 summarizes criteria used by prospective sponsoring agencies to determine if a project is suitable for delivery as a PPP project, such as project scale and level of public need. If the result is affirmative, the next set of decision factors help determine which type of project delivery and/or financing approach to pursue, including the development stage of the project, its risk profile, and the potential for funding from traditional and/or alternative sources.

Exhibit 13 – Project-Based Criteria for Selecting PPP Approaches

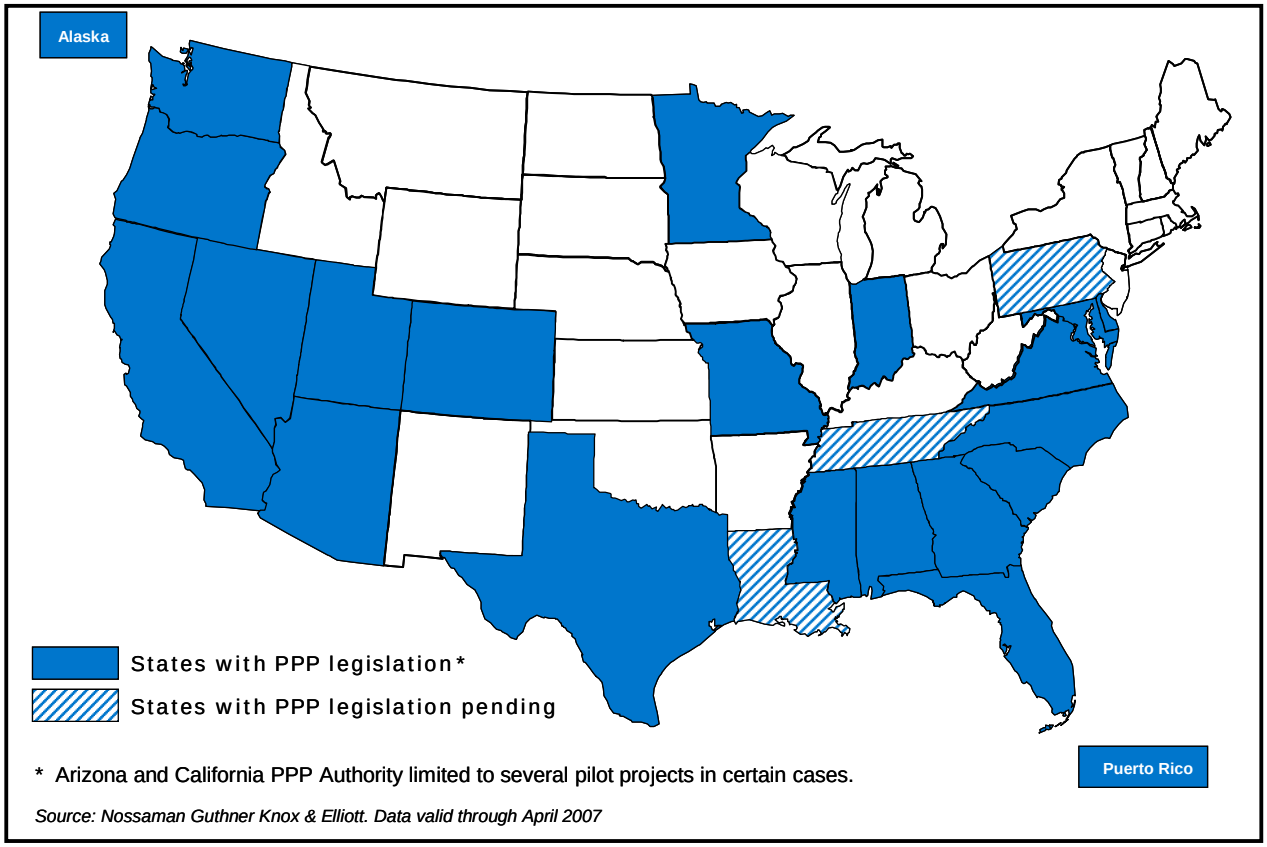
Threshold Criteria for Considering PPPs		Decision Factors for Selecting PPP Approach	
Project Scale	**Public Demand**	**Project Stage and Risk Profile**	**Project Revenue and Funding Potential**
Project size in terms of cost and financing requirements - the higher the cost the more likely the private sector will be needed to bridge the financing gap	Urgency of project to satisfy transportation mobility need	Preliminary concept planning favors joint development and life-cycle PPP approaches that maximize potential for cost minimization and value capture maximization	Scarce public funding sources to meet transportation program budgets are enhanced by pooling multiple modal program resources
Project design and construction complexity - the more complex the design and the more sophisticated the financing the greater the potential role of private partners	Significant transportation-related economic development potential	Public sector takes responsibility for environmental clearance, obtaining most permits, and most right-of-way acquisition, including advanced acquisition	PPPs enhance ability of project to secure adequate financing and funding to support the project's developmental based on user pricing and/or economic development value capture
Project functional scope (whether financing and/or O&M are included) - the broader the more likely private partners can leverage public resources to meet the needs	Broad public support for PPP approach to project delivery, financing, and funding approaches used	Design is at less than 30% to optimize best practice input by PPP team	Legal authority must exist to permit sponsoring agency to engage in PPPs that include use of private capital financing
Capability of sponsoring public agency not adequate to deliver project by Itself in a timely manner	Broad and sustaining political support for PPP approaches to leverage scarce public funds and expedite project delivery	Post-construction responsibility for O&M and preservation transfers significant project performance risk to the PPP team though O&M contract or brownfield long-term concession lease	Projects with high initial costs and long-range revenue potential require alternative financial approaches which can be more readily obtained through a PPP arrangement
Low risk tolerance of sponsoring public agency for large, complex projects	Presence of project in state or local transportation improvement plans (STIPs or TIPs)	The greater the risks of the project and the public sponsor's aversion to risk the more likely that a PPP approach will be considered	Projects that lack financial feasibility will not attract private sector interest - therefore sponsoring agencies should not limit PPPs to the least feasible projects

AGENCY READINESS FOR PPPs

The readiness of state and local transportation agencies to use PPP approaches to transportation project delivery can be inferred by several factors, including having the legal authority to use PPPs, institutional willingness to use design-build project delivery, and participation in various direct user charge initiatives under the FHWA's Value Pricing Pilot Program (VPPP). These factors are important indicators of PPP potential, especially for private provider teams that want assurance that the legal and institutional framework exists to enable the use of PPPs for transportation projects. States where several or all of these factors currently exist are the most likely to consider PPPs to develop needed transportation projects.

The following three exhibits show the states with legal authority to use PPPs for transportation projects, have the authority to use design-build project delivery, and have value pricing projects either operating or planned under FHWA's VPPP. Exhibit 14 shows the 21 states and Puerto Rico with current PPP legislation for transportation projects, plus three additional states with pending legislation. A number of other states are also considering possible legislative action to allow the use of PPPs for transportation projects, including New York, New Jersey, and Hawaii.

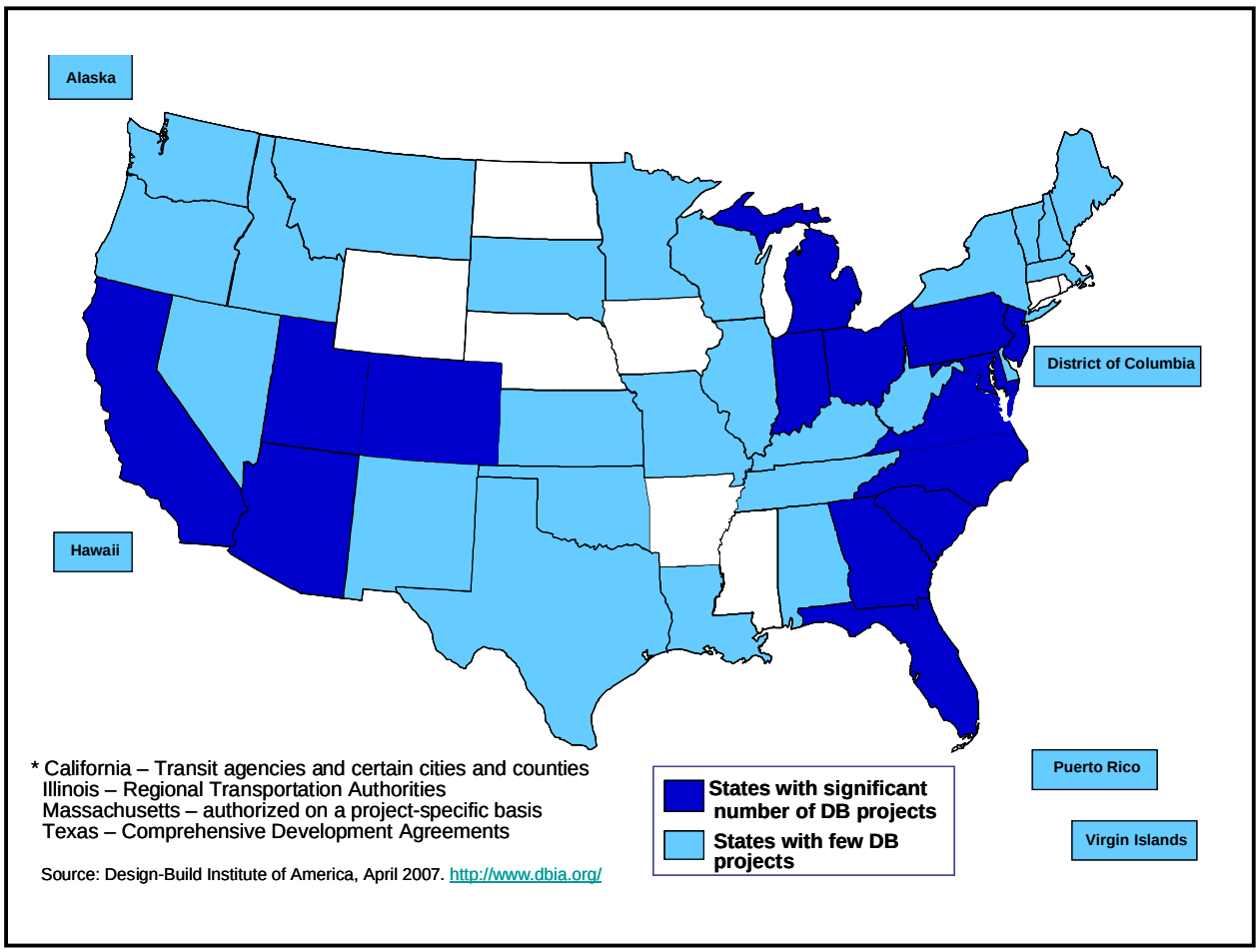
Exhibit 14 – States with Legal Authority to Use PPPs for Transportation Projects



Most states provide legislative authority to their transportation agencies to use the design-build PPP approach to delivery various types of projects. Exhibit 15 shows that forty-two states, the District of Columbia, Puerto Rico, and the Virgin Islands have the ability to deliver transportation projects using the DB project delivery approach. Fifteen of these states have or currently make extensive use of the DB approach to expedite projects and control costs by passing much of the project risk for project engineering and construction to the DB team.

The significance of having DB authority is that most private members of PPPs desire the features design-build provides the project to help control costs and delivery schedules by integrating the design and construction functions. This helps them better manage project risks by ensuring that constructible design plans are completed before construction begins and that the construction efforts comply with the performance-based specifications contained in the plans. Therefore states with DB capability and experience are considered more likely to develop PPP arrangements and have contract administration capability needed for a successful PPP project.

Exhibit 15 – States with Design-Build Project Delivery Authority



Another positive indicator of PPP interest and capability is a state's active participation in FHWA's Value Pricing Pilot Program, which promotes the use of innovative ways to reduce congestion while generating additional funds for transportation infrastructure programs. In seeking ways to reduce traffic congestion, VPPP projects will also improve safety, reduce emissions, and lower fuel consumption.

Each year project applications are sent to FHWA for review and certain projects are approved for VPPP grants. In 2005, fourteen states had eleven operating projects and seventeen projects under development, as shown in Exhibit 16 on the next page. Since then, thirty-nine additional projects that have been designated for VPPP grant funds, with the State of Pennsylvania joining the ranks of states shown in Exhibit 16 with VPPP-approved project grants. This brings the total approved VPPP grant applications for projects to sixty-seven as of March 2007. This means greater experience and exposure for operating and pricing strategies that can facilitate future PPPs.[5]

As of April 2007, the Value Pricing Pilot Program included the following types of projects, listed in order of number of grants approved:

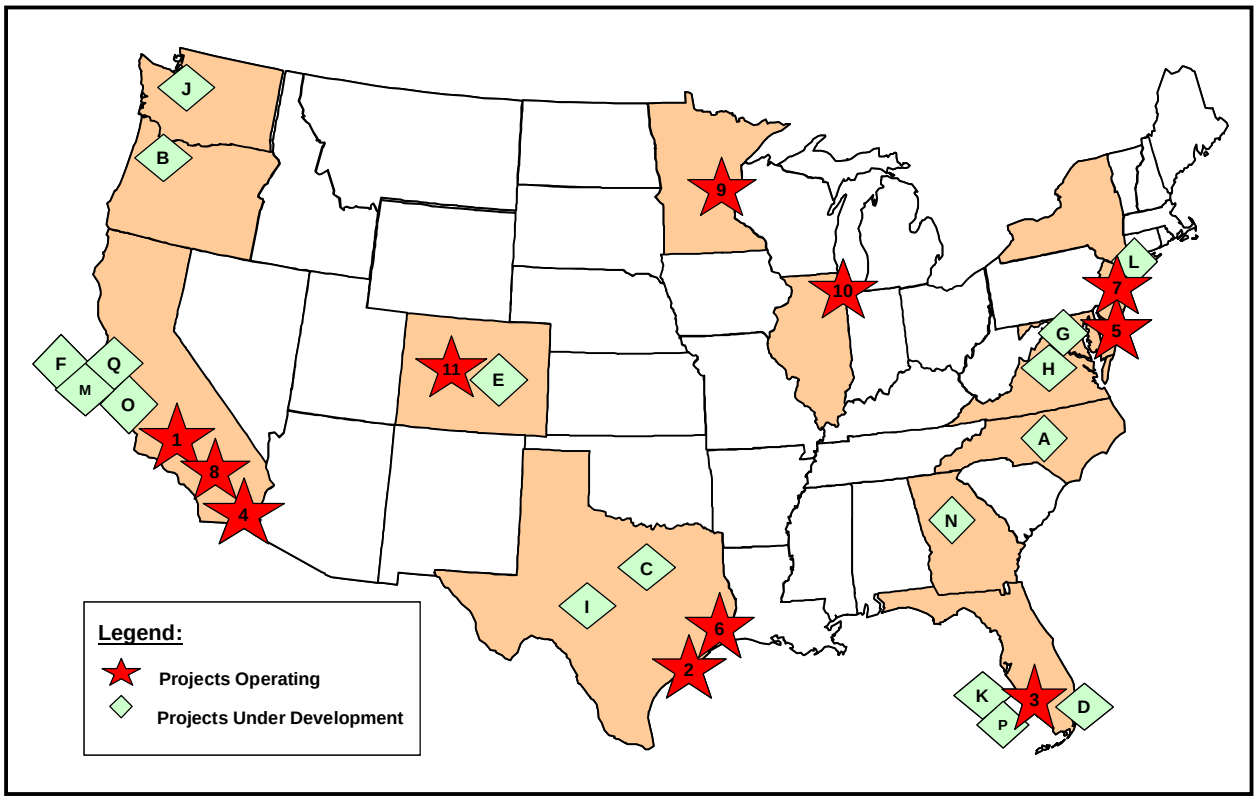
- Variable pricing on new highway lanes and bridges – 20 projects
- Variable pricing of existing tolled facilities – 14 projects
- Conversion of HOV lanes to HOT lanes – 8 projects
- Regional pricing networks – 9 projects
- Usage-based vehicle charging – 8 projects
- Cash-out strategies for those electing to use alternatives to the single-occupant automobile – 3 project
- Parking pricing – 2 projects
- Cordon area tolling – 2 projects
- Truck-only toll facilities – 1 project

Participation in VPPP projects demonstrates a willingness of the state to embrace innovative methods to generate additional program revenues and reduce congestion. States most active in the program include the following five states, which have a combined forty-five approved VPPP projects, representing sixty-seven percent of the total projects approved by April 2007:

- California – 14 projects
- Florida – 10 projects
- Texas – 10 projects
- Minnesota – 6 projects
- Washington State – 5 projects

[5] Sources: http://www.ops.fhwa.dot.gov/tolling_pricing/value_pricing/quarterlyreport/qtr1rpt07/index.htm and http://www.fhwa.dot.gov/pressroom/fhwa0703.htm

Exhibit 16 – States Participating in FHWA's Value Pricing Pilot Program in 2005



Operating Projects

1. Express Lanes on SR-91 (Orange County, CA)
2. HOT Lanes on I-10 (Houston, TX)
3. Variable pricing (Lee County, FL bridges)
4. HOT Lanes on I-15 (San Diego, CA) (HOT Lanes extension under study)
5. Variable tolls (New Jersey Turnpike, NJ)
6. HOT Lanes on US 290 (Houston, TX)
7. Variable tolls (Port Authority Interstate vehicle crossings, NY and NJ)
8. Peak pricing on the San Joaquin Hills Toll Road (Orange County, CA)
9. HOT Lanes on I-394 (Minneapolis, MN)
10. Variable tolls (Illinois Tollway System)
11. HOT Lanes on I-25/US 36 (Denver, CO)

Projects Under Development

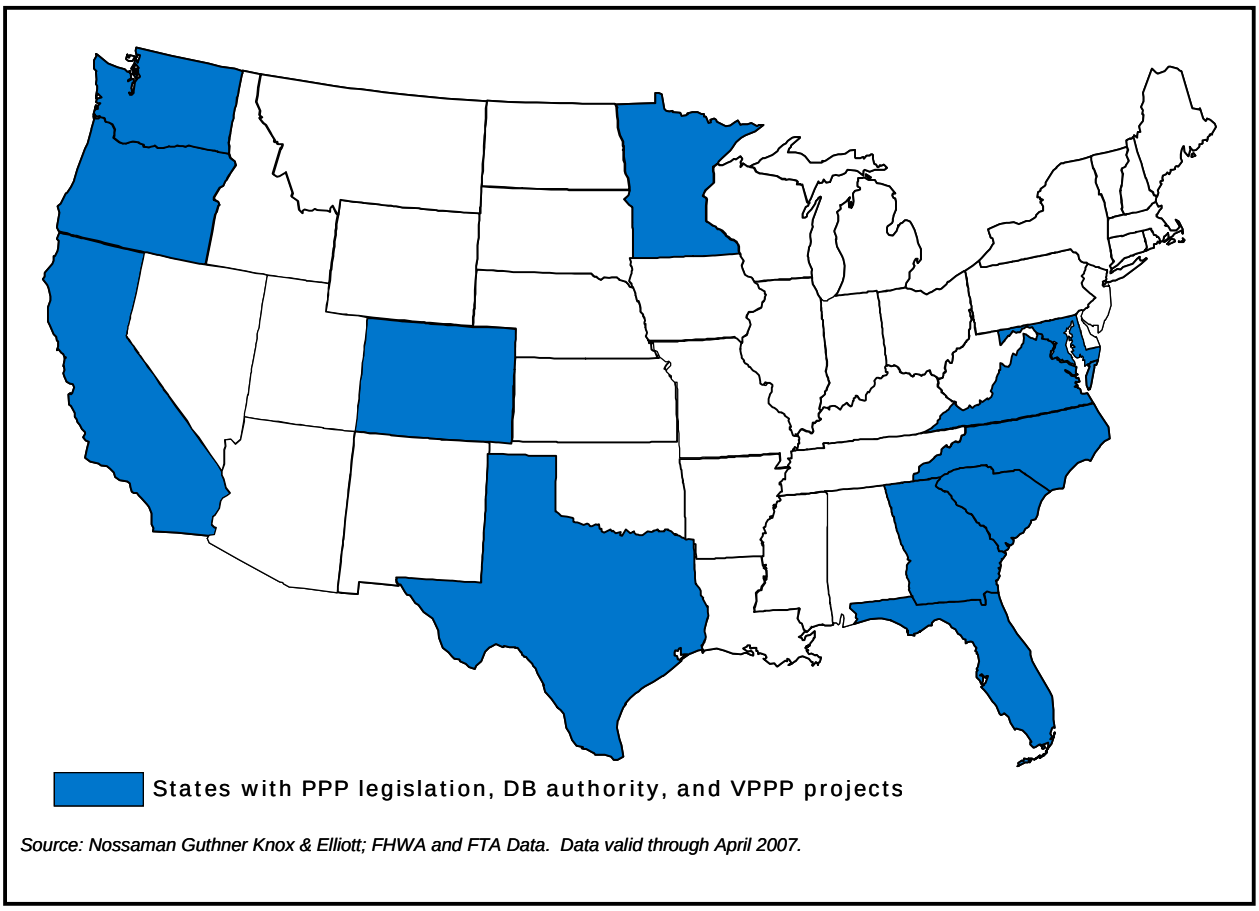
A – HOT Lanes on I-40 (North Carolina)
B – HOT Lanes on 217 (Portland, OR)
C – HOT Lanes on LBJ Freeway (Dallas, TX)
D – HOT Lanes on I-95 (Miami, FL)
E – HOT Lanes on C-470 (Denver, CO)
F – HOT Lanes on I-580 and I-680 (Alameda Co., CA)
G – HOT Lanes on I-495 (Virginia/Maryland)
H – HOT Lanes on I-95 and I-395 (Virginia)
I – HOT Lanes on Loop 1 – MOPAC (Austin, TX)
J – HOT Lanes on SR 167 (Seattle, WA)
K – Cordon tolling (Fort Myers Beach, FL)
L – Cordon tolling in central New York City (NY)
M – FAIR Lanes (Alameda County, CA)
N – HOT Lanes/FAIR Lanes/Truck-Only Toll Lanes (Atlanta, GA)
O – HOT Lanes in Median of Route 1 (Santa Cruz, CA)
P – Q-Jumps (Lee County, FL)
Q – Cordon tolling (San Francisco, CA)

Source: Issues and Options for Increasing the Use of Tolling and Pricing to Finance Transportation Improvements, AECOM Consult study for FHWA's Office of Transportation Policy Studies, June 2006

STATES MOST LIKELY TO SPONSOR SURFACE TRANSPORTATION PPPs

Exhibit 17 shows the twelve states actively participating in the Value Pricing Pilot Program as of the beginning of 2007 which also have enabling legislation for PPPs and design-build approaches to surface transportation project delivery. These three factors are leading indicators of state readiness for using alternative, innovative approaches to expedite their transportation programs and projects currently slowed due to a shortage of available funding.

Exhibit 17 – States with PPP Legislation, Design-Build Authority, and VPPP Projects



Source: Nossaman Guthner Knox & Elliott; FHWA and FTA Data. Data valid through April 2007.

Given the combination of legal authority and willingness to innovate, the twelve states shown in Exhibit 17 represent the most likely to incorporate innovative financing and project delivery approaches associated with PPPs in their surface transportation programs and projects. However recent events suggest the addition of Nevada, Pennsylvania, New York, New Jersey, Louisiana, Mississippi, and Alabama to this list – the last three largely a consequence of the transportation reconstruction and replacement needs resulting from the devastating effects of Hurricane Katrina on the infrastructure along the Gulf Coast in 2005.

5. PROGRAM FRAMEWORK FOR DEVELOPING AND MANAGING TRANSPORTATION PPPs

To successfully develop and implement public-private partnership projects requires a supportive and capable institutional environment within the sponsoring agency. An effective PPP program provides an underlying framework for how the agency will administer PPP projects and should be in place before launching into procurement of PPP projects. A PPP program involves the development of policies, procedures, documentation, and resources to guide development and management of PPP projects. These program pre-requisites will enable the sponsoring agency to carry out the necessary contract procurement and administration of PPP projects to ensure their successful implementation. These requirements are discussed in this section.

INSTITUTIONAL REQUIREMENTS AND ISSUES

Once the transportation agency has established a PPP program, it can more effectively proceed to develop and implement PPP projects that offer the potential to cost-effectively expedite needed transportation projects by involving the private sector to a greater extent than in the past. These are a number of requirements for transportation agencies to meet to have an effective PPP program. Among these, the most significant requirements are listed in Exhibit 18 below.

Exhibit 18 – Transportation Agency Requirements for an Effective PPP Program

- **PPP program development and refinement – policy, authority, and responsibility**
- **Program management – strategic planning, guidance, monitoring, evaluation. And reporting processes**
- **Resource management – organization, staffing, and procedures**
- **Technical capabilities**
  - Legal and regulatory review and analysis capabilities
  - Innovative procurement and contract administration techniques
  - Innovative funding approaches and financial management practices
- **Project prioritization and selection criteria and processes**
- **RFP development and/or bidder evaluation processes**
  - Solicited and/or unsolicited proposals
  - Brownfield (existing) and/or greenfield (new) projects
- **Legal assessment of bidding process, bids, and contracts**
- **Effective contract administration and project oversight to ensure accountability**

A transportation agency should consider the key issues framed in terms of the five questions listed in Exhibit 19 to successfully develop a PPP program.

Exhibit 19 – Key Issues to Consider in Developing a Transportation Agency PPP Program

- **What is the institutional context for the PPP program?**
  - Focus of PPP initiative (e.g., mega projects, inadequate funding, strong private interest)
  - Primary reasons to consider PPPs for project/asset delivery
  - Relationship of PPP approaches to the agency's mission and responsibilities
- **Does the sponsoring agency have the statutory and regulatory authority for PPPs?**
  - Review existing statutes and regulations to assess authority for PPP projects
  - Assess legal context and capability for PPP project proposals – solicited and unsolicited
  - Eligibility for PPP delivery by project type based on project selection criteria
- **What are the potential public and private partner responsibilities, risks, and returns?**
  - Project development – financing – operations - preservation
  - Toll schedule
  - Asset ownership
  - Contract duration and renewal potential
- **Does the sponsoring agency have the capabilities and resources to develop and manage a PPP program and the resulting projects?**
  - Organizational placement and structure
  - In-house staffing levels and qualifications
  - Specialized staff resources
- **What kind of procurement approach should be used to select qualified PPP teams?**
  - Procurement method
    - § solicited – unsolicited
    - § one-step – two-step (prequalification leading to short list)
    - § prequalification process – criteria
    - § performance-based versus prescriptive standards
  - Selection basis
    - § project price – level of third party financing – other considerations
    - § best value – lowest responsible bidder – lowest bid
  - Contract type
    - § DB, DBOM, DBOM-F, BOT, long-term concession lease
    - § performance-based versus prescription based
    - § project delivery – service levels – asset conditions
    - § shared risks – shared rewards
    - § duration – renewal potential
  - Extent and sources of competition for PPP assignments
    - § local
    - § national
    - § international
  - Contract administration responsibility and approach
    - § quality control – quality assurance

LEGAL CONSIDERATIONS

Among the most important considerations by prospective public and private sector partners in a transportation project PPP is whether there exists sufficient legal authority and flexibility to use alternative PPP approaches to deliver surface transportation projects. Without adequate legal authority and flexibility, PPPs cannot be used to expedite delivery of a state's transportation program.

Legal Issues Related to Transportation PPPs

A number of legal issues should be addressed by enabling state and/or local legislation when developing the capability to use PPPs for transportation projects. These are summarized in Exhibit 20.

Exhibit 20 – Statutory-Based Legal Issues Associated with Transportation PPPs

- **Legal capacity of parties and legal requirement of sponsor to provide services**
- **Ability of private firms to be more involved in infrastructure development and control, including the nature and extent of participation by foreign firms**
- **Existence and legal basis of cost recovery and tolling (if applicable)**
- **Authority to regulate toll rates, exemptions to tolling, and services**
- **Dispute resolution and liability provisions**
- **Competition and anti-trust regulations**
- **Avoiding conflicts of interest among private and public parties to a PPP**
- **Special provisions associated with use of Federal funds – Davis-Bacon, Buy-America, Section 13(c) of the Federal Transit Act, etc.**
- **Public sector borrowing restrictions/debt limitations**
- **Tax and accounting liabilities**
- **Adequacy of procurement and selection procedures**
- **Contract provisions and surety requirements**
- **Property and intelligent property laws protecting proprietary technologies and know-how**
- **Authority of other government entities over infrastructure assets and access rights**
- **Property issues of land acquisition – condemnation, use, and disposal**

Given the many legal considerations associated with PPPs, it is suggested that PPP-authorizing statutes should allow transportation agencies the following capabilities:

- Bundle a wide range of services from pre-development through long-term operations;
- Allow various project delivery systems, including DB, DBOM, DBFO and concessions;
- Use qualifications-based procurement, such as two-stage "best value" procurements;
- Apply selection criteria that result in the choice of the best developer able to provide the greatest value to the project sponsor;
- Use alternative forms of financial security; and
- Negotiations with private partners during early planning stages of project development.

Those legal issues most likely to be addressed during the contract negotiation process are summarized in Exhibit 21.

Exhibit 21 – Negotiation-Based Legal Provisions of Transportation PPP Contracts

- **Administrative coordination**
- **Adequacy of oversight and monitoring procedures**
- **Ability and restrictions over transfer of private sector contract duties to other parties**
- **Contract re-negotiation, re-financing, hand-back provisions, and assignment of rights**
- **Provisions regarding the ability of the public sector or other parties to build or expand competing facilities**
- **Treatment of "windfall" profits due to traffic growth or congestion pricing**
- **Public control or limitations on private refinancing of project debt**
- **Currency and profit repatriation rules**
- **Authority over advertising or facility branding rights and treatment of proceeds**
- **Ability to provide guarantees**
- **Changes in design standards or construction specifications during development**
- **Shifts in public policy towards PPPs or technology changes that impact project viability**

Among the legal issues listed in the two exhibits above, those listed in Exhibit 22 deserve particular attention given their potential influence over the viability of a PPP approach for a particular project from both the public sponsor and private provider perspectives.

Exhibit 22 – Key Legal Considerations in Developing Surface Transportation PPPs

- **Procurement methodologies**
  - Acceptance of solicited or unsolicited proposals
  - Selection criteria, such as traditional low-bid or best value
- **Surety bonding requirements**
  - Level of bonding requirements
  - Application of financial security requirements to some or all private partners
  - Application of surety bond requirements to more than construction-related functions included in the PPP contract
- **Flexibility in project delivery process**
  - Level of responsibility and risk that the private partner can assume
  - Opportunity to apply innovative alternative approaches that provide comparable or better performance more cost-effectively
  - Breadth of functions that can be performed by the private partner, beyond design, construction, and construction management and inspection
  - Ability for private partners to share in the project's revenue stream or value capture commensurate with their level of responsibility, risk, and investment
- **Applicability of federal statutory and regulatory requirements**
  - Labor protection (Davis-Bacon Act[6]/Section 13(c) of the Federal Transit Act [7])
  - Buy America Act [8] restrictions on buying materials from firms outside the U.S.
  - Environmental clearance and permitting requirements
  - Flexibility allowed by FHWA's SEP-15 Program and FTA's PPP Pilot Program

State Enabling Legislation for Surface Transportation PPPs

As noted in Section 4, one of the most important catalysts for the use of PPPs by state and/or local transportation agencies is passage of enabling legislation granting these agencies statutory permission to form public-private partnership agreements to delivery infrastructure facilities and services. Twenty-one states and the Commonwealth of Puerto Rico have already enacted legislation enabling the use of PPPs for transportation projects, as shown earlier in Exhibit 14. Appendix B provides a summary of the key provisions of the enabling PPP legislation for these twenty-one states and Puerto Rico, plus the proposed PPP enabling legislation for Louisiana.

[6] 40 U.S.C. Section 276a et seq.

[7] Now codified at 49 U.S.C. 5333(b).

[8] 49 CFR Parts 661 and 663.

The degree to which partnerships have been enacted under these acts varies greatly, however, in relation to the number and nature of agreements permitted under each statute. A key distinction is whether solicited proposals, unsolicited proposals, or both are enabled. In some cases acts apply only to particular types of facilities, such as toll highways or toll bridges, or specify the level of government or agency types permitted to partner. Others are established as pilot legislation and limit the number of partnerships permitted. For example, the Commonwealth of Massachusetts enacted PPP legislation to permit only one project to use the DBOM approach financed through a 63-20 public-benefits corporation for rehabilitating Route 3 north of Boston to the New Hampshire state line. Some bills have been ineffective vehicles for public-private partnerships given provisions that create risk and uncertainty sufficient to deter potential private sector construction, design, and/or financing firms from partnering under the statute. These include initial PPP legislation in Washington State and California.

The Federal Highway Administration (FHWA) has published a study of the state PPP enabling statutes identifying key elements for highway projects.[9] Most of the same elements would apply to transit projects. In addition, USDOT has published in draft form model PPP legislation for states to consider.[10] These documents provide useful insights for states considering either adoption of comprehensive PPP legislation or amendments to their existing enabling statutes and regulations regarding the use of alternative project development, financing, delivery, and/or operations.

Enabling Legislation for Transit PPPs

In the case of prospective transit project sponsors seeking to use PPP approaches, the question of whether a state or local transit agency can procure a project using a PPP approach is first governed by state law. The laws of states noted in Exhibit 14 allow varying levels of participation by the private sector in transportation projects.[11] In addition, authorization in certain states is limited to specific agencies and therefore might not be available to transit authorities given their regional or local focus. Hence transit agencies in many states are governed by separate statutes or local ordinances. As a result there are still many state and local transit agencies with no current legal capacity to apply PPPs as an alternative to traditional approaches to project delivery, finance, and operations.

PROCUREMENT CONSIDERATIONS

There are many types of PPP arrangements involving different roles, responsibilities, risks, and rewards for the public and private partners participating in a transportation project. However, for most PPP approaches, there are certain activities that comprise the implementation and execution phases that are generally common among them. These are listed below in Exhibit 23, which provides an overview of a typical PPP project development effort.

[9] http://www.fhwa.dot.gov/ppp/legis_key_elements.pdf.

[10] http://www.fhwa.dot.gov/ppp/legis_model.pdf. It should be noted that FHWA's web page specifically advises that the model legislation is provided for informational purposes only and that it should not be construed as the policy of USDOT or FHWA.

[11] See Study Deliverable 2, Literature Review of Public-Private Partnerships for Transit Capital Projects in the United States, Section 1.C.

Exhibit 23 – Overview of PPP Project Development Process

- **Identification of possible PPP approaches and prospective private providers**
- **Organizational development - roles and responsibilities of designated internal team and knowledgeable external support resources**
- **Internal due diligence/evaluation of project as a candidate for PPP arrangement**
- **Pre-marketing/pre-procurement to guide process and gain private sector insights**
- **Transparent marketing/procurement to assure equity and future accountability**
- **Close transaction/contracting process with fully understanding of terms and their implications for project costs, schedule, quality, financial returns, and risk taking**
- **Transition to delivery team involving public and private entities with defined responsibilities and risks**
- **Project execution - public sector and private sector roles and responsibilities**
- **Partner accountability based on contract terms**

Certain of the activities listed in Exhibit 23 pre-date the project PPP implementation process while others begin and end during different phases of PPP project delivery. Each of these steps and the determination of which partner should take responsibility for the action or if responsibility is to be shared should be based on the following factors, which are discussed more fully below:

- The procurement approach(s) and types of projects to be considered in the PPP program;
- The nature and scope of the project under consideration for possible delivery as a PPP;
- The functional capabilities of the sponsoring agency to carry out the project;
- The competitive availability of competent private providers for the public sponsor to partner with; and
- The duration of the partnership relative to the life-cycle of the resulting facility.

Exhibit 24 summarizes the key issues to be addressed by sponsors of transportation PPPs during the procurement and contract negotiation processed, grouped into four categories, including public interest and perceptions, transportation network coordination, and capability of the sponsoring agency to administer these processes.

Exhibit 24 – Key Issues During PPP Procurement and Negotiation Processes

Public Interest Concerns	Public Perception Issues	Transportation Network Coordination Concerns	Administrative Capability Issues
Setting of toll rates and schedule/basis of future increases	Public sponsor agency outreach and communication to the public on nature and impacts of a proposed PPP project and its contract terms	Integration of individually operated PPP-developed or operated facilities within a regional transportation system	Capabilities of specialized resources to develop, negotiate, and administer a balanced PPP contract either resident to or retained by sponsor agency
Control over ultimate level of toll rates	Ability of public sponsor agency to share in project proceeds beyond acceptable rate of return to the private sector partners	Alignment of public mobility and economic development goals with private profit goals	Existence of legal authority to enter into PPP contracts for surface transportation projects
Acceptable limits on rates of return on private sector investment	Rationale for instituting direct user charges, such as tolls or variable pricing, as part of the PPP arrangement	Coordination and communication between surface transportation agencies and the private partners involved in project PPPs regarding operational and pricing of surface transportation facilities within a region	Adequacy and transparency of procurement framework to protect the public interest while providing equal opportunity to prospective private firms/teams
Responsibility for and treatment of windfall profits or losses	Where tolling is imposed, whether there is a non-priced alternative and the consequences of not applying pricing to the project in terms of project delivery schedule and cost	Integration of PPP project facilities with other infrastructure and service components of the regional transportation system	Ability to identify and avoid conflicts of interest among partners to PPP contract, especially during procurement and selection processes
Uses of excess revenues or proceeds from long-term leases	Whether and how project proceeds are focused on the transportation facility or network affected by the PPP when direct user charges are applied	Full accounting for compliance with planning, environmental clearance, and permitting requirements during project development process	Suitable contract administration process and staff to ensure terms of PPP contract are adhered to by all partners
Control over nature, extent, and frequency of refinancing	Ability of responsible public entity to protect the public interest while respecting the private sector's rate of return requirements	Ability to grant flexible staging of environmental clearance, permitting, and right-of-way acquisition activities as the project proceeds, consistent with NEPA and other Federal/state/local requirements	Existence of continuous performance measurement and reporting process to hold PPP partner accountable for compliance with contract obligations
Control over transfer of private partner responsibilities or involvement in PPP contract to other private entities not part of original team	Degree of foreign involvement in PPP and foreign control over project proceeds	Ability to ensure that project proceeds are used to enhance transportation mobility in the area served by the PPP project where user charges are applied	Continuity of public sponsor agency staff to oversee development and execution of PPP contract terms

Potential Need for Specialized Resources

A key consideration for public agencies preparing to procure a project using PPP approaches that involve sophisticated technical and financial techniques is to obtain the services of firms or retain in-house personnel that offer specialized expertise in these techniques and how to analyze them within the context of the PPP project at issue. Given the high value of many PPP projects and the potential for significant value capture by the private sector, the public agency will likely find itself negotiating with specialists that have a high degree of experience in these techniques.

Such specialized personnel would be prohibitively expensive to retain on the public side of the negotiations on a full-time basis as in-house staff. Therefore most public agencies sponsoring PPP projects should include firms or individuals with comparable expertise as part of their PPP procurement support and contract negotiating team on an as-needed basis. This will increase the potential for arriving at a fair contract agreement that balances the needs of both the public agency and private partner, while ultimately protecting the public interest.

Procurement Approaches

One of the key policy decisions facing sponsors of PPPs is whether to allow unsolicited proposals in the process, as is allowed under the Virginia Public Private Transportation Act (PPTA) of 1995, or limit PPP bids to only those that respond to projects specifically solicited by the sponsoring agency. Unsolicited proposals for a PPP project result from a concept developed by a private consortium and submitted directly to a public agency outside of the normal bid solicitation process. Key features of unsolicited proposals are listed below.

- Opportunity for advance projects not included in traditional transportation plans by applying innovative, often unique approaches;
- Opportunity to beat the competition to the starting gate and define the agenda in terms of project scope and approach; and
- High risk for the initial proposer since there is no guarantee the initiator will end up winning the project after the concept subsequently undergoes a formal solicitation process prompted by the receipt of the initial unsolicited proposal, provided there is adequate time provided to allow competing teams to prepare their own proposed approaches to the project.

Solicited proposals for PPP projects are the result of the normal bid solicitation process, whereby the sponsoring agency defines the projects to be procured in each bidding cycle based on prioritized needs as defined in the short-range transportation plan. Key features of solicited proposals include the following:

- Preferred by many public agencies since it provides them with more control of the project solicitation process instead of diverting scarce resources to react to bids that often seek to circumvent the competitive procurement process;
- More consistent with the results of agency transportation planning efforts that involve public and private inputs in a more transparent process;
- Primary source of PPP project opportunities in the future since there is a greater likelihood of the project going forward due to its inclusion in the vetted transportation planning process; and
- Level of competition for solicited requests for bids will depend on project size and risks.

Preferred Project Categories for Certain PPP Approaches

Another policy issue to be addressed by both sponsors and respondents to PPP project solicitations is whether the purpose of the project is to merely change the responsibility for taking care of existing infrastructure assets or to develop new infrastructure assets. The first category is called a "brownfield" project, in which a private consortium assumes responsibility for existing transportation infrastructure assets through a long-term lease agreement with a potential up-front payment to the agency sponsor/owner. Recent mega-transactions have been dominated by long-term leases of existing tolled assets, including the Chicago Skyway, Indiana Toll Road, and Pocahontas Parkway.

The key features of a brownfield project are listed below:

- Lower traffic, revenue, environmental, and construction risks;
- Opportunity to increase toll rates much more quickly that the public sector;
- Able to introduce new technology to eliminate tolling queues;
- Significant potential for public sector to undervalue asset to the benefit of the private concessionaire; and
- Limited number of candidate brownfield projects.

The second category of project is called a "greenfield" project, in which a private consortium uses a PPP approach to develop and operate new transportation infrastructure assets through a long-term contract. Early greenfield PPP projects occurred in California and Virginia. More recent greenfield PPP projects are taking place in California (South Bay Expressway near San Diego) and Texas (TTC-35).

Key features of a greenfield project include the following:

- Higher traffic, revenue, construction, environmental, and financial risks;
- Highly prized by transportation agencies seeking added infrastructure capacity;
- Opportunity to apply life-cycle asset management to significantly lower the total costs of the facility from concept to disposal; and
- Large number of potential greenfield projects, including adding congestion-priced new capacity to existing highways at lower risks than entirely new alignment.

The decision to pursue projects through unsolicited or solicited proposals, or as a brownfield or greenfield project, depends on the preference of the sponsoring agency, the opportunity presented by the specific project being considered, and the interest and willingness of private firms to join in a partnership with the public sponsor under any of these procurement approaches or project categories.

Financial Analysis Considerations

In analyzing prospective transportation PPP projects, it is important for both public and private sector partners to determine the financial criteria for evaluating the project and the assumptions that underlay the financial analysis to determine project feasibility from financial perspective. Potential bases for financial evaluation depend on the perspectives of each partner. Public partners look primarily at the ability of the project cash flow to cover the full costs of the project over time, including the costs of operations and maintenance, debt service, various reserve or coverage funds, long-term preservation costs, and capital expansion costs (if needed).

Private partners want to ensure that the project can provide a reasonable return on invested capital, whether debt or equity, net of design and construction, operation and maintenance, reserve or coverage funds, tax costs, and any sharing of revenue proceeds from the project. Therefore the results of private financial analyses for PPP projects focus on the Internal Rate of Return (IRR) on invested capital and/or the Net Present Value (NPV) of the net proceeds from the project over the term of the contract. Projects which provide an IRR greater than that which the financial community can obtain by investing its capital funds elsewhere are considered viable, as are projects with a positive NPV.

Public sector sponsors of PPPs are becoming increasingly interested in the financial returns from PPPs given the potential for some deals to generate windfall profits far above the purported rates of return required by the private sector to consider a project financially feasible. The challenge is how to balance the financial risk-taking by private partners financing or helping to finance a project through a PPP, which may not achieve minimum rates of return. More recent PPPs involving private financing are introducing revenue-sharing based on levels of rates of return on invested capital achieved from the project, with increased proportions of project revenues going to the public sponsor as the project IRR reaches greater levels, such as the Pocahontas Parkway PPP refinancing deal. The most recent deals have including revenue-sharing between the public and private partners starting when the project opens, such as the Texas State Highway 130 PPP concession. With revenue-sharing the public partners retain a financial interest in the success of the PPP project, which limits the potential for the private partners to earn windfall profits. Revenue sharing generally reduces the total value of the deal to the private sector and consequently the up-front payment a concessionaire may be willing to provide the sponsoring agency for a long-term concession lease.

Typical issues associated with the financial analysis of transportation PPP projects include:

- Assumed inflation rates on costs and interest rates on debt
- Length of contract term – affects value of PPP deal and ownership status of lease[12]
- Required debt coverage ratios and level of reserve funds
- Treatment of risks – range of outcomes
- Taxable versus non-taxable debt and equity – timing issue
- Transparency – public availability of private sector project financial information

Other financial issues relate to the use of IRR and NPV calculations to determine the value of a long-term concession lease or the profits from a PPP involving financing by the private partner. Both calculations depend on assumptions regarding the future level of background inflation, which may not transpire as projected. In the case of NPV calculations, the results become unusable beyond a twenty-year contract term due to the declining value of project costs and revenues that far into the future due to the effects of inflation. Long-term contracts of fifty or more years are even more difficult to project financial results, which makes revenue-sharing a risk sharing strategy for both public and private partners to a long-term PPP involving financing – possibly with both the public and private sector participating in the financing arrangements.

[12] IRS rules require lease contracts of 50 years or more for the lessee to be considered the effective operating owner, thereby granting the lessee the ability to take depreciation tax credit against the value of the asset. This suggests PPP legislation grant PPP contract term at least up to 50 years to maximize value to the public sponsors of long-term concession leases.

Other financial concerns relate to the basis for determining project IRR or NPV values and the source of the financial data upon which these calculations are based. If the private partners to a PPP collect and retain control over project revenue proceeds, including toll revenues and financial transaction fees collected during the term of the contract, it is uncertainty whether the information is a complete or accurate representation of the financial status of the project. Where the private sector retains control of project revenues and this information is used to determine IRR thresholds for revenue sharing, the asymmetrical nature of this financial information can raise questions about the veracity of the results. Revenue-sharing arrangements require that the public sector have access to a project's full financial records for audit purposes to ascertain their authenticity.

Demonstrating Value for Money

Another important consideration in judging PPP project proposals is a concept known as Value for Money (VfM). This concept refers to the extent to which the proposed PPP approach offers greater value to the sponsoring agency than the traditional approach. This analytical tool is often used to determine the project cost savings of a PPP approach paid for with availability payments or shadow tolls by the sponsoring agency, instead of through proceeds from direct user charges (such as tolls). To determine Value for Money for using an alternative project delivery approach, the sponsoring agency needs to define the project scope in advance to the extent that a realistic determination of project requirements, costs and revenues (where appropriate) are likely to be. This may involve the following actions:

- Develop greater understanding of project geotechnical and site conditions through advanced reconnaissance;
- Advance project design to the point where there is a clear understanding of the key attributes of the project design and functional characteristics;
- Perform advanced value engineering to ensure the most cost-effective design parameters are considered;
- Revise assumptions typically used to estimate traffic volume and revenue potential, especially the possible size and frequency toll rate changes when tolling is involved to reflect current fiscal concerns; and
- Recognize the risks inherent in the inflationary effects on the costs of project materials.

This information can then be used to develop a comparative basis for assessing whether a PPP approach or submitted proposal offers sufficient advantages to the sponsoring agency. The more information the sponsoring agency has to judge competing responses to the RFP against each other and to more traditional approaches using varying levels of in-house responsibilities will help to ensure a more informed basis for determining how to proceed in the use of private provider services and what kind of PPP approach most benefits the public interest. This does not necessarily mean advancing the project to the 30 percent design stage before developing the Request for Proposals for the project as a possible PPP. To gain greater opportunity for more cost-effective plans, projects taken to the 10 percent to 15 percent stage of design may be sufficient. This depends on the type, size, and complexity of the project.

Public and private entities engaged in PPPs can achieve greater "Value for Money" by:

- Applying business best practices to expedite the project and lower its cost;

- Providing higher quality design, construction, and inspection up front that saves costs over the long-term; and
- Using life-cycle asset management to reduce the frequency and costs of preservation.

Increased value or project cost savings from these kinds of strategies can range from 5% to 66% of total life-cycle costs, depending on the best practices used, the integration of project phases, and the extent to which life-cycle total asset management is applied. The Value for Money estimate will depend to some extent on how the sponsoring agency treats direct and indirect costs of the project.

From the private sector perspective, the details of the estimates of financial benefits to the private sector concessionaire for a long-term lease agreement is typically not fully disclosed and therefore not made part of the Value for Money determination. This may raise questions regarding the potential for windfall profits to be earned by the private concessionaire, difficulty in holding private partners accountable for project financial reporting, and public interest concerns where transparency in the procurement and development of PPPs is required.

Bidder Prequalification

If a two-step solicitation process is used for project team selection (pre-qualification then proposal submission), the first step will identify and pre-qualify those prospective bidders that have the greatest potential for developing and delivering the proposed project as a public-private partnership using innovative approaches that offer high value for money and an effective partnering relationship with the agency sponsor. The first step could be as simple as allowing only those firms already on the agency's pre-qualification list to receive a Request for Proposal for the proposed PPP project. However, since there is little domestic experience with PPP projects in most states, this approach may overlook highly qualified firms that are not on the agency's pre-qualification list, particularly if the agency has not sponsored PPP projects before.

Bidder prequalification often begins by issuing a request for a Letter of Interest (LOI) from each prospective bidder or bidding team (if already organized) to indicate whether or not they are interested in competing for the project as a PPP. The LOI request can also be used to ask for information on the firm and its relevant qualifications to perform the project as a PPP. This could be followed by a formal Request for Qualifications (RFQ) from all or selected firms that responded to the LOI.

The LOI and RFQ may be preceded by a fact-finding process in which prospective firms are invited to participate in an information-sharing meeting or workshop to share insights regarding the project and the anticipated PPP procurement process. Meeting topics typically include:

- The proposed project description, available public funding, and obtainable data on the project, including any preliminary planning or preliminary design studies;
- What the agency is seeking from bidders;
- What types(s) of PPP approaches will be considered;
- Responsibilities, level of risks, and value capture required/desired by the private sector;
- How to structure the request for proposals; and
- What is considered a reasonable timeframe for proposal preparation.

Following the workshop meeting, the sponsoring agency may also provide the opportunity for individual one-on-one meetings between representatives of the sponsoring agency and interested firms to further discuss specific ideas and concepts regarding the proposed project and ways to approach its procurement and delivery.

Exhibit 25 displays sections a typical Request for Qualifications that may accompany or follow the Letter of Interest request.

Exhibit 25 – Sample Components of a PPP Project Request for Qualifications

- **Introduction to RFQ document**
- **Project background - current conditions and rationale for project**
- **Project description - scope and schedule**
- **Purpose of pre-qualification**
- **Pre-qualification process - objectives, process, and schedule**
- **Conditions, terms, and limitations**
- **Statement of qualifications - contents and format of managerial, financial, and technical capabilities and resources**
- **Evaluation process - procedures, roles, criteria, and scoring method**
- **Receipt and security of statements of qualifications**
- **Approved bidder's list**
- **Notification process**
- **Annexes - certifications, representations, required forms, and sample scoring form**

On the next page, Exhibit 26 provides a representative listing of criteria an agency might consider for evaluating the responses to the RFQ so that a smaller list of pre-qualified firms or teams can be selected to receive Requests for Proposals (RFP). The preparation and issuance of RFPs should be done after the following items have been finalized by the agency sponsoring the project:

- Project scope;
- PPP approaches to be allowed;
- Evaluation criteria;
- Remaining steps in the PPP project procurement process; and
- Schedule for completing the procurement and selection process leading to a Notice to Proceed (NTP).

Exhibit 26 – Sample Pre-Qualification Evaluation Criteria

- **Relevancy and extent of prior project experience by team members - size, nature, and complexity of prior relevant projects completed by team members**
- **Satisfaction of prior clients used as team references**
- **Financial capability and capacity of the team**
- **Adequacy of project management capability and experience**
- **Quality assurance capabilities and programs**
- **Relevancy and extent of specific technical and financial experience and expertise of designated key staff members of submitting team**
- **Adequacy/availability of key staff to perform the project in proposed timeframe**
- **Completeness and timeliness of statement of qualifications submission**
- **Inclusion and proper execution of all required certifications and representations for members of submitting team and key staff**
- **Submission of audited financial statements for core team members for prior five years**
- **Availability of required net working capital**
- **Net worth of submission team**
  - Confirmation of bonding capability
  - Bank and surety references
  - Legal standing of team members

For unsolicited proposals, this process would be significantly condensed since there is already a submitted proposal which serves as the basis for comparison, provided the proposed project is one the responsible agency wished to pursue even though it is not on the short-term approved list of planned transportation projects. In this case, other interested bidders are given a certain timeframe to offer competing proposals, thereby eliminating the LOI and RFQ requests. Both the LOI and firm/team qualifications would become part of the proposal.

Proposal Solicitation and Bid Evaluation Considerations

For solicited proposals, an RFP is prepared which contains the requirements, terms, and conditions for the PPP project. The RFP is issued to the pre-qualified firms or teams, which then prepare proposal responses. These are submitted to the sponsoring agency within a specified timeframe, as described in the RFP, with each submission reviewed and evaluated to determine which one offers the best value to the sponsoring agency and the public it represents. Exhibit 27 summarizes the key factors that should be considered in evaluating and ranking PPP project bids that are received in response to either a solicited or unsolicited proposal.

Exhibit 27 – Key Factors to Evaluate PPP Project Bids

- **Flexibility/breadth of legal-regulatory authority of sponsoring agency to use proposed contract approach**
- **Capability of sponsoring agency to effectively negotiate and administer the proposed contract through in-house and retained specialized support resources**
- **Transparency of PPP procurement process and contract terms - and their implications**
  - Life-cycle cost of project that maximizes Value for Money
- **Project delivery schedule**
  - Performance-based standards for holding partners accountable for project results
  - Periodic performance monitoring and reporting requirements
  - Annual contract auditing provisions
- **Capabilities and experience of project delivery team in all areas of proposed responsibility and its ability to manage various project risks**
- **Innovative use of alternative funding approaches to leverage available public funds**
  - Relative use of equity and/or debt, bank loans and/or capital markets and their respective timing to finance the project
  - Involvement of public sector in value capture – including developers and businesses served by transportation facilities produced as a result of a PPP
  - Treatment of "windfall" profits – revenue-sharing with public agency and price regulation
  - Insurance or surety provisions to manage financial risks
- **Proposed use of new technology to improve cost-effectiveness of project and enhance user service and safety**
- **Consistency with public policy and interest**
  - Public attitudes towards ownership and control of transportation assets – parochialism potential
  - Protection of public interest – equity, safety, reasonable price, accessibility, mobility

This mix of factors to be considered by the agency project selection committee reflects a best value-based bid evaluation process, versus the low-bid evaluation process associated with the traditional contractor selection process. The value-based selection process reflects how the private bids are structured, the broader private sector responsibilities of PPP project delivery approaches, and the many attributes that can impact the overall value to be received by the public from the PPP approach taken.

PPP PROJECT DEVELOPMENT AND IMPLEMENTATION PROCESSES

Successfully implementing projects delivered through public-private partnership approaches requires more than issuing a solicitation and developing a contract to that effectively transfers project responsibilities and risks to a private sector team in return for certain financial considerations. Once procured, a PPP project requires continuing communication and coordination throughout the project development, implementation, operation, and preservation phases between the project partners. PPP projects also require thorough contract administration by the sponsoring agency, including periodic monitoring and public reporting of project performance relative to the terms of the contract agreement to ensure accountability of the partners to the public.

Performance Measures for PPP Project Reviews

Exhibit 28 lists a representative sample of performance measures for assessing PPP projects relative to the contract agreement terms.

Exhibit 28 – Potential PPP Project Performance Measures

- **Traffic volumes on an annual and peak hour basis, by season**
- **Level of service (extent of congestion) on the facility during peak periods by season**
- **Annual revenues from tolls, concession, and other funding sources relative to projections**
- **Annual lane-miles out of service for incident-based repair and preventive maintenance**
- **Percentage of project financing provided by private sector partners**
- **Ability of project to fully cover debt service costs, contract costs, and coverage levels with a reasonable rate of return on invested capital by the private sector partners**
- **Net increase in capital program due to PPP projects**
- **Project cost relative to engineer's estimate and contract budget**
- **Project duration relative to contract term**
- **Cost per transaction for PPP project operations**
- **Percent of tolls collected by ETC for PPP project facilities**
- **Ratings of bonds sold for PPP project**
- **Proportion of PPP project costs required for contract administration**

Key Steps in Developing and Implementing PPP Projects

Exhibit 29 lists the five key phases and steps in development and implementation of a surface transportation PPP. These five key phases lay out the sequence of events that should occur as the public sponsor determines whether a PPP approach is appropriate for the project, while the private sector providers determine if there is sufficient potential for adequate return to justify the assumption of responsibilities and risks associated with the proposed PPP approach.

These same phases and component steps are appropriate even when the PPP is for a public-public partnership involving multiple public agencies. This will increasingly be the case as highway, transit, and economic development agencies collaborate to expedite transportation improvements that promote personal mobility, accessibility, and economic development.

Exhibit 29 – PPP Implementation Steps for Public Agency Sponsors

- **Phase 1 – Perform Preliminary Project Planning**
  - Determine transportation need
  - Develop preliminary project scope
  - Determine environmental constructability
  - Develop preliminary financial plan regarding project sources and uses of funds
- **Phase 2 – Establish Eligibility for PPP Status**
  - Assess in-house capabilities to perform project using in-house resources or traditional approaches
  - Identify resource and functional capabilities required to deliver project in a timely manner
  - Determine procurement approach and type of projects to be considered in the PPP program
  - Establish legal authority to enter into PPP arrangements involving alternative approaches to project financing, development, delivery, and preservation
  - Develop preliminary allocation of roles, responsibilities, risks, and returns for the public and private partners to a potential project PPP
  - Develop and implement remedies to legal or regulatory impediments to PPPs and other alternative approaches to more cost-effective project development
- **Phase 3 – Explore Potential and Interest of Private Providers to Enter into a PPP for the Project**
  - Request suggestions for structuring the PPP from interested private providers
  - Solicit letters of interest and qualifications to pre-qualify the most promising prospective providers

Exhibit 29 – PPP Implementation Steps for Public Agency Sponsors – continued

- **Phase 4 – Solicit Proposals from Prospective Private Providers and Select Best Value Team Using a Transparent Process**
  - Develop and issue performance-based request for proposals from pre-qualified private providers for scope of services required by the private provider, with potential to improvise and offer innovative solutions to project financing, delivery, and preservation
  - Review and evaluate responses to RFPs based on pre-established criteria, providing a level playing field for prospective private partners
  - Begin negotiations with PPP team judged to offer the best value over the life-cycle of the project and finalize PPP contract terms of agreement when acceptable
- **Phase 5 – Establish and Nurture PPP Arrangements for Project Delivery as a PPP**
  - Develop full understanding and capabilities among public sector staff responsible for managing the PPP contract
  - Ensure clear understanding of relative roles, responsibilities, risks, and rewards of PPP arrangements, as defined in the contract agreement
  - Establish full protocols for communication, coordination, and problem identification and resolution throughout contract term, involving clear lines of authority, responsibility, and communication
  - Work collaboratively and constructively to flexibly apply the terms of the contract within the performance requirements defined in the terms of agreement
  - Hold periodic meetings among team leaders from both public and private sectors, at the senior management level and tactical/technical implementation level, throughout the project contract term
  - Hold all parties to the PPP accountable for complying with the terms of the PPP throughout the duration of the contract through regular project reporting and review

6. IMPEDIMENTS AND RISK MANAGEMENT FOR TRANSPORTATION PPPs

This section discusses the principal challenges to the successful development and implementation of PPPs for surface transportation projects come from legal, regulatory, institutional, procedural, financial, and cultural impediments. In considering whether to proceed with a project as a PPP, there may be a number of issues that arise and require resolution prior to initiation or during project execution.

KEY IMPEDIMENTS

Existing agencies can have difficulty in applying PPPs due to differences in how public agencies and private companies function and value their efforts, which reflects differences in their respective cultures. Exhibit 30 lists several potential cultural differences between public agencies and their private sector counterparts to a PPP. Producing a successful PPP requires first recognizing and then bridging these differences through mutual understanding.

Exhibit 30 – Potential Cultural Differences between Public and Private Partners

- **Short-term versus long-term timeframe**
- **User focus versus customer focus**
- **Risk averse versus managed risk**
- **Expensed assets versus investments to be preserved**
- **Wait for full funding (debt free) versus build and pay off (using equity and/or debt)**
- **Rigid versus flexible approaches to project development, financing, and delivery**
- **Standardized versus innovative approaches**
- **Domination of transportation infrastructure program delivery by local firms versus competition provided by domestic and international firms**
- **Regulatory compliance versus empowered staff**
- **Constrained resources versus leveraged resources**
- **Process driven versus product/service driven**

Ten additional potential impediments to the successful deployment of PPPs for surface transportation projects are described in Exhibit 31 on the next page. Besides cultural differences which are the most difficult to change and are better accommodated, the most important threat to a transportation public-private partnership is institutional inertia, which can be reinforced by both culture and a long legacy of performing functions a certain way, as prescribed by FHWA or AASHTO. Each of the following ten impediments needs to be anticipated and mitigated where apparent so that PPP efforts are not sabotaged by the very agencies responsible for their development and implementation.

Exhibit 31 – Potential Impediments to Transportation PPPs

- **Institutional Inertia** – opposition by transportation program administrators/staff and members of the construction/design industries to changes in traditional approaches
- **Fear of Change** - by local firms that change will undermine their competitive positions
- **Distrust** - between the public sector and the private sector – reinforces institutional inertia
- **Legal Prohibitions or Regulatory Restrictions** - against attributes of effective PPPs – often instituted and reinforced by imbedded stakeholders in the status quo
  - Procurement (unsolicited, best value, design-build, warranties, environmental clearance)
  - Permitting (utility, navigable waterways, etc.)
  - Land acquisition (advanced, before and after pricing)
  - Environmental clearance
- **Lack of Familiarity with PPPs** - including the mechanisms for developing and implementing PPP projects and the relative balance between public and private sector roles, responsibilities, risks, and returns
  - Limited public knowledge and understanding of PPPs
  - Lack of consistency in how agencies interpret statutes/regulations regarding PPPs
  - Scarcity of documented examples of successful PPPs in transportation
  - Lack of a specialized corps of professionals within state transportation agencies responsible for managing PPPs
- **Differences in Perspectives and Objectives** - between public sponsoring agency and private provider firms
  - Process constrained public sector conflicts with expediency of private sector
  - Differences in financing goals and timeframes
  - Confidentiality concerns of private versus public sector transparency requirements
  - Public sector service focus versus private sector rate of return needs
  - Tax exemption advantage of public debt over private debt
- **Lack of Adequate/Dedicated Revenue Sources** – to support project financing
  - Project must "add up" – be financially feasible for both partners
  - Private sector partner needs to earn a reasonable rate of return
  - User fees and other revenues may need to be tapped unless public funds can provide availability payments over the life of the contract in lieu of user fees, such as tolls
  - Dedicated revenue sources are the best way to support project financial plan
- **Loss of Control –** facility operations, toll rates, use of revenues, public interest protection

ADDRESSING IMPEDIMENTS TO TRANSPORTATION PPPs

Suggested strategies to address these impediments by project phase are listed in Exhibit 32. These strategies are organized into the following categories:

- Getting started
- Defining the partnership participants
- Funding and financing the project
- Balancing the roles, responsibilities, risks, and returns
- Nurturing the partnership

These categories reflect the evolving phases in the development, implementation, and execution of the PPP project over its life cycle. While PPP approaches to project delivery are not the only way to solve the fiscal problems facing state and local transportation agencies, freedom from institutional impediments alone cannot make a poor project successful. Experience has shown how institutional impediments such as those shown in Exhibit 31 can stop or significantly delay worthy projects.

Exhibit 32 – Strategies to Address Impediments to Transportation PPPs

- **Getting Started**
  - PPP project success or failure will depend on many factors – most important is the nature and level of interest of project stakeholders and their willingness/ability to commit to the project as partners.
  - Establish broad legal authority to enable transportation agencies to use PPPs.
  - Identify a public "champion" to bulldog the project from start to completion.
  - Define a clear project vision so interested private and public sector parties can assess their interest.
  - Establish clear guidelines for PPP development, including milestones, roles, and responsibilities.
  - Tailor each PPP to its institutional, jurisdictional, transportation, economic, and financial context.
- **Defining the Partnership Participants**
  - Involve all public and private stakeholders with an economic or other interest in the project willing and able to participate as partners in project financing commensurate with their expected benefits.
  - Involve private sector partners in project conceptualization as soon as possible to gain maximum advantage of their insights and suggestions.
  - Encourage private sector creativity to cost-effectively achieve the project vision.
  - Focus on performance outcomes/benefits of the project - not the just the procedures.

Exhibit 32 – Strategies to Address Impediments to Transportation PPPs – continued

- **Funding and Financing the Project**
  - Let the project define financing - but allow the financing to define project delivery.
  - Consider the full range of possible funding sources, not just tolls – i.e., new credit programs, joint development prospects, new revenue sources, private activity bonds
    - Define the financing plan before beginning development
    - Identify project benefits and beneficiaries
    - Let government partner sponsor social programs
    - Understand the allocation of financial risks
    - Identify contingencies and have a plan to fund them
  - Enable private sector partner(s) to make a reasonable return on their investment – no profit potential means no private capital will be put to risk.
- **Balancing the Roles, Responsibilities, Risks, and Returns**
  - Transfer financial/project risks to the private sector provided it has the authority and capability to manage conditions that are likely to impact these risks.
  - Avoid imposing excessive risks on the private sector that will keep them away, particularly in the area of tort liability where private risk may be much higher than public risk.
  - Avoid trying to make a "bad" project into a "good" project merely by turning it into a PPP project
    - Quality projects may be enhanced with a PPP approach
    - "Bad" projects are unlikely to become viable even with a PPP approach
    - The private sector will avoid "bad" projects if it bears the risk of failure.
- **Nurturing the Partnership**
  - Maintain an air of civility among the partners based on mutual self-interest and respect.
  - Establish ongoing communication among the project partners throughout the project development process to quickly recognize achievements and address problems in a constructive manner.
  - Communicate status, progress, and results of project quickly and openly to the public to gain their understanding, support, and enthusiasm.
  - Establish an objective, transparent, equitable, and accountable contract procurement and administration process where the project roles, responsibilities, risks, and rewards are clearly defined, with appropriate due diligence to ensure compliance with contract terms and conditions.

In addition to the strategies listed in Exhibit 32 for addressing impediments to transportation PPPs, Exhibit 33 lists additional ways to address these issues before they can cause a project to fail, including the protection of the public interest in public infrastructure long paid for by motor fuel taxes and other federal, state, and local revenue sources.

Exhibit 33 – Additional Strategies to Address Issues Related to Transportation PPPs

- **Define toll rate adjustment schedule based on pre-established criteria (such as consumer price index or highway construction price index) and prescribed coverage ratios that avoids the potential for windfall profits to the private partner.**
- **Define maximum profit levels or rates of return on invested capital by private sector partners, with potential revenue sharing above certain profit levels.**
- **Require sponsor approval of any transfer of responsibility for functions provided by the private sector partners, including ability to sell or transfer financial interests in the project.**
- **Define standards of performance for services provided by the developer, operator, and preserver of the project over the term of the contract agreement that are beneficial to users of the facility.**
- **Hold both private and public sector partners accountable for project and service delivery consistent with the contract terms that protects the public interest in the project and the non-financial benefits the facility provides to various stakeholders.**
- **Define court of jurisdiction as state where sponsor and facility are located.**
- **Retain responsibility for financial management of proceeds from long-term concession leases, with up-front (if applicable) and on-going payments to the private sector team members (or consortia) based on payment terms of contract.**
- **Establish transparent and equitable procurement and selection process that provides equal access to all interested parties, while permitting the application of innovative approaches and technologies that may be unique.**

RISKS ASSOCIATED WITH TRANSPORTATION PPPs

While providing a variety of advantages, there are also risks to consider when using PPPs for transportation projects. There are many types of risks that can influence dramatically the viability of a PPP project and the relative interest of the public sponsor and the private provider team. Exhibit 34 provides a summary listing of the major types of risks associated with transportation projects. It is one of the purposes of a PPP that the risks are allocated to those partners best able to manage those kinds of risks.

Exhibit 34 – Summary of Major Risks Associated with Transportation Projects

- **Public acceptance**
- **Control of assets**
- **Protectionism**
- **Political stability**
- **Moral hazard**
- **Demand/volume**
- **Revenue**
- **Environmental/archeological**
- **Right-of-way costs**
- **Construction cost**
- **Maintenance cost**
- **Liability/latent defects**
- **Life-cycle cost**
- **Regulatory/contractual**
- **Payment structure/mechanism**
- **Transaction cost**
- **Changes of law**
- **Compensation/termination**
- **Economic shifts**
- **Currency/foreign exchange**
- **Taxation constraints**

Various risks that can impact the cost and feasibility of a transportation project, as well as the revenue potential and financial feasibility of a PPP and its ultimate success are described below. One of the features of a PPP is the ability to allocate project risks to the partner best able to manage and mitigate these risks. All members of a PPP should understand these risks and how they can affect a proposed project to determine how to best structure the PPP arrangement.

- **Public Acceptance** – perhaps the greatest risk to a proposed PPP project is the degree of public acceptance of the project, its procurement as a PPP, and the means by which the project will be paid for (tolling or value pricing), with greater public acceptance and political support reducing the risk of project development failure or default following completion.

- **Control of Assets** – the public and many local politicians have expressed concern over the perceived loss of control over transportation infrastructure assets, particularly the level and frequency of toll rate increases, the physical condition and appearance of the facility, and protection of the public interests in these public-use facilities (such as personal mobility, commercial accessibility, promotion of public safety, and discounted access to public transportation).

- **Protectionism** – an emerging factor in the United States is the nationality of the firms comprising the PPP provider team, especially the lead project development firm and financing companies, which may result in either legislative efforts to limit foreign involvement in certain types of PPP projects (such as the long-term lease of established toll highways, especially those included in the Interstate System) or state or local political and public grassroots efforts to oppose PPP projects with significant and highly visible foreign company involvement and control.

- **Political Stability/Support** – even in the United States where the political framework of the nation is quite stable (unlike a number of nations overseas), the continuity of political support for a PPP project remains an essential ingredient for successful development and implementation and should there be a change in the political structure or composition in the area served by the PPP project and to which the

sponsoring agency is accountable, this can significantly impact the potential of a PPP project to proceed or continue, particularly if the status of the PPP project becomes a major issue in a political campaign.

- **Moral Hazard** – the sensitivity of using PPP approaches to deliver transportation projects in the United States makes it imperative that the public sponsor of the project maintain complete integrity and transparency of the PPP procurement, selection, and contract administration to avoid conflicts of interest and fraudulent activities during procurement and execution phases of the project. This requires the public sector to hold the PPP provider publicly accountable for the proper execution of the project consistent with the terms of the contract agreement. Unethical behavior in one PPP project can negatively impact the potential for successful development and implementation of proposed PPP projects by the sponsoring agency, as well as in other parts of the nation where PPP approaches are novel and subject to greater scrutiny and doubt.
- **Demand/Volume** – level and timing of traffic or transactions on an annual basis and at peak travel periods.
- **Revenue** – level of timing of proceeds from tolls or congestion (variable) pricing of highway use, concession and other non-toll revenues (advertising), or transit fares.
- **Environmental/Archeological** – site conditions that raise environmental, archeological, historic preservation, and other issues (munitions on the site) that may require mitigation and the costs of mitigation measures and their responsibility.
- **Right-of-Way Cost** – a major area of uncertainty for transportation projects is the amount and cost of acquiring parcels of land needed for the project right-of-way. The costs of real estate can vary significantly depending on the strength and expansion of the local economy, the level of demand for new development relative to the available supply, whether a full parcel is required or only a portion of the parcel (called a partial take), and the influence of speculators who recognize the potential for increased land values in the vicinity of the project due to the added accessibility to be provided by the project.
- **Construction Cost** – the cost of project construction costs which may be impacted by changes in the availability and cost of materials, labor, and maintenance of traffic, plus the cost of performance bonds required by the sponsoring agency for the full value of the project (also called surety bonds).
- **Maintenance Cost** – for PPP contracts including operations and maintenance, the cost of maintenance and repair activities which may be impacted by the quality of the design and construction, changes in traffic volumes (auto and truck), the weight limits of trucks using the facility, geological (subsurface) conditions, and adequacy and condition of drainage structures.
- **Liability/Latent Defects** – potential for defects in the design or construction, due to poor workmanship or unknown site conditions and the effect on project costs and the responsibility for paying for these costs.

- **Life-Cycle Cost** – for PPP contracts with long terms (45 years or more), the cumulative costs of facility maintenance, rehabilitation, and reconstruction or expansion over the term of the contract and its effect on project cash flow and reserves, which are affected by the quality of the design, construction, and inspection as well as the preventive maintenance program implemented by the PPP provider team.
- **Regulatory/Contractual** – changes in regulations or contract provisions that impact the cost exposure of one or more of the partners and their responsibility for their costs.
- **Payment Structure/Mechanism** – effect on value of project participation based on source, method, and timing of project cost reimbursement or availability payments.
- **Transaction Cost** – the level of costs associated with completing the various transactions involved in completing the PPP contract agreement and subsequent financial actions and responsibility for payment of these costs.
- **Changes of Law** - new statutes or regulations, including design standards or construction specifications, which impact the cost and profitability of the project and delivery timeframe.
- **Compensation and Termination Clauses** – how the PPP provider team will be compensated for work completed if the project or the contract agreement is terminated, depending on the reasons for termination, and any penalty clauses for early termination by the sponsoring agency.
- **Economic Shifts** – changes in the economic activity and demography of the region served by the facility which could impact the level of usage and the proceeds to cover the costs of the facility over the term of the contract and the responsibility for accounting for the difference.
- **Currency/Foreign Exchange** – changes in the relative value of national currencies that can impact the cost of the project and the value of revenue proceeds to a PPP provider which is based in another country with a different currency than that used for project reimbursement or payment of revenue proceeds.
- **Taxation Constraints** – national, state, or local taxes on the materials used in developing a transportation facility and the proceeds derived from operation of a priced facility can impact its financial viability, especially when using taxable debt and/or equity and/or when the PPP production team is based overseas.

Each of these risk factors can raise or lower the viability of a PPP project, producing a range of potential outcomes that the financial community has recognized need to be incorporated into financial feasibility studies of PPP projects to show the estimated upper and lower limits of financial results for the project. Managing these risks is an important consideration in selecting the right PPP approach and project team.

Exhibit 35 identifies the project responsibilities and risks that can be fully or partially transferred to the private sector partner for each alternative PPP approach considered in this document.

Exhibit 35 – Functional Responsibilities and Risks of Private Partners by PPP Approach

ALTERNATIVE PUBLIC-PRIVATE PARTNERSHIP APPROACHES	FUNCTIONAL RESPONSIBILITIES AND PROJECT RISKS FULLY OR PARTIALLY TRANSFERRED TO THE PRIVATE SECTOR UNDER ALTERNATIVE PPP APPROACHES[1]												
	Planning	Environmental Clearance	Land Acquisition	Finance	Preliminary Design	Final Design	Construction	Construction Inspection	Maintenance	Operations	Long-Term Preservation[2]	Traffic-Revenue	Asset Ownership
Asset Sale				✓					✓	✓	✓	✓	✓
Greenfield Concession or Long Term Lease				✓		✓	✓	✓	✓	✓	✓	✓	
Brownfield Concession or Long-Term Lease				✓					✓	✓	✓	✓	
Multimodal Agreement (Public-Public Partnership)				✓		✓	✓	✓	✓	✓	✓	✓	
Joint Development Agreement (JDA - pre-development)[3]	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Transit-Oriented Development (TOD - post-development)[3]	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Build-Own-Operate (BOO)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Build-Own-Operate-Transfer (BOOT)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Build-Transfer-Operate (BTO)				✓	✓	✓	✓	✓	✓	✓	✓	✓	
Build-Operate-Transfer (BOT)				✓	✓	✓	✓	✓	✓	✓	✓	✓	
Design-Build-Finance-Operate (DBFO)				✓		✓	✓	✓	✓	✓		✓	
Design-Build-Operate-Maintain (DBOM)				✓		✓	✓	✓	✓	✓		✓	
Design-Build with Warranty (DB-W)						✓	✓	✓			✓		
Design-Build (DB)						✓	✓	✓					
Construction Manager at Risk (CM@Risk)					✓	✓	✓	✓					
Contract Maintenance									✓	✓			
Traditional Design-Bid-Build (DBB)						✓	✓						

[1] Functional responsibilities and risks noted with a ✓ may be transferred in whole to the private partner or shared with the public sponsor, depending on the contract

[2] Refers to long-term risk of asset failure or physical obsolescence

[3] Refers to private developer portion of infrastructure

Each partner to a PPP has a level of tolerance for risks and a capacity to manage certain types of risks. Risk transfer to the partner best able to mange it is a way to reduce the cost of the project and improve its potential for success. The public sector is typically best equipped to manage environmental, right-of-way acquisition, statutory/regulatory, and public acceptance risk factors. The private sector is typically best equipped to manage construction cost, project delivery timeframe, maintenance cost, latent defects and project quality risk factors. Other risk factors are more difficult for either partner to manage and become part of the uncertainty that needs to be accounted for in evaluating the PPP project by all parties to the partnership.[13]

Exhibit 36 highlights the potential consequences of a number of these risk factors for members of a PPP and suggests ways to mitigate these results.

Exhibit 36 – Consequences and Mitigation Strategies for PPP Project Risks

Risk Category	Description	Consequence	Mitigation
Site Conditions	• Existing structures may be inadequate. • Contamination of site. • Needed approvals may not be obtained.	• Additional construction costs and time delays. • Clean up costs.	• Commission studies to investigate suitability of site and structures. • Private sector to incorporate risk by refurbishment during construction phase.
Design, Construction and Implementation Risk	• Facility incapable of delivering at the anticipated costs. • Physical or operational implementation tests cannot be completed.	• Increase in recurrent costs, delays. • Delayed/lost revenue.	• Seek reputable constructors with strong financial credentials. • Private party may pass risk to builder/architects while maintaining primary liability. • Link payments to progress.
Financial	• Interest rate risk. • Financing unavailable. • Contingent funding requirements.	• Increased project cost. • Non-completion of construction.	• Interest rate hedging. • Financial due diligence. • Bank/capital guarantees from companies and directors.

[13] *Global Toll Road Rating Guidelines*. Project Finance, Criteria Report. Fitch Ratings, New York City, NY, September 12, 2006.

Exhibit 36 – Consequences and Mitigation Strategies for PPP Project Risks - continued

Risk Category	Description	Consequence	Mitigation
Operating	• Inputs, maintenance may yield higher costs. • Changes to government requirements with respect to facility operations.	• Increase in operating costs. • Adverse effects on quality and service delivery.	• Long-term supply contracts where quality/quantity can be assured. • Upfront specification by public sponsoring agency.
Market	• Fluctuations in economic activity on demand. • Competition, demographic change and inflation.	• Lower revenues. • Diminution in real returns to the private party.	• Private operator to seek an availability payment element to minimize impact on risk premium. • Review likely competition for service and barriers to entry.
Legislative	• Additional approvals required during the course of the project cannot be obtained. • Changes in laws and regulation.	• Further change in business operation may be prevented. • Increase in operating costs by complying with new laws.	• Private sector to anticipate requirements. • Public sponsor to monitor and limit changes which may yield adverse results. • Foster public, political, and institutional understanding/support
Asset Ownership	• Loss of the facility upon premature termination of lease or other project contracts upon breach and without adequate payment. • Different residual value to that originally calculated. • Loss of public control over asset, toll rates, and the public interest.	• Loss of investment of private party • Possible service disruption as additional capital costs incurred to upgrade the asset to the agreed value and useful life. • Public outcry and political backlash that may lead to termination of the contract.	• Provide private partner cure rights to remedy defaults. • Public sponsor may pay for project value on a cost to complete basis if termination occurs pre-completion. • Impose maintenance and refurbishment obligations on the private party. • Secure services of a reputable maintenance contractor, with strong financial credentials. • Contract clearly states responsibilities of public and private parties, including toll rates and service standards.

7. DOMESTIC AND GLOBAL USE OF TRANSPORTATION PPPs

This section places the relative use of PPP approaches to deliver surface transportation projects in the United States in the context of the global experience of using PPPs in other countries over the past 20 years. The section also highlights the domestic and international capabilities of project development and infrastructure finance companies to support various PPP approaches to transportation project delivery.

USE OF PPPs FOR U.S. ROAD-RELATED PROJECTS

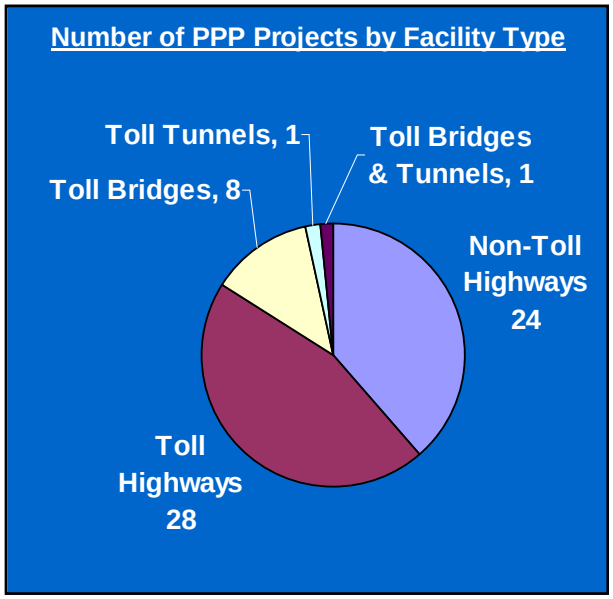
Between 1985 and 2004, there were 62 PPP road projects planned and funded in the United States representing $42 billion. Exhibit 37 shows the distribution of PPP road-related projects by facility type over that 20-year period. Exhibit 38 shows the distribution of PPP road-related projects by contract approach over the same 20-year period.

The key results shown in Exhibits 37 and 38 on the next page are listed below:

- Most of the U.S. road projects were for toll and non-toll highways, representing 44 percent and 39 percent of the total number of projects, respectively.
- In terms of project costs, the largest type of PPP road project was toll highway, representing 62 percent of total cost.
- Non-toll highway projects accounted for only 19 percent of total cost, since toll highway projects are often much larger than their non-toll highway counterparts.
- At just over $900 million each, toll highway projects were about three times the cost of non-toll highway projects in the PPP project database
- Most of the U.S. road projects involved DB and DBOM contracts with DB the largest contract type at 40 percent of the projects and 34 percent of the costs. These PPP contracts included both toll highway and non-toll highway projects.
- While DBOM projects represented only 16 percent of the total number of PPP projects planned and funded in the U.S., they amounted to 37 percent of the total costs. This was because DBOM projects, at $1.6 billion each, are about three times the size of their DB counterparts, with contract terms of up to 20–30 years.
- The third most frequently used contracting method was Management Contract at 15 percent. These were relatively small non-toll highway projects in terms of cost, which was reflected by the small percentage (1 percent) of total costs accounted for by Management Contract projects, whose terms were typically from 5-7 years.
- While there were fewer Concession and DBFO contracts in the U.S., their average cost was significantly higher than their DB counterparts, particularly Concession contracts at about $1.3 billion each.

Globally, the United States has had the vast majority of the DB and Management Contract road projects. While not extensively used in any region, BOO was also used more in the U.S. than elsewhere, particularly for small projects involving toll bridges.

Exhibit 37 – U.S. Road, Bridge, and Tunnel PPPs by Facility Type[14]
(62 Planned & Funded Projects in the U.S. worth $42 Billion between 1985-2004)



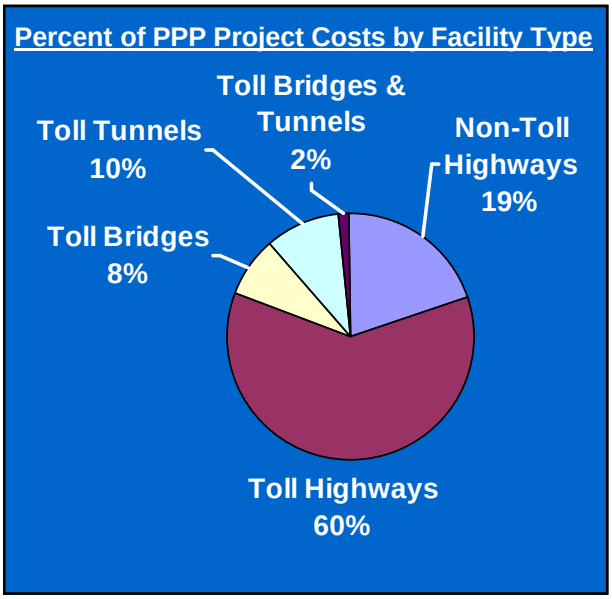
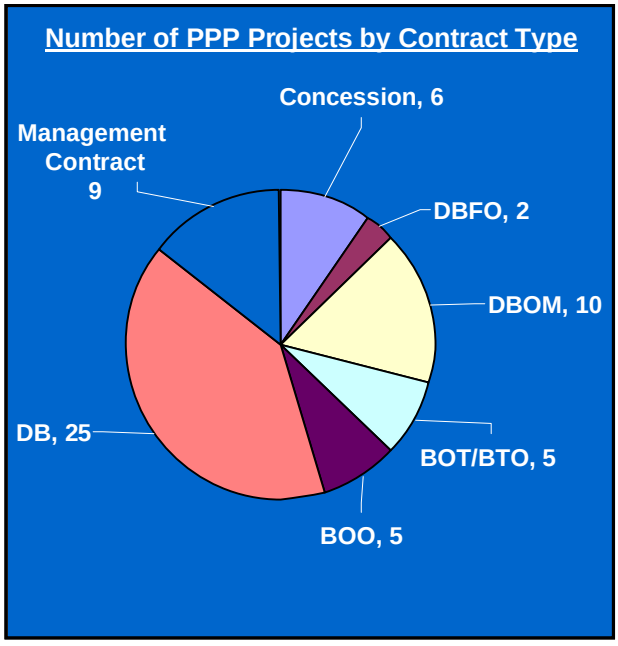
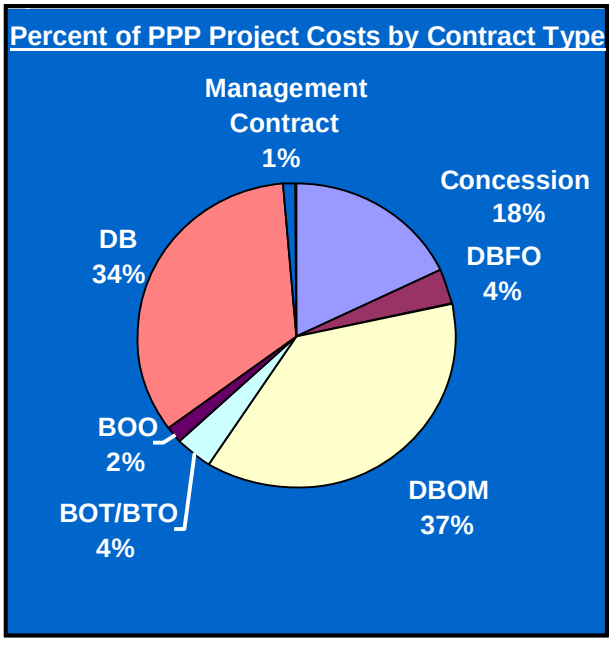


Exhibit 38 – U.S. Road, Bridge, and Tunnel PPPs by Contract Type[15]
(62 Planned & Funded Projects in the U.S. worth $42 Billion between 1985-2004)





[14] AECOM Consult, Inc. "Synthesis of Public-Private Partnership Projects for Roads, Bridges & Tunnels from Around the World – 1985-2004", prepared at the request of the Federal Highway Administration, August 30, 2005.

[15] AECOM Consult, Inc. "Synthesis of Public-Private Partnership Projects for Roads, Bridges & Tunnels from Around the World – 1985-2004", prepared at the request of the Federal Highway Administration, August 30, 2005.

The growth in PPPs in the U.S. is most evident in the past 2 years, when:

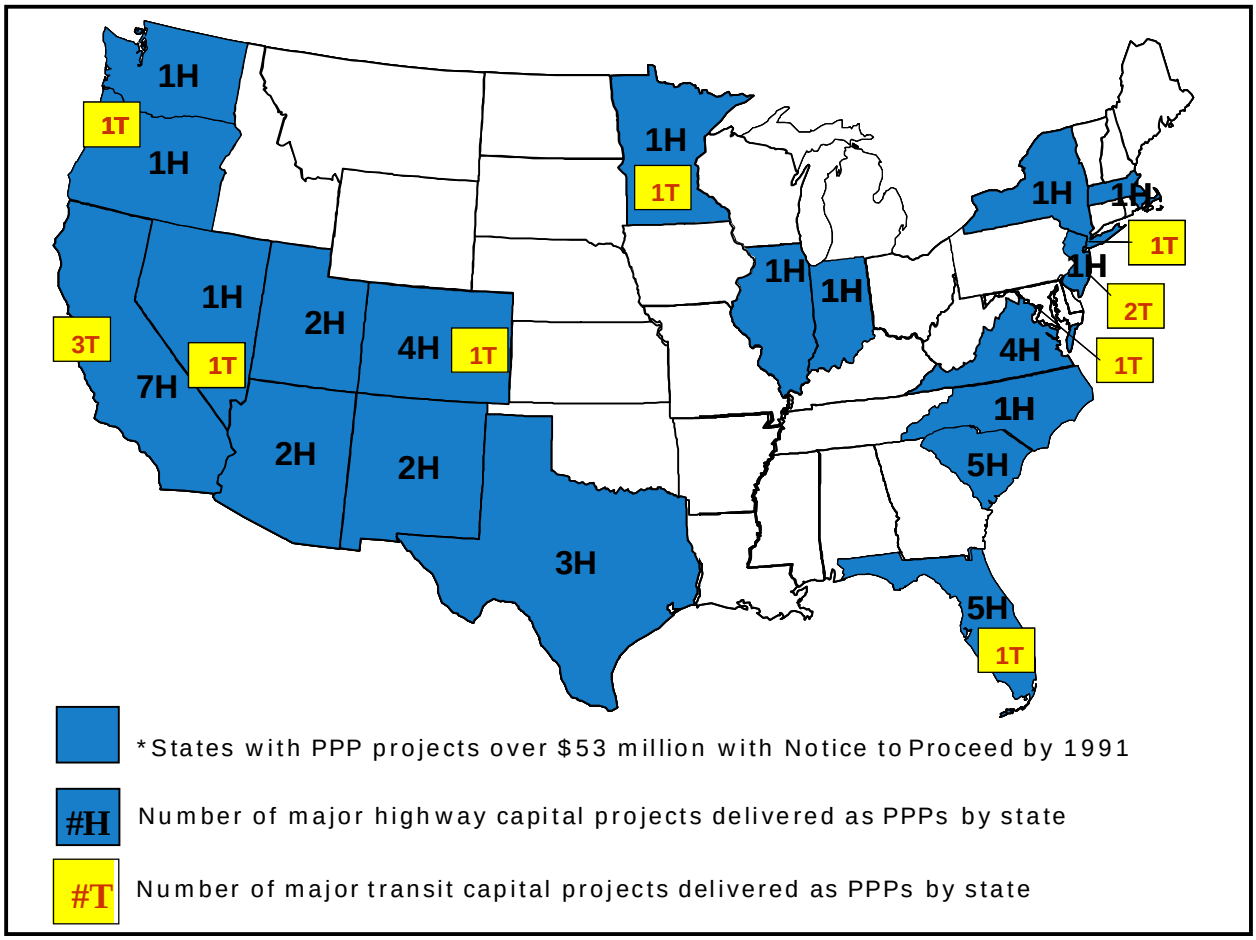
- 58 PPP road projects were planned or funded, versus 42 projects in the prior 20 years; and
- $54.3 billion in PPP road projects were planned and/or funded, versus $42.2 billion in PPP road projects during the entire prior 20 years.

Other evidence of the growth of PPP projects is found in increased number of proposed toll projects, currently totally 58 toll projects valued at $85 billion. This compares to only 16 toll projects valued at $19 billion just two years ago. Most of these toll road projects are structured as concession arrangements, while other are proposed simply as design-build projects.[16]

COMPARATIVE USE OF PPPs FOR U.S. HIGHWAY AND TRANSIT PROJECTS

There have been 44 highway projects and 12 transit projects approved and/or completed since 1991that have used some type of PPP arrangement to expedite the financing and delivery of these projects, as shown in Exhibit 39 below.

Exhibit 39 – Major Highway and Transit PPP Projects since 1991

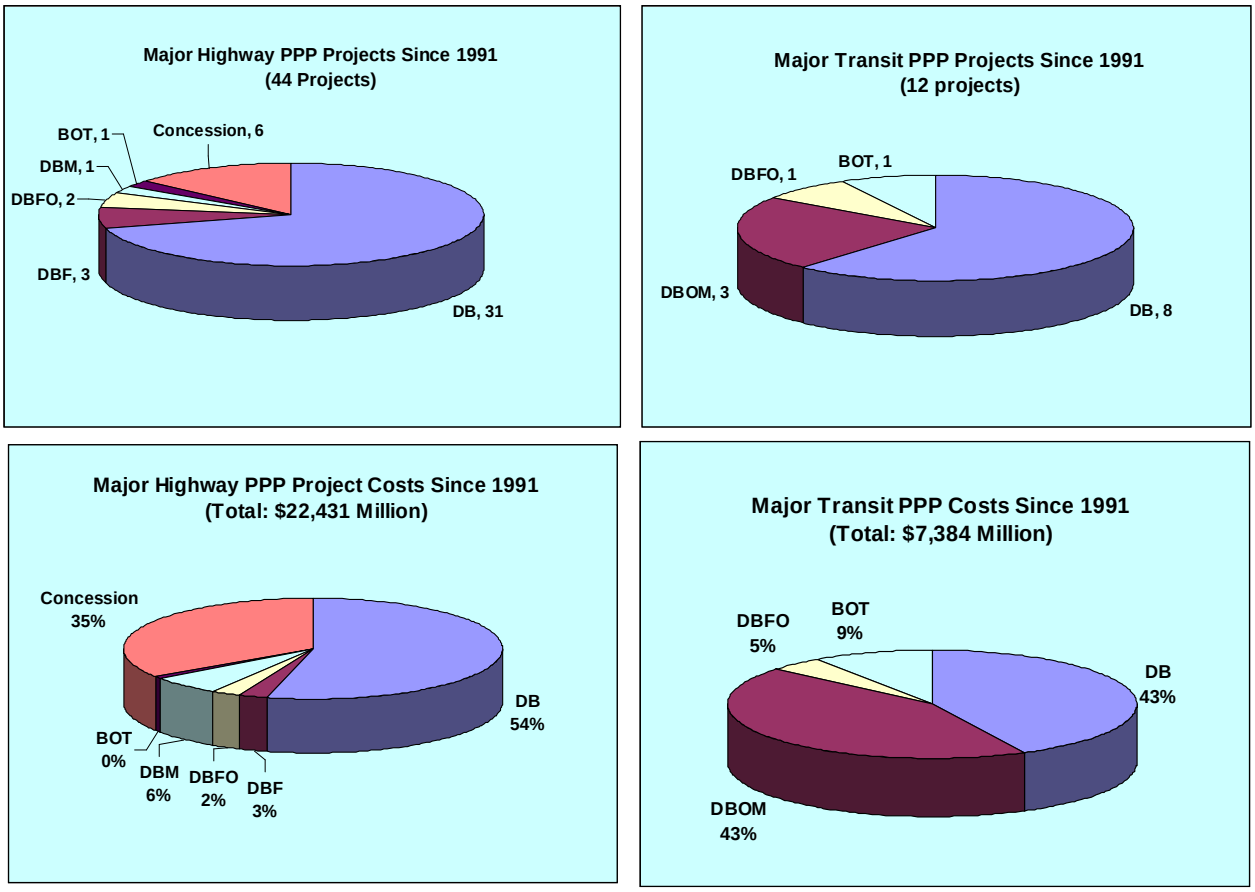


Source: *Public Works Financing Newsletter*, Volume 214, March 2007, pp. 14 and 15.

[16] *Public Works Financing Newsletter*, Volume 209, October 2006, p. 4.

Exhibit 40 shows the types of PPP arrangements used for highway and transit projects delivered as PPPs since 1991. Both highway and transit PPP projects have been primarily design-build projects, with concession projects the second highest category of PPP for highways and DBOM the second highest category of PPP for transit.

Exhibit 40 – Use of PPPs for Major Highway and Transit Projects since 1991*



** Projects over $53 million with Notice to Proceed by 1991*

Sources: *Public Works Financing – Volume 211.* December 2006, pp. 14-15.

The 12 major transit-related PPP projects alluded to in Exhibit 40 represent an investment of $9.9 billion and include the following breakdown of PPP delivery approaches: eight DB projects; three DBOM projects; and one DBFO project.

According to the FTA New Starts Program Office, 28 percent of the costs of major transit capital projects approved under the New Starts program have or are being delivered as PPPs since 2000. This percentage is expected to grow with the encouragement and support of the Federal Transit Administration, which recently initiated a PPP Pilot Program to help fund up to three New Starts projects that involve a significant use of the private sector through a PPP arrangement to move large-scale capital projects forward.[17]

[17] Federal Transit Administration, Docket No: FTA-2006-23697, Public-Private Partnership Pilot Program, 72 Fed. Reg. 2583 (January 19, 2007) (the "Pilot Program Notice"). The Pilot Program was authorized by section 3011 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), Public Law 109-59, 119 Stat. 1144 et seq. (2005).

FUTURE USE OF PPPs FOR U.S. SURFACE TRANSPORTATION PROJECTS

A number of factors will influence the extent to which PPPs will be part of the solution of addressing the fiscal and service delivery challenges facing surface transportation sponsors in the future. These include the following:

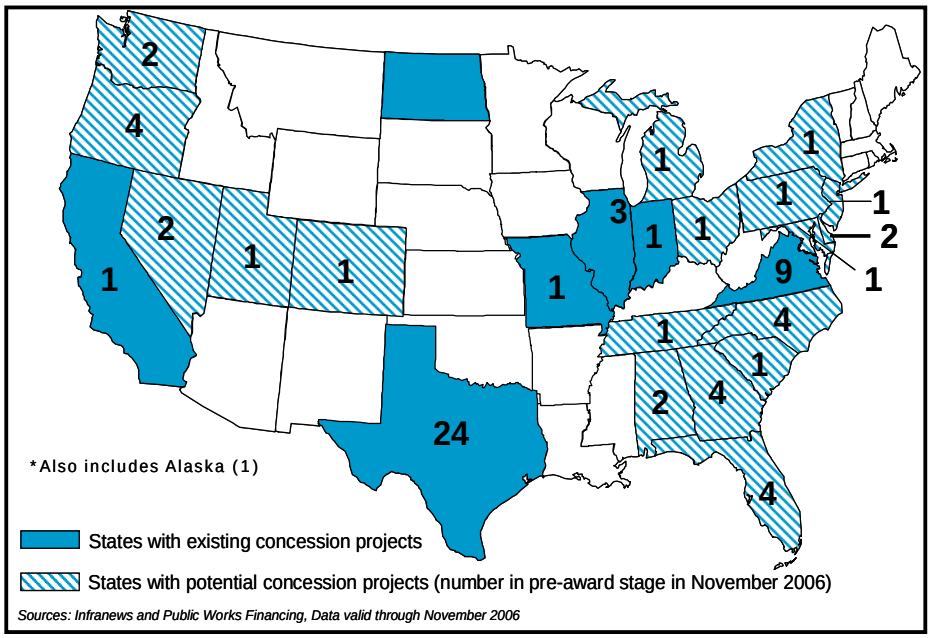
- Lack of robust tax-based Transportation Trust Fund will encourage more PPPs by states;
- PPPs' potential to deliver projects faster and cheaper, with quicker access to capital markets and new technology; and
- While PPPs can leverage scarce public resources and improve the efficiency of project delivery and operations, alternative funding sources will be needed to meet the needs.

The PPP market is estimated to grow significantly over the next 10 years as traditional transportation funding sources are expected to become scarcer. The primary types of PPPs for delivering surface transportation projects in the U.S. are expected to be:

- DB - medium to large new or reconstructed highways; transit facilities
- DBOM - new tolled or non-tolled roads; transit facilities
- DBFO - primarily new toll roads
- Concession - primarily existing and new toll roads
- Joint Development Agreement - new highways and transit facilities

It is projected that up to $40 billion in surface transportation concession projects could be awarded in the U.S. during the next few years.[18] By the end of 2006, there were at least 74 highway and transit projects in the U.S. being considered for development using the concession approach, with the number of prospective projects in the pipeline shown in Exhibit 41 by state. Many of these are located in the states of Texas, Florida, Virginia, North Carolina, and Oregon.

Exhibit 41 – States with Existing and Pre-Award Concessions*
(figures indicate total number of pre-award concessions as of November 2006)



[18] *State of New Jersey Asset Evaluation Program - Phase 1 Report*. UBS Investment Bank, November 15, 2006, p. 54.

GLOBAL USE OF PPPs TO ADVANCE ROAD-RELATED PROJECTS

Major changes in the economic strength and relationships among nations have prompted many of them to seek alternative ways to expedite the development of transportation infrastructure to improve regional accessibility and support their economic growth. Examples of this include:

- Creation of the European Union;
- Breakup of the Soviet Union;
- Reunification of eastern European nations with their western counterparts; and
- Emergence of both China and India as major players in the global economy.

The evolution of PPPs to rapidly meet these emerging needs has led to their refinement and proliferation in type and number, with many more countries moving to establish the legal authority to enter into PPPs to expedite financing and delivery of surface transportation projects prompted by the changes noted above.

The use of public-private partnerships to develop transportation infrastructure is more widespread in other parts of the world than in the United States. Exhibit 42 shows the dollar value of road, bridge, and tunnel projects funded and/or delivered as PPPs between the years 1985 and 2004 for each major region of the world, including PPP projects in the U.S. as part of the North America region.

Exhibit 42 – Number and Value of Road-Related PPPs by Global Region[19]

Region	Total Planned & Funded Since 1985				Total Funded & Completed by 10/04			
	#	%	$Billion	%	#	%	$Billion	%
Africa	14	2%	$4.8	1%	7	2%	$3.7	2%
Asia	137	21%	$83.9	26%	72	20%	$44.5	28%
Europe	205	31%	$139.1	43%	91	25%	$58.1	37%
Latin America	126	19%	$26.2	8%	83	23%	$18.9	12%
North America	174	27%	$70.8	22%	106	30%	$32.2	20%
Total	656	100%	$324.7	100%	359	100%	$157.3	100%

As revealed by Exhibit 42, Europe has been the leader in using PPP approaches to delivery road-related infrastructure projects. Even with the U.S. transportation PPP projects included in the totals for North America in this chart, North America has lagged behind both Europe and the Asian continent in terms of budgeted PPP projects. However the North America region has the second largest number of PPP projects planned and funded, and the largest number funded and completed from 1985 to 2004. However, these larger numbers are indicative of much smaller PPP projects, including maintenance management contracts and smaller design-build contracts.

Exhibits 43 and 44 display the distribution of PPP road-related projects in other countries, excluding U.S., by facility type and contract approach, respectively, between 1985 and 2004.

[19] AECOM Consult, Inc. "Synthesis of Public-Private Partnership Projects for Roads, Bridges & Tunnels from Around the World – 1985-2004", prepared at the request of the Federal Highway Administration, August 30, 2005. Derived from Exhibit 4 on page 8.

Over that 20-year period there were 539 PPP road projects planned and funded in other countries, representing $282.5 billion in project costs. The majority of PPP projects in other parts of the world have used the following delivery approaches: concession, BOT. and BTO.

Exhibit 43 – Global Road-Related PPPs by Facility Type, Excluding the U.S. [20]
(539 Planned & Funded Projects outside the U.S. worth $282.5 Billion between 1985-2004)

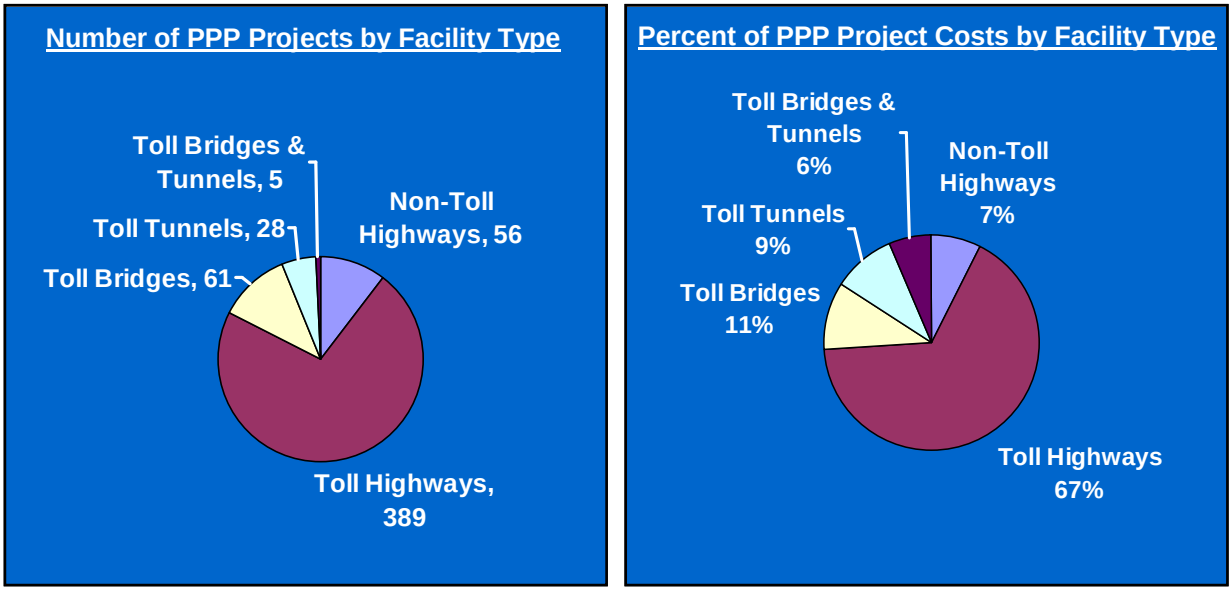
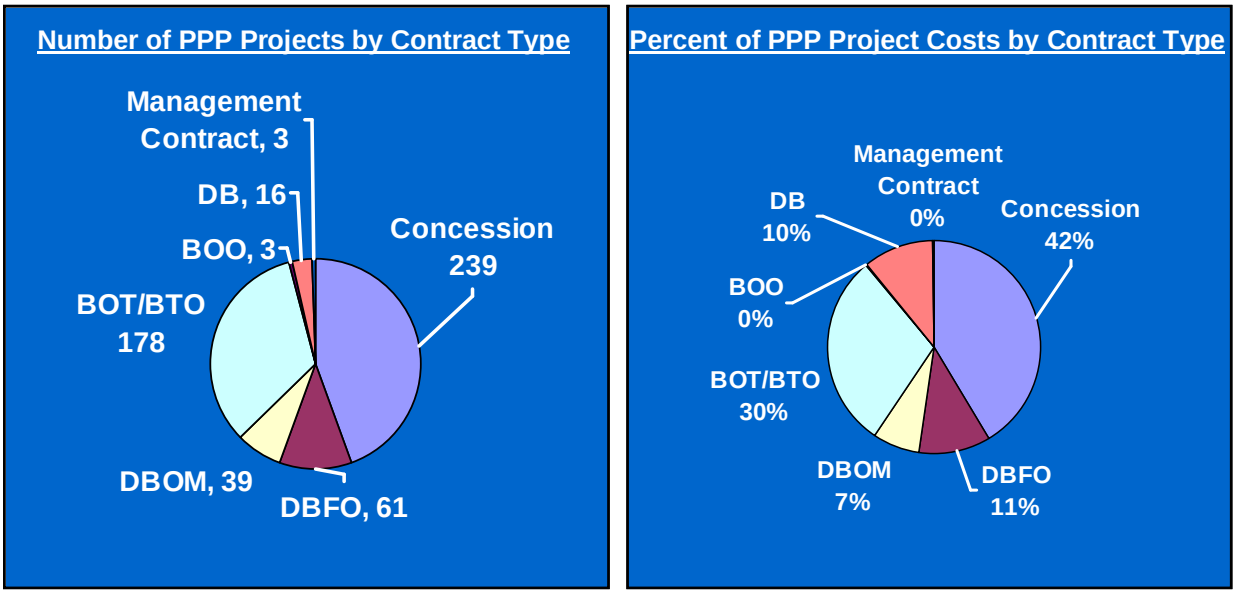


Exhibit 44 – Global Road-Related PPPs by Contract Type, Excluding the U.S. [21]
(539 Planned & Funded Projects outside the U.S. worth $282.5 Billion between 1985-2004)



[20] AECOM Consult, Inc. "Synthesis of Public-Private Partnership Projects for Roads, Bridges & Tunnels from Around the World – 1985-2004", prepared at the request of the Federal Highway Administration, August 30, 2005.

[21] AECOM Consult, Inc. "Synthesis of Public-Private Partnership Projects for Roads, Bridges & Tunnels from Around the World – 1985-2004", prepared at the request of the Federal Highway Administration, August 30, 2005.

On the following page, Exhibit 45 shows the breakdown of road-related projects by global region and PPP contract type, excluding PPP projects in the U.S. to more clearly show the distinction between PPP use in other countries and in the U.S. (shown earlier in Exhibit 38). According to Exhibit 45, the regions which have investing the most in PPP contracts for road-related projects are Europe and Asia. In terms of average project cost, PPP road projects in the United States were about the same size as in Europe and Asia & Far East at about $670-690 million. By contrast, there was much greater use of concession and BOT/BOT contracting to deliver road projects worldwide, excluding the United States. This is particularly the case in Europe, Asia, Latin America, and Caribbean.

CAPABILITIES TO SUPPORT TRANSPORTATION PROJECT PPPs

The capabilities to develop and implement PPP projects exist in both the United States and in numerous other countries to varying degrees, depending on the type of PPP approach being considered. Many nations overseas have been developing, refining, and applying these approaches for almost two decades due to an acute lack of public funding to meeting the expanding economic and population growth of these nations, and greater demand for personal mobility and commercial accessibility. This is demonstrated by the larger budgets of road-related projects overseas ($282 billion) versus the U.S. ($42 billion) over the past 20 years.[22]

Domestic and International PPP Project Delivery Firms

As a result, international capabilities in developing and applying innovative financing, contracting, and project delivery approaches to surface transportation projects have grown significantly, particularly in such countries as England, Spain, France, and Australia. Exhibit 46 demonstrates the greater extent of international involvement in PPP projects compared to U.S.-based firms. However, the number of U.S.-based firms entering the PPP market for design, construction, finance, operations, and maintenance are growing as more surface transportation agencies turn to PPP project delivery approaches to leverage their limited transportation funds.

The use of public-private partnerships for surface transportation project delivery in the United States is still in its early, formative stages. For the past 15 years, state transportation agencies in the United States have been experimenting and using alternative project delivery approaches that involve the private sector to greater degrees. Much of this activity has involved the DB approach to project delivery, with a growing number of maintenance management contracts and more recently concession arrangements, as shown earlier in Exhibit 40. The use of these alternative project delivery approaches at the state level has been facilitated by two programs sponsored by the FHWA, called SEP-14 and SEP-15.

Special Experimental Project Number 14 (SEP-14) was authorized in 1990 to enable state transportation agencies to test innovative contracting approaches to assess their effects on project costs, duration, and quality. Among the project contracting approaches considered were cost-plus-time bidding, lane rental, DB contracting, warranty clauses, include indefinite-delivery/indefinite-quantity (IDIQ) contracts, alternative pavement type bidding, no excuse bonuses, lump sum bidding, price/qualifications bidding, quality incentives, warrantees and guarantees, system integrator contracts, and performance-based specifications. The main PPP approach tested by 38 states under this program was DB contracting.

[22] AECOM Consult, Inc. "Synthesis of Public-Private Partnership Projects for Roads, Bridges & Tunnels from Around the World – 1985-2004", prepared at the request of the Federal Highway Administration, August 30, 2005.

Exhibit 45 – Road-Related Projects Planned or Completed by Global Region and PPP Contract Type, Excluding the U.S. – 1985 through 2004[23]

Region	Contract Type	Number	Percent	$ Billion	Percent
Africa & Middle East	Concession	1	8%	$0.0	1%
	DBFO	**3**	**25%**	**$1.6**	**33%**
	DBOM	2	17%	**$1.5**	**32%**
	BOT/BTO	**5**	**42%**	**$1.5**	**31%**
	BOO	1	8%	$0.2	3%
	DB	0	0%	$0.0	0%
	Mgt Contract	0	0%	$0.0	0%
	Subtotal	12	100%	$4.8	100%
Asia & Far East	**Concession**	**49**	**40%**	**$21.8**	**26%**
	DBFO	5	4%	$9.8	12%
	DBOM	2	2%	$0.2	0%
	BOT/BTO	**61**	**50%**	**$34.9**	**42%**
	BOO	1	1%	$0.1	0%
	DB	4	3%	$15.8	19%
	Mgt Contract	0	0%	$0.0	0%
	Subtotal	122	100%	$82.5	100%
Europe	**Concession**	**69**	**34%**	**$61.7**	**45%**
	DBFO	**45**	**22%**	$18.3	13%
	DBOM	26	13%	$14.6	11%
	BOT/BTO	**53**	**26%**	**$31.4**	**23%**
	BOO	1	0%	$0.9	1%
	DB	4	2%	$10.6	8%
	Mgt Contract	3	1%	$0.9	1%
	Subtotal	201	100%	$138.4	100%
Latin America & Caribbean	**Concession**	**45**	**44%**	**$11.6**	**44%**
	DBFO	3	3%	$0.7	3%
	DBOM	5	5%	$1.7	7%
	BOT/BTO	**50**	**49%**	**$12.4**	**47%**
	BOO	0	0%	$0.0	0%
	DB	0	0%	$0.0	0%
	Mgt Contract	0	0%	$0.0	0%
	Subtotal	103	100%	$26.4	100%
North America (excluding U.S.)	**Concession**	**75**	**74%**	**$21.6**	**71%**
	DBFO	5	5%	$1.1	4%
	DBOM	4	4%	**$2.1**	**7%**
	BOT/BTO	9	9%	$2.7	9%
	BOO	0	0%	$0.0	0%
	DB	**8**	**8%**	**$2.8**	**9%**
	Mgt Contract	0	0%	$0.0	0%
	Subtotal	101	100%	$30.3	100%
Worldwide (excluding U.S.)	**Concession**	**239**	**44%**	**$116.6**	**41%**
	DBFO	61	11%	$31.5	11%
	DBOM	39	7%	$20.1	7%
	BOT/BTO	**178**	**33%**	**$82.9**	**29%**
	BOO	3	1%	$1.2	0%
	DB	16	3%	$29.2	10%
	Mgt. Contract	3	1%	$0.9	0%
	Total	539	100%	$282.5	100%

[23] AECOM Consult, Inc. "Synthesis of Public-Private Partnership Projects for Roads, Bridges & Tunnels from Around the World – 1985-2004", prepared at the request of the Federal Highway Administration, August 30, 2005. Exhibit 13 on page 20.

Exhibit 46 – Top National and International Transportation Developers as of 2006

Number of Concessions/PPP Projects by Company

	Projects Under Construction/Operating*		Active Project Proposals		
MIG/Macquarie Bank (Australia)	51*	14	Bilfinger Berger (Germany)	8*	9
ACS Dragados/Iridium (Spain)	45*	22	Siemens (Germany)	8*	8
Ferrovial/Cintra (Spain)	44*	34	Caja Madrid (Spain)	8*	0
Sacyr Vallehermoso (Spain)	29*	19	Bechtel (US)	7*	5
FCC (Spain)	27*	20	Balfour Beatty (UK)	7*	5
Abertis/La Caixa (Spain)	24*	2	KBR Brown & Root (US)	7*	3
Vinci/Cofiroute (France)	21*	26	BRISA (Portugal)	7*	3
Hochtief (Germany)	19*	16	Skanska (Sweden)	6*	10
OHL (Spain)	17*	10	Impregilo (Italy)	6*	4
Cheung Kong Infrastructure	17*	4	New World Infrastructure (China)	6*	2
Laing/Equion (UK)	15*	2	Alfred McAlpine (UK)	6*	1
Acciona/Necso (Spain)	14*	18	Fluor (US)	5*	17
Alstom (France)	13*	6	Bombardier (Canada)	5*	6
EGIS Projects (France)	13*	10	Carillion (UK)	5*	2
Andrade Gutierrez (Brazil)	10*	6	AMEY (UK)	5*	5
AMEC (UK)	9*	6	Strabag (Germany)	5*	14
Bouygues (France)	8*	22	Transurban (Australia)	4*	7
			ABB (Switzerland)	4*	4

** Road, bridge, tunnel, rail, port, airport concessions over $50m capital put under construction/operation since 1985. Source: 2006 PWF database.*

Special Experiment Project Number 15 (SEP-15) was authorized in 2004 to expand the number of functions for which alternative approaches can be tested to expedite projects and leverage scarce public resources through expanded opportunities for PPPs. In addition to alternative contracting approaches, SEP-15 permits the testing of innovative approaches to finance, planning, environmental clearance, and right-of-way acquisition for designated projects. This new SEP-15 program expands on SEP-14 by enabling state and local highway project sponsors to test a combination of innovative approaches to different aspects of a project to optimize the effects on project cost, duration, and quality.

Domestic and International Infrastructure Funds

In addition to project delivery capabilities for PPP projects, there have emerged in recent years a number of domestic infrastructure funds sponsored by major financial companies in the U.S. that are seeking to compete with the major infrastructure funds sponsored by international financial companies. These U.S.-based financial companies are actively pursuing opportunities to help finance PPP infrastructure projects, particularly in the emerging transportation sector of the market.

Exhibit 47 lists the major U.S. financial companies involved in financing transportation infrastructure in the U.S., as well as the many international finance companies, many of which are also interested in the U.S. transportation infrastructure market.

Exhibit 47 – Partial List of U.S. and International Companies Financing Transportation Infrastructure

U.S. Finance Companies	International Finance Companies
• Goldman Sachs (US)	• Babcock & Brown (AU)
• Citigroup and Blackstone (US)	• Hastings Fund Management (AU)
• GE & Credit Suisse First Boston (US)	• MIG/Macquarie Bank (AU)
• Morgan Stanley (US)	• DRIVE – Transurban (AU)
• Carlyle Infrastructure Group (US)	• HSBC Investment Bank (Asia)
• JP Morgan Chase (US)	• Borealis Infrastructure Fund (CAN)
• Lehman Brothers (US)	• Ontario Teachers Fund (CAN)
	• Galaxy Fund (France)
	• Deutsche Bank (Germany)
	• Fondo Italiano (Italy)
	• Japan Bank for Intl. Coop. (Japan)
	• Star Capital Investors (UK)
	• Meridiam Infrastructure Fund (UK)
	• Innisfree (UK)

Source: *Public Works Financing Newsletter*, Volume 213, February 2007, p. 5.

These funds tap a variety of institutional investors and well as individual investors through mutual funds, large pension funds, and insurance funds. It is estimated that the purchasing power of just 10 of the largest international infrastructure funds is about $200 billion.

As the financial community recognizes the opportunities presented by investing in U.S.-based surface transportation infrastructure and additional transportation infrastructure funds get established, particularly those that tap the long-term institutional pension and insurance funds, the available funds for investment are expected to grow significantly. While there remain legal and institutional challenges to PPP projects in this country, the financial outlook is very bright for surface transportation PPP projects in the U.S., provided the following conditions are met:

- Public understanding and support;
- Political support and visible champion(s);
- Institutional support;
- Broad legal authority to apply PPPs to develop/finance surface transportation projects;
- Adequate funding sources committed to the project; and
- Capable public agency staff to administer the PPP project and competitive private provider firms to delivery the project most cost-effectively in a cooperative spirit of partnership.

8. LESSONS LEARNED FROM TRANSPORTATION PPP PROJECTS

This section provides a summary of the key lessons learned regarding the application of PPP approaches to develop, finance, and/or operate and maintain surface transportation infrastructure. This includes critical factors required for successful PPP project development and key ingredients for successful PPP project implementation. Also included is a synthesis of the major lessons learned from a variety of PPP projects developed in the United States over the past ten years and PPP projects developed in other countries over the past twenty years.

CRITICAL SUCCESS FACTORS FOR PPP PROJECT DEVELOPMENT AND IMPLEMENTATION

Numerous case studies and cameos were prepared of surface transportation PPP projects developed in the U.S. and in other countries as part of the overall study effort that produced this document. Each case study describes a PPP project in terms of its background, partnership arrangement, private and public partner roles and responsibilities, funding sources and financial arrangements, impediments incurred during the development and implementation of the project, strategies used to overcome them, and project results when completed.

These case studies and cameos provide useful insights into the variety of transportation projects that can be developed using PPP approaches and the variety of issues that can affect their potential for successful implementation. Appendix A provides a summary of the implications of a sampling of PPP projects developed in the United States in the past decade, based on the case studies and cameos contained in the companion report on U.S. PPP projects. Appendix A also provides a summary of implications of PPP projects developed in other countries over a longer timeframe, based on the case studies contained in the companion report on International PPP Projects.

The contents of Appendix A reveal the wide range of project results of using different PPP approaches and the importance of tailoring the project delivery approach to the project and its public–political–legal-institutional context. Exhibits 48 and 49 illustrate a number of the PPP projects documented in the companion case study reports from the U.S. and other countries, respectively. Exhibit 50 summarizes the critical success factors for transportation PPPs derived from the U.S. and international case studies and cameos documented in these reports.

Based on the lessons learned from prior PPP projects in the U.S. and other countries with more experience in using PPP approaches for transportation infrastructure delivery, Exhibit 51 summarizes the key ingredients to a successful PPP implementation.

LESSONS LEARNED FROM U.S. AND INTERNATIONAL TRANSPORTATION PPP PROJECTS

Exhibit 52 summarizes the key lessons learned from the domestic and international case studies and cameos of transportation PPP projects. These summaries offer relevant insights for domestic sponsors and providers of transportation projects in the U.S. as they contemplate using various PPP approaches to expedite a needed transportation improvement project or improve the cost-effectiveness of a transportation facility that is under active development or already implemented.

Exhibit 48 – Illustrations of Selected PPP Projects from the U.S.

T-REX I-25 Corridor Expansion

Location: Denver, Colorado

Chicago Skyway Concession Lease

Location: Chicago, Illinois, United States

Alameda Corridor Rail Expressway

Location: Southern California

Central Texas Turnpike

Location: Central Texas, United States

Westpark All Electronic Tollway

Location: Houston, Texas, United States

Carolina Bays Parkway

Location: Myrtle Beach, South Carolina

Exhibit 48 – Illustrations of Selected PPP Projects from the U.S. - continued

Route 28 Interchange Expansion

Location: Fairfax County, Virginia, United States

17th Street Bridge over I-75/85

Location: Atlanta, Georgia, United States

Hudson-Bergen Light Rail Line - DBOM

Location: Jersey City, New Jersey, United States

Conroy Bridge Interchange at I-4

Location: Orlando, Florida, United States

State Highway 130 Design-Build

Location: Austin, Texas, United States

Tren Urbano Rail System Project

Location: San Juan, Puerto Rico

Exhibit 49 – Illustrations of Selected PPP Projects from Other Countries

Brisbane Inner City Bypass

Location: Brisbane, Queensland, Australia

Trans-Israel Toll Highway 6

Location: Central Israel

QE2 - Dartford Bridge

Location: Dartford, United Kingdom

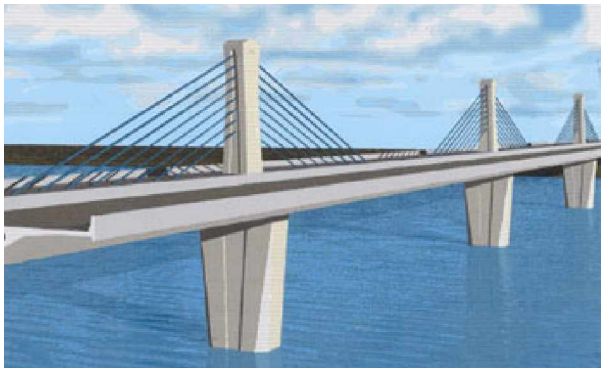
Second Severn River Bridge

Location: Bristol, United Kingdom

Rion-Antirion Bridge

Location: Gulf of Corinth, Patras, Greece

Second Vivekananda Bridge



Location: Kolkata, India

Exhibit 50 – Critical Success Factors for Transportation PPP Projects

- **Stakeholder consultation through regular meetings at both managerial and technical levels**
- **Active public involvement through public outreach and on-going communication**
- **Political leadership supporting the project and serving as a champion for implementation**
- **Secure public control of the infrastructure assets through continued public ownership and PPP team accountability for project results consistent with the contract terms**
- **Limited complexity of PPP contract to ensure stakeholder understanding and compliance**
- **Well-defined legal authority for the public sector to enter into PPPs and apply alternative methods of funding, financing, and delivering transportation infrastructure**
- **Financial viability under various risk factors managed by the appropriate partner**
- **Clear delineation and balance of project roles, responsibilities, and risks among the PPP partners commensurate with their potential returns**
- **Demonstrated transportation need (congestion relief, safety improvement, improved accessibility, and travel time reliability) and public support among stakeholder groups**
- **Capable public and private sector partners with complementary interests in the project and a willingness to accommodate changing conditions and opportunities consistent with the desired project outcomes and performance requirements**
- **Adequate dedicated funding sources for the full term of the PPP contract**
- **Environmental constructability to ensure the project can be cost-effectively built without damaging the environment through context-sensitive design and value engineering**
- **Ample number of capable private sector firms and teams to ensure competition in a transparent procurement and selection process**

Exhibit 51 – Key Ingredients to a Successful PPP Project Implementation

- **Determine early on the relative scope and feasibility of the project.**
- **Understand the capabilities of the public sponsor to accomplish the project in a timely manner and the potential advantages of a PPP arrangement.**
- **Have public and private sector stakeholders collaborate and communicate with each other from the start of project development, with specialized expertise available as needed.**
- **Enable each party to the PPP to be responsible for those functions it is best able to perform, resulting in the most cost-effective balance between public and private sector responsibilities, risks, and rewards.**
- **Institute an open, transparent, and fair process to solicit and evaluate PPP proposals from private providers to ensure equal opportunity for all interested bidders and select on the basis of best life-cycle value.**
- **Look for receptive partners eager to build a successful long-term partnership with compatible project objectives that reinforce each other.**
- **Apply a flexible project delivery approach to a project with defined design requirements, recognizing that all projects are unique and may require unique approaches.**
- **Have each party carefully analyze the project agreement language to ensure that all project risks are understood, as well as how any risks will be mitigated and which party is responsible for such mitigation.**
- **Have each party scrutinize the financial elements of any proposal and subsequent contract, including risks factors and responsibility for addressing financial project risks, approaches to be used for cost management, and performance monitoring and reporting methods and responsibilities.**
- **Keep PPP projects moving forward by having both public and private participants promptly work out issues and problems as partners and not as adversaries.**
- **Hold all parties to the PPP accountable for the terms of the contract agreement, while providing flexibility to accommodate changes in site conditions, project scope, and enabling technology at or better performance results.**
- **Institute an on-going project performance monitoring and reporting process to ensure project accountability by both public and private partners.**

Exhibit 52 – Lessons Learned from U.S. and International PPP Projects

- **Unique situations often require unique solutions. Differences in projects and their institutional environments make each project unique in certain ways which should be taken into consideration when structuring a PPP contract agreement.**
- **Allow a flexible project development approach for projects that have demanding design requirements to enable the private partner team to introduce innovative design and construction techniques that control the cost and timing of the project.**
  - This suggests the public agency partner not over design the project before bringing the PPP team on board but instead takes the preliminary design process to the point where the basic requirements of the project are defined so the PPP design team can take it from there.
  - It also suggests that the PPP partners should work collaboratively and constructively in confronting obstacles that invariably arise during project development with creative solutions, instead of playing the "blame game". This requires trust among the members of the PPP.
- **Having champions for a PPP project among top elected and appointed officials is essential to moving PPP projects forward in a timely and cost-effective manner, especially in the early stages of environmental clearance, permitting, and financing.**
- **PPPs can benefit by combining multiple objectives that benefit numerous stakeholders, beyond just the PPP members, such as economic development, remediation of brownfield sites, congestion relief, and safety that provide a "win-win" solution set that enhances the chances of the project proceeding.**
- **PPPs can bring together various stakeholders in a project, some of which might ordinarily serve as an adversary to a project but by being a party to the PPP or the PPP development process from an early stage, might become advocates of the project or at least have their opposition neutralized by having their concerns addressed for the full term of the PPP agreement.**
- **Transportation PPPs are more likely to survive the stresses of development and implementation if the partners share a common vision of the project that provides continuity and mutual commitment throughout these phases of project delivery.**
- **Other surface transportation facilities nearby a PPP-delivered facility may help or hurt the success of the PPP arrangement depending on if these facilities channel additional traffic to the facility or compete with the facility for the same customers.**
- **Successful PPPs begin with a clear understanding of the respective roles, responsibilities, risks, and returns each partner will assume during the terms of the project contract agreements with each party held accountable for delivering according to the terms of the contract.**

Exhibit 52 – Lessons Learned from U.S. and International PPP Projects - continued

- **Members of the PPP team should maintain a spirit of openness (transparency) and cooperation throughout the project development and implementation processes, soliciting inputs from and communicating with each other and key stakeholders, including the general public. This will help keep the project moving as the parties work out issues in a collaborative manner.**
- **Risk management can be optimized by retaining a private sector project delivery team with extensive experience and capabilities in delivering PPP projects that meet the full terms of the contract.**
- **The public agency project sponsor should take responsibility for the environmental clearance and permitting processes, as well as right-of-way acquisition, particularly if the use of eminent domain or "quick take" approaches is required to obtain needed parcels for the project.**
- **Public agencies should develop clear criteria for privatizing their highway infrastructure assets, such as transportation need, lack of available public funding, need to expedite the project, environmental constructability, financial viability, private sector interest and willing to assume certain project risks in return for an acceptable return on their investment, and reasonable risks for both public and private members of the PPP.**
- **Transparent solicitation and procurement processes provide equal opportunity for participation in a proposed PPP project by interested private sector firms or teams through comprehensive documentation of facility attributes and project requirements.**
- **Have qualified staff or consultants (legal, procurement, contract administration, financial, traffic and revenue estimation, value engineering, project partnering, and public outreach) participate in the development of the PPP contract agreement and scrutinize the resulting agreement prior to contract execution to mitigate project risks, position responsibility for project risks among the partner(s) best able to manage them, and determine if the project remains financially viable under a reasonable range of project risks.**
- **PPP partners should work collaboratively and constructively in confronting obstacles that invariably arise during project development with creative solutions, instead of playing the "blame game". This requires trust among the members of the PPP.**
- **Inexperience by both public and private members of a PPP can lead to distrust and a dysfunctional partnership, where the respective parties revert to their traditional roles of public sponsor client and overseer tightly holding the private designer and contractor to prescribed standards and specifications in an atmosphere of distrust.**

Exhibit 52 – Lessons Learned from U.S. and International PPP Projects - continued

- **Instead of resolving disputes amicably and having the private provider team apply its ingenuity to cost-effectively address project issues as they arise, the lack of a mature partnership arrangement can result in a return to frequent requests for change orders, extra work orders, and claims against the project sponsor agency for reimbursement of costs incurred due to unexpected conditions, causing project delays and increased costs that should have been avoided under a partnership arrangement.**
- **The project sponsor agency should provide due diligence oversight throughout the project development process to ensure all partners are upholding their commitments and that the partnership can withstand various risk factors, such as cost, traffic, revenue, and environmental risks.**
- **The general public may be more accepting of paying tolls on bridges and tunnels than highways.**
- **PPPs are being used extensively by many countries around the world to deliver surface transportation projects for which the sponsoring government or public agency lacks the financial resources to delivery the project in a reasonable timeframe. This is especially true for emerging nations in Central and Eastern Europe, Asia, and Latin/South America.**

9. CONCLUSIONS

This final section presents a brief synthesis of the key insights discussed in the prior sections regarding public-private partnerships and their implications for leveraging the surface transportation program in the United States. While listing the advantages and risk management opportunities of PPPs, it also discusses concerns regarding the need to balance the public and private interests underlying PPP project delivery and financing efforts.

GLOBAL USE OF ALTERNATIVE PROJECT DELIVERY METHODS LEADS TO DOMESTIC APPLICATIONS

Transportation agencies around the world have long faced fiscal challenges caused by the gap between the costs of preserving and expanding highway infrastructure and available highway program funding. In most other countries high motor fuel taxes are generally used for non-transportation social programs. The lack of dedicated public funding sources for transportation and the burdens placed on rail and highway infrastructure by a growing global economy prompted transportation policymakers overseas, especially in Western Europe, to develop and apply alternative ways to finance and deliver needed transportation infrastructure since the early 1990s. A number of countries in Europe and Asia have turned to the private sector for relief in the form of contractual public-private partnerships.

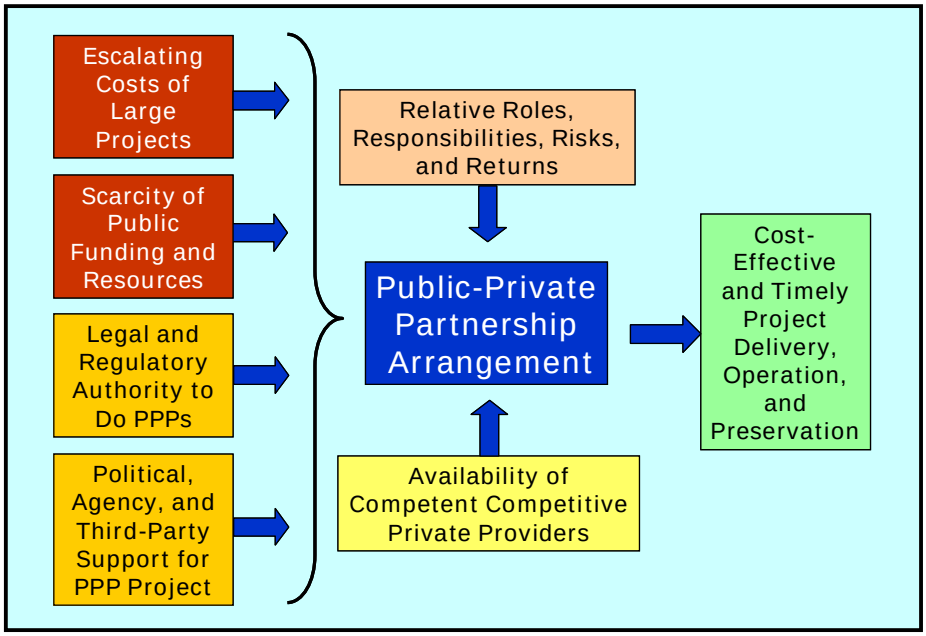
In the United States, the public sector's interest in PPPs has been stimulated by the widening gap between the needs for improving and expanding our aging transportation systems and the scarce public funding to address these needs. Facing increasing congestion, declining accessibility, unreliable freight delivery, and obsolete facilities, transportation officials have begun to realize traditional project delivery and financing approaches cannot come close to addressing these needs. PPPs offer public sponsors of transportation projects the potential to expedite their transportation programs and leverage scarce public resources by accessing private sector best practices, new technology, and capital markets to deliver and operate transportation facilities in a more timely and cost-effective manner. With the U.S. Department of Transportation and its surface transportation administrations encouraging state and local transportation agencies to consider the selective use of PPP approaches to expedite urgent transportation projects, there is significant opportunity for these agencies to add PPPs to their project delivery options.

PUBLIC-PRIVATE PARTNERSHIP APPROACHES LEVERAGE SCARCE PUBLIC RESOURCES

Public-private partnerships enable public sponsors of transportation projects to enlist the resources and capabilities of the private sector in the performance of certain functions that were previously handled by the public sector. This can range from contracted services like maintenance to full financing, development, operations, and preservation over the service life of the asset. The variety of PPP approaches continues to evolve and offers increasing choices to better enable state and local transportation agencies to responsibly fulfill their missions. Though not appropriate for all projects, PPPs can benefit many projects, particularly large-scale projects which would not otherwise be able to move forward for many years under traditional financing and delivery approaches.

Exhibit 53 illustrates the critical inputs and desired outcomes for transportation projects delivered through a PPP.

Exhibit 53 – Critical Inputs and Desired Outcomes of Transportation PPPs



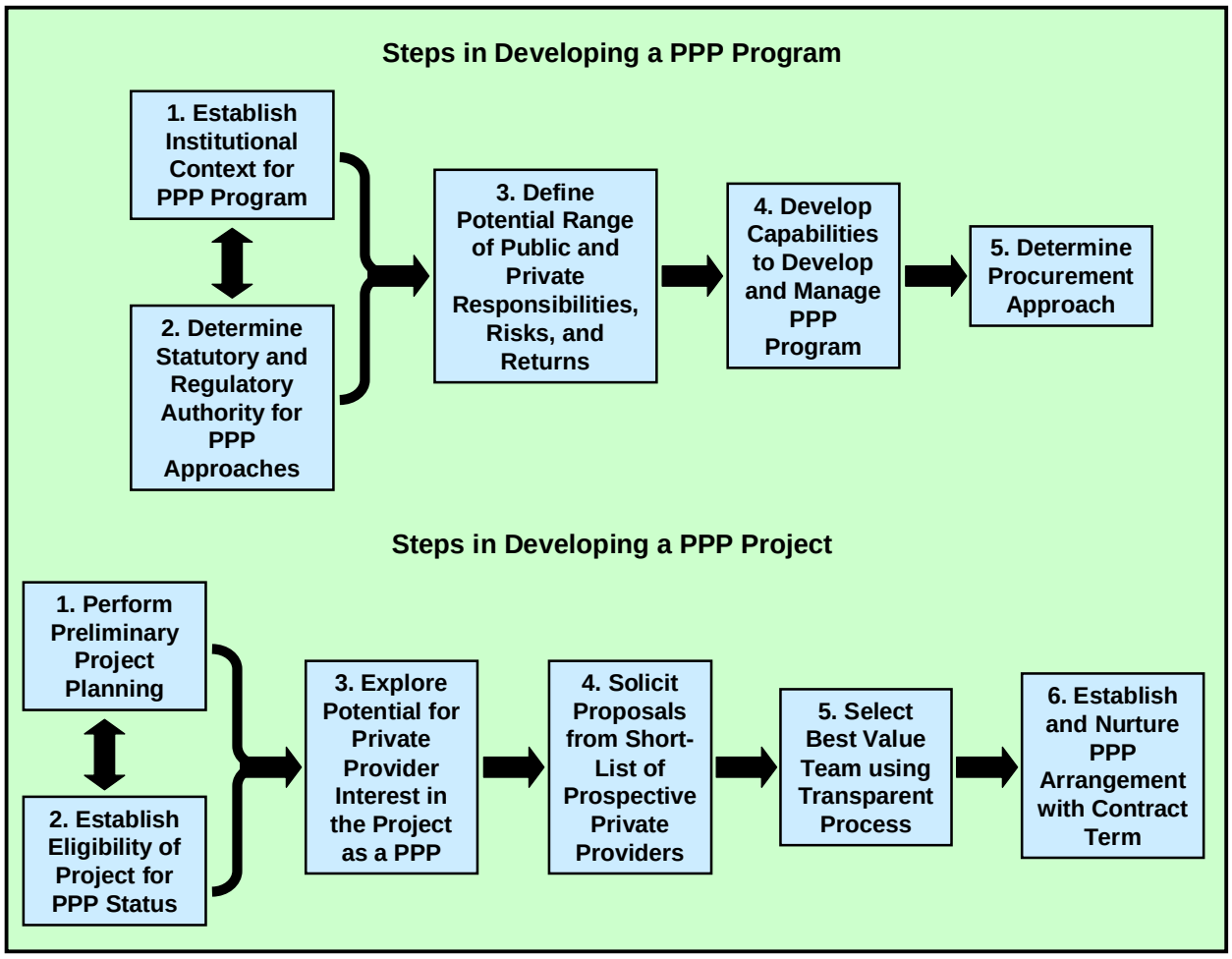
PPP PROGRAM AND PROJECT DEVELOPMENT STEPS AND CRITICAL SUCCESS FACTORS

Establishing a sustainable PPP program staffed with the appropriate specialized resources capable of developing, negotiating, and administering various PPP approaches is an essential prerequisite for successfully developing and implementing a PPP project. The experience of state and local transportation agencies with functioning PPP programs and projects can be quite useful to other public agencies beginning to consider applying PPP approaches to their work programs. Exhibit 54 provides flowcharts showing the basic steps state and local transportation agencies should use to develop and implement PPP programs and individual PPP projects.

In developing PPP programs and applying PPP approaches to transportation projects, the following factors listed in priority order are critical to the success of the resulting projects:

1. **Public and market support for the project and the proposed delivery approach based on demonstrated transportation needs;**
2. **Political support from elected officials, including one or more project champions;**
3. **Legal authority through established statutes that permit the application of PPPs to transportation projects;**
4. **Institutional cooperation from sponsoring agencies lacking the resources (staff, technical, financial) to deliver large and/or complex projects in a timely manner;**
5. **Adequate funding potential from tolls, availability payments, or economic development;**
6. **Competitive private sector resources with a level playing field for bidding teams; and**
7. **Strong partner relationships during contract term based on competence and trust among the members of a PPP.**

Exhibit 54 – PPP Program and Project Development Flowcharts



In developing transportation projects using PPP approaches, the following concerns must be fully considered and addressed throughout the project development and implementation phases:

- Public interest concerns;
- Public perception issues;
- Transportation network interoperability concerns; and
- Capability of the sponsoring agency to properly administer a PPP project through:
  - Procurement and selection;
  - Contract development and negotiation; and
  - Contract administration and performance reporting.

BENEFITS AND RISKS FOR PUBLIC SPONSORS AND PRIVATE PROVIDERS OF PPP PROJECTS

If properly developed and executed, PPP projects offer the following types of potential benefits to sponsors of transportation infrastructure projects:

- Additional resource capability and capacity;
- Accelerated project delivery;
- Reduced costs and increased efficiency;
- Risk transfer or sharing with private provider team;
- Quicker access to new technology and innovative techniques; and
- Increased ability to hold project delivery team accountable for project performance.

Exhibit 55 arrays the potential benefits and risks to the public sponsor and private partner, respectively. This exhibit shows the complementary nature of the potential advantages of using PPP approaches. It also shows to which partner the various project risks are likely to be most sensitive.

Exhibit 55 – Potential Benefits and Risks of PPP Approaches by Partner

Potential Benefits to Public Sponsor	Potential Risks to Public Sponsor
• Reduced financial constraints/increased financial capacity • Expedited project initiation and faster delivery • Access to innovative techniques and specialized expertise • Integration of project development and delivery with life-cycle cost incentives • Greater choices in project approaches • Increased competition and accountability • Risk transfer to entity better able to manage	• Transaction/administrative costs to procure and monitor PPPs • Taxation constraints • Moral hazard • Control over transportation assets and toll rates • Public acceptance • Compensation and termination clauses • Environmental/archeological clearance • Permitting costs • Right-of-way costs
Potential Benefits to Private Partner	**Potential Risks to Private Partner**
• Higher rate of return compared to conventional project delivery approach • Greater control over assets/operation/user fees • Lower life-cycle costs • Increased revenues from financial transactions • Opportunity to apply best practices and new technology to increase productivity and meet performance standards at lowest life-cycle costs • Opportunity for value capture from direct users and indirect beneficiaries	• Change in law • Economic shifts • Public acceptance/protectionism • Currency/foreign exchange • Political support/stability • Moral hazard • Project development/maintenance costs • Project delivery schedule • Financial feasibility/traffic & revenue levels • Liability for latent defects • Prohibition against non-compete clauses • Compensation/termination clauses • Transparency requirements

Experience from other countries which have long used PPPs for transportation infrastructure projects shows that the structure and delivery methods selected are highly dependent on the following features:

- Enabling statutes and regulations;
- The capabilities of all members of the PPP to execute their roles and responsibilities;
- Flexibility and a proactive approach to identifying and resolving issues that arise during the project planning, development, and implementation phases;
- Underlying taxation arrangements that may lower the cost of the project; and
- The ability of capital markets to deliver financing structured to suit each PPP project.

The case studies and cameos contained in the two companion reports illustrate how significantly these issues can vary and therefore should be addressed on a project-by-project basis. Particularly important are potential risks arising:

- When state or local transportation agencies attempt to implement PPPs for the first time;
- Where legal authority to use PPP approaches is not clearly defined; or
- There is strong political, community, or institutional opposition.

NEED FOR OBJECTIVE COMPARISON OF PPP ADVANTAGES AND LIMITATIONS

As demonstrated in certain case studies, increased involvement by the private sector may not by itself prevent a project from experiencing difficulties that result in higher costs and/or schedule delays. Various circumstances may cause projects to experience problems beyond the ability of the private development team to mitigate or eliminate. This is why a careful analysis of potential risk factors should be performed before a public sponsor and a private delivery team enter into a PPP arrangement, particularly where there are significant externalities or complexities to the project. Therefore prospective partners to a PPP should consider the following in assessing whether to proceed with a particular PPP approach:

- While the involvement of the private sector in a transportation capital project and its operations can help improve the cost-effectiveness and timeliness of project delivery and provide other benefits in terms of risk transfer and access to financial markets, it is not a guarantee of successful delivery or financial self-sufficiency.
- While the involvement of the private sector can enhance the prospects for a good project to be successfully delivered within budget and schedule limitations, greater involvement by the private sector may not make a project of dubious feasibility automatically become feasible. However greater involvement by the private sector may help a marginal project become more feasible and a good project even better through the application of cost-effective practices, use of the latest technology, and access to affordable financial strategies and capital markets.
- PPPs are not a strategy for turning bad projects into viable projects just because the private sector is involved to a greater extent, except in those cases where the private sector can gain significant value capture benefits that lower the public sponsor's responsibilities for funding project capital and O&M costs.

- The private sector, like the public sponsor, is subject to ridership, development, and revenue risks. Projections of material prices, ridership, revenues, and development activity are subject to future events or changing conditions that could affect these estimates. The assumptions upon which traffic and revenue projections are based are often beyond the control of either the private or public sectors. However, the private provider team may be able to better manage and withstand the consequences of these risks based on their prior experience and the depth and skills of their resources.
- The private sector can misjudge the feasibility of transportation projects delivered through a particular PPP approach given the many factors that can influence project results and the provider team's ability to fulfill its contractual obligations in a cost-effective and timely manner. However, the private sector has greater incentive to apply due diligence and risk management techniques to identify and minimize the potential for these kinds of challenges, particularly when the private sector partner has an equity position in financing the project which is at risk if the project does not achieve certain performance requirements.

A review of the available literature and the results of the case studies included in the companion reports to this guidebook indicates that the number of successful PPP transportation projects is much larger than the number of projects involving the private sector which have experienced difficulties, often for reasons not related to the increased involvement by the private sector. In many cases the involvement by private sector partners reduced the extent and consequences of these difficulties.

With many PPP approaches available, the kind of private sector involvement can vary by function, service, project, and agency. Some partnership approaches may not be appropriate or beneficial in certain cases while in other instances a PPP can turn a troubled project into a success. The essence of a PPP is that it is based on a true partnership, where both the public sponsor and private delivery team are involved in ways that maximize their contributions to the project based on their respective capabilities. While not a panacea for the fiscal, staffing, and technological shortages facing state and local transportation agencies, PPPs can provide additional resources to the provision of transportation infrastructure and services. As a result, the number of state and local transportation agencies sponsoring PPP projects is rapidly growing, while the domestic financial investment community has begun to seize the opportunities associated with this emerging market for transportation infrastructure financing.

OVERCOMING UNCERTAINTY OF PPPs WHILE BALANCING PUBLIC AND PRIVATE INTERESTS

PPPs are new to many state and local governments in this country. Consequently there is considerable uncertainty about using these alternative approaches that rely more heavily on the private sector than in the past, when there was a clear distinction in responsibilities between the sponsor/owner agency and the private firms that performed final design or construction services. Therefore it is important to emphasize that PPPs involve a sharing of project responsibilities and risks between public owners of transportation facilities and their private sector partners – not an abdication of public authority over or responsibility for these important infrastructure assets. Arriving at an appropriate sharing of responsibilities, risks, and rewards with the private sector through a contractual partnership poses both a challenge and opportunity for public agencies seeking to rebuild and expedite their transportation programs. It is only through continuous contract administration that state and local transportation agencies can hold private project

partners accountable for project performance in their areas of responsibility, consistent with the terms of the PPP contract agreement, while endeavoring to protect the interests of both public sponsor and private provider.

The uncertainty associated with introducing PPP approaches to state and local transportation programs and projects can be reduced through insights and guidance provided in the extensive literature on PPP programs and projects in the U.S. and around the world. See Appendix E for an extensive list of references on PPPs. Another source of insights on PPPs is documentation from actual transportation PPP projects in the form of case studies and cameos, as presented in the two companion reports to this PPP User Guidebook. See Appendix A for a summary of PPP project case studies presented in these reports.

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The information presented in this PPP Guidebook is designed to inform elected and appointed officials and agency leadership about PPP approaches based on insights provided by peer agencies in the U.S. and around the world which have successfully developed PPP programs and implemented PPP projects. Armed with this information, public officials will be better able to evaluate whether and how to use PPP approaches to leverage scarce public resources and expedite financing and delivery of essential transportation projects, while protecting the public interest. The guidebook draws significantly from the results of actual transportation PPP projects in the U.S. and other countries and the experiences of public and private partners involved in these projects. Hence the guidebook goes beyond the theoretical and hypothetical to provide practical insights into what needs to be considered and done to successfully develop and implement transportation projects using public-private partnership approaches.

APPENDIX A – SAMPLE TRANSPORTATION PPP PROJECT RESULTS FROM THE U.S. AND OTHER COUNTRIES

KEY RESULTS OF USING PPPs TO DELIVER U.S. TRANSPORTATION PROJECTS

PPP Project	PPP Type	Timeframe	Cost	Quality	Economic Development	Other
Anton Anderson Memorial Tunnel Multimodal Conversion	DBO	Reduced 38-month schedule by 16 months (-42%)	Reduced $59.6M budget by $2.6M (4%)	Consistent with federal and state standards	Volume of auto traffic to and from Whittier increased by 500%. Number of annual tourists to Whittier area increased by 400%. Recreational boating in Whittier area increased by 200%.	Project operating and maintenance (O&M) costs paid from user fees (auto tolls), augmented by federal grants until no longer required.
Atlantic Station Redevelopment 17th Street Bridge	DBB-F	Within schedule	Within budget	Consistent with state and local standards	New bridge opened area to multi-use development in downtown Atlanta in transformed brownfield site - earning the development the National Phoenix Award for Excellence in Brownfield Development in 2004.	By 2006, Atlanta Station consisted of 5,000 residential units, 47 retail outlets, several banks, and shuttle bus service throughout development to nearby MARTA rail transit station.
					Atlantic Station Development opened 3 years late due to adverse economic conditions from 1999-2002.	Atlantic Station officially opened October 20, 2005.
Chicago Skyway Bridge Long-Term Lease	Concession Lease	99-year lease	$1.83B up-front payment to City for lease	Concession contract assures the facility will be well operated and maintained over its 99-year term	$1.83B in proceeds from long-term lease used to reduce City debt, repay cost of bridge rehabilitation prior to lease, establish a reserve fund, and provide a variety of neighborhood improvement projects and services.	Reduction of City outstanding debt improved its credit rating and lowered its cost of future debt. However the use of concession lease proceeds for other than transportation purposes has caused some to question whether the deal is in the public's best interest, particularly with the high increases in toll rates specified by the concession agreement in future years of the contract.
					Lease proceeds not dedicated to any specific transportation improvement projects or services, making the deal a net transfer of the value of the transportation infrastructure asset to non-transportation purposes. This reduced the transportation asset base of the City of Chicago and its future potential value capture.	Concession lease enabled concession team to implement electronic toll collection and open road tolling to improve convenience of using the facility with the option of cashless toll collection.
Route 28 Phase II Expansion	DB	Within fixed-time schedule	Within fixed-price budget	Consistent with Commonwealth standards	Increasing economic development within Route 28 Special Assessment District enabled full Phase II project to be authorizes, with 6 out of 10 interchanges built to replace inefficient at-grade intersections which has vastly improved operating efficiency of arterial and reduced congestion at these bottlenecks.	Project expedited improvements needed to reduce congestion along the Route 28 corridor and reduced the inflationary effects on project costs.
					Upgrading of Route 28 will further enhance value of commercial property and hasten development along the corridor within the Route 28 Special Assessment District.	Use of county-based debt further reduced costs of the project by up to $150M over the life of the debt.

KEY RESULTS OF USING PPPs TO DELIVER U.S. TRANSPORTATION PROJECTS - continued

PPP Project	PPP Type	Timeframe	Cost	Quality	Economic Development	Other
Route 3 North Highway and Bridge Rehabilitation	DB	Increased 42-month schedule by more than 34 months (+81%) caused by difficulty of project provider to meet sponsoring agency quality requirements	Within budget	Consistent with state standards because of public agency insistence on acceptable products	Opportunity for joint development along the corridor was lost as the project provider team became pre-occupied with completing the project within budget and schedule.	Potential DBOM project was limited to a DB project due to problems with project delivery, which cost the contractor $3.8M in liquidated damages (capped at 1% of overall contract budget) due to completion delays.
		Contractor underestimated effort and time to develop and deliver documents needed to support right-of-way acquisition by the sponsoring agency				Lack of familiarity of both public and private sector members of PPP team led to district and a breakdown of the partnership approach to the project, which reverted to a more traditional approach to design and construction management.
South Bay Expressway (State Road 125)	DBOM-F	12-year delay caused by local community and environmental concerns. Project opened to traffic in late 2006	Project costs increased due to local community environmental issues and inflation during the delay	Consistent with state and local standards, under scrutiny of CALTRANS and its QA contractor	Long project delay reduced accessibility enhancements to adjacent land owners, which delayed economic development along the corridor to be served by SR-125.	Renamed the facility the South Bay Expressway to provide a fresh image to the corridor long tarnished by the environmental and local community issues that plagued the project during 12 years or protracted negotiations and law suits.
		Despite 12-year delay, the project was completed 4 years earlier than the state or county could have built the project using their own funds			Twelve-year delay in project opening resulted in significant loss of toll revenues during this timeframe.	Long delay of project and efforts to address environmental and local community concerns undermined profitability of project for initial project team, which sold its interest in the project to another team in May 2003 which completed and now operates the project.
Atlantic City - Brigantine Road and Tunnel Connector	DB-F Joint Development	On time	Within budget	Consistent with state and local standards	Project reduced congestion on local streets in Atlantic City.	South Jersey Transportation Authority (SJTA) tolls, parking fees and up-from cash contribution from the Brigantine Casino, Hotel, and Spa, incremental property taxes (TIF) generated by new developed made accessible by the corridor, and NJDOT funds used to pay for the project.
					Project corridor improved access to and from (in case of emergency evacuation) from Brigantine Island east of the project limits.	$28 million contingency fund established for environmental problems encountered during construction, 85% of which could be used for a performance bonus to the contractor if not needed for environmental mitigation for on-time completion within budget.
					Project produced 15,000 jobs during construction and 5,500 permanent jobs at the Brigantine Casino, Hotel, and Spa once opened.	

KEY RESULTS OF USING PPPs TO DELIVER U.S. TRANSPORTATION PROJECTS - continued

PPP Project	PPP Type	Timeframe	Cost	Quality	Economic Development	Other
Trans-Texas Corridor - I-35 Corridor Toll Road Program	Comprehensive Development Agreement	Initial planning and environmental clearance completed for portions of corridor and several portions are entering procurement and award stage	To be determined as project segments are developed and opened	To be determined as project segments are developed and opened	TTC program is highly leveraging its limited public funding for surface transportation to develop a state-wide multimodal transportation corridor system that services interstate, cross-border (NAFTA-related), and intrastate travel by auto, truck, and rail, using user fees (tolls) to pay for this huge program.	Flexibility and broad capabilities provided by original PPP legislation passed by the Texas legislature several years ago makes toll projects in the TTC program highly attractive to would-be project providers from the U.S. and overseas, including concessionaires. The recent two-year partial moratorium on PPP toll projects in portions of the state may slow progress on the TTC program and might discourage future investors in Texas PPP projects unless there is greater clarity regarding the state's commitment to the PPP-tolling transportation infrastructure program.
Port of Miami Tunnel	DBFO with Availability Payments	Procurement and selection process completed; awaiting final financial terms to be negotiated	To be determined as project development gets underway in later 2007	To be determined as project development, operation, and maintenance proceeds	Project expected to significantly reduce congestion on local streets in downtown Miami near Port of Miami.	No direct tolls will be charged to users of the facility due to the potential for ship and truck traffic diversion from the Port to other competing ports in Florida. Instead availability payments will be made to the concession team by FDOT, based on funds provided by FDOT, Miami-Dade County, the City of Miami, and the Port of Miami. The project will make extensive use of tax-exempt Private Activity Bonds (PABs) to lower the cost of financing over the 35-year concession contract term.

KEY RESULTS OF USING PPPs TO DELIVER U.S. TRANSPORTATION PROJECTS - continued

PPP Project	PPP Type	Timeframe	Cost	Quality	Economic Development	Other
Conroy Road Bridge	DBB - Joint Development (TIF)	On time	Within budget	Consistent with state and local standards	Bridge and approaches off I-4 provided direct access to the site that produced $244M in new economic development and city property taxes greater than the annual debt service costs of the project within 4 years of opening.	This PPP project was initiated by private sector developers who gained the support of the city, county, and state transportation agency to proceed as an expedited Tax Increment Financing (TIF) project.
					Significant off-site economic development surrounding the Mall at Millenia site have produced additional incremental property tax revenues for both the city and county.	Site was set up under a Community Redevelopment Authority (CRA) to facilitate rezoning and financing arrangements.
					The Mall at Millenia and surrounding development have produced significant incremental sales tax revenues for both the state and county.	Project funding consisted of CRA-issued tax-exempt debt, state transportation agency loan (later repaid out of excess TIF proceeds), and right-of-way donated by the private development partners.
					Significant increase in jobs during construction of the Mall at Millenia and to staff the mall and related development once opened.	
Universal Boulevard Bridge	DBB - Joint Development (TIF)	On time	Within budget	Consistent with state and local standards	Bridge and approaches off I-4 provided direct access to site that produced $750M in new economic development and city property taxes more than twice the annual debt service costs of the project within two years of opening.	This PPP project was initiated by private sector developers who gained the support of the city, county, and state transportation agency to proceed as an expedited TIF-funded project.
					Significant increase in jobs during construction of new theme park and to staff the park, hotels, and parking facilities once opened.	Site was set up as a Community Redevelopment District to facilitate rezoning and financing arrangements.
						Project funding consisted of CRA-issued tax-exempt debt.

KEY RESULTS OF USING PPPs TO DELIVER INTERNATIONAL TRANSPORTATION PROJECTS

PPP Project	PPP Type	Timeframe	Cost	Economic Development	Other
United Kingdom - M6 Toll Highway	54-year DBFO concession for first tolled highway built in England in many years	Delayed 8 years due to public opposition to tolls on highways	Project costs increased due to delays caused by community and environmental opposition	Economic development was not a factor due to recent completion of facility and limited traffic volume.	Auto traffic increased according to projections while truck traffic has significantly lagged expectations. Plans to expand the toll highway 50 miles were abandoned in 2006 due to high right-of-way costs, toll opposition, and lack of private sector interest given the performance of M6 .Widening the highway to 6-8 lanes has also been delayed 8-10 years.
United Kingdom - Dartford Toll Bridge	First DBFO highway project undertaken in England	Completed on schedule	Completed within budget	Not available	Provided needed additional capacity to relieve congestion on existing tunnels linking the M-25 orbital road crossing the Dartford River. Volume of traffic provides the potential to retire the debt service on the construction costs of the bridge and rehabilitation of the adjacent tunnel within 20 years of completion.
United Kingdom - Second Severn Bridge	DBFO concession for new bridge and O&M on the original bridge for up to 30 years, or until the debt service is retired by tolls on the two bridges	Completed on schedule	Completed new bridge within budget and repaid the outstanding debt on the original bridge	Not available	Relieved congestion on parallel original bridge while providing redundant capacity to accommodate traffic whenever lanes on either bridges are taken out of service for maintenance and major rehabilitation purposes. This became a necessity when the agency operating the original bridge found that the suspension cables had severely deteriorated and required replacement.
United Kingdom - M1-A1 Highway	Largest and most complex DBFO concession in national PPP program initiated in 1994 paid by public agency shadow tolls	Completed ahead of schedule, and many years ahead of the timeframe using traditional project delivery approaches	Completed within budget	Reduced congestion in area served by the highway which spurred economic development along the highway and the trunk highways it connected.	PPP arrangement expedited resolution of issues and enhanced coordination and communication among the members of the partnership. The new highway produced sufficient traffic to fully support the level of shadow tolls paid to the concession team by the Highway Agency to cover both debt service and operations and maintenance costs incurred by the concession team.

KEY RESULTS OF USING PPPs TO DELIVER INTERNATIONAL TRANSPORTATION PROJECTS - continued

PPP Project	PPP Type	Timeframe	Cost	Economic Development	Other
Australia - Sydney Harbor Tunnel	BOOT, with minimum revenue guarantee	Completed on schedule	Completed within budget	Not available	Relieved congestion crossing Sydney Harbor, and also allowed addition of dedicated bus lane on the bridge.
Melbourne CityLink	BOOT concession for 34 years duration	Construction completed on schedule, but toll operations curtailed until start-up problems were corrected	Completed within budget	Project improved highway network capacity in central Melbourne, providing congestion relief in and around Melbourne. It also provided economic benefits to motor carriers through better traffic flow along the system.	First application of cashless open road tolling in Australia, based on electronic toll collection and photo recognition technologies.
Australia - Port of Brisbane Motorway	DB	Delivered six months ahead of schedule	Completed $20 million under budget	Not available	Not available
Australia - Eastern Distributor - Airport/M1 Highway	BOT	Not available	Completed within budget	Not available	Not available
Australia - Sydney Airport Transit Link	BOOT	Completed on schedule	Not available	Not available	Required A$704 million government bailout after project was placed in receivership in November 2000, six months after opening. This resulted from ridership levels of only one-quarter what was projected for the facility. The low ridership levels for the Sydney Airport Link were exacerbated by competition from another PPP project, the Eastern Distributor highway which runs parallel to the Link.
Australia - Brisbane Airport Rail Link	BOOT	Completed on schedule	Not available	Not available	Ridership far below estimates, sharply reducing credit rating for concessionaire. Government will take over the facility after 5 years of 35-year operating concession.

KEY RESULTS OF USING PPPs TO DELIVER INTERNATIONAL TRANSPORTATION PROJECTS - continued

PPP Project	PPP Type	Timeframe	Cost	Economic Development	Other
Hong Kong - County Park Motorway	BOT non-tolled concession for 30 years	Completed on schedule	Completed within budget	This joint development project improved access to container port and airport facilities in the Northwest Territories and encouraged further economic development in the region.	Provided strategic highway linkage between Hong Kong and mainland China - one of several non-tolled highway, bridge, and tunnel PPP projects sponsored by the Hong Kong government prior to reunification with China.
Israel - Yitzhak Rabin Trans-Israel Highway	Finance-Design BOT Concession	Completed on schedule	Completed within budget	Project expanded highway capacity in the central spin of Israel, thereby relieving congestion along non-tolled parallel routes to the east and west of the tolled highway.	The highway is Israel's first tollway and uses cashless open road tolling, based on electronic toll collection and photo recognition technologies. Traffic and revenues have grown faster than forecasted prior to construction.
India - Second Vivekananda Bridge	BOT	Under construction but expected to be completed and opened to traffic in 2007	To be determined	Project financing includes tolls and value capture from nearby economic development resulting from improved accessibility to be provided by the bridge.	BOT PPP and innovative financing approaches enabled this necessary bridge to be expedited to relieve congestion in the northern parts of Kolkata.
Øresund Bridge and Tunnel (Denmark to Sweden)	Design-Build	Completed in July 2000 after eight-year development and construction period	Coast-to-coast section completed 25 percent over budget and landside infrastructure completed 70 percent over budget	The Øresund highway/rail link between Denmark and Sweden has spurred economic development on both sides of the facility, especially in the vicinity of Malmö, Sweden, many of whose residents work in or near Copenhagen, Denmark.	This bi-modal facility was the final link in the surface transportation network of Northwest Europe.
Argentina - Rosario-Victoria Bridge	DBOM	Completed on schedule	Completed within budget	Bridge increased accessibility and mobility in the Mesopotamia Provinces of Argentina, spurring increased trade and between those provinces connected by the bridge and with the South American Common Market and increased economic development in the region served by the bridge.	Bridge produced significant increases in traffic capacity between the northern Mesopotamia Provinces of Argentina and reductions in vehicle travel times and operating costs.

APPENDIX B - STATUTORY AUTHORITY AND KEY PROVISIONS FOR TRANSPORTATION PPP PROJECTS BY STATE

STATUTORY AUTHORITY FOR TRANSPORTATION PPP PROJECTS BY STATE

State	Statute	Comments
1. AK	AK § 19.75.111 http://www.legis.state.ak.us/cgi-bin/folioisa.dll/stattx06/query=19!2E75!2E111/doc/{@9161}	Authorizes the Knik Arm Bridge and Toll Authority to utilize a PPP to finance, design, construct, operate and maintain the Knik Arm bridge to connect the Municipality of Anchorage and the Matanuska-Susitna Borough. http://www.knikarmbridge.com/documents/HB0471Z_000.pdf
2. AL	ALA. CODE §§ 23-1-80 to 23-1-95 http://www.legislature.state.al.us/CodeofAlabama/1975/132328.htm Follow link and scroll down to article 3.	Authorizes the Alabama DOT and county commissions to establish toll roads, toll bridges, ferries or causeways or allow for their operation by private parties. No express provision regarding the solicitation or acceptance of unsolicited proposals. Not appropriate to use as a model for PPP enabling legislation.
3. AZ	ARIZ. REV. STAT. §§ 28-7701 to 28-7758 http://www.azleg.state.az.us/FormatDocument.asp?inDoc=/ars/28/07701.htm&Title=28&DocType=ARS Click the "Next Document" link to scroll through the sections.	Two pilot programs each allow up to two solicited and unsolicited proposals. Not appropriate to use as a model for PPP enabling legislation.
4. CA	CAL STS & HY CODE § 143 AND § 149.7. Scroll down on below link to locate section 143 and 149.7. http://www.leginfo.ca.gov/cgi-bin/displaycode?section=shc&group=00001-01000&file=90-155.6 CAL GOV CODE § 5956 http://www.leginfo.ca.gov/cgi-bin/displaycode?section=gov&group=05001-06000&file=5956-5956.10	The legislation authorizing Caltrans to enter into PPP pilot tollroad projects (known as AB 680) was repealed in 2003. AB 1467, enacted in 2006, amended §143 to authorize four pilot projects, two in northern California and two in southern California, for goods movement, and allows tolls to be charged only to commercial vehicles with three or more axles. AB 1467 also added §149.7, which authorizes regional transportation agencies to develop and operate high-occupancy toll lanes, including a value pricing program and exclusive or preferential lane facilities, subject to approval by the Transportation Commission. This legislation (also known as AB 2660) authorizes PPPs for a range of "fee-producing infrastructure projects," but explicitly excludes the use of toll roads on state highways. [2]
5. CO	COLO. REV. STAT. §§ 43-1-1201 to 1209 COLO. REV. STAT. §§ 43-4-801 to 812 COLO. REV. STAT. §§ 43-3-201 to 43-3-416 http://198.187.128.12/colorado/lpext.dll/Infobase4/6703c?fn=document-frame.htm&f=templates&2.0	Allows solicited and unsolicited proposals for PPPs. Created a statewide tolling enterprise to finance, build, operate and maintain toll highways. Operated as a government-owned business within the Colorado DOT. Provides PPP authority to Colorado DOT for specific projects including turnpikes and HOT lanes.
6. DE	DEL. CODE ANN. tit. 2, part II, ch. 20, §§ 2001 to 2012 http://www.delcode.state.de.us/title2/c020/index.htm - TopOfPage	Authorizes solicited and unsolicited proposals for PPP projects, including highways and bridges.
7. FL	FLA. STAT. ANN. § 334.30 http://www.flsenate.gov/statutes/index.cfm?mode=View%20Statutes&SubMenu=1&App_mode=Display_Statute&Search_String=&URL=CH0334/SEC30.HTM FLA. STAT. ANN. §§ 338.22 to 338.241 http://www.flsenate.gov/statutes/index.cfm?App_mode=Display_Statute&URL=Ch0338/titl0338.htm&StatuteYear=2005&Title=%2D%3E2005%2D%3EChapter%20338	Allows Florida DOT to receive or solicit proposals for PPPs. 1953 statute that established the Florida Turnpike Enterprise, which is operated like a private-sector business within the Florida DOT.
8. GA	GA. CODE. ANN. §§ 32-2-78 to 32-2-80 http://w3.lexis-nexis.com/hottopics/gacode/Default.asp?loggedIn=done Click the x to close the opening window and Expand the Table of Contents to Title 32, Chapter 2, Article 4 for access.	In May of 2005, several significant amendments to this statute were enacted as S.B. 270. The statute now allows Georgia DOT to both receive and solicit proposals for PPPs. Potential competitors also have 135 days (instead of 90 days) to respond to an unsolicited proposal.

Source: Nossaman, Guthner, Knox & Elliott LLP - Legislative developments through February 2007

STATUTORY AUTHORITY FOR TRANSPORTATION PPP PROJECTS BY STATE – continued

State	Statute	Comments
9. IN	IN CODE §§ 8-15.6 AND 8-15.7 IN CODE § 8-15-3 IN CODE § 8-23-7-22 HTTP://WWW.AI.ORG/LEGISLATIVE/IC/CODE/TITLE8/AR15.7/CH8.HTML	Authorizes PPPs for tollroads, bridges, roads, and a wide array of related facilities and buildings and structures. Pub L. 47-2006 amended IN Code 8-23-7-22 to permit public private partnerships to be used to operate tollways and authorized the Indiana Toll Road lease transaction. The legislation also establishes the process for entering into a public-private agreement on I-69 from Indianapolis to Evansville, and specifically prohibits the State from entering into such an agreement for any other road or project without further legislative approval. While similar in scope to the authorization for the Indiana Toll Road lease, there are a number of significant differences in the process for procuring an I-69 agreement. As an example, the I-69 PPP will be administered by INDOT, instead of the Indiana Finance Authority. A second difference is the increased amount of legislative oversight that will be given to the I-69 project.
10. LA	LA. REV. STAT. §§ 48:1251 to 1281 http://www.legis.state.la.us/lss/lss.asp?doc=102766 Click on "Next Section" to scroll forward. LA. REV. STAT. §§ 48:2020 to 2037 HTTP://WWW.LEGIS.STATE.LA.US/LSS/LSS.ASP?DOC=102975 Click on "Next Section" to scroll forward.	Louisiana HB 1294, a bill to "authorize the Louisiana Transportation Authority to pursue public-private partnerships for the construction for certain transportation facilities," was passed by the House last week. It is currently before the Senate. The legislation broadly defines "project," and includes authority to enter into agreements on I-49 and I-10. The only highway facility specifically excluded from the legislation is the "West Bank Expressway" in Jefferson County.
11. MD	MD. TRANSPORTATION CODE ANN. § 8-204 http://198.187.128.12/maryland/lpext.dll/Infobase/205c3/20d8c/20d99/20daa?f=templates&fn=document-frame.htm&2.0#JD_tr8-204	Maryland does not have a statute expressly authorizing highway PPPs. According to a 1996 Attorney General opinion referenced in the annotations to this statute, the Maryland Transportation Authority has authority to construct toll roads using certain forms of PPPs. [3] Additional legislative authority may be needed, however, depending on the form of the transaction. There is also no express provision regarding the acceptance of unsolicited proposals for highway projects.
12. MN	MINN. STAT. ANN. §§ 160.84 – 160.93 http://www.revisor.leg.state.mn.us/stats/160/	Authorizes solicited and unsolicited PPPs for toll facilities. Authorizes HOT lanes.
13. MO	MO. REV. STAT. §§ 238:300 to 238:367 http://www.moga.state.mo.us/STATUTES/C238.HTM	Creates a special purpose non-profit corporation known as a Transportation Corporation as a vehicle for PPPs. No express provision regarding the solicitation or acceptance of unsolicited proposals. Not appropriate to use as a model for PPP enabling legislation.
14. NV	NEV. REV. STAT. §§ 338.161 to 168. http://www.leg.state.nv.us/NRS/NRS-338.html#NRS338Sec161	Authorizes public bodies to accept unsolicited proposals to develop, construct, improve, maintain or operate transportation facilities. Toll bridge and toll road projects, however, are prohibited under this statute.
15. NC	N.C. GEN. STATE. §§ 136-89.180 to 136-89.197 http://www.ncleg.net/EnactedLegislation/Statutes/HTML/ByArticle/Chapter_136/Article_6H.html	North Carolina Turnpike Authority now authorized to develop, construct, operate and maintain up to nine toll facilities, including a toll bridge.[4] Solicited process only.
16. OR	OR. REV. STAT. §§ 367.800 to 367.826. http://www.leg.state.or.us/ors/367.html OR. REV. STAT. §§ 383.001 to 383.019 http://www.leg.state.or.us/ors/383.html.	Establishes the Oregon Innovative Partnerships Program with detailed guidelines at OAR 731-070-0005 to 731-070-0360. Allows Oregon DOT to solicit and accept unsolicited PPPs for tollway projects.
17. PR	9 LEYES P.R. AN. §§ 2001 to 2021	This Spanish language statute establishes a toll transportation facility authority with broad powers to authorize private participation in public highway projects.
18. SC	S.C. CODE § 57-3-200 http://www.scstatehouse.net/code/t57c003.htm S.C. CODE § 57-5-1310 et. al. http://www.scstatehouse.net/code/t57c005.htm	Allows South Carolina DOT to enter into PPPs. Allows DOT to construct and operate turnpike facilities; § 57-5-1330(1)4 appears to permit SC DOT to use PPPs to develop these facilities. No express provision regarding the solicitation or acceptance of unsolicited proposals.
19. TX	TEX. TRANSP. CODE ANN. ch. 227, 361 and 370 http://tlo2.tlc.state.tx.us/statutes/tn.toc.htm	Allows TxDOT, the Texas Turnpike Authority, and Regional Mobility Authorities to accept solicited and unsolicited proposals for PPPs. Pending legislation (H.B. 2702) would require a popular vote for any conversion from free lanes to tolled. The bill also would limit toll franchises to 50 years.

Source: Nossaman, Guthner, Knox & Elliott, LLP, February 2007

STATUTORY AUTHORITY FOR TRANSPORTATION PPP PROJECTS BY STATE – continued

State	Statute	Comments
20. UT	UT. CODE ANN. §§ 63-56-502.5 HTTP://LE.UTAH.GOV/~CODE/TITLE63/63_29.HTM UT. CODE ANN. §§ 72-6-201 HTTP://LE.UTAH.GOV/~CODE/TITLE72/72_06.HTM OPEN AND UNZIP THE CODE SECTIONS BY CLICKING ON THE LINK TO THE SECTION NUMBER.	SB 80 authorizes the Utah DOT, with approval from the Transportation Commission, to accept solicited and unsolicited proposals for PPPs involving tollway facilities through the use of "tollway development agreements."
21. VA	VA. CODE ANN. §§ 56-556 to 56-575 http://leg1.state.va.us/cgi-bin/legp504.exe?000+cod+TOC56000000022000000000000	Virginia's Public-Private Transportation Act of 1995 authorizes PPPs and was modified during the 2005 legislative session. Allows solicited and unsolicited proposals. Contains detailed guidelines to assist VDOT and other public entities in implementing this program.
22. WA	WASH. REV. CODE §§ 47.46.29.010 - 47.46.29.900 http://apps.leg.wa.gov/RCW/default.aspx?cite=47.29 §§ 47.46.010 to 47.46.900 http://apps.leg.wa.gov/RCW/default.aspx?cite=47.46	The Washington legislature determined that the state's 1993 PPP statute (§§ 47.46.010 to 47.46.900), was not meeting the expectations of the public and private sectors, and revamped its PPP law with § 47.46.29. The new PPP enabling legislation (passed in May of 2005 as H.B. 1541) is unlikely to encourage much private sector investment because (1) the only significant projects that require PPPs are state (WashDOT) projects; (2) the exclusive source of financing for WashDOT projects is state treasurer-issued indebtedness; and (3) no such indebtedness, or expenditures from it, may occur without prior legislative approval. Presently, solicited proposals only, but unsolicited proposals may be accepted after 1/1/07.

Source: Nossaman, Guthner, Knox & Elliott, LLP, February 2007

Note: In March 2007, the Mississippi State Legislature passed SB 2375, PPP-enabling legislation what allows governmental entities to build toll roads and bridges or contract with private companies to design, build, operate, and finance highway toll projects, provided they are new roads, there are free alternative facilities available, and the tolls end when the project debt is retired. (Public Works Financing, Volume 214, March 2007, p. 18)

OVERVIEW OF KEY ELEMENTS AND SAMPLE PROVISIONS OF STATE PPP ENABLING LEGISLATION FOR HIGHWAY PROJECTS

No:	Issue:	Importance:	Sample Provision:
1.	Does the relevant law allow solicited and unsolicited proposals for PPP projects?	Both proposal processes are important. Solicited proposals enable the responsible public entity to communicate its transportation project priorities. Unsolicited proposals, by contrast, enable the private sector to propose projects that the public entity might not otherwise have considered.	The responsible public entity will solicit proposals through a request for proposals, accompanied by material explaining the Public-Private Initiatives Program enacted hereunder and describing the selection process and criteria. The responsible public entity may identify in these requests for proposals specific systems, corridors or routes for improvement. Alternatively, potential projects may be identified and proposed by any potential contracting party. Such unsolicited proposals will also be accepted provided that they satisfy the criteria outlined in accordance with this chapter.
2.	Does the relevant law permit local, state and federal funds to be combined with private sector funds on a PPP project?	Most projects are so large that they will require access to the full range of funding options in order to finance them.	The responsible public entity, either directly or through a designated party, may apply for, receive and accept from any federal agency or any other governmental body grants or financial support of whatever nature for any purpose described in this chapter. The responsible public entity may transfer or lend the proceeds of any such grant, or utilize such proceeds available for credit enhancement, to public agencies or contracting parties, on terms and conditions complying with applicable federal and state law.
3.	Who has rate-setting authority to impose user fees and under what circumstances may they be changed or otherwise reviewed?	Both the responsible public entity and its private sector partner (by contract) should have this authority. Moreover, detailing when and by how much tolls can be modified is a critical component of the PPP agreement and will improve the project's ability to be financed on favorable terms.	Each agreement may authorize the contracting party to impose tolls or user fees for use of the transportation system constructed and/or leased by it to allow a reasonable rate of return on investment. The agreement may authorize the contracting party to collect tolls or user fees through both conventional methods and non-conventional methods including, but not limited to, automatic vehicle identification systems, electronic toll collection systems and, to the extent permitted by law, video-based toll collection enforcement. The agreement may authorize the collection of tolls and user fees by a third party.
4.	Does the relevant law permit TIFIA loans to be used on PPP projects?	TIFIA loans are a useful public financing tool, and should be included as an option for individual projects.	Any transportation project may be financed in whole or in part with grants, loans, loan guarantees, lines of credit, revolving lines of credit or other financing arrangements available pursuant to the Transportation Infrastructure Finance and Innovation Act under 23 U.S.C. 181 *et seq.*, or any other applicable federal law.
5.	Is the number of PPP projects limited to only a few "pilot" or "demonstration" projects?	Pilot projects sometimes represent a good political compromise for states that do not have much experience with PPP projects involving highways. Pilot projects, however, may also signal to both the public and private sectors that there is a lack of long-term political and institutional commitment to getting projects done under such legislation. The pilot program approach has been used in the states of California and Washington.	No model language proposed.
6.	Are there restrictions concerning the geographic location of PPP projects?	Such restrictions may unnecessarily reduce the ability of the public and private sectors to innovate when considering potential new projects.	No model language proposed.
7.	Are there restrictions concerning the particular mode of transportation eligible to be developed as a PPP project (*e.g.*, truck, passenger auto, freight rail, passenger rail)?	Allowing the widest range of transportation modes to be considered encourages innovation. The Trans-Texas Corridor 35 project represents a good example of a creative multi-modal proposal.	"Transportation facility" means any road, bridge, tunnel, overpass, ferry, airport, mass transit facility, vehicle parking facility, port facility or similar commercial facility used for the transportation of persons or goods, together with any buildings, structures, parking areas, appurtenances, and other property needed to operate such facility.

Source: Nossaman, Guthner, Knox & Elliott, LLP, October 2005

OVERVIEW OF KEY ELEMENTS AND SAMPLE PROVISIONS OF STATE PPP ENABLING LEGISLATION FOR HIGHWAY PROJECTS - continued

No:	Issue:	Importance:	Sample Provision:
8.	Is there a legal requirement to remove tolls after the repayment of project debt?	While sometimes politically desirable, this requirement eliminates one important source of financing for future transportation projects along the corridor or planned for elsewhere in the state. The Florida Turnpike Enterprise has made use of its excess tolling revenues to develop additional projects.	After expiration of the lease or ownership period of a project to or by a contracting party, the responsible public entity may continue to charge tolls or user fees for the use of the project. The responsible public entity may also delegate such authority to continue to collect tolls or user fees for the use of the project to a third party, provided that such revenues must first be used for operations and maintenance of the project and, subsequently, any revenues determined by the responsible public entity to be excess must be paid by such third party to the State's Transportation Trust Fund, the responsible public entity or the State.
9.	Does the relevant law permit the conversion of existing or partially constructed highways into toll roads?	Permitting such conversions provides additional flexibility, but may be controversial. Some state laws expressly limit conversions to projects that add capacity.	Tolls or user fees may be imposed by the operator on any free road, bridge, tunnel or overpass, provided that such road, interstate highway, bridge, tunnel or overpass is reconstructed to provide for increased capacity and the private entity obtains the necessary federal, state and local approvals.
10.	Is there a restriction that prevents the revenues from PPP projects from being diverted to the state's general fund or for other unrelated uses?	Allowing these revenues to be diverted to a state's general fund undermines support from the general public for tolls and other user fees.	A PPP agreement may provide that excess earnings be distributed to the state's transportation trust fund, to the responsible public entity, or shared with appropriate public entities.
11.	Is prior legislative approval required when an individual PPP proposal is received?	Private entities are less likely to be willing to incur significant proposal development costs due to the added uncertainty of whether legislative approval will thereafter be obtained.	No model language proposed.
12.	Are there any similar requirements that subject the PPP proposal or the negotiated PPP agreement to a local veto?	Same issue. Private entities are less likely to be willing to incur significant development costs related to their proposal and the negotiation of the PPP agreement due to the added uncertainty of whether local approval will thereafter be obtained. As an alternative, some statutes require local and regional transportation entities to provide their input when the proposal is first issued or received.	Each affected local jurisdiction that is not a responsible public entity for the respective qualifying transportation facility shall, within 60 days after receiving a request for comments from the responsible public entity, submit any comments it may have in writing on the proposed qualifying transportation facility to the responsible public entity and indicating whether the facility will address the needs identified in the appropriate state, regional or local transportation plan by improving safety, reducing congestion, increasing capacity and/or enhancing economic efficiency.
13.	Does the relevant law permit all kinds of procurements for PPP project delivery? These might include, for example, calls for projects, competitive RFQs and RFPs, qualifications review followed by an evaluation of proposer concepts, use of design build, procurements based on financial terms such as return on equity rather than on price, long-term asset leases for some period of up to 60 years or longer from the time operations commence?	More flexibility is an important goal, so authorizing a wider range of procurement tools is helpful because it enables the responsible public entity to more easily select the one that is most appropriate for a particular project.	A responsible public entity must proceed in accordance with the guidelines adopted by it pursuant to subdivision 1. The responsible public entity may select any procurement process that it believes is likely to be advantageous to the public, based on the probable scope, complexity or urgency of a project. When the responsible public entity determines to proceed with a particular procurement process, it must follow the guidelines adopted by it pursuant to this subdivision.

Source: Nossaman, Guthner, Knox & Elliott, LLP, August 2006

OVERVIEW OF KEY ELEMENTS AND SAMPLE PROVISIONS OF STATE PPP ENABLING LEGISLATION FOR HIGHWAY PROJECTS - continued

No:	Issue:	Importance:	Sample Provision:
14.	Are there explicit exemptions/supplemental procurement authority from the application of the state's general procurement laws?	Such a provision is important because it provides certainty to the participants that the alternative procurement process they are using is legitimate and is not subject to subsequent legal challenges.	The responsible public entity may contract with the proposer for a public-private initiative based upon the proposal without subjecting such contract to public bid as otherwise would be required.
15.	Does the relevant law authorize the public sector to grant long-term leases/franchises for the construction, operation and maintenance of toll facilities?	The Chicago Skyway and Trans-Texas Corridor 35 projects, are leading examples of lease/concession-type models.	The private entity may own, lease or acquire any other right to use or develop and/or operate the qualifying transportation facility.
16.	Does the public sector have the authority to issue toll revenue bonds or notes?	Some PPP statutes contain this provision; many states also grant this authority in other statutes. Regardless of its location, this is an important financing and project delivery tool.	The responsible public entity may issue revenue bonds to pay all or a portion of the cost of a qualifying transportation facility or to refund any previously issued bonds.
17.	Does the public sector have the authority to form nonprofits and let them issue debt on behalf of a public agency?	The use of nonprofit corporations (sometimes referred to as "63-20 Corporations") in structuring public-private infrastructure financings has attracted a great deal of attention. Its use is being promoted as a way to preserve the ability for a project to be financed with tax-exempt bonds, while maintaining for both the public and private participants most of the benefits of private development. Examples include Virginia's Pocahontas Parkway and South Carolina's Southern Connector.	The board is authorized to establish, create and approve nonprofit entities and bonds issued by or on behalf of such nonprofit entities for the purpose of financing, constructing, operating or maintaining a toll highway, to accept the assets of any such nonprofit entity, to obtain an option to acquire the assets of any such nonprofit entity by paying such bonds, to appoint or approve the appointment of members of the governing board of any such nonprofit entity, and to remove the members of the governing board of any such nonprofit entity for cause.
18.	Does the relevant public agency have the authority to hire its own technical and legal consultants?	The ability to hire outside experts to assist the responsible public entity in preparing implementation guidelines and evaluating PPP proposals is critical . It also represents one good indicator for the private sector that the responsible public entity intends to dedicate the human and financial resources that are required to successfully deliver a PPP project in a timely manner.	The responsible public entity is authorized to employ or contract for the services of consulting engineers, attorneys or other experts as are necessary in its judgment to carry out its powers and duties hereunder.
19.	Does the relevant law permit the public sector to make payments to unsuccessful bidders for work product contained in their proposals?	The flexibility to make such payments encourages the private sector to devote the resources that are required to develop innovative proposals for PPP projects as well as their financing.	The responsible public entity may pay an unsuccessful private entity that submits a response to a request for proposals a stipulated amount of the final contract price for any costs incurred in preparing that proposal in return for the right to use any work product contained in the proposal, including the technologies, techniques, methods, processes and information contained in the project design.
20.	Can the agency charge application fees to offset its proposal review costs?	Application fees help the responsible public entity defray some of the costs it incurs in reviewing unsolicited proposals developed by the private sector.	To offset a portion of the costs of initiating this program and reviewing proposals received for projects under this chapter, the responsible public entity is authorized to assess a non-refundable Proposal Review Fee for each proposal not to exceed $ 50,000.00.

Source: Nossaman, Guthner, Knox & Elliott, LLP, August 2006

OVERVIEW OF KEY ELEMENTS AND SAMPLE PROVISIONS OF STATE PPP ENABLING LEGISLATION FOR HIGHWAY PROJECTS - continued

No:	Issue:	Importance:	Sample Provision:
21.	Does the relevant law allow adequate time for the preparation, submission and evaluation of competitive proposals? Note that the responsible public entity should have the authority to establish these deadlines on a case-by-case basis depending on the complexity and scope of the initial proposal or other factors that might promote competition (e.g., more review time during holiday periods).	The responsible public entity should have discretion to set this period of time. Proposals for some projects such as corridor-wide improvements are more complicated than other proposals. As a general rule, the more complicated the project being proposed, the more time should be allowed for competitors to prepare their competing submissions.	Upon acceptance of an unsolicited proposal, the responsible public entity must publicly release a detailed description of the unsolicited proposal and provide 90 days within which other interested parties may submit proposals relating to the same subject, or such additional time as may be designated by the responsible public entity.
22.	Is the public sector required to maintain comparable non-toll routes when it establishes new toll roads?	Such a blanket requirement reduces the flexibility of the responsible public entity in obtaining proposals for new or expanded projects.	No model language proposed.
23.	Are there any non-compete clause prohibitions?	These should vary on a project-by-project basis. For example, the Chicago Skyway concession contains no restrictions on competing toll roads while the SR 125 project being developed in California does have such a provision.	In a PPP agreement, the responsible public entity may include protection from competition provisions or agree to provide a traffic guarantee to the private entity, provided that it will not unreasonably prohibit the development of essential public transportation systems and facilities.
24.	Is the authority to enter into PPPs restricted to the state DOT or state turnpike authority or may regional or local entities also do so?	This varies on a state-by-state basis depending on local conditions.	Any private entity seeking authorization under this chapter to develop and/or operate a transportation facility must first obtain the approval of the responsible public entity. Such private entity may initiate this approval process by submitting an unsolicited proposal or the responsible public entity may request that such proposals be submitted to it. A "Responsible public entity" for these purposes means a public entity, including local governments and regional authorities, that has the power to develop and/or operate the qualifying transportation facility.
25.	Does the relevant law specify evaluation criteria for PPP proposals received under a given procurement approach?	Some PPP statutes contain general criteria that are then elaborated in internal implementation guidelines.	The responsible public entity shall base its evaluation of an unsolicited proposal on the following factors: (a) Unique and innovative methods, approaches or concepts demonstrated by the proposal; (b) Scientific, technical or socioeconomic merits of the proposal; and (c) Potential contribution of the proposal to the responsible public entity's mission.
26.	Does the relevant law specify the structure and participants for the review process involving PPP proposals?	Same comment as above. The review process details can be set forth in the PPP law or in internal guidelines. The private sector and the public may have more confidence in the selection process if this process is detailed in advance.	The projects shall be selected by a project committee, chaired by the Secretary of Transportation, consisting of the Secretary, the Director of Financial Management and Budget, the Chief Engineer of the Department of Transportation, and up to four other persons to be appointed by the Secretary.

Source: Nossaman, Guthner, Knox & Elliott, LLP, August 2006

OVERVIEW OF KEY ELEMENTS AND SAMPLE PROVISIONS OF STATE PPP ENABLING LEGISLATION FOR HIGHWAY PROJECTS - continued

No:	Issue:	Importance:	Sample Provision:
27.	Does the relevant law protect the confidentiality of PPP proposals and any related negotiations in the period prior to execution of the PPP agreement?	These provisions require a delicate balancing between competing considerations. On the one hand, disclosure of proposed projects is necessary for them to gain public legitimacy. On the other hand, the private sector will be unwilling to participate if certain information about them and their business secrets must be disclosed.	The responsible public entity shall take appropriate action, as more specifically set forth herein and in its guidelines, to protect confidential and proprietary information provided by the private entity pursuant to a proposal filed with it or in connection with the negotiation of a PPP agreement. In order for confidential and proprietary information to be excluded from disclosure, the private entity must (i) invoke such exclusion upon submission of the data or other materials for which protection from disclosure is sought; (ii) identify the data or other materials for which protection is sought; and (iii) state the reasons why protection is necessary. However, nothing in this subdivision shall be construed to prohibit the release of procurement records as otherwise required by law. Procurement records may not be interpreted to include proprietary, commercial or financial information, balance sheets, financial statements, or trade secrets that may be provided by the private entity as evidence of its qualifications.
28.	Does the relevant law provide for the ability of the public sector to outsource long-term operations and maintenance and other asset management duties to the private sector?	The authority to include these types of projects provides additional flexibility.	The responsible public entity may use a PPP agreement with a private entity to construct, maintain, repair, operate, extend or expand a qualifying transportation facility.

Source: Nossaman, Guthner, Knox & Elliott, LLP, August 2006

APPENDIX C - GLOSSARY OF TERMS

GLOSSARY OF TERMS

- **Account Servicing:** Monitoring the status of accounts of indebtedness, monitoring records of current debts, billing for amounts due, collecting amounts due, handling debtor correspondence, performing follow-up functions, and providing accurate reporting of debt portfolios.
- **Accrue:** Process of increasing account value, usually associated with interest or other time-related increases in account value.
- **Administrative Costs/Charges:** Additional costs incurred in processing and handling a debt because it has become delinquent. Costs should be based on actual costs incurred or cost analyses which estimate the average of actual additional costs incurred for particular types of debt at similar stages of delinquency. Administrative costs should be accrued and assessed from the date of delinquency. (See "Delinquency.")
- **Administrative Offset:** Withholding money payable by the federal government to a person or held by the government for a person or entity in order to satisfy a debt that the person or entity owes the government.
- **Advance Construction:** States or local governments independently raise upfront capital required for a federally approved project and preserve eligibility for future federal-aid reimbursement for that project. At a later date, the state can obligate federal-aid highway funds for reimbursement of the federal share. This tool allows states to take advantage of access to a variety of capital sources, including its own funds, local funds, anticipation notes, revenue bonds, bank loans, etc., to speed project completion.
- **Allowance for Uncollectible Accounts:** Account established to reduce receivables for estimates of uncollectible amounts to reflect the assets at their net realizable value.
- **Amortization:** Provision made in advance for the gradual reduction of an amount owed over time.
- **Appraisal:** Formal valuation of property, made by a competent authority.
- **Asset:** Any item of economic value, either physical in nature (such as land) or a right to ownership, expressed in cost or some other value, which an individual or entity owns.
- **Availability Payments:** Periodic (typically annual) payments made by the sponsoring agency to the project delivery team on the basis of the availability of facility capacity, traffic volumes, operations and maintenance expenses, safety, facility condition and appearance, or other factors considered important to the users, in lieu of toll revenues when it is not possible or practical to charge drivers a toll to use the facility.
- **Bad Debt Expense:** Estimated cost of losses which may be realized as a result of a failure to collect on receivables. The loss is recorded when information is available that an asset (in this case, receivables) has probably been impaired or a liability incurred and when the amount can be reasonably estimated. For accounting purposes, the bad debt expense estimate is recorded when the allowance account is established or periodically adjusted.
- **Basis Point:** A shorthand financial reference to one-hundredth of one percent (.01 percent) used in connection with yield and interest rates.

- **Bond Counsel:** A lawyer or law firm, with expertise in bond law, retained by the issuer to render an opinion upon the closing of a municipal bond issue regarding the legality of issuance and other matters including the description of security pledged and an opinion as to the tax-exempt status of the bond.
- **Bond Insurance:** A financial guarantee provided by a major insurance company (usually AAA rated) as to the timely repayment of interest and principal of a bond issue.
- **Book Value:** Net amount at which an asset or liability is carried on the books of account (also referred to as carrying value or amount). It equals the gross nominal amount of any asset or liability minus any allowance or valuation amount.
- **Budget Authority:** Authority provided by law to enter into financial obligations that will result in immediate or future outlays of federal government funds. Budget authority includes the credit subsidy costs for direct loan and loan guarantee programs. Basic forms of budget authority include appropriations, borrowing authority, contract authority, and authority to obligate and expend offsetting receipts and collections.
- **Build/Operate/Transfer:** Public-private partnership arrangement involving private construction, private operation for given period of time, and eventual transfer to public ownership.
- **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.
- **Call Risk:** Risk to the investor associated with prepayments by the issuer of the principal amount of the bonds prior to the stated maturity date, in accordance with the bonds' redemption provisions.
- **Capital Appreciation Bond:** Long-term bonds which pay no current interest but accrete or compound in value from the date of issuance to the date of maturity. CABs differ from zero coupon bonds in that they are issued at an initial amount and compound in value, in contrast to zeroes, which are issued at a deep-discount and compound to par.
- **Capital Reserves:** Funds that remain in a bank and are not loaned out. These funds can be used to support a variety of credit enhancement tools. Capital reserves also can be used to leverage the lending institution, or borrow against reserves to expand the pool of available loan funds.
- **Capitalization:** Process of depositing various funds as seed capital into a lending institution to enable financial services. This pool of money is distributed, through loans and credit enhancements, in such a way to ensure that payments are made back to preserve the corpus.
- **Capitalized Interest:** A specified portion of the original bond proceeds which will be used to pay interest on the bonds until revenue from planned sources becomes available upon completion of construction.
- **Charge Off:** Alternative term to write-off. Write-off is the preferred term. (See "Write-off".)

- **Claim:** Synonymous with the term "debt," for purposes of this document. (See "Debt.") Alternative meanings of the word "claim" include a request (1) submitted by a lender for government payment of a defaulted guaranteed loan; (2) filed with the Department of Justice for the pursuit of litigation and/or enforced collection of an account; or (3) filed with an agency for the payment of an amount considered due to the submitting individual or organization, such as for medical insurance.
- **Close Out:** Occurs concurrently with or subsequent to an agency decision to write off a debt for which the agency has determined that future additional collection attempts would be futile.
- **Cohort:** Direct loans obligated or loan guarantees committed by a program in the same year even if disbursements occur in subsequent years. Post-1992 direct loans or loan guarantees will remain with their original cohort throughout the life of the loan, even if the loan is modified. Pre-1992 loans and loan guarantees that are modified shall each, respectively, constitute a single cohort. (OMB Circular No. A-11, "Preparation and Submission of Budget Estimates." Executive Office of the President, Office of Management and Budget, hereafter cited as OMB Circular No. A-11.)
- **Collateral:** Any property pledged as security for a loan.
- **Collection Agency:** Private sector entity whose primary business is the collection of delinquent debts.
- **Collection:** Process of receiving amounts owed to the federal government, such as payment on a debt.
- **Commercial:** Adjective used to signify a business activity, regardless of whether that activity has been undertaken by an individual or business.
- **Compromise:** Accepting less than the full amount of the debt owed from the debtor in satisfaction of the debt. Also referred to as "settlement."
- **Concession:** Long-term lease agreement that involves the lease of publicly financed facilities to a private sector concessionaire for a specified time period. Under the lease, the private sector concessionaire agrees to pay an upfront fee to the public agency in order to obtain the rights to collect the revenue generated by the facility for a defined period of time (usually from 25 to 99 years). In addition to the concession fee, the concessionaire agrees to operate and maintain the facility, which may include capital improvements in some instances.
- **Concession Benefits**: Rights to receive revenues and other benefits (often from tolling) for a fixed period of time, including transferring responsibility for increasing user fees to the private sector; generating large up-front revenues for the public agency; transferring most project, financial, operational and other risks to the private concessionaire; and gaining private sector efficiencies in operations and maintenance activities.
- **Construction Manager at Risk**: A hired construction manager (CM) begins work on the project during the design phase to provide constructability, pricing, and sequencing analysis of the design. The CM becomes the design-build contractor when a guaranteed maximum price is agreed upon by the project sponsor and CM.
- **Consumer:** Adjective used to signify a personal activity. For example, a loan to a farmer to buy an automobile for personal use would be considered a consumer loan.

- **Contingencies:** Existing conditions, situations, or circumstances which involve uncertainty and which could result in gains or losses. For example, guaranteed loans represent contingent liabilities which, in the event of default by the borrowers, the federal government would be liable to cover the losses of the guarantors, and thereby sustain the loss itself.
- **Contract Authority:** A form of budget authority that permits obligations to be made in advance of appropriations or receipts. Contract authority therefore is unfunded and requires a subsequent appropriation or offsetting collection to liquidate (pay) the obligations. The federal-aid highway program has operated under contract authority since 1921.
- **Cooperative Agreement:** Written consent between two parties to define the basic structure and purpose of a financial transaction, including the roles the parties involved and the way in which funds will be administered.
- **Corpus:** The corpus refers to all initial funds, additional, and subsequent revenue deposited for bank capitalization. The corpus is essentially a "body" of funds that is available, on a revolving basis, for use in providing financial assistance to borrowers.
- **Coverage Margin:** The margin of safety for payment of debt service on a revenue bond, reflecting the number of times (e.g., 1.2) by which annual revenues after operations and maintenance costs exceed annual debt service.
- **Credit Cycle:** Complete credit process, composed of four phases: credit extension, account servicing, debt collection, and write-off/close out.
- **Credit Enhancement:** Financial guarantees or other types of assistance that improve the credit of underlying debt obligations. Credit enhancement has the effect of lowering interest costs and improving the marketability of bond issues.
- **Credit Enhancement:** Financing tools - such as letters of credit, lines of credit, bond insurance, debt service reserves, and debt service guarantees -that improve the credit quality of underlying financial commitments. Credit enhancements have the effect of lowering interest costs and improving the marketability or liquidity of bond issues.
- **Credit Extension:** Review and approval of requests for short- and long-term credit.
- **Credit Program:** Federal program that makes loans and/or loan guarantees to non-federal borrowers.
- **Credit Reporting Bureau:** Private sector entity which collects financial information on debtors and whose reports on debtors reflect information received from the public and private sectors.
- **Credit Score:** A statistically-based measure of risk of a particular type of loan to a particular borrower.
- **Credit:** Promise of future payment in kind or of money given in exchange of present money, goods, or services.
- **Current Discount Rate:** Discount rate used to measure the cost of a modification with respect to the modification of direct loans or loan guarantees. It is the interest rate applicable at the time of modification on marketable Treasury securities with a similar maturity to the remaining maturity of the direct guaranteed loans, under either pre-modification terms, or post-modification terms, whichever is appropriate.

- **Current Receivable:** A receivable on which payment is due within 12 months of the reporting period.
- **Debt:** Synonymous with the term "claim," for purposes of this document. It refers to an amount of money or property which has been determined by an appropriate federal official to be owed to the U.S. from any person, organization, or entity other than another federal agency. Included as debts are amounts due the U.S. from fees, duties, leases, rents, royalties, services, sales of real or personal property, overpayments, fines, penalties, damages, taxes, interest, forfeitures, and other sources.
- **Debt Collection:** Recovery of amounts due after routine follow-up fails. This activity includes the assessment of the debtor's ability to pay, the exploration of possible alternative arrangements to increase the debtor's ability to repay and other efforts to secure payment.
- **Deed-in-Lieu of Foreclosure:** A voluntary transfer of marketable title to a property to avoid foreclosure.
- **Default:** Failure to meet any obligation or term of a credit agreement, grant, or contract. Often used to refer accounts more than 90 days delinquent.
- **Deficiency:** Portion of a loan which remains outstanding after pledged property has been liquidated (converted to cash) and applied to the outstanding balance.
- **Delinquency:** Failure of the debtor to pay an obligation or debt by the date specified in the agency's initial written notification or applicable contractual agreement, unless other satisfactory payment arrangements have been made by that date. Delinquency would also occur if, at any time thereafter, the debtor fails to satisfy the obligations under payment agreement with the agency.
- **Design-Bid-Build**: The traditional project delivery method where design and construction are sequential steps in the project development process, where one contract is bid for the design phase and then a second contract is bid for the construction phase of the project.
- **Design-Build**: A procurement or project delivery arrangement whereby a single entity (a contractor with subconsultants, or team of contractors and engineers, often with subconsultants) is entrusted with both design and construction of a project. 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.
- **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.
- **Direct Loan:** A disbursement of funds by the Government to a non-Federal borrower under a contract that requires repayment of such funds with or without interest. The term includes the purchase of, or participation in, a loan made by a non-Federal lender. The term also includes the sale of a Government asset on credit terms of more than 90 days duration. The term does not include the acquisition of federally guaranteed non-Federal loans in satisfaction of default or other guarantee claims or the price-support loans of the Commodity Credit Corporation.

- **Direct Loan Obligation:** A legal or binding agreement by a Federal agency to make a direct loan when specified conditions are fulfilled by the borrower. Acquisitions of federally guaranteed non-Federal loans in satisfaction of default or other guarantee claims are not recorded as direct loan obligations.
- **Direct Loan Subsidy Cost:** Estimated long-term cost to the federal government of direct loans calculated on a present value basis, excluding administrative costs. The cost is the present value of present value of estimated net cash outflows at the time the direct loans are discharged. The discount rate used on the calculation is the average interest rate (yield) on marketable Treasury securities of similar maturity to the loan, applicable to the time when the loans are disbursed.
- **Discharge:** Satisfying a debt as a legal obligation through the performance of the obligation(s) imposed under the debt instrument, such as to pay the debt in full, or through another action such as a compromise.
- **Discretionary Spending:** Outlays controllable through the congressional appropriation process. Such outlays result from the provision of budgetary resources (including appropriations and obligation limitations but excluding mandatory spending authority) in appropriation acts. The Budget Enforcement Act establishes annual spending limitations or caps on discretionary appropriations and resulting outlays.
- **Equity:** Commitment of money from public or private sources for project finance, with a designated rate of return target.
- **Executive Order 12893:** An executive order issued by President Clinton in January 1994, establishing infrastructure investment as a priority for the Administration and directing federal agencies to establish programs for more effective capital investment from current federal funds.
- **Face Amount:** The par value (i.e., principal or maturity value) of a security.
- **Financing Account:** A non-budget account associated with each credit program account. The financing account holds fund balances, receives the subsidy cost payment from the credit program account, and includes all other cash flows to and from the government resulting from post-1991 direct loans or loan guarantees. (OMB Circular No. A-11, and OMB Circular No. A-34, "Instructions on Budget Execution," Part VI, "Credit Apportionment and Budget Execution," hereafter cited as OMB Circular No. A-34.)
- **Forbearance:** The act of a creditor who refrains from enforcing a debt when it falls due. Various government credit programs, under specific conditions, offer borrowers certain protections against foreclosure.
- **Force Majeure:** Events that are beyond the control of a contractor, such as earthquakes, epidemics, blockades, wars, acts of sabotage, and archeological site discoveries.
- **Foreclosure:** Method of enforcing payment of a debt secured by a mortgage by seizing the mortgaged property. Foreclosure terminates all rights which the mortgagor has in the mortgaged property upon completion of due process through the courts.
- **Forgive:** To grant relief from all or part of a debt under statutory authority. When an agency forgives a debt, or some portion thereof, it is deciding that the amount being waived is not now part of the government's claim.

- **Government Sponsored Enterprise:** A shareholder owned and operated financial institution, chartered by the federal government that facilitates the flow of investment funds to specific economic sectors thereby providing access to national capital markets. The activities of these private entities are not included in federal budget totals. But because of their special relationship to the government, GSEs provide detailed statements as supplementary information for budget presentation. Examples of GSEs include the Federal National Mortgage Association (Fannie Mae), the Student Loan Marketing Association (Sallie Mae), and the Federal Home Loan Mortgage Corporation (Freddie Mac).
- **Governmental Purpose Bond:** A term in the Internal Revenue Code for a tax-exempt bond which is secured by governmental revenues or whose proceeds are used for a general governmental purpose (as opposed to a private activity bond).
- **Grant Anticipation Notes (GANs):** Short-term debt that is secured by grant money expected to be received after debt is issued. Financial institutions may buy anticipation notes on behalf of project sponsors in advance of receiving other financial assistance, to enable a faster project start. Helps project sponsors advance projects, especially when unable to access capital markets.
- **Guarantee:** A contract(s) in which a financial institution agrees to take responsibility for all or a portion of a project sponsor's financial obligations for a project under specified conditions.
- **Innovative Contracting**: Alternative 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:** Alternative 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.
- **Installment Loan:** An obligation to repay monies borrowed at fixed intervals over time.
- **Institutional Investor:** A financial institution such as a mutual fund, insurance company, or pension fund that purchases securities in large quantities.
- **Insurance:** Type of guarantee in which any agency pledges the use of accumulated insurance premiums to offset the cost of default on the part of borrowers. "Loan insurance" is considered the equivalent of a "loan guarantee."
- **Intelligent Transportation Systems:** The application of advanced electronics and communication technologies to enhance the capacity and efficiency of transportation systems, including traveler information, public transportation, and commercial vehicle operations.
- **Interest Method:** Method used to amortize the premium or discount of an investment in bonds, or to amortize the subsidy cost allowance of direct loans. Under this method, the amortization amount of the subsidy cost allowance equals the effective interest minus the nominal interest of the direct loans. The effective interest equals the present value of the direct loans times the effective interest rate (the discount rate). The nominal interest equals the nominal amount (face amount) of the direct loans times the stated interest rate (the rate stated in the loan agreements).

- **Interest Subsidy:** A subsidy provided by financial institutions (such as multi-lateral lenders, state infrastructure banks, or export credit agencies) to lower overall financing costs for project sponsors. With this tool, project sponsors repay loans at less than current market rates. Market rates may be determined by the cost of borrowing through conventional issues of comparable duration.
- **Interest:** Sum paid or calculated for the use of capital. Financing interest is the charge assessed as a cost of extending credit as distinguished from additional interest which is the charge assessed on delinquent debts in order to compensate the federal government for the time value of money owed and not paid when due. Additional interest is accrued and assessed from the date of delinquency.
- **Internal Rate of Return:** Interest rate that equates the present value of the expected future cash flows net of on-going costs for operations, maintenance, repair, reserve funds, and taxes, to the initial capital cost outlay or investment. This is the rate at which the net present value of the project equals zero.
- **Investment Grade:** Describes the top four rating categories of relatively secure bonds suitable for a conservative investor. Standard & Poor's rating service looks upon all bonds between the AAA and BBB ratings as investment grade. Generally speaking, any bonds rated below BBB are considered to have speculative features and are deemed sub-investment grade or junk bonds.
- **Junior Debt:** Debt having a subordinate or secondary claim on an underlying security or source of payment for debt service, relative to another issue with a higher priority claim. (See Subordinate Claim.)
- **Late Charges:** Amounts accrued and assessed on a delinquent debt; the term includes administrative costs, penalties, and additional interest.
- **Letter of Credit:** A form of loan from a financial institution to be used only in the instance of a shortfall in net revenue for debt service (i.e., a contingent loan). A letter of credit is security provided directly to the lender/bondholders (via a bond trustee), rather than to the borrower/project sponsor.
- **Leverage:** A financial mechanism used to increase available funds usually by issuing debt (typically bonds) or by guaranteeing or otherwise assuming liability for others' debt in an amount greater than cash balances.
- **Leveraging Ratio:** Measures the extent to which a given investment attracts additional capital. In the context of this report, the leveraging ratio of federal funds is equal to the total project costs divided by the budgetary cost of providing federal credit assistance.
- **Liability:** Amount owed (i.e., payable) by an individual or entity, such as for terms received, services rendered, expenses incurred, assets acquired, construction performed, and amounts received but not yet earned.
- **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.

- **Line of Credit:** A form of loan to be used only in the instance of a shortfall in net revenue for debt service or other financial commitments (i.e., a contingent loan). A line of credit, while similar to a letter of credit, is security available directly to the borrower/project sponsor with flexibility in use of the funds.
- **Liquidation:** Process of converting collateral to cash.
- **Liquidity:** Refers to an investor's ability to sell an investment as a means of payment or easily convert it to cash without risk of loss of nominal value.
- **Litigation:** Legal action or process taken for full or partial debt recovery.
- **Loan Guarantee Commitment:** Binding agreement by a federal agency to make a loan guarantee when specified conditions are fulfilled by the borrower, the lender, or any other party to the guarantee agreement. (OMB Circular No. A-11).
- **Loan Guarantee:** Contingent liability created when the federal government assures a private lender who has made a commitment to disburse funds to a borrower that the lender will be repaid to the extent of a guarantee in the event of default by the debtor.
- **Loan Guarantee Subsidy Cost:** Estimated long-term cost to the federal government of loan guarantees calculated on a present value basis, excluding administrative costs. The cost is the present value of estimated net cash outflows at the time the guaranteed loans are disbursed by the lender. The discount rate used for the calculation is the average interest rate (yield) on marketable Treasury securities of similar maturity to the loan guarantees, applicable to the time when the guaranteed loans are disbursed.
- **Loan Servicer:** A public or private entity that is responsible for collecting, monitoring, and reporting loan payments. In the context of this report, a loan servicer would also assist in originating the loan.
- **Loan:** Legally binding document which obligates a specific value of funds available for disbursement. The amount of funds disbursed is to be repaid (with or without interest and late fees) in accordance with the terms of a promissory note and/or repayment schedule.
- **Loan-to-Value Ratio:** Represents the proportion of the amount of a loan to the value being pledged to secure that loan. It is derived as follows: total financing costs (i.e., the market value of the collateral plus the financed portion of any closing costs, insurance premiums, or other transaction-related expenses less the borrower's cash down payment) divided by the market value of the collateral.
- **Mandatory Spending:** Outlays generally not controllable through the congressional appropriation process. Mandatory amounts are budget authority or outlays that cannot be increased or decreased in a given year without a change in substantive law. Entitlement programs (e.g., food stamps, Medicare, veterans' pensions) are chief examples of mandatory programs, whereby Congress controls spending indirectly, by defining eligibility and setting benefit payment rules, rather than directly through the appropriation process. With regard to the federal-aid highway program, mandatory spending refers to outlays resulting from obligations of contract authority programs not subject to annual obligation limitations, such as Minimum Allocation, Emergency Relief, and Demonstration Project spending.

- **Modification:** Federal government action, including legislation or administrative action, that alters the estimated subsidy cost and the present value of outstanding direct loans (or direct loan obligations), or the liability of loan guarantees (or loan guarantee commitments). Direct modifications change the subsidy cost by altering the terms of existing contracts or by selling loan assets. Indirect modifications are actions that change the subsidy cost by legislation that alters the way in which an outstanding portfolio of direct loans or loan guarantees is administered. The term modification does not include subsidy cost re-estimates, the routine administrative workouts of troubled loans, and actions that are permitted within the existing contract terms.
- **Net Present Value:** Amount by which the total present value of cash inflows, net of on-going costs for operations, maintenance, repair, reserve funds, and taxes and discounted at the cost of capital over the period of the contract, exceed the project's capital cost outlay. (See definition of Present Value below for further explanation of this concept.)
- **Nominal (or Face or Par) Value or Amount:** Amount of a bond, note, mortgage, or other security as stated in the instrument itself, exclusive of interest or dividend accumulations. The nominal amount may or may not coincide with the price at which the instrument was first sold, its present market value, or its redemption price.
- **Non-Current Receivable:** a receivable on which payment will not be due within 12 months of the reporting period.
- **Non-Federal Match:** The commitment of state or other non-federal funds required to receive federal contributions. For example, the U.S. SIB program requires a non-federal match for capitalization funds, which is 25 percent of the amount of federal funds. The match may be lower in states which have a sliding scale rate based on the percentage of federal land in the state.
- **Obligation Authority:** The amount of budgetary resources (including new budget authority, balances of unobligated budget authority carried over from prior years, and obligation limitations) available for obligation in a given fiscal year. With regard to the federal-aid highway program, obligation authority often refers to the amount of federal-aid obligation limitation, established annually by Congress in appropriation acts, that is allocated to the states and controls the amount of apportioned contract authority that can be obligated by the states in a given fiscal year.
- **Original Discount Rate:** Discount rate originally used to calculate the present value of direct loans or loan guarantee liabilities, when the direct or guaranteed loans were disbursed.
- **Outlays:** An outlay represents an official payment of funds.
- **Parity Debt:** Debt obligations issued or to be issued with an equal claim to other debt obligations on the source of payment for debt service.
- **Pay-As-You-Go Financing:** Describes government financing of capital outlays from current revenues or grants rather than by borrowing.
- **Penalty:** Punitive charge assessed for delinquent debts, with the assessed rate capped by law.
- **Personal Property:** Tangible, movable assets, such as automobiles, planes, and boats.
- **Pre-Foreclosure Sale:** The opportunity for borrowers who cannot meet their obligation (repayment of a loan) to sell their property in order to avoid foreclosure. Borrowers who agree to sell their property using this method are generally relieved of their loan obligation.

- **Preliminary Rating:** A credit opinion from a rating agency based on a preliminary assessment assigned to a proposed bond issue.
- **Prepayment:** Partial or full repurchase or other advance deposits of outstanding loan principal and interest by the borrower/debtor. The repurchase may be made at a discount from the current outstanding principal balance.
- **Present Value (PV):** The value of future cash flows discounted to the present at certain interest rate (such as the entity's cost of capital or funds), assuming compounded interest. The GAO definition of present values is as follows: The worth of a future stream of returns or costs in terms of money paid immediately (or at some designated date). A dollar available at some date in the future is worth less than a dollar available today because the latter could be invested and earn interest in the interim. In calculating present value, prevailing interest rates provide the basis for converting future amounts into their "money now" equivalents. Under credit reform, the subsidy cost of direct loans and loan guarantees are to be computed on a present value basis and included as budget outlays at the time the direct or guaranteed loans are disbursed.
- **Principal:** Amount loaned to the borrower and owed to the federal government which excludes interest, penalties, administrative costs, loan fees, and prepaid charges.
- **Program Account:** Budget account into which an appropriation to cover the subsidy cost of a direct loan or loan guarantee program is made and from which such cost is disbursed to the financing account. Usually, a separate amount for administrative expenses is also appropriated to the program account.
- **Project Revenues:** All rates, rents, fees, assessments, charges, and other receipts derived by a project sponsor from a project.
- **Public-Private Partnership**: A contractual agreement formed between public and private sector partners, which allows more private sector participation than is traditional. These 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 is often given additional decision rights in determining how the project or task will be completed most cost-effectively. 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.
- **Ramp-Up Phase**: The phase in a project's life cycle immediately following construction. It is during this phase, the early years of operation, that a project's revenue stream is established.
- **Purchase Rate:** Total actual and projected dollars purchased, including principal and interest, on a guaranteed loan as a percentage of the total dollars disbursed for a given cohort of loans.

- **Purchase:** If a borrower is in default for at least 60 days (SBA terms), the lender can request the Agency to honor its guarantee by purchasing SBA's pro-rata share of the debt outstanding to the lender. The purchase amount includes principal and up to 120 days (SBA terms) accrued interest.
- **Rate Covenant:** A contractual agreement in the legal documentation of a bond issue requiring the issuer to charge rates or fees for the use of specified facilities or operations at least sufficient to achieve a stated minimum debt service coverage level.
- **Rating Agency:** An organization that assesses and issues opinions regarding the relative credit quality of bond issues. The three major municipal bond rating agencies are Fitch Investors Service, Moody's Investors Service, and Standard and Poor.
- **Real Property:** Tangible, non-movable assets, such as land and buildings.
- **Receivable:** Amount owed to a lender by an individual, organization, or other entity to satisfy a debt or a claim. Examples of receivables generated by government activities include amounts due for taxes, loans, the sale of goods and services, fines, penalties, forfeitures, interest, and overpayments of salaries and benefits.
- **Recourse:** Rights of a holder in due course of a financial instrument (such as a loan) to force the endorser on the instrument to meet his or her legal obligations for making good the payment of the instrument if dishonored by the maker or acceptor.
- **Recovery:** The dollars collected subsequent to a purchase, net of expenses, on a guaranteed loan.
- **Recovery Rate:** The total actual and projected collections net of expenses subsequent to a purchase as a percentage of the total projected dollars purchased for a given cohort of guaranteed loans.
- **Re-estimates:** Estimates of the subsidy costs performed subsequent to their initial estimates made at the time of a loan's disbursement.
- **Repayment Agreement:** Agreement that establishes the terms and conditions governing the recovery of a debt of the lender and borrower when credit is initially extended or a debt is rescheduled. (See "Reschedule.")
- **Reschedule:** Procedure of establishing new terms and conditions to facilitate repayment of a debt. Also called restructuring, refinancing, and reamortizing, rescheduling includes establishing new terms as a result of changes in authorizing legislation (e.g., congressional action allowing farmers to have an additional 5 years to pay off their loans).
- **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.
- **Revolving Loan Fund:** Financing tool that recycles funds by providing loans, receiving loan repayments, and then providing further loans.

- **Risk Category:** Subdivisions of a cohort of direct loans or loan guarantees into groups of loans that are relatively homogeneous is cost, given the facts known at the time of obligation or commitment. Risk categories will group all loans obligated or committed for a program during the fiscal year that share characteristics predictive of defaults and other cost.
- **Salary Offset:** Process of collecting a debt by deducting part or all of the debt from an employee's current pay at one or more officially established pay intervals without his or her consent.
- **Secured Debt:** Debt for which collateral has been pledged.
- **Senior Debt:** Debt obligations having a priority claim on the source of payment for debt service.
- **Servicer:** Entity under contract to a lender or agency to perform account servicing functions.
- **Settle:** Resolving a debt or claim.
- **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.
- **Soft Loan:** Loan provided to a project sponsor with flexible repayment terms. Soft loans are generally subordinate to other debt, can have variable repayment schedules and extended terms, and subsidized interest rates.
- **Start-Up Project:** A separate, free-standing and new facility dependent on its own revenue stream to generate earnings to cover operating and capital costs.
- **State Infrastructure Bank:** A state or multi-state revolving fund that provides loans, credit enhancement, and other forms of financial assistance to surface transportation projects.
- **State Transportation Improvement Program:** A short-term transportation planning document covering at least a three-year period and updated at least every two years. The STIP includes a priority list of projects to be carried out in each of the three years. Projects included in the STIP must be consistent with the long-term transportation plan, must conform to regional air quality implementation plans, and must be financially constrained (achievable within existing or reasonably anticipated funding sources).
- **State Transportation Plan:** The transportation plan covers a 20-year period and includes both short- and long-term actions that develop and maintain an integrated, intermodal transportation system. The plan must conform to regional air quality implementation plans and be financially constrained.
- **Stress Test:** A financial test applied by rating agencies to assess the claims-paying ability of municipal bond insurers. The stress test subjects a bond insurer's portfolio to a severe and prolonged economic downturn that produces an extraordinary level of bond defaults. In order to receive an AAA rating on its claims-paying ability, a bond insurer must be able to pay all projected claims through the peak years of the stress period and be left with sufficient resources to write new business when more stable economic conditions resume.
- **Subordinate Claim:** A claim on an underlying source of payment for debt service which is junior or secondary to that securing another debt obligation. (see Junior Debt)

- **Subsidy Cost:** The estimated long-term cost to the federal government of providing credit assistance (e.g., direct loans or loan guarantees), calculated on a net present value basis at the time of disbursement and excluding administrative costs.
- **Suspend Collection Action:** Placing collection action temporarily in abeyance due to the existence of a particular set of circumstances.
- **Tax Refund Offset:** Reduction of a debtor's tax overpayments by the amount of legally enforceable debt owed to a federal agency. It is a type of administrative offset.
- **Taxpayer Identification Number (TIN):** Social Security Number (SSN) for individuals or the Employee Identification Number (EIN) for business organizations or non-profit entities.
- **TE-045 Innovative Finance Initiative:** A research program begun by the Federal Highway Administration in 1994 in response to Executive Order 12893. This finance initiative is designed to increase investment, accelerate projects, promote the use of existing innovative finance provisions, and establish the basis for future initiatives by waiving selected federal policies and procedures. This allows specific transportation projects to be advanced through the use of non-traditional finance mechanisms.
- **Terminate Collection Action:** Ceasing active collection of a debt. The act of removing the debt from accounting records is to "write off." A decision to terminate collection action occurs concurrently with the write-off.
- **TIFIA Credit Program:** As part of its 1998 enactment of the Transportation Equity Act for the 21st Century (TEA 21), Congress established a Federal credit program for large transportation projects. Sections 1501 to 1504 of TEA 21, collectively the Transportation Infrastructure Finance and Innovation Act of 1998 (TIFIA), authorize the Department of Transportation (DOT) to provide three forms of credit assistance - secured (direct) loans, loan guarantees and standby lines of credit - to surface transportation projects of national or regional significance. A specific goal of TIFIA is to leverage private co-investment. Because the program offers credit assistance, rather than grant funding, potential projects must be capable of generating revenue streams via user charges or other dedicated funding sources. In general, a project's eligible costs must be reasonably anticipated to total at least $100 million. Credit assistance is available to highway, transit, passenger rail and multi-modal projects. Other types of eligible projects include intercity passenger rail or bus projects, publicly owned intermodal facilities on or adjacent to the National Highway System, projects that provide ground access to airports or seaports, and surface transportation projects principally involving the installation of Intelligent Transportation Systems (ITS), for which the cost threshold is $30 million. The TIFIA credit assistance is limited to 33 percent of eligible project costs. For more information, visit the TIFIA website at http://tifia.fhwa.dot.gov/
- **Title 23 of the United States Code:** Highway title that includes many of the laws governing the federal-aid highway program. The title embodies substantive provisions of law that Congress considers permanent and need not be reenacted in each new highway authorization act.
- **Title 49 of the United States Code:** Transportation title that includes laws governing various transportation-related programs and agencies, including the Department of Transportation, general and intermodal programs, interstate commerce, rail and motor vehicle programs, aviation programs, pipelines, and commercial space transportation.

- **Toll Credits**: 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.
- **Turnkey:** A generic term for a variety of public/private partnership arrangements whereby a public sector entity awards a contract to one or more private firms to undertake the development, construction, and/or operation of an infrastructure project for a predetermined period of time before turning the project back over to the public entity. Turnkeys may take various forms, including design-build-transfer and build-operate-transfer.
- **Unobligated Balance:** The portion of obligation authority (including new budget authority and balances of unobligated budget authority carried over from prior years) that has not yet been obligated. With regard to the federal-aid highway program, the term generally refers to balances of apportioned contract authority that the states have been unable to obligate due to annual obligation limitations imposed by Congress.
- **Value for Money:** The estimated project cost savings associated with using a PPP delivery approach, when the project delivery team is paid directly by the sponsoring agency through either availability payments or shadow tolls instead of from the proceeds coming from direct user charges, like tolls, where value is related to the level of tolls patrons are willing to pay to use the facility.
- **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.
- **Workout Group:** Group established within an agency, whose sole purpose is to resolve or attempt to resolve troubled debts, including those debts which demand that extreme measures be taken to protect the government's interests.
- **Write-Off:** (Preferred term to "Charge Off") Occurs when an agency official determines, after all appropriate collection tools have been used, that a debt is uncollectible. Active collection on an account creases and the account is removed from an entity's receivables.
- **Zero Coupon Bond:** A bond that is originally issued at a deep discount from its par or face amount and which bears no current interest. The bond is bought at a discount price which implies a stated rate of return calculated on the basis of the bond being payable at par at maturity. (see Capital Appreciation Bond)

APPENDIX D - LIST OF ACRONYMS

LIST OF ACRONYMS

AASHTO	American Association of State Highway & Transportation Officials
AGCA	The Associated General Contractors of America
ARTBA	American Road and Transportation Builders Association
BOO	Build-Own-Operate
BOT/BTO	Build-Operate-Transfer/Build-Transfer-Operate
CBO	Congressional Budget Office
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CM	Construction Manager
CM@Risk	Construction Manager at Risk
CPTC	California Private Transportation Company
DB	Design-Build
DBB	Design-Bid-Build
DBF	Design-Build-Finance
DBOM	Design-Build-Operate-Maintain
DBOM-F	Design-Build-Operate-Maintain-Finance
DOT	Department of Transportation
EBRD	European Bank for Reconstruction & Development
ECI	Early Contractor Involvement
EIB	European Investment Bank
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

GARVEEs	Grant Anticipation Revenue Vehicles (bonds or notes)
HBA	Highway Beautification Act
HOV	High Occupancy Vehicle
HUD	U.S. Department of Housing & Urban Development
IFB	Invitation for Bid
IDB	Inter-American Development Bank
IRR	Internal Rate of Return
ISTEA	Intermodal Surface Transportation Efficiency Act of 1991
JDA	Joint Development Agreement
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 & Transportation Department
NPV	Net Present Value
NTP	Notice to Proceed
OCTA	Orange County Transit Authority
PDC	Project Development Contractor
PENTA-P	FTA's PPP Pilot Program (or PPPPP)
PPP	Public-Private Partnership
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 Number 14 allows state transportation and local transportation agencies using Federal-aid funds to apply for permission to use a variety of alternative procurement approaches to deliver projects

SEP-15	Special Experimental Project Number 15 allows state and local transportation agencies using Federal-aid funds to apply for permission to use alternative approaches to transportation planning, financing, contracting, environmental clearance, and right-of-way acquisition that are more efficient than traditional approaches and promote involvement by the private sector through PPPs
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 & Innovation Act
TxDOT	Texas Department of Transportation
U.S.C.	United States Code
USFWS	United States Fish & Wildlife Service
UDOT	Utah Department of Transportation
USDOT	United States Department of Transportation
VDOT	Virginia Department of Transportation
VPPP	Value Pricing Pilot Program of FHWA
WSDOT	Washington State Department of Transportation
WVDOT	West Virginia Department of Transportation

APPENDIX E - PUBLIC-PRIVATE PARTNERSHIP REFERENCES

PUBLIC-PRIVATE PARTNERSHIP REFERENCES

FHWA PPP RESOURCES

- **FHWA Manual for Using PPPs on Highway Projects:** Issued in November 2005, this manual is intended to provide a one-stop resource for States interested in pursuing Public-Private Partnerships and curious as to how Federal requirements apply. Although a summary document itself, it identifies links and references that will provide access to more detailed guidance for anyone interested in exploring a Public-Private Partnership.

- **Synthesis of Public-Private Partnership Projects for Roads Bridges & Tunnels from Around the World – 1985-2004:** This August 2005 report presents a synthesis of a comprehensive database of highway infrastructure projects from around the world financed or delivered through some form of public-private partnership (PPP). This synthesis provides insights into the nature and extent of highway infrastructure projects that have and are being advanced through various types of PPP contractual arrangements. They also reveal the predominant types and sizes of PPP contracts used in various regions and countries around the world for developing different types of highway infrastructure, including roads, bridges, and tunnels. The results of this synthesis are intended to inform those involved in the development, funding, or delivery of highway infrastructure regarding the worldwide use of PPPs to delivery highway and other forms of public use infrastructure.

- **FHWA Report to Congress on PPPs:** This report, issued in December 2004 by 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.

- **FHWA Office of International Programs: Contract Administration: Technology and Practice in Europe:** In June 2001, a team comprised of Federal, State, contracting, legal, and academic representatives travelled to Portugal, the Netherlands, France, and England. Their mission was to investigate and document alternative contract administration procedures for possible implementation in the United States.

  The scan team discovered that European highway agencies appear to be better at exploiting the efficiencies and resources that the private sector offers, through the use of innovative financing, alternative contracting techniques, design-build, concessions, performance contracting, and active asset management. European agencies have created contracts that focus on the users, while seeking to allocate risk appropriately and establish an atmosphere of trust in the implementation of procedures. The United States can directly and immediately employ many European procedures to help cope with its most urgent transportation needs.

The report discusses these European techniques in terms of procurement, contract types, and payment mechanisms. The report also addresses the following subjects: best-value selection, performance specifications, design-build, shadow tolls, public-private partnerships, concessions, and design-build-operate-maintain.

- **FHWA Innovative Finance Quarterly:** This quarterly newsletter, published by FHWA, provides information on the latest developments in Federally-sponsored innovative finance programs, such as TIFIA, GARVEE Bonds, and SIB transactions. It also features descriptions of innovative projects and programs of interest launched by state DOTs around the country. The newsletter also tracks legislative changes. Copies of all issues of the Quarterly dating back to 1997 are available on the FHWA Innovative Finance website, together with copies of FHWA's earlier Innovative Finance Newsletter.

- **Current Toll Road Activity in the U.S.:** A Survey and Analysis by FHWA.

- **PPP Letter from former Secretary Mineta to Congressman Petri:** This letter from former Secretary Mineta to Congressman Thomas Petri, Chairman of the Subcommittee on Highways, Transit, and Pipelines of the U.S. House of Representatives Committee on Transportation and Infrastructure commends the committee for holding a congressional hearing on highway public-private partnerships and provides a compressive list of the various programs active within U.S. DOT that support partnership projects

TRB PPP RESOURCES

- **"Let's Make a Deal" Panel Discussion:** On Monday, January 10, 2005 FHWA Administrator Mary Peters moderated a panel at the Transportation Research Board's annual meeting titled "Let's Make a Deal." The session was structured as an open forum between the U.S. DOT and private sector players involved in project financing and delivery. The session focused on how the parties need to think creatively and strategically together to advance critical surface transportation projects, specifically addressing what flexibilities the key stakeholders need to bring to the table.

STATE DOT PPP RESOURCES

- **Current Practices in Public-Private Partnerships for Highway Projects:** States throughout the country face serious gaps between the level of highway services demanded by citizens and businesses and the funding available to finance, construct, operate and maintain the highway system. The needed improvements would provide substantial economic benefits to the travelling public – both to citizens of the sponsoring states and to the residents and businesses travelling through these states to other destination.

  The State of Maryland is exploring the potential to expand the use of public-private partnerships (P3) to deliver highway projects. Maryland has enjoyed success using the "design-build" model of P3 in several highway projects. That model would be expanded to larger projects and could encompass a broader range of project activities including the financing, planning, design, construction, operation and maintenance of highways.

Issued in July 2005, this report reviews transportation P3 initiatives throughout the US in order to gain a broad understanding of the challenges and obstacles associated with such programs. The information used in the review came from two concurrent research efforts conducted by staff form the Maryland Transportation Authority, Maryland DOT, the State Highway Administration, FHWA, and KCI Technologies (the Maryland P3 Team) in 2004.

NATIONAL CENTER FOR PPP RESOURCES

- **PPP Final Report: Partnerships in Transportation Workshops:** Based on workshop presentations, panel dialogues, and roundtable discussions, this report outlines the many lessons learned from the workshops, with an emphasis on the elements of a successful PPP project from both public and private perspectives, impediments to PPPs in surface transportation programs, and strategies for overcoming these impediments. The report also summarizes the status of PPP programs within each of the states that hosted a PPP workshop. The report concludes by discussing the impacts that the PPP workshops have had on host agencies, next steps to further promote PPPs, and available resources for sponsors of PPPs and others who are interested in developing and implementing PPP programs and projects.

DEVELOPMENT BANK PPP RESOURCES

- **World Bank Policy Research Working Paper 3356: Where do We Stand on Transport Infrastructure Deregulation and Public-Private Partnership?** The evolution of transport public-private partnerships (PPPs) in developing and developed countries since the early 1990s seems to be following a similar path: private initiatives work for a while but after a shock to the sector takes place the public sector returns as regulator, owner or financier; after a while the public sector runs into problems and eventually finds a hybrid solution to ensure the survival of the sector. This paper reviews the effectiveness of transport infrastructure deregulation from three angles: efficiency, fiscal and users' viewpoint. The paper emphasizes the difficulties and strong political commitments required to make the reforms sustainable and argues that governments willing to make corrections to the reform path are faced with the need to address recurrent and emerging issues in transport systems: tariff structure, quality (timetable, safety, environment), access rules for captive shippers, the trend toward rebundling and decrease in intrasectoral competition, multimodalism and the stimulus through yardstick competition.

- **World Bank Technical Paper No. 399, Concessions for Infrastructure: A Guide to Their Design and Award:** Concession arrangements entail a myriad of legal and economic issues, including the organization of government entities responsible for concession programs and the adequacy of the broader legal and regulatory environment. The design and implementation of concession contracts that allocate risks and responsibilities and the mechanisms for evaluating and awarding projects are also of paramount importance. The government's role as regulator and as a provider of support for infrastructure concessions must also be assessed. While some countries have established extensive concession programs, others are just beginning to develop these programs. This report provides a guide to the complex range of issues and options involved in the implementation of concession arrangements, drawing on the experience of both industrial and developing countries.

- **Public Private Partnerships in Toll Roads in the Peoples Republic of China:** This paper was prepared for the PPIAF/ADB Conference on Infrastructure Development – Private Solutions for the Poor: The Asian Perspective, Manila, 28-30 October 2002. It provides a detailed review of the toll roads program in China deals with issues that are relevant to other countries and sectors. Issues addressed include: the motivation for private participation, institutional arrangements (including the use of corporatized companies that are nominally private but in fact government-controlled), and modalities for raising finance - including securitization of toll revenues, bond issues, joint ventures and concessions. Impacts on economic and regional development and social equity are assessed. The paper recommends greater coordination in planning of toll roads to create an effective network; clearer and standardized regulatory and institutional frameworks; a greater focus on users; and a more consultative approach to resettlement and related issues.

- **World Bank Toll Roads and Concessions:** This knowledge base deals with the general issue of toll roads. It also covers contractual options for private sector involvement (including concessions). The knowledge base covers the extent of toll road provision internationally, the objectives, benefits, and costs of a toll road program, tariff setting and development issues, and involvement of the private sector. This key issues document is based on extensive experience in the sector worldwide and follows on from the work being carried out on behalf of the World Bank and Japanese Ministry of Construction on the development of toll roads in Asia.

- **Seminar Proceedings for Asian Toll Road Development in an Era of Financial Crisis:** This seminar was held from 9-11 March 1999 at the Tokyo International Forum in Tokyo, Japan. It brought together a wide range of leaders, decision-makers, academics, and other influential people related to toll road development, totalling 340 persons from 17 countries. The Seminar featured 18 individual speeches and presentations, as well as a comprehensive panel discussion on the last day. Seminar speakers and panellists included MOCJ and World Bank officials, foreign government representatives, academic experts from Japan and abroad, public and private sector toll road developers and operators, and specialists in the areas of toll road finance, regulation, and legal issues.

  The Seminar Proceedings comprise three volumes. Volume I contains an introductory Section and eight others, one for each of the Seminar Sessions. Volume II contains background information on the seminar and its participants. Volume III contains Appendix G, a report entitled "Review of Recent Toll Road Experience in Selected Countries," which served as the Seminar Resource Report and was given to all Seminar attendees.

- **Public Policy for the Private Sector 258 - Unsolicited Proposals: John Hodges Competitive Solutions for Private Infrastructure:** This Paper looks at systems used by some governments transform unsolicited proposals for private infrastructure projects into competitively tendered projects. It focuses on the policies that Chile, the Republic of Korea, the Philippines, and South Africa have adopted for managing such proposals. A companion discussion explores the problems associated with unsolicited proposals, especially the risks they raise for competition and transparency.

- **PPP Council of Canada**

EUROPEAN COMMISSION PPP RESOURCES

- **Guidelines for Successful Public-Private Partnerships:** This document was designed as a practical tool for PPP practitioners in the public sector faced with the opportunity of structuring a PPP and of integrating or "blending" European Communities grant financing in PPPs. The report is to focus on a number of critical issues influencing the successful integration of public grants, private funds, IFI loans (such as the EIB or EBRD) and European Commission financing. Reference is made to a number of analytical techniques which are well known and documented. These are not presented with the objective of promoting a standard methodology but rather in an attempt to highlight areas in which particular care and analysis needs to be observed. The Guidelines are not designed to provide an exhaustive list of PPP structures nor present any structures as having the endorsement of the Commission. The Guidelines present five thematic parts dealing with:
  - PPP structures, suitability and success factors
  - Legal and regulatory structures
  - Financial and economic Implications of PPPs
  - Integrating grant financing and PPP objectives
  - Conception, planning and implementation of PPPs
- **Resource Book on PPP Case Studies:** The growing interest in the development of PPP's was confirmed by the request, put forward by representatives of Candidate Countries, to complement the Guidelines with examples of actual projects in order to better understand the practical implementation issues. Following this request, the Commission has developed this Resource Book, consisting of case studies of PPPs in both Western and Central Europe and in various sectors including: Water and Wastewater Management, Solid Waste Management and Transport. These sectors are representative of those in which the Commission has provided grant financing. While they are not the only sectors in which PPP principles are being applied, they do provide a balance between sectors with a considerable history of PPP application such as transport and those in which it is new and encountering issues.

FOUNDATION PPP RESOURCES

- **Reason Foundation Annual Privatization Report:** The Reason Foundation's Annual Privatization Report helps policy- and opinion-makers understand the fast-moving arena of privatization, outsourcing, and government reform. The report addresses various forms of public infrastructure. The "Surface Transportation" section provides excellent information on PPP developments including:
  - State PPP Laws
  - Sale/Lease of Existing Toll Roads
  - PPP Toll Road Projects
  - HOT Lanes and Express Toll Lanes
  - Federal Reauthorization of Surface Transportation
  - Overseas Toll Road Developments

RATING AGENCY PPP RESOURCES

- **Public-Private Partnerships: The Next Generation of Infrastructure Finance:** Prepared by Fitch Ratings, this technical paper investigates infrastructure requirements in developed and developing nations and finds that they are beginning to exceed available financing resources. This funding gap has lead to widespread acceptance that the private sector, in partnership with the public sector, might have to play a larger role in infrastructure financing. This role could be active - in the form of project sponsorship - or passive - in the form of an institutional bond investor. This paper sees more promise in the latter role. A 'new generation' of public-private partnerships (PPPs) is described, wherein project credit risk is pooled through infrastructure banks and layers of credit enhancement are added to engage domestic debt markets. The role of the private sector in such arrangements is to act as the financial engineers, creating enhanced investment vehicles and stimulating the efficient use of capital. For such partnerships to truly succeed, host countries will need to promote a relatively stable macroeconomic environment, develop a legal and regulatory framework for infrastructure projects, and foster the development of a domestic debt market. Until such conditions have been achieved, multilateral and development banks will still have a significant role to play in project financing.

- **Project Finance Summary: Debt Rating Criteria:** Prepared by Fitch Ratings, this document provides a comprehensive review of the risks facing project-financed infrastructure, from the perspective of a lender. A rigorous framework is presented. Project-level risks include construction, operations and technology risk, as well as contractual design. Also relevant to the overall risk assessment are sovereign risk, level of legal institutional development and force majeure. Credit enhancements such as guarantees and escrow accounts are discussed. By describing the factors important to lenders to infrastructure projects, this document will help project designers ensure that their projects are financeable.

- **Global Toll Road Rating Guidelines – Exposure Draft:** Prepared by Fitch Ratings and issued in September 2006 as a companion to the report cited above to guide readers through the analytical framework used in assessing the credit quality of various types of toll roads and financing structures and the treatment of risks associated with these types of facilities. Toll roads are an important way to finance a PPP project due to the cash flow potential of the toll facilities, whether new or existing. Hence they generally provide enhanced opportunities to apply some of the more sophisticated forms of PPPs, such as long-term leases or Concessions.

INDUSTRY JOURNALS AND PERIODICALS

- **Public Works Financing:** Periodic newsletter whose specific focus since 1988 has been on public-private partnerships in infrastructure finance. The editorial staff provides projects leads, detailed project case studies, news analysis, business and political trends, plus a directory of 36 of the industry's most experienced consultants. In addition to monthly issues, PWF publishes a database each October of over 2,200 PPP projects that are planned, being built or operating around the world.

- **Infrastructure Journal:** British publication and website dedicated to PPPs across all sectors. Infrastructure Journal also prepares PPP case studies and organizes conferences. It is an international forum with 29% of its reader distribution in Europe, 17% in Asia, 31% in North America, 18% in Latin America, and 5% in the Middle East and Africa. Its readership includes public officials, lawyers, consultants, contractors, commercial lenders, multilateral and bilateral lenders, development agencies, and project sponsors and developers.

- **Innovation Briefs:** Provides transportation policy analysis for legislators, public officials, business leaders, newspaper editors and transportation professionals. The Briefs' critical commentaries and incisive analysis of current events keep our readers in touch with events, trends and ideas in the transportation world. Innovations Briefs is published by the Urban Mobility Corporation (UMC), a Washington-based consultancy established in 1982 specializing in transportation management and technology transfer.

- **The Bond Buyer:** The definitive source of up-to-date information on bond offerings in the United States. It is available by subscription only, in both on-line and paper format. The paper is updated daily.

- **Project Finance Magazine:** Provides strategic information, news, and forecasts and trend analysis on the project finance markets. It contains features on countries, infrastructure surveys by region and sector, and agency and development bank news. It offers periodic industry- and region-specific special issues and maintains a team of 22 journalists who track current developments around the world.

- **TOLLROADSnews:** Publication specializing in tolling that describes this emerging service business and documents the debates and controversies. It provides descriptions of new toll projects around the world, analysis of political, legal, and economic problems of toll projects, information on toll technologies, and reports on ongoing operations of toll agencies and projects.

- **The International Comparative Legal Guide to: PPP / PFI Projects 2007:** International summary of legal status and issues associated with the use of PPPs in other countries. First published by the Global Legal Group Ltd, London in November 2006.

- **Wall Street Journal:** Published by Dow Jones & Company, Inc., the Wall Street Journal is one of the most respected daily financial newspapers in the world. It carries information on all aspects of finance and is used as a reference by nearly all financiers.

- **Engineering News Record (ENR):** Weekly engineering industry magazine has online access. Recent articles are listed by topic, such as transportation or finance. The site also provides up to date construction pricing information, indicating recent cost trends for key construction materials.

- **American Association of State Highway Transportation Officials (AASHTO) Journal:** Weekly publication that covers legislative and regulatory news on transportation. The AASHTO site search engine references previous volumes of the journal but without specific article references.

PPP BOOKS

- **Achieving Public Private Partnership in the Transport Sector:** This is the first volume in a series sponsored by the Diebold Institute for Public Policy Studies. The book reviews the history of transport partnerships around the world and provides detailed case studies of three recent partnership projects:
  - The M1/M15 Motorway in Western Hungary, a 56.3-kilometer, US $330 million facility;
  - The Vasco da Gama Bridge, a 12.3-kilometer, US $1.0 billion bridge in Lisbon, Portugal
  - The Bangkok Mass Transit System, a 23.7-kilometer, US $1.5 billion elevated rail mass transit system in the Thai capital

  Research for the book has been assembled through interviews with financial advisers, bankers, construction companies, investors, government officials, development banks, academicians, and journalists, together with the review of primary project documents and other written materials.

  Representing a case of failure, a case of success, and one whose fate has not yet been determined, the cases offer rich comparisons. They have been shaped by differing cultural expectations and economic conditions. They have also benefited from the commitment of creative supporters and been subjected to changing political winds.

- **International Project Financing:** This book deals with the legal issues encountered when negotiating and drafting agreements relating to project finance, and is designed for general use throughout the world rather than any particular country. The book is printed in loose-leaf form and is updated annually. It provides a chapter-by-chapter analysis and discussion of the different issues involved in project finance, together with contract forms that represent a collection of documents used around the world.

- **Going Private - The International Experience with Transport Privatization:** Examines the diverse privatization experiences of transportation services and facilities. Cases are drawn from the United States, Asia, Europe, and Latin America. Since almost every country has experimented to some degree with highway and bus privatization, the authors focus particularly on these services, although they also discuss urban rail transit and airports. Highways and buses, they explain, encompass all three of the most common and basic forms of privatization: The sale of an existing state-owned enterprise; use of private, rather than public, financing and management for new infrastructure development; and contracting out to private vendors public services previously provided by government employees.

APPENDIX F - PUBLIC-PRIVATE PARTNERSHIP WEB SITE LINKS

PUBLIC-PRIVATE PARTNERSHIP WEB SITE LINKS

- The National Council for Public-Private Partnerships (NCPPP) – URL: http://ncppp.org
- AASHTO/FHWA Innovative Finance Web Site – URL: http://www.innovativefinance.org
- FHWA Asset Management Website –

  URL: http://www.fhwa.dot.gov/infrastructure/asstmgmt/index.htm
- U.S. Department of Transportation TIFIA Credit Program –

  URL: http://www.tifia.fhwa.dot.gov
- The American Road & Transportation Builder's Association – URL: http://www.artba.org
- American Association of State Highway and Transportation Officials –

  URL: http://www.transportation.org
- American Public Transit Association – URL: http://www.apta.com
- International Bridge Tunnel and Turnpike Association – URL: http://www.ibtta.org
- World Road Association (PIARC) – URL: http://www.piarc.org
- International Road Federation – URL: http://www.irfnet.org
- International Bank for Reconstruction and Development - URL: http://www.worldbank.org
- Asia Development Bank – URL: http://www.adb.org
- Inter-American Development Bank – URL: http://www.iadb.org
- European Bank for Reconstruction and Development – URL: http://www.ebrd.com
- European Investment Bank – URL: http://www.ebrd.com
- European Union – URL: http://www.europa.eu.int
- European Union Transport Activities - URL: http://www.europa.eu.int/pol/trans
- Organization for Economic Co-operation and Development - URL: http://www.oecd.org
- United Kingdom Highway Agency - URL: http://www.highwaysgov.uk
- Reason Public Policy Institute - URL: http://www.reason.org
- Diebold Institute for Public Policy Studies - URL: http://www.dieboldinstitute.org
- U.S. General Accountability Office - URL: http://www.gao.gov
- The World Bank - URL: http://www.worldbank.org/transport/roads/toll_rds.htm