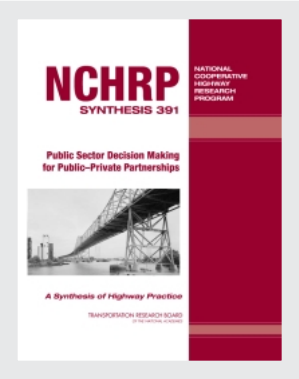

Public-Sector Decision Making for Public-Private Partnerships

DETAILS

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NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM

NCHRP SYNTHESIS 391

Public Sector Decision Making for Public–Private Partnerships

A Synthesis of Highway Practice

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SUBJECT AREAS
Planning and Administration

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in Cooperation with the Federal Highway Administration

TRANSPORTATION RESEARCH BOARD

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NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM

Systematic, well-designed research provides the most effective approach to the solution of many problems facing highway administrators and engineers. Often, highway problems are of local interest and can best be studied by highway departments individually or in cooperation with their state universities and others. However, the accelerating growth of highway transportation develops increasingly complex problems of wide interest to highway authorities. These problems are best studied through a coordinated program of cooperative research.

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The program is developed on the basis of research needs identified by chief administrators of the highway and transportation departments and by committees of AASHTO. Each year, specific areas of research needs to be included in the program are proposed to the National Research Council and the Board by the American Association of State Highway and Transportation Officials. Research projects to fulfill these needs are defined by the Board, and qualified research agencies are selected from those that have submitted proposals. Administration and surveillance of research contracts are the responsibilities of the National Research Council and the Transportation Research Board.

The needs for highway research are many, and the National Cooperative Highway Research Program can make significant contributions to the solution of highway transportation problems of mutual concern to many responsible groups. The program, however, is intended to complement rather than to substitute for or duplicate other highway research programs.

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The members of the technical committee selected to monitor this project and to review this report were chosen for recognized scholarly competence and with due consideration for the balance of disciplines appropriate to the project. The opinions and conclusions expressed or implied are those of the research agency that performed the research, and, while they have been accepted as appropriate by the technical committee, they are not necessarily those of the Transportation Research Board, the National Research Council, the American Association of State Highway and Transportation Officials, or the Federal Highway Administration, U.S. Department of Transportation.

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Cover figure: Chicago Skyway, looking southeast across Calumet River, showing underside of main span and river piers.

ACKNOWLEDGMENTS

The authors would like to thank Alex Linthicum, who conducted most of the literature review for this project.

FOREWORD

Highway administrators, engineers, and researchers often face problems for which information already exists, either in documented form or as undocumented experience and practice. This information may be fragmented, scattered, and unevaluated. As a consequence, full knowledge of what has been learned about a problem may not be brought to bear on its solution. Costly research findings may go unused, valuable experience may be overlooked, and due consideration may not be given to recommended practices for solving or alleviating the problem.

There is information on nearly every subject of concern to highway administrators and engineers. Much of it derives from research or from the work of practitioners faced with problems in their day-to-day work. To provide a systematic means for assembling and evaluating such useful information and to make it available to the entire highway community, the American Association of State Highway and Transportation Officials—through the mechanism of the National Cooperative Highway Research Program—authorized the Transportation Research Board to undertake a continuing study. This study, NCHRP Project 20-5, "Synthesis of Information Related to Highway Problems," searches out and synthesizes useful knowledge from all available sources and prepares concise, documented reports on specific topics. Reports from this endeavor constitute an NCHRP report series, *Synthesis of Highway Practice.*

This synthesis series reports on current knowledge and practice, in a compact format, without the detailed directions usually found in handbooks or design manuals. Each report in the series provides a compendium of the best knowledge available on those measures found to be the most successful in resolving specific problems.

PREFACE

By Jon M. Williams
Program Director,
Transportation
Research Board

Public sector agencies are increasingly exploring the use of public–private partnerships to increase funding available for infrastructure improvement. This study examines the information that is available to properly evaluate the benefits and risks associated with allowing the private sector to have a greater role in financing and developing highway infrastructure. The report will be of interest to public sector decision makers seeking to leverage or supplement traditional sources of funding with private investment and other participation.

Information for the study was gathered through a literature review, a survey of U.S. state departments of transportation and Canadian ministries of transportation, and a second survey of other stakeholders. Supplemental information was gathered through interviews.

Jeffrey N. Buxbaum and Iris N. Ortiz of Cambridge Systematics, Inc., collected and synthesized the information and wrote the report. The members of the topic panel are acknowledged on the preceding page. This synthesis is an immediately useful document that records the practices that were acceptable within the limitations of the knowledge available at the time of its preparation. As progress in research and practice continues, new knowledge will be added to that now at hand.

CONTENTS

PUBLIC SECTOR DECISION MAKING FOR PUBLIC–PRIVATE PARTNERSHIPS

SUMMARY

Public sector agencies around the country are seeking creative solutions to closing an increasing gap between transportation infrastructure costs and funding. Public–private partnerships (PPPs) have the potential to provide part of this needed investment. In addition, some believe that PPPs can bring cost savings and efficiencies on project delivery and operations; however, there is not a lot of evidence to confirm this belief. A 2007 study commissioned by Infrastructure Partnership Australia evaluated the efficiency of PPPs relative to traditional procurement, and found that such partnerships were more cost-efficient and more often completed within schedule. Private investors have shown a willingness to invest heavily in new and existing transportation infrastructure, given the right incentives, and properly structured contracts can bring about cost savings. Much of the information promoting or criticizing PPPs comes from those who have a direct stake in the outcome of the debate (positive or negative). Public sector decision makers seeking to leverage or supplement traditional sources of funding with private investment and other participation must make informed decisions. Currently, there is a shortage of balanced information available to the public and decision makers in their deliberations on PPPs.

The well-publicized long-term leases of the Chicago Skyway and Indiana Toll Road generated a lot of attention by supporters and critics of PPPs. The public sector may benefit from tapping into the private sector to procure much needed transportation improvements through a variety of PPP types, with varying levels of private sector participation, based on risk transferred. However, concerns have been raised as to whether PPPs are in the public interest and what type of information is available to decision makers as they decide whether to pursue a PPP.

This synthesis examines the information available in the United States and internationally that is needed to properly evaluate the benefits and risks associated with allowing the private sector to have a greater role in the financing and development of highway infrastructure, and how that information can be used in the decision-making process. The synthesis also included two surveys. The survey of state departments of transportation (DOTs) included 65 surveys distributed to the 50 states, the District of Columbia, Puerto Rico, and 13 Canadian provinces. Overall, a total of 49 responses were received for a 78% response rate. At the U.S. state DOT level (including the District of Columbia and Puerto Rico), 44 responses were received, a response rate of 85%. A second survey of interested parties was taken by 24 individuals who were identified by the authors and the topic panel, and had been publicized at the 2008 Annual Meeting of TRB.

The numerous topics of interest related to PPP decision making were divided into three major categories: (1) project selection and delivery, (2) transparency, and (3) terms of PPP agreements.

Three major themes emerged:

How might governments decide whether or not to pursue a PPP?

PPPs encompass a variety of project delivery options, with varying levels of private sector participation, based on risk transferred. A PPP is not a one-size-fits-all solution, and the

decision to use one of the many PPP types or traditional approaches could consider and incorporate:

- **Valuation of alternative approaches.** There is a need for a framework or process to analyze the differences between public versus private delivery that can be well understood by decision makers. The value for money is one of the most well-known techniques to evaluate PPP projects. All valuation techniques have their merits and limitations, and decision makers must be aware of what the benefits and limitation are from using these valuation tools. To accomplish this, there is a need for personnel with skills including value engineering, business modeling, risk transfer assessment, capital budgeting, traditional financial problem-solving methodology, and performance auditing.
- **Appropriate risk transfer.** The transfer and sharing of project risks is considered by many as one of the main benefits of PPPs. In a PPP, risk could be allocated to the party that can best manage such risk and, in some instances, there are risks to be shared by both partners. Contract terms can be used to accomplish the transfer of risks.
- **Transparency and public participation.** PPP agreements are complicated, and there have been criticisms over deals being rushed through without the public or its elected officials understanding the implications. The lack of transparency in the PPP process has been voiced as one of the main concerns, and it is mentioned as an important issue by both supporters and opponents of PPPs. Once a PPP model is identified for a specific project, this could be followed by an exercise in educating and informing both the public and elected officials.
- **Unavoidable complexity of the transactions.** States are motivated to find creative solutions, and they are interested in obtaining results quickly. However, the PPP process is complex, from the valuation and procurement process through the duration of the partnership. There is no uniform set of rules or standards to follow for all projects; therefore, there is a high level of expertise required when pursuing a PPP.

How might the public interest be protected?

A PPP allows a much larger role for the private sector, from bundling design and construction in one contract (design-build), to long-term operations and maintenance of existing or new facilities (concessions). Some PPPs include equity contributions from the private partner and may also transfer toll collection and rate setting responsibilities to the private sector. When transferring these responsibilities it is important to ensure that the private sector has the proper motivations to protect the public interest, while allowing investors to meet a return on the investment that is in line with the risk they take.

Most of the concerns about PPPs can be managed through contract terms. Although recent contracts have addressed many of the issues that have caused concerns in the past, unforeseen situations may arise. That is, when the strength and flexibility of the contract is tested, and clauses that allow for contract termination or buyout are important.

A PPP may also be monitored over its sometimes long lifetime to ensure that the private sector meets safety, maintenance, and other standards specified by contract. When valuing the decision to pursue a PPP, the public sector may account for the additional cost of performance monitoring by qualified, independent public sector/DOT staff.

Other key public interest issues include appropriate use of revenues, maintaining environmental standards, and maintaining fair labor practices.

Misperceptions about PPPs can be a distraction from the real issues.

Many public concerns are rooted in concerns raised over past transactions, even though more recent approaches have learned from the past and resolved the issues in contracts. Some neg-

ative perceptions about PPPs have lingered over time. Also, inadequate public information and openness in the process may lead to mistrust. Project sponsors might communicate with citizens and decision makers in an effort to build trust and to educate the public about some of the misperceptions related to PPPs and how they have been addressed, such as:

- **Non-compete clauses are always part of PPPs with a long-term lease component.** In reality, after the experience with strict non-compete clauses in the 91 Express Lanes PPP in California, most PPP deals have included "limited-compete" clauses.
- **A PPP is a synonym for tolls and with that toll increases are inevitable, resulting in windfall profits.** Limiting schedules for toll levels can be and have been written into PPP agreements. In addition, there are several types of PPPs that do not require the implementation of tolls (e.g., design-build, maintenance contracts, and agreements with availability payments/shadow tolls). Furthermore, direct user fees (i.e., tolls) are not the only way that the private sector can be compensated. The PPP debate, specifically related to long-term concessions paid through tolls, is caught in the middle of a debate about tolling policy. Tolling policy and use of revenue is an important public responsibility that can be clearly articulated in contracts.
- **The public sector loses total control of the facility.** Under a PPP agreement, the public sector never loses ownership of the facility; however, some responsibilities are transferred to the private sector. The extent to which these responsibilities are transferred is defined by contract. Well-crafted agreements, along with monitoring and enforcement of contract terms, can ensure that the public interests are protected.

An open process helps build trust and support, as long as project sponsors can demonstrate that decisions are being made with the public interest in mind.

Future research on this subject could focus on the PPP valuation process and the development of a framework to assist project sponsors in the selection of project delivery options, including the various types of PPPs. In addition, additional research is needed on how to develop an annual growth rate to establish toll rate caps on PPPs that rely on tolling. However, this report provides a basic understanding of PPP efforts to date in this country.

CHAPTER ONE

INTRODUCTION

Across the country, public sector agencies are seeking creative solutions to closing an increasing gap between transportation infrastructure costs and funding. Public–private partnerships (PPPs) have the potential to provide part of this needed investment. In addition, there are those who believe that PPPs can bring cost savings and efficiencies on project delivery and operations, although there is not much evidence to confirm this belief. One recent study commissioned by Infrastructure Partnership Australia (2007) evaluated the efficiency of PPPs relative to traditional procurement, and found that they were more cost-efficient and more frequently completed within schedule. Given the right incentives, private investors have shown a willingness to invest heavily in new and existing transportation infrastructure, and properly structured contracts can result in cost savings. Much of the information promoting or criticizing PPPs comes from those who have a direct stake in the outcome of the debate.

In recent years, interest in PPPs for highway infrastructure projects has surged in the United States as a result of a confluence of several trends (Brown 2007; Zhang 2008):

1. Automobile travel demand is high and is expected to continue growing;
2. Inflation has outpaced the rate of motor fuel tax increases, thus decreasing available revenue for transportation investment, and significant existing state municipal debts have limited public agencies' abilities to obtain more money from the tax-exempt bond market;
3. Transportation infrastructure costs are rising as a result of construction cost inflation and the aging of existing infrastructure; and
4. Pension funds and insurance companies, both domestic and international, have enormous amounts of cash to invest in steady, predictable, long-term cash flows.

It was the high-profile asset monetization deals of existing facilities (referred to as brownfields) on the Chicago Skyway—$1.83 billion in up-front payments, and the Indiana Toll Road—$3.8 billion in up-front payments, that really caught the attention of elected officials. Some saw such deals, referred to now generically as public–private partnerships, as a way to tap value from existing infrastructure. Others saw these contracts as relinquishing control over decision making on public assets to the profit-motivated private sector without adequate public oversight.

Such asset monetization agreements are only one type of PPP that can be used for highways, but they have inspired great excitement and debate over the merits and pitfalls of PPPs. One of the primary areas of concern is how are public interests protected and what information is available to decision makers such that the public interests are protected. A recent report from the Government Accountability Office (GAO) concluded that although PPPs appear to be a viable alternative to support transportation investments, "it is difficult to be confident that [the public] interests are being protected when formal identification and consideration of public and national interests has been lacking, and where limited upfront analysis of public interest issues using established criteria has been conducted" (GAO 2000b).

This synthesis examines the information available in the United States and internationally in decision making related to PPPs. Note that a PPP can be used for all manner of transportation projects: highways, transit, freight, air, and waterways. This research focuses on the use of PPPs for highway projects, but sometimes uses examples from other modes, where appropriate.

PPPs in the United States are evolving, and there are no set rules that prescribe specifically when and how these partnerships should be pursued and implemented. States are learning and adapting as they acquire experience and gain more exposure to the various PPP mechanisms. There is no "one-size fits all," and the ultimate decision of what type of PPP is appropriate for a particular project will depend on many factors, making each arrangement unique. Nevertheless, governments can draw lessons from United States and international experience that will help craft an arrangement that achieves the transportation goals and needs, while protecting the public interest.

METHODOLOGY

This synthesis is based on information obtained through a literature review and two web-based surveys, one to all U.S. state and Canadian provincial departments of transportation (DOTs), and the other to individuals and organizations known to the authors and panel to have an interest in PPPs.

Literature Review

The literature review was designed to locate U.S. and international experience related to concerns about how the public

interest was protected in PPP transactions and how these concerns were addressed by decision makers, project sponsors, and other stakeholders. The literature review included documents suggested by the review panel, in addition to papers and studies previously compiled by the authors. Some of the information sources reviewed included:

- A Cambridge Systematics's report on long-term lease agreements and public concerns prepared for the University of Southern California, Keston Institute;
- Studies by states, regions, and toll road authorities investigating PPP options;
- U.S. House of Representatives—Testimonies on PPPs before the House Transportation and Infrastructure Committee;
- Several GAO studies, including a recent report about protecting the public interest in PPPs;
- FHWA:
  - PPP website;
  - International Scan Report on Asset Management;
  - PPP User Guidebook and Case Studies; and
  - PPP legislation survey prepared by Nossaman, Guthner, Knox & Elliot, LLP.
- Publications from the Organization for Economic Cooperation and Development (OECD), the European Union, and the World Bank;
- TRB papers presented at its annual meetings in recent years;
- Academic and industry papers;
- Books on PPPs: *Nuevos Sistemas de Gestión y Financiación de Infratructuras de Transporte* (*New Systems of Management and Financing for Transportation Infrastructure*), by Izquierdo and Vassallo (2004); and
- Newspapers and Internet newsletters/blogs on PPPs and toll roads.

Survey of U.S. State and Canadian Provincial Departments of Transportation

A web-based survey was sent to all U.S. state DOTs (including the District of Columbia and Puerto Rico) and to their 13 Canadian provincial counterparts to assess various aspects of PPP decision making, covering:

- Criteria used to select PPP projects;
- Measures and/or strategies used to protect the public interest;
- Level of importance of public concerns related to PPPs;
- Tools used by state DOTs to evaluate PPP proposals; and
- Information provided to decision makers, including who provides the information.

The survey was developed as a collaborative effort among AASHTO, NCHRP, and FHWA, to avoid duplication and to limit the potential burden on DOTs for responding to multiple surveys on a similar subject. In 2005, FHWA and AASHTO conducted a survey that investigated state DOT experience with, their readiness to undertake and professional capacity needs related to PPPs, and it was scheduled to be updated during the spring 2008. The full survey included 15 questions, of which 9 were specifically related to this NCHRP synthesis. Overall, 65 surveys were distributed and 49 responses were received for a 78% response rate. Forty-four state responses were received, a response rate of 85%, and five Canadian provinces responded. Appendices A and B contain the survey questionnaire and the results summaries, including separate summaries for U.S. and Canadian transportation departments.

Survey of Other Individuals and Organizations

A second survey about public concerns related to PPPs was distributed to individuals and organizations that are known to have an interest in the subject. The distribution list was developed by the principal investigators in collaboration with NCHRP staff and Topic Panel members. The survey was also publicized at the January 2008 TRB 87th Annual Meeting. This survey was qualitative, and sought to specifically find the perceived benefits of PPPs, the most common concerns, and how these concerns might be mitigated. A total of 24 individuals responded to the survey, representing several groups including legislature, state DOTs, transportation consultants, financial advisors, investment banks, interest groups, and academia. The full questionnaire can be found in Appendix C, and a summary of the responses is provided in Appendix D.

REPORT ORGANIZATION

Chapter two of this synthesis provides an overview of the different ways that PPPs are defined, some history about PPPs in the United States, and addresses some common misconceptions about PPPs. Chapter three addresses a broad range of topics of concern related to PPPs, and chapter four has conclusions and suggestions for further research.

CHAPTER TWO

PUBLIC–PRIVATE PARTNERSHIP DEFINITION AND HISTORY

The high-profile asset monetization lease contracts executed on the Chicago Skyway in 2005 and the Indiana Toll Road in 2006 are but one way the private sector can take a greater than usual interest in transportation infrastructure development, operations, and maintenance. There are many other varieties of PPPs, and any discussion of the merits of PPPs needs to be clear on what is being discussed. This section provides an overview of the many types of PPPs that have been implemented or considered in North America.

DEFINITION OF PUBLIC–PRIVATE PARTNERSHIPS

References to PPPs are wide-ranging and ambiguous, with little precision in how the term is used. Some consider a partnership simply a term used to describe relationships between any contracting parties, whereas others interpret it as an advancement on or alternative to "contracting out" (Wettenhall 2003). Grimsey and Lewis (2005) consider whether PPPs are a form of privatization and assert they are not, because with privatization, the government no longer has a direct role in ongoing operations, whereas with a PPP the government retains ultimate responsibility. Leavitt and Morris (2007) suggest partnerships encompass a continuous range of public/private mixes. At one end of the continuum the government agency provides for and produces products or services. At the other extreme the government completely divests all responsibility for products or services. A partnership is any arrangement that exists between these two extremes. The FTA specifies that a PPP is essentially a form of innovative procurement in which private capital is invested, and not an innovative finance tool such as "joint development" or "transit oriented development" deals that are typical of transit projects and that provide additional capital and operating revenues (FTA 2007).

The U.S.DOT's Report to Congress on Public-Private Partnerships (U.S.DOT 2004) defines a PPP as:

> 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.

This definition is widely adopted across the PPP literature (Jeffers et al. 2006; AECOM 2007b) as related to transportation PPP, and we continue to use that definition in this synthesis.

Opinion/Comment from "Other Individuals/Interest Groups" Survey:

PPPs range from concessions to construction contracting methods. It is very important to differentiate between the various types of PPPs in use rather than lumping them all together. The public accountability varies significantly from type to type.

Types of Public–Private Partnerships

The literature documents several alternative approaches to partnerships (U.S.DOT 2004; AECOM 2007b; FHWA 2007; Pakkala et al. 2007). The approaches relevant to highway infrastructure are summarized in Table 1, and are sorted by involvement to the private sector, from least to greatest. The first, Design-Bid-Build (DBB) is the traditional method of project delivery; the last two are considered complete privatization, whereas the rest are considered PPP. Build-Own-Operate and Asset Sales represent full privatization of public-use assets, and the FHWA *PPP Guidebook* reports that "these contracts are perceived as not in the public interest," because the public sector relinquishes control over how the asset is maintained and priced. The Chicago Skyway and Indiana Toll Road deals are sometimes referred to as "asset sales," but this is incorrect—in reality, they were "long-term lease agreements."

The survey of state PPPs enabling legislation (prepared by Nossaman, Guthner, Knox, & Elliott, LLP for FHWA) shows that 21 states allow DBFO procurement for toll facilities.

Common Perceptions

The Chicago Skyway and the Indiana Toll Road deals fall into the long-term lease agreement/concession category defined earlier. Although PPPs in various forms (mostly through design-build) have been used in the United States before these concession agreements, the large payments from private investors to the public sector raised awareness in the transportation community about this PPP option, and the deals were

TABLE 1
ALTERNATIVE APPROACHES TO INFRASTRUCTURE DEVELOPMENT
(from least private involvement to most)

Traditional Approach (non-PPP)	Definition
Design-Bid-Build (DBB)	The traditional method of project delivery in which the design and construction are awarded separately and sequentially to private firms.
PPP Approaches	
Design-Build (DB)	Combines the design and construction phases into a single fixed-fee contract, thus potentially saving time and cost, improving quality, and sharing risk more equitably than the DBB method.
Private Contract Fee Services / Maintenance Contract	Contracts to private companies for services typically performed in-house (planning and environmental studies, program and financial management, operations and maintenance, etc.)
Construction Manager @ Risk (CM@R)	A contracted construction manager (CM) provides constructability, pricing, and sequencing analysis during the design phase. The design team is contracted separately. The CM stays on through the build phase and can negotiate with construction firms to implement the design.
Design-Build with a Warranty	A DB project for which the design builder guarantees to meet material workmanship and/or performance measures for a specified period after the project has been delivered.
Design-Build-Operate-Maintain (DBOM), Build-Operate-Transfer (BOT), or Build-Transfer-Operate (BTO)	The selected contractor designs, constructs, operates, and maintains the facility for a specified period of time meeting specified performance requirements. These delivery approaches increase incentives for high quality projects because the contractor is responsible for operation of the facility after construction. The public sector retains financial risk, and compensation to the private partner can be in the form of availability payments.
Design-Build-Finance (DBF), Design-Build-Finance-Operate (DBFO), or Design-Build-Finance-Operate-Maintain (DBFOM)	DBF, DBFO, and DBFOM are variations of the DB or DBOM methods for which the private partner provides some or all of the project financing. The project sponsor retains ownership of the facility. Private sector compensation can be in the form of tolls (both traffic and revenue risk transfer) or through shadow tolls (traffic risk transfer only).
Long-Term Lease Agreements/Concessions (brownfield)	Publicly financed existing facilities are leased to private sector concessionaires for specified time periods. The concessionaire may pay an upfront fee to the public agency in return for revenue generated by the facility. The concessionaire must operate and maintain the facility and may be required to make capital improvements.
Full Privatization	
Build-Own-Operate (BOO)	Design, construction, operation, and maintenance of the facility are the responsibility of the contractor. The contractor owns the facility and retains all operating revenue risk and surplus revenues for the life of the facility. The Build-Own-Operate-Transfer (BOOT) method is similar, but the infrastructure is transferred to the public agency after a specified time period.
Asset Sale	Public entity fully transfers ownership of publicly financed facilities to the private sector indefinitely.

Source: Based on FHWAs "User Guidebook on Implementing Public-Private Partnerships for Transportation Infrastructure Projects in the United States," with some modifications made by the authors.

widely covered by the media, leading to an extensive discussion of the merits and issues of long-term concessions. Concession proposals in Pennsylvania and New Jersey to lease their existing toll roads fueled the debate among supporters and opponents, and alternative proposals have been put forth in both states to move away from the long-term concession model involving the private sector to what has been dubbed as "public-public" partnerships. In New Jersey, the state decided not to pursue a public–public toll road monetization approach because public support was lacking. Pennsylvania has two competing initiatives simultaneously. One involved a PPP through Act 44 (enacted in the summer of 2007) that would generate annual payments from the Pennsylvania Turnpike to other transportation uses in the state, and includes the possible tolling of the currently toll-free I-80, which is pending federal approval. The other was a long-term lease of the existing Pennsylvania Turnpike to private investors. As of July 2008, Pennsylvania had requested bids from private investors and accepted a bid for $12.8 billion that is pending legislative approval. The Pennsylvania Turnpike has already provided payments to the Pennsylvania DOT under Act 44. The request to implement tolls on I-80 was resubmitted to FHWA; the proposal was rejected by the federal government on September 11, 2008.

In 2006, the Harris County Toll Authority conducted a study to assess the revenue generation potential of three different financial arrangements: asset sale, long-term concession, and keeping the system under public control. The Harris County commissioners made a decision to maintain public control over the toll road system. Under the public ownership

scenario, the implementation of more aggressive tolling would generate financial gains close to those under the long-term concession scenario and still allow the county to retain full control of its toll roads.

The significant exposure of these deals in the media has led the public, and even some transportation professionals, to view or refer to PPPs as only long-term concessions and/or Design-Build-Finance-Operate (DBFO), in which the rights to collect tolls and set toll rates, and the operations and maintenance of a toll facility are transferred to the private sector. As noted previously, however, PPPs encompass a wider range of procurement methods with varying levels of private responsibility based on risks transferred. Furthermore, the public concerns raised by PPPs vary within each PPP type, and these increase as the level of private involvement increases.

It is also important to distinguish between "greenfield" and "brownfield" PPPs, where the former refers to any PPP for new infrastructure (e.g., DBFO) and the latter refers to long-term lease agreements or concessions for existing facilities.

EVOLUTION OF PUBLIC–PRIVATE PARTNERSHIPS IN THE UNITED STATES

The history of PPPs in the United States presented in this section comes from various sources including the U.S.DOT PPP "Report to Congress" (2004), the USC Keston Institute study on PPPs (2007), the FHWA *PPP Guidebook* (2007), and the recent GAO report on PPPs and the public interest (GAO 2000b). Modern PPP agreements are not new in the United States. In 1990, FHWA's Special Experimental Project Number 14 (SEP-14) authorized the use of innovative contracting techniques, including design-build and, as reported by the FHWA *PPP Guidebook,* 42 states, the District of Columbia, Puerto Rico, and the Virgin Islands have the ability to deliver transportation projects through design-build.

Private sector participation in road development dates back to the 1790s, with the development of the Philadelphia and Lancaster Turnpike in Pennsylvania. The private role in highway development, however, diminished over time. Toll facilities were developed by public turnpike authorities after World War II, mainly in the north and the east of the United States (U.S.DOT 2004). In addition, with the development of the Interstate Highway System and a higher reliance on gas taxes for road development, private sector involvement in highways was mainly through either design contracts between state DOTs and architectural/engineering firms or construction contracts.

In the late 1980s, states began to explore the potential for increased private sector participation in highway development. In Virginia, the Dulles Greenway was authorized by legislation in 1988, and developed under one of the first PPP agreements in the United States. This project was the precursor of the Virginia Public-Private Transportation Act of 1995 (PPTA), one of the first state PPP-enabling legislations. Some of the early PPPs for development of toll roads in the 1990s, such as the Pocahontas Parkway in Virginia and the Southern Connector in South Carolina, included the creation of 63-20 non-profit corporations to issue debt. California enacted PPP legislation in 1989, allowing for four pilot PPP projects. Two, the SR-91 Express Lanes and the South Bay Expressway, were developed under the Build-Transfer-Operate model with private finance.

On the federal side, SEP-14 was created in 1990, allowing states to experiment with innovative contracting options, such as cost-plus-time bidding, lane rental, and the use of warranties for certain project elements. Subsequent transportation acts, such as ISTEA, TEA-21, and SAFETEA-LU created pilot programs and innovative finance tools that added flexibility for implementation of tolling and also encouraged states to pursue private participation in transportation infrastructure.

For example, the Transportation Infrastructure Finance and Innovation Act of 1998 (TIFIA) was created to leverage federal resources and stimulate private capital investment by providing credit assistance for large transportation projects. The precursor to the creation of this credit assistance program was the Alameda Corridor. Recent PPPs that have been approved for TIFIA loan assistance include the refinancing and funding of the Pocahontas Parkway (for a future extension), SH-130 Segments 5 and 6, SR-125, and the I-495 Capital Beltway high-occupancy toll (HOT) lanes. Interest in the TIFIA program has increased recently owing to relaxed rules emerging from SAFETEA-LU, coupled with the recent credit crunch that has raised significantly the cost of private debt, making TIFIA credit assistance more attractive.

SAFETEA-LU amended the Internal Revenue Service Code to allow tax-exempt Private Activity Bonds (PAB) for privately developed and operated highway and freight facilities, authorizing up to $15 billion through 2009. As of March 2008, $3.3 billion had been allocated to various projects, including the Port of Miami Tunnel in Florida (availability payment concession) and the I-495 Capital Beltway in Virginia (HOT lane concession), among other projects. FHWA created the Special Experimental Program 15 (SEP-15), which allows for experimentation on new PPP approaches to project delivery, focusing primarily on four major components including contracting, compliance with environmental requirements, right-of-way acquisition, and project finance.

Although many of the toll roads developed in the late 1990s included private participation, some, including the Pocahontas Parkway and Southern Connector, were financed through tax-exempt bonds, TIFIA assistance, and commercial debt, with no equity from the private sector. PPPs in recent years have involved private equity investment in DBFO (e.g., Texas' SH-130 Segments 5 and 6 and Virginia's I-495 Capital Beltway HOT lanes) and long-term leases (e.g., Chicago Skyway and Indiana Toll Road), and some of the toll roads financed in the 1990s through non-profits have been refinanced in recent

years through transfers to private investors (e.g., Pocahontas Parkway and Dulles Greenway, and the Northwest Parkway toll road outside Denver) after failing to meet traffic and revenue projections.

PUBLIC–PRIVATE PARTNERSHIPS PARTICIPANTS

A PPP in transportation consists of several participants that come together to deliver a specific project, including:

- Public sector decision makers (i.e., members of the legislature);
- State or public toll authority (project sponsor);
- Equity participants, such as:
  - Integrated transportation companies,
  - International construction companies,
  - Funds, and
  - Developer/concessionaire.
- Lenders (e.g., commercial banks);
- Design and construction companies;
- Operating companies.

CHAPTER THREE

PUBLIC–PRIVATE PARTNERSHIPS DECISION-MAKING TOPICS

PPP projects raise a variety of concerns as they move from concept through project delivery. These concerns range from the initial decision to use a PPP procurement/delivery mechanism through specifics of who has control over toll setting (where there are tolls involved), how risks and revenue are shared, and how the complexities of agreements can be communicated to the public and decision makers. This synthesis has been organized into the following topical areas:

- Project selection and delivery:
  - Criteria for deciding whether to use a PPP approach;
  - Unsolicited proposals and the transportation planning process;
  - Roles of public and private sectors, risk allocation, and rates of return;
  - PPP valuation tools; and
  - Bonding, bonding capacity, letters of credit, and initial construction warranties.
- Transparency:
  - Transparency and public participation;
  - Adequacy of legislative branch review; and
  - Perceptions of foreign control of domestic assets and the role of local contractors.
- Terms of PPP agreements:
  - Asset control and ownership;
  - Tolling policy;
  - Non-compete and other unanticipated event provisions;
  - Use of proceeds and revenue sharing;
  - Maintenance standards and hand-back provisions;
  - Environmental safeguards;
  - Labor relation issues;
  - Length of agreement;
  - Termination and buyouts;
  - Safety and enforcement;
  - Commercial development rights;
  - Data privacy and ownership;
  - International trade agreement implications; and
  - Liability, indemnification, and insurance.

PROJECT SELECTION AND DELIVERY

Criteria for Deciding Whether to Use a Public–Private Partnership Approach

Various factors have led to an increased interest in transportation PPPs by public decision makers in recent years. The existing transportation infrastructure is aging and travel demand continues to increase. At the same time, traditional transportation revenues are growing at a slower rate than transportation needs, leading to an increasing funding gap.

Opinion/Comment from "Other Individuals/Interest Groups" Survey:

CONCERN: Inadequate criteria for selecting candidate projects for P3 implementation.
MITIGATION: Better public sector understanding of the trade-offs inherent in P3—private sector money is not "free" and P3 is not necessarily the answer when everything else has failed.

In response, some governors, legislators, and others in positions of transportation policy leadership have proposed raising motor fuel taxes or vehicle fees to close the transportation funding gap; however, few attempts at revenue enhancement have succeeded. It is tempting for government to consider PPPs a "quick cash" scheme to close the transportation funding gap, but in reality, a PPP provides several tools that can help narrow the gap between transportation needs and funding. Many aspects of PPPs introduce extensive changes to the way things have always been done, and the changes may not be well understood. With this in mind, PPPs must be pursued carefully, and decision makers need a set of criteria to help guide the decision between using a PPP or traditional procurement when considering their transportation priorities.

Opinion/Comment from "Other Individuals/Interest Groups" Survey:

Put in place solid PPP processes that help promote the best projects and finance plans moving forward and limit the highly risky projects/schemes from moving forward.

OECD, in its *Principles for Private Sector Participation in Infrastructure* (2007), laid out the following four principles

related to the decision to provide infrastructure services by the public or private sectors:

1. The decision should be based on a cost-benefit analysis that includes all alternative procurement and delivery methods, and both financial and non-financial costs and benefits should be projected over the project life cycle.
2. The project sponsor should assess how the costs of infrastructure will be recovered (e.g., user-fees), and what other financing sources are available in case of shortfalls.
3. The selection of a PPP model and allocation of risks should be based on the public interest.
4. Fiscal discipline and transparency must be safeguarded, and the potential public finance implications of PPPs must be understood.

Countries with extensive experience in PPPs have developed guidance (see Table 2) that might be useful to states considering PPPs for project delivery. Project sponsors must note that each PPP project is different and these guidelines might have to be adapted on a case-by-case basis.

Not all projects present viable opportunities for a PPP. Public decision makers need to understand the criteria for successful projects to inform their decisions about whether or how to involve the private sector in what has traditionally been a public sector enterprise. The enabling legislation in nine states includes specific criteria to evaluate PPP proposals. Only 9% of the respondents to the DOT survey indicated that a lack of PPP criteria is not important. In addition, the lack of criteria to evaluate candidate projects for PPP implementation was called an important concern by one respondent of our survey of other interested parties. These respondents suggested that the public sector needs a better understanding of the trade-offs inherent in PPPs, and in particular that PPPs are not "the answer when everything else has failed."

Several studies that address selection of PPP projects have been published (Zhang 2005; Abdel-Aziz 2007; AECOM 2007b). Abdel-Aziz (2007) suggests that the decision to proceed with a PPP should depend foremost on the programmatic environment. If the program environment is supportive of PPPs, only then should project-specific characteristics be evaluated. Abdel-Aziz identifies eight critical success factors at the programmatic level:

1. Availability of a PPP institutional/legal framework,
2. Availability of PPP policy and implementation units,
3. Perception of private finance objectives,
4. Perception of risk allocation and contractor's compensation,
5. Perception of value-for-money,
6. PPP process transparency and disclosure,

TABLE 2
LIST OF FOREIGN GUIDANCE DOCUMENTS FOR PPP PROJECTS

Country	Guidance Document	URL
United Kingdom	Standardisation of Private Finance Initiative Contracts, Version 4 (Mar. 2007)	http://www.hm-treasury.gov.uk/documents/public_private_partnerships/ppp_standardised_contracts.cfm
Canada (province of Alberta)	Alberta Infrastructure and Transportation, Management Framework: Procurement Process (Sep. 2006)	http://www.infratrans.gov.ab.ca/INFTRA_Content/doctype309/production/ait-p3-procurementframework.pdf
Canada (province of Alberta)	Alberta Infrastructure and Transportation, Management Framework: Assessment Process (Sep. 2006)	http://www.infratrans.gov.ab.ca/INFTRA_Content/doctype309/production/ait-p3-assessmentframework.pdf
Australia (Victoria)	Partnerships Victoria, Policy and Guidelines (various documents)	http://www.partnerships.vic.gov.au/CA25708500035EB6/0/C0005AB6099597C2CA2570F50006F3AA?OpenDocument
Netherlands	Ministry of Finance, DBFM Manual, Version 5 (Jan. 2008, in Dutch)	http://www.minfin.nl/nl/onderwerpen,publiek-private-samenwerking/publicaties/DBFM-algemeen.html
Ireland	Department of Finance, Central PPP Policy Unit (various documents)	http://www.ppp.gov.ie/keydocs/guidance/central/

Note: URLs last accessed on May 28, 2008.

7. Standardization of PPP procedures and contracts, and
8. Performance specifications and method specifications.

Once a transportation agency has established a PPP program, it can more effectively develop individual projects (AECOM 2007b). Zhang (2005) suggests 47 project-specific critical success factors in five categories:

1. Favorable investment environment,
2. Economic viability,
3. Reliable concessionaire consortium with strong technical strength,
4. Sound financial package, and
5. Appropriate risk allocation via reliable contractual arrangements.

The author surveyed both academics and practitioners with respect to the importance of these subfactors, and compared the differences between the survey results of academics with all those surveyed. He concluded that academics and practitioners at-large generally agree on the relative importance of the critical success factors.

The AECOM "Guidebook" (2007b) reviews key criteria from both public and private perspectives for identifying potential projects to pursue as PPPs; the criteria that are general precedents to successful implementation of PPPs by the public partner are summarized here.

- Enabling legislation in place,
- Urgent transportation need,
- Political and institutional support,
- Lack of internal resources to effectively deliver the project,
- Leverage public resources and transfer risks to private sector,
- Expedite schedule through access to capital markets and innovative project delivery,
- Increase 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, and
- Public accountability through monitoring of contract performance standards.

PPP Enabling Legislation

Enabling legislation is a necessary step for any PPP implementation and it can be provided on a project-by-project or program basis. PPP legislation in seven states limits PPPs to selected "pilot" or "demonstration" projects.

Project-by-project-enabling legislation allows public representatives to consider the details of each project. However, the competitive nature of PPP procurements in one instance apparently led to withholding proprietary technical information from elected officials, even as they voted to approve a project. In the case of The Canada Line, an extension of the Vancouver urban rail line, local elected officials responsible for approving the PPP responded to public criticism by claiming that they did not know the extent of the controversial cut-and-cover tunneling method to be used on the project. Because the amount of cut-and-cover tunneling was a proprietary part of the contractor's bid information regarding its use that was appropriately withheld—this did prevent the elected officials from not getting a complete picture of the project that they approved (Siemiatycki 2007).

If more than one project is anticipated, however, project-by-project legislation is time and cost intensive for both the public and private sector, and standardization of PPP procedures can streamline the procurement process. The United Kingdom developed a standardized Private Finance Initiative contract to simplify negotiations, enable consistent pricing of projects, and promote common understanding of risks among PPP projects (Abdel-Aziz 2007).

Ghavamifar and Touran (2008) conducted a comprehensive survey of the codes of all 50 states within the United States to identify enabling legislation for alternative project delivery systems: design-build, construction management-at-risk, and PPP project. They found that an increasing number of states are moving toward more fully authorizing alternative delivery systems.

According to a study prepared for the FHWA, state-enabling legislation should, at a minimum, provide an operating environment that allows a state DOT to enter into partnerships and to approve specific activities associated with that partnership. To be effective, it could designate a lead agency, such as the state DOT or a toll authority to implement highway partnerships. The lead agency should have the authority to act on behalf of the state and should have certain statutory powers including the power to procure projects through negotiation, to acquire right-of-way through eminent domain (or otherwise) and transfer use of it to a private partner, to acquire and confer environmental permits, to confer exclusive franchises, to establish a geographic non-compete zone, to enter into binding concession agreements and lease arrangements, to regulate tolls or rates of return, to accept unsolicited proposals, and to blend or lend state and federal funds to a project (Apogee Research, Inc. 1995; U.S.DOT 2004). Enabling legislation may also include provisions that define the maximum repayment term for debt (e.g., 30 years) and surety/performance bond requirements. Bloomfield (2006) warns against relaxing procurement laws too much, citing an example of local enabling laws that waived the need for competitive procurement for a long-term lease of a new correctional facility in Plymouth, Massachusetts. On the other hand, some terms provided by enabling legislation may discourage the private sector from investing in transportation

infrastructure. For instance, the PPP legislation in Washington State requires post-legislative approval of proposed PPPs after a private partner has been selected, which some observers say appears to have discouraged private investors from submitting unsolicited proposals, because there is no guarantee that the negotiations will be closed even after a PPP project has been selected and approved by the DOT.

Public Interest Evaluation

Some government sponsors have found value in setting out specific criteria that need to be met before a PPP can be pursued. A recent GAO report, *Highway Public-Private Partnerships . . .* (2000a) on PPPs reported that the states of Victoria and New South Wales in Australia have developed the following criteria that consider the public interests before entering into a PPP agreement. In New South Wales, the public interest evaluation is conducted before advertising the project as a PPP, and the analysis is constantly updated as the project moves through the procurement process, including before the government signs the PPP agreement.

- Victoria
  1. Effectiveness in meeting government objectives
  2. Accountability and transparency, ensuring that communities are informed of both public and private sector obligations, and that there is oversight of projects
  3. Affected individuals and communities, whether they have been able to contribute during planning stages, and whether their rights are protected through appeals and conflict resolution mechanisms
  4. Equity, ensuring that disadvantage groups can make use of infrastructure
  5. Public access, whether there are safeguards to ensure access to essential infrastructure
  6. Consumer rights, whether the project provides safeguards for consumers
  7. Safety and security of the community are secured
  8. Privacy, whether the project adequately protects users' rights to privacy.
- New South Wales
  1. Effectiveness in meeting government objectives
  2. Accountability and transparency, ensuring that communities are informed of both public and private sector obligations, and that there is oversight of projects
  3. Value for Money used to determine if the PPP approach is in the public interest
  4. Community consultation, whether affected individuals and communities have been able to contribute during planning stages
  5. Consumer rights, whether the project provides safeguards for consumers
  6. Health and safety of the community are secured
  7. Privacy, whether the project adequately protects users' rights to privacy.

Unsolicited Proposals and the Transportation Planning Process

The use of a PPP raises concerns that private investors may circumvent the transportation planning process set by state, regional, and local governments, specifically by allowing them to submit unsolicited proposals. The public concern is that the private sector will "cherry-pick" the most profitable projects, leaving the public sector with other needed, but less profitable projects (Buxbaum and Ortiz 2007). Others may argue that the most profitable projects might be those with the highest projected traffic and therefore the most needed. Attracting private investment for these projects would leave public funds available for other needed projects that may not be good candidates for PPPs.

Opinion/Comment from "Other Individuals/Interest Groups" Survey:

Because a private corporation is most interested in the most profitable project, and not the one that is most needed, they may force the public agency to entertain construction of projects that are not a priority for the public—but of course the public will pay.

An unsolicited proposal is a bid by a private company to the government for a project for which proposals have not been solicited. Unsolicited proposals are sometimes perceived to serve special interests or favor individual companies. Meanwhile, a variety of stakeholders including state representatives, law firms, private companies, and trade associations recommend elimination of state prohibitions on accepting unsolicited proposals (U.S.DOT 2004). Conversely, in a letter to state DOTs, Congressmen Oberstar (chairman of the House Committee of Transportation and Infrastructure) and Congressman DeFazio (chairman of the House Subcommittee on Highways and Transit) (2007), asserted that states should not allow unsolicited proposals because they circumvent the established planning process by favoring projects that are profitable to private developers. A response from the National Governors Association (NGA 2007), asserted that PPPs have been carefully evaluated by states to ensure that the public interest is protected, and that a PPP proposal where the public interest is not protected should not be considered.

Opinion/Comment from "Other Individuals/Interest Groups" Survey:

CONCERN: PPP may undermine comprehensive transportation planning and work of MPOs [Metropolitan Planning Organizations].
MITIGATION: Require PPP projects to be consistent with state, local, and MPO transportation plans. PPP projects need to be part of plans, not separate from them.

The interested party's survey done for this synthesis confirmed this concern and provided some mitigation suggestions:

- Require PPP projects to be consistent with state, local, and MPO transportation plans;
- Prohibit PPP vendors from participating in project planning activities;
- Limit or prohibit unsolicited bids; and
- Provide sufficient time for submittal of competing proposals.

International experience suggests three methods that deal with unsolicited proposals in a way that introduces competition and transparency (Hodges and Dellacha 2007):

1. The "Bonus System" invites additional competition but gives a small advantage to the unsolicited bidder. Thus, later bidders are incentivized to submit high-quality, low-cost projects, but may have slightly less incentive to submit at all. This system is used by Chile and South Korea.
2. The "Swiss Challenge System" invites additional competition and gives the unsolicited bidder the opportunity to beat or match the new bids. This system is used by Guam, India, Italy, and Taiwan.
3. The "Best and Final Offer System" involves multiple rounds of tendering and the original bidder is automatically guaranteed participation in the final round. This system is used by South Africa and Argentina.

British Columbia developed its Capital Asset Management Framework to standardize and streamline its PPP procurement process. The Capital Asset Management Framework follows a three-stage process of solicitation, evaluation/negotiation, and contract award and allows for unsolicited proposals, but invites competitors to submit a better proposal. It adopts the Swiss Challenge System (Abdel-Aziz 2007).

PPP legislation in 18 states allows unsolicited proposals for PPP projects. One of the first laws to enable use of transportation PPP, Virginia's PPTA of 1995, allows private entities to submit both solicited and unsolicited project proposals and specifies similar steps to evaluate, select, and implement both types of projects (U.S.DOT 2004). Changes to the PPTA law in 2005 direct the program toward solicited proposals, although the Virginia DOT may still accept unsolicited proposal by statute. In the case of unsolicited proposals, Virginia has developed a quality control process in which unsolicited proposals are reviewed to determine if these are in the interest of the public sector and then make a decision on whether the project should be pursued. The Commonwealth's PPP guidelines provide that if the state decides to moves forward with the proposed project, competing proposals may be submitted within a minimum of 90 days if the project does not involve federal funding, or a minimum of 120 if using federal funding.

Buxbaum and Ortiz (2007) noted that short time periods for competing proposals may lead to inadequate competition among bidders. On the other hand, a long period may discourage private investors in submitting unsolicited proposals.

Roles of Public and Private Sectors, Risk Allocation, and Rates of Return

The roles and responsibilities of public and private sectors under traditional procurement are well understood by state DOTs, architectural/engineering firms, and contractors that are involved in the process. The introduction of a PPP changes the traditional roles of these entities in the development, operations, and management of transportation infrastructure. The public sector's goal is to provide a transportation infrastructure (and system) that is safe and improves user mobility, whereas the private sector's main goal is to achieve a return on investment. Because these goals may be in conflict, the public sector must ensure that the assignment of roles, responsibilities, and risk is done in a manner that protects the public goals.

Risk Transfer

The transfer and sharing of project risks is considered by many as one of the main benefits of PPPs. Much of the risk associated with the design, construction, financing, operations, and maintenance of transportation projects is traditionally managed by the government. In contrast, a PPP seeks to allocate risks to the parties best able to manage them (Bettignies and Ross 2004; U.S.DOT 2004). Three factors drive risk sharing in PPPs. First, the private sector is in charge of a number of activities during the lifetime of the project, including financing, whereas the government usually holds a residual ownership right. Second, the two contracting parties in a PPP arrangement have different stakeholders and different objectives, risk perceptions, and constraints. Third, the public and private partners may have different abilities to diversify the risk (Checherita and Gifford 2008). For example, the private partner can diversify the risks of construction and financing across many projects.

Concern about how this risk allocation is handled was borne out by the two surveys done for this synthesis. Risk sharing and allocation among public and private sectors on PPPs is considered as an either "very important" or "somewhat important" concern by all respondents in our state DOT survey, with 88% responding that it is a "very important" concern. Also, most U.S. states and Canadian provinces that have completed or are currently are negotiating a PPP project use risk assessments when considering PPP proposals.

One of the respondents to our interested parties' survey identified the need for strong demarcation of responsibilities between the public and private sectors. In the survey, the

Central Artery/Tunnel project in Boston (also known as the "Big Dig") was cited as an example of a project where there was a "too cozy" relationship between the public and private sectors leading to lack of oversight and enforcement of public interests. The Big Dig included a design and construction management contract with a joint venture between two large engineering firms, where considerable independent responsibility was handed over to the private sector. Another survey respondent indicated that the public sector may be unaware of what risks are being transferred and which ones remain.

Opinion/Comment from "Other Individuals/Interest Groups" Survey:

How can distribution of transportation benefits/burdens and risks be decided in a strategically equitable manner? Government deal making in transportation infrastructure development may only include stakeholders and interests of upper class membership. However, it is the role of government to assure that these deals benefit society as a whole, including the underclasses. If the spectrum of public interests is not represented, inequitable distributions of benefits, burdens, and risks may occur. There must be an approach to uncovering hidden and indeterminate public risk. In a PPP, the paradigm for business interests where the business interest short term gain means the long-term public loss, must be changed. The public interest must be of paramount benefit.

The FHWA's PPP website (2008) and Table 2 in chapter two show a continuum of public/private mixes in order from those of greatest public responsibility to those of greatest private responsibility. The amount of risk allocated to each party depends on the type of partnership, the risk profile of each partner, and details specified in the partnership contract. Allocation of risks among private and public partners has been reviewed extensively in the literature (Fishbein and Babbar 1996; FHWA 2004; AECOM 2007b; Checherita and Gifford 2008). Checherita and Gifford (2008) provide a comprehensive typology of risks and identify risks most likely to arise under a PPP arrangement rather than under traditional financing or complete privatization. Risks are classified in three broad categories: (1) fiscal risks, (2) residual value or valuation risks; and (3) bidding risks. AECOM (2007b) provides discussion of risks, as summarized here:

- Public acceptance—Degree of public acceptance of the project, its procurement as a PPP, and the means by which the project will be paid (e.g., tolling).
- Control of assets—Perceived loss of control, particularly the level and frequency of toll rate increases, physical condition and appearance of the facility, and protection of the public interest.
- Protectionism—Concern about nationality of firms comprising the PPP team, which may result in legislative efforts to limit foreign involvement or state/local political and public grassroots efforts to oppose PPP with significant foreign company involvement.
- Political stability—Continuity of political support for a PPP project should there be a change in political structure or composition.
- Moral hazard—Public sponsor to avoid conflict of interests and fraudulent activities during procurement and execution phases of the project. Public sector to hold PPP provider publicly accountable for proper execution of the project consistent with the terms of the contract agreement.
- Demand/volume—Level and timing of traffic.
- Revenue—Level and timing of proceeds from tolls or congestion pricing of highway use.
- Environmental/archeological—Site conditions that may require mitigation, and the cost of mitigation measures and their responsibility.
- Right-of-way costs—Uncertainty in cost of acquiring parcels of land needed for project.
- Construction costs—Impacts from availability and cost of materials, labor, and maintenance of traffic, plus the cost of surety bonds.
- Maintenance costs—Cost of maintenance and repair activities that may be affected by factors such as quality of design and construction, and changes in traffic volumes, among others.
- Liability/latent defect—Potential for defects in design or construction, and the effect on project costs and the responsibility for paying these costs.
- Life-cycle costs—Cumulative costs of facility maintenance, rehabilitation, and reconstruction/expansion over the term of the contract and its effect on cash flow and reserves.
- Regulatory/contractual—Changes in regulation or contract provisions that affect the cost exposure of one or more partners.
- Payment structure/mechanism—Effect on value of project participation based on source, method, and timing of project cost reimbursement or availability payment.
- Transaction costs—Level of costs associated with completing various transactions involved in completing the PPP contract agreement and responsibility for payment of these costs.
- Changes of law—New statutes and regulations, including design/construction standards, which affect the cost of the project and delivery schedule.
- Compensation/termination—How PPP team will be compensated for work completed if contract is terminated, depending on reasons for termination, and any penalties for early termination by the sponsoring agency.
- Economic shifts—Changes in economic activity and demography of the region that could affect traffic and revenue over the term of the contract.
- Currency/foreign exchange—Changes in relative value of national currencies that can affect the cost of the

project and value of revenue to a PPP provider based on another country with different currency used for project reimbursement or payment of revenue proceeds.
- Taxation constraints—National, state, or local taxes on the materials used in developing the transportation facility and the proceeds from operation of a priced facility that can affect financial viability.

AECOM (2007b) also provides a detailed table summarizing risks fully or partially transferred to the private sector based on 17 types of alternative PPP approaches, as shown in Table 3. For instance, in a DBFO agreement, finance, design, construction, construction inspection, maintenance, operations, and traffic-revenue risk are often transferred to the private sector.

In a PPP, risk should be allocated to the party that can best manage such risk. According to a 2008 GAO study, some of the typical risks transferred to the private sector include project construction/schedule risks and traffic/revenue risks. The GAO report noted international examples that show the benefits of transferring the aforementioned risks to the private sector. One such project was the CityLink highway project in Melbourne, Australia, which was subject to extensive delays and additional costs. Because all construction risks had been transferred to the private sector, none of the additional costs of this project were a responsibility of the public sector. An example of the benefits of transferring traffic and revenue risks cited in the GAO report is the Cross City Tunnel in Sydney, Australia, where public officials have indicated that the public sector has not been affected (financially) by the low traffic and revenues, because those risks were borne by the private sector. The project was sold in 2007 to new private owners, after the first concession failed.

The original Pocahontas Parkway project, on the other hand, is an example of what some might consider poor risk allocation on the part of the public sector. Under the original

TABLE 3
RISK TRANSFER RESPONSIBILITIES UNDER DIFFERENT PPP ARRANGEMENTS

	Functional Responsibilities and Project Risks[a]												
Alternative PPP and Procurement Approaches	Planning	Environmental Clearance	Land Acquisition	Finance	Preliminary Design	Final Design	Construction	Construction Inspection	Maintenance	Operations	Long Term Preservation[b]	Traffic-Revenue	Asset Ownership
Asset Sale				√					√	√	√	√	√
Greenfield Concession				√		√	√	√	√	√	√	√	
Brownfield Concession				√					√	√	√	√	
Multimodal Agreement				√		√	√	√	√	√	√	√	
Joint Development[c]	√	√	√	√	√	√	√	√	√	√	√	√	
Transit-Oriented Development[c]	√	√	√	√	√	√	√	√	√	√	√	√	√
Build-Own-Operate	√	√	√	√	√	√	√	√	√	√	√	√	√
Build-Own-Operate-Transfer	√	√	√	√	√	√	√	√	√	√	√	√	√
Build-Transfer-Operate				√	√	√	√	√	√	√	√	√	
Design-Build-Finance-Operate				√		√	√	√	√	√		√	
Design-Build-Operate-Maintain				√		√	√	√	√	√		√	
Design-Build w/ Warranty						√	√	√			√		
Design-Build						√	√	√					
Construction Management at Risk					√	√	√	√					
Contract Maintenance									√	√			
Traditional Design-Bid-Build						√	√						

[a]Functional Responsibilities and Project Risks noted with a check mark (√) may be transferred in whole to the private partner or shared with the public sponsor, depending on the contract.
[b]Refers to long-term risk of asset failure or physical obsolescence.
[c]Refers to private developer portion of infrastructure.
Source: FHWA Office of Policy and Governmental Affairs, User G uidebook on Implementing Public Private Partnerships for Transportation Infrastructure in the United States," prepared by AECOM, July 2007.

PPP agreement, the Virginia DOT would operate and maintain the facility, thus retaining some of the traffic and revenue risk by providing funding to cover operations and maintenance (O&M) until the facility generated sufficient toll revenue to meet its debt obligations, fully cover O&M expenses, and pay back the state's investment [including both capital (State Infrastructure Bank loan) and O&M]. Actual traffic was much lower than projections, and revenues were not sufficient to pay back debt (with bond holders bearing this risk); therefore, the state paid for O&M expenses on the facility until it was leased in 2006.

Some of the risks that are better managed by the public sector include environmental, right-of-way acquisition, statutory/regulatory, and public acceptance risks (AECOM 2007b). The environmental process can be lengthy, especially if federal funding is involved, and can add significantly to the project cost (GAO 2000b). The South Bay Expressway in California is a good example of the environmental risk and uncertainty: it took almost a decade after the project had been awarded to a private partner to get environmental clearance (AECOM 2007b; GAO 2000b). The delay resulted in increased construction costs and foregone toll revenues. The original private partners sold the franchise to Macquarie Infrastructure Group in 2003, and shortly after construction of the facility began (AECOM 2007b).

Risks are not always fully transferred from one entity to another. For example, some PPP arrangements include traffic/revenue risk sharing and/or include mechanisms that help mitigate the traffic risk to the private sector (Izquierdo and Vassallo 2004). Minimum revenue guarantees (Chile) or economic rebalancing provisions (Spain) are used to mitigate this risk. In the case of minimum revenue guarantees, the concession contract also includes revenue sharing if traffic exceeds projections, such that the public sector also benefits from additional revenues. Rebalancing provisions allow for revision of toll rates or changes in the length of the concession if a chosen metric (e.g., traffic, revenues) falls outside a specified range.

Rate of Return

The main objective of the private sector in a PPP is to achieve a target return on investment on the equity invested. The European private sector expects a return on its investment of 7% to 17% (Jeffers et al. 2006). Data analysis by Infrastructure Management Group shows that the long-term return on equity on recent concession deals involving "brownfield" toll roads was expected to be around 12%, whereas returns of 14% or higher were expected on greenfield projects (Page 2008). Buxbaum and Ortiz (2007) identified windfall revenues as one of the main public concerns related to long-term concessions. This concern was further validated by the public agencies surveyed in this synthesis, where all but one respondent indicated that excessive rates of return to private investors are an important concern.

Revenue sharing provisions, refinancing regulations, and contract rebalancing provisions are strategies that allow the public sector to benefit from revenues that are higher than projected and/or limit excessive returns to the private sector (Mayer 2007). In Virginia, both the Pocahontas Parkway and the I-495 Capital Beltway HOT lanes concessions include provisions requiring the private partners to share toll revenues based on the rate of return achieved. Revenue sharing provisions are also common in Texas' CDA and were also included in the Northwest Parkway lease agreement.

Some observers have suggested that a facility should be returned to the public sector once the private partner has met a specified rate of return, and the French and Spanish concession models allow for termination of a concession once an agreed upon internal rate of return is achieved, although estimating and determining when the rate of return has been achieved could be difficult (Mayer 2007; see also section on Use of Proceeds and Revenue Sharing later in the chapter). This would allow for the benefits of private capital being used for transportation infrastructure, but also guard against excess profits. However, it provides no incentive to keep costs down.

Another way that the public sector can maximize the work performed in a PPP agreement that is based on a set amount of available funding is through "bidding scope," which has been used by the Missouri DOT. On the I-64 reconstruction project, the Missouri DOT set a "not to exceed" price available for the project and provided some minimum scope items, as well as a conceptual design of the project for information. The bidding teams were asked to propose the "most scope" they could deliver for the set price, and this was evaluated as the most significant portion of the "best value" determination. A similar approach is currently being considered for the rebid of Missouri's bridge program to replace more than 550 of the state's lowest-rated bridges. The Missouri DOT will set a price and then list all the bridges to be replaced in a priority order. Bidding teams will be asked to propose how many bridges from this list they would complete for a set price.

Public–Private Partnership Valuation Tools

The decision to pursue a PPP project should be supported by analytical processes that show the PPP procurement as a better option than traditional procurement or public provision. The valuation process should include the careful selection of inputs/variables that properly characterize the chosen procurement method and risk allocation, using quantitative methods that include sensitivity analysis to better assess the risk variables for a particular project. Several states in the United States, including Florida and Alaska, as well as the United Kingdom, Victoria (Australia), and British Columbia have widely used "value for money" as a tool to assess PPPs. Other methods have also been used in the United States, including shadow bids and market valuation in Texas, and asset valuation in both Chicago and Indiana, to set a minimum value for the proposed project. Proper development and use of valuation tools

is potentially one of the most important means of helping the public and elected officials better understand the benefits, costs, risks, and rewards of PPPs.

Opinion/Comment from "Other Individuals/Interest Groups" Survey:

Need to adopt level-playing-field competition procedures, to permit fair competitions that do not tilt toward either public-sector or private-sector bidders.

Value for Money Analysis and Other Valuation Tools

Consideration of the PPP option can be fraught with emotionally charged ideological rhetoric, but this debate can be informed by well-defined and executed business case analysis. Value for Money (VfM) calculates the difference between the costs and benefits associated with both traditional and PPP procurements. Some of the benefits to developing a financial model to evaluate PPP proposals include (Oakley 2008):

- Helps establish the business case for a PPP,
- Provides important insights about the project's ability to obtain financing,
- Allows for testing of assumptions (e.g., toll increases, traffic growth, length of agreement) early in the process, and
- Provides a method for "optimizing" the transaction and encouraging competition and innovation.

The VfM analysis has been widely used outside the United States, particularly the United Kingdom. Our state DOT survey confirms that the availability and consistent application of evaluation tools, such as VfM, are important to state decision making. Of the nine states that have at least one PPP project in place, two (22%) have not used VfM, and four (44%) reported using VfM frequently. The preliminary results of a survey of VfM analysis tools in the United States conducted by Morallos and Amekudzi (2008b) showed that only one-third of the states use VfM or similar tools to evaluate PPPs. Florida, Virginia, and Oregon reported using VfM.

Texas has used a process called "shadow bids" for two PPPs. These involve the state, through its own resources and consultants, making detailed estimates of design and construction costs, operating costs, and a detailed financial model (GAO 2000b). The results of the shadow bids are compared with the private sector proposals. In addition, the moratorium bill passed in 2007 (SB 792), requires the Texas DOT to conduct a "market valuation" analysis for new toll roads to assess how much value a facility might attract from the private sector.

An International Technology Scanning report by the FHWA documented best practices regarding audit stewardship and oversight of PPPs in Europe (Jeffers et al. 2006). The report indicates a need for personnel with skills, including value engineering, business modeling, capital budgeting, traditional financial problem-solving methodology, and performance auditing. The report concludes that a state DOT team should develop a public sector comparator (PSC) and a business model for each PPP opportunity to determine whether the project can return VfM to public.

Grimsey and Lewis (2005) and Morallos and Amekudzi (2008a) have thoroughly explored the VfM concept. Although cost-benefit analysis is widespread, there are few examples of VfM in the United States, largely because of the limited experience with PPPs. British Columbia, the United Kingdom, and Victoria, Australia, have made PPP/public procurement decisions for many projects using VfM analysis and have established set procedures for its calculation. Table 4 provides a list of some of the publicly available guides for VfM analysis.

An estimate of VfM is achieved by calculating the present value of the PSC and then comparing it with one or more bids from private companies. The PSC examines life-cycle project costs, including construction, operations, maintenance, and additional improvements that will be incurred over the course of the concession term (GAO 2000b). To prepare the PSC, the sponsoring agency needs to define the project scope in advance to the extent that a realistic determination of what project requirements, costs, and revenues 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 that 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 of toll rate changes when tolling is involved to reflect current fiscal concerns;
- Recognize the risks inherent in the inflationary effects on the costs of project materials (AECOM 2007b); and
- Consider value of speed in construction execution associated with minimizing public inconvenience.

Once the characteristics of the project are better understood, the PSC is constructed using four components:

1. Raw PSC is the discounted cash flows of benefits and costs attributable to the project assuming no private sector involvement. Cash flows are discounted by a rate reflective of the government's time value of money plus a systematic risk premium for risks inherent to the project. Costs include direct and indirect costs and are reduced by third-party revenues including user charges, increased demand for a facility

TABLE 4
VALUE FOR MONEY GUIDES

Country	Document	URL
United Kingdom	HM Treasury, Value for Money Assessment Guidance (Nov. 2006); Value for Money Quantitative Assessment User Guide (Mar. 2007)	http://www.hm-treasury.gov.uk/documents/public_private_partnerships/additional_guidance/ppp_vfm_index.cfm
Canada	Industry Canada, The Public Sector Comparator: A Canadian Best Practices Guide (2002)	http://strategis.ic.gc.ca/pics/ce/ic_psc.pdf
Victoria, Australia	Partnerships Victoria, Public Sector Comparator (2001); Public Sector Comparator Supplementary Technical Note (2003)	http://www.partnerships.vic.gov.au/CA25708500035EB6/0/C0005AB6099597C2CA2570F50006F3AA?OpenDocument
Ireland	Central PPP Unit, Value for Money and the Public Private Partnership Procurement Process (2007); Compilation of a Public Sector Benchmark (2007)	http://www.ppp.gov.ie/keydocs/guidance/central/Value%20for%20Money%20Technical%20Note.doc http://www.ppp.gov.ie/keydocs/guidance/central/PSB%20Guidelines%20Jan%2007.doc

Note: URLs last accessed on May 28, 2008.

or service, or payments received by third-party use of the facility.

2. Competitive neutrality value removes inherent competitive advantages or disadvantages of a government agency compared with the private sector. This value is added to the PSC to allow for comparison with the PPP option. For example, public sector advantages include exemptions from land taxes or other taxes and fees that would otherwise be levied from a private investor. On the other hand, public sector disadvantages may include political risks or economies of scale that would allow the private sector to operate more efficiently.
3. Transferable risks are those that are likely to be transferred from the procuring agency to the chosen private partner(s). The risk valuation includes estimating the probability of the risk occurring, and could be a simple estimation of an amount above or below the raw PSC, or the application of Monte Carlo simulation using a probability distribution of risk.
4. Retained risks are those risks that the public partner will retain. The present value of retained risks will also be added to the cost of the private bids to reflect the true cost of the PPP options.

The four components are summed and compared with the combined cost of the private bids and the cost of the public's retained risks, as shown in Figure 1.

Besides the previous quantitative analysis, qualitative factors could also be considered. The public agency must identify the objectives and desired project outcomes and translate these into the performance standards on which to base the payment mechanism. The qualitative analysis considers whether the long-term contract can meet the objectives. It also considers important regulatory, public equity, efficiency, or accountability issues. Does the PPP improve on traditional delivery, financing, management, operations, or maintenance structures? Is the PPP procurement option feasible given current market conditions, the public agency's available resources (monetary and management experience), and the attractiveness of the proposed project? The GAO (2000b) found that both the states of Victoria and New South Wales, in Australia, have used qualitative analysis, along with quantitative analysis, to evaluate how the public interest is affected in a PPP.

Although VfM appears to be a useful tool to lead the PPP decision process, there are several criticisms of the VfM process. The most significant is that the PSC is a hypothetical case entirely dependent on the experience of the person(s) conducting the calculation. Inaccurate or erroneous estimates of cost and/or risk may seriously impair the PSC (Bloomfield 2006). Furthermore, the PSC is estimated using numerous assumptions and projections well into the future, adding a high degree of uncertainty (GAO 2000b).

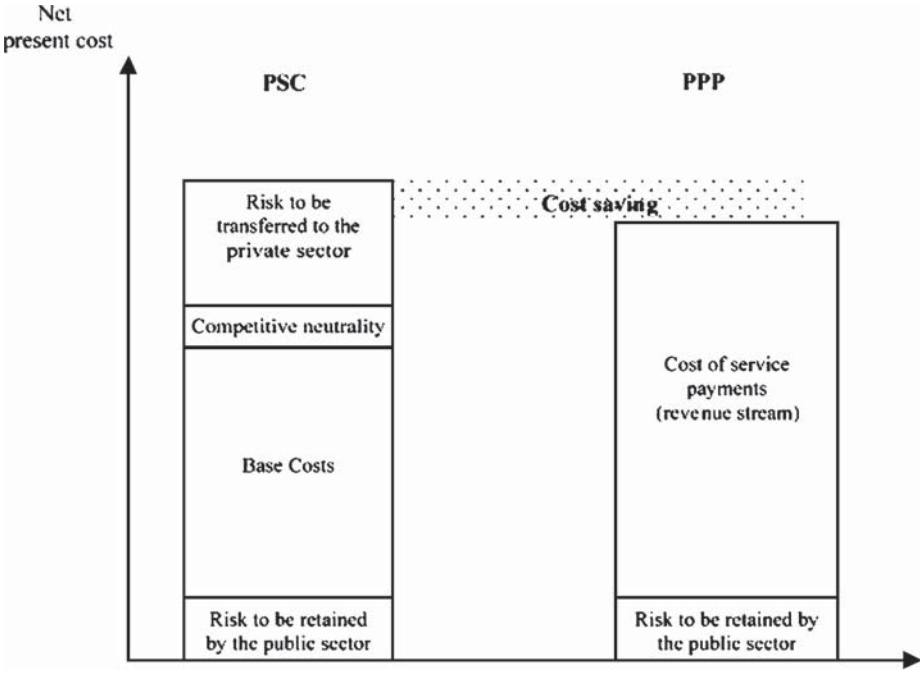

FIGURE 1 PSC and value for money comparison. *Source:* Grimsey and Lewis (2005).

Selection and Use of Assumption in PPP Valuation

The concern about selection and use of assumptions is true for other valuation tools as well, such as those used to determine the value of an existing asset for potential brownfield concessions. The NW Financial Group conducted a review of both long-term lease agreements for the Chicago Skyway and the Indiana Toll Road, concluding that the public sector could have generated as much revenue as the private sector (Buxbaum and Ortiz 2007; Enright 2007). The analyses for both projects included key assumptions, such as periodic toll increases, that are uncommon and politically difficult under public ownership. Similarly, a Pennsylvania Turnpike valuation (Foote et al. 2008) showed that public monetization would provide the best value ($26.4 billion for Act 44 compared with $14.8 billion for a 50-year asset lease), assuming that tolls are applied on I-80, which is an assumption that carries a very high risk. Later, a private offer for the Pennsylvania Turnpike actually yielded $12.8 billion for a 75-year lease, which is about $2.0 billion less than Foote et al. estimates, for a longer lease term, which might be the result of current market conditions.

Discount Rate for PPP Valuation

There are highly contentious arguments among critics over using a higher or lower discount rate for the PPP. A recent analysis of the procurement options for the Pennsylvania Turnpike monetization (Foote et al. 2008) used different discount rates, further supporting this argument by applying lower discount rates to the public monetization scenario. The lower discount rate for the public monetization scenario was equivalent to the Pennsylvania Turnpike Commission's (PTC) borrowing cost of 4.5%, whereas the discount rate of a private lease was estimated at 7.75%. The PTC discount rate was based on the yield of PTC's AA/Aa3 debt in today's market, and assumed that the state would pursue to public monetization as proposed in Act 44, which includes raising tolls on the Turnpike and adding tolls on I-80 (contingent to federal approval). The higher discount rate for the private monetization scenario was estimated based on the weighted average cost of capital, assuming 6.65% for private borrowing costs (for Baa rated corporate bonds), a cost of equity of 12.5%, and assuming an equity/debt ratio of 19% to 81% (based on the Indiana Toll Road concession equity/debt ratios). A critique to the Foote et al. analysis (Poole and Samuel 2008) suggested that the PTC discount rate should have been raised to account for risk, owing to the uncertainty of adding tolls on I-80. Grout (2003) recounts a decades-long controversy over this issue, and concludes that there are powerful arguments for using a higher discount rate for the PPP delivery mechanism.

Valuation After PPP Contract Award

Observers maintain that VfM analysis should be assessed even after the contract is awarded so that prices and risks may be readjusted as necessary to maintain VfM. However, it may be impossible to compare the actual costs of the project with the original PSC as the PSC quickly becomes obsolete; the original PSC is only valid before the PPP implementation (Edwards 2004; Stambrook 2005). Presumably this comparison cannot

be achieved because the original PSC would represent some ideal conditions that could have changed if the public sector implemented the project, and the actual PPP costs represent real conditions. Furthermore, the value of the PPP will continue to change over time, and the actual value will be realized when the lease period expires, which, in the case of recent PPP projects in the United States, will occur many decades from today.

Life-Cycle Costs

As noted by Buxbaum and Ortiz (2007), future expansion and/or extensions, or other major capital improvements throughout the lease period, must be identified and the responsibilities for such investments should be defined in the concession agreement and included in the valuation process. The use of life-cycle cost analysis that includes the costs of initial construction, operations, maintenance, and other costs anticipated during the life of a project has been encouraged by organizations such as the ASCE. The use of life-cycle cost analysis may lead to higher project costs in the short term, but may lead to long-term savings in O&M (Lehman 2007). In addition, for PPP projects that either include transfer O&M over a period of time or have warranty requirements, the private sector is provided incentives to provide a higher quality of design and construction (Grout 2005) to minimize O&M costs.

Additional Costs of PPP

The use of PPP for transportation infrastructure brings some additional costs compared with traditional procurement (GAO 2008). The valuation and decision-making process to pursue a PPP should account for these to estimate the real costs of PPPs. These additional costs include:

- Higher cost of borrowing (for private debt), although there are ways that the private sector can lower this, for example, with private activity bonds;
- Foregone tax revenue, when tax-exempt debt is used, although this is revenue that may not have materialized in any case;
- Cost of reviewing unsolicited proposals;
- Cost of contracting financial and legal advisors, and/or developing PPP expertise in-house; and
- Cost of performance monitoring.

The first two items are related to the financing of the PPP project. The borrowing costs of private debt are higher than public tax-exempt debt; therefore, those higher costs are passed onto the public, either through a lower up-front payment (compared with the public sector issuing debt to raise money) or through higher toll rates than under public ownership—assuming tolls are part of the finance plan (Baxandall 2007). And, as discussed by Foote et al. on their Pennsylvania Turnpike monetization analysis, the cost of borrowing is expected to rise in the near term, with the current credit crunch that is causing interest rates to increase, along with increases in the cost of bond insurance (although the latter affects both public and private debt). Foote's evaluation concluded that because of the higher borrowing costs of the private monetization, toll rates under Act 44 (i.e., public monetization through the existing Turnpike Commission) were estimated at 71.5% the private toll rate. However, the use of public debt to support transportation infrastructure may be restricted by a state's or toll authority's debt capacity and statutory debt limits, and the unwillingness on the part of decision makers to regularly raise tolls to meet debt requirements (Buxbaum and Ortiz 2007). In addition, some financial experts indicated that some tax benefits available to private investors (e.g., interest deductions and accelerated depreciation) can help bridge the gap between tax-exempt and private debt (Florian et al. 2007). Furthermore, these federal tax provisions, combined with availability of other finance tools (e.g., Private Activity Bonds and TIFIA), may substantially reduce the cost difference between private and public debt (Goldman Sachs 2008).

The financing package for some PPP projects included the use of tax-exempt debt, such as debt issued by 63-20 corporations in the 1990s (e.g., Pocahontas Parkway) and, in more recent deals, the use of TIFIA and/or private activity bonds for toll road projects (e.g., I-495 Capital Beltway HOT lanes). GAO (2004) estimated federal foregone tax revenues of between $25 and $35 million in 2003 from outstanding debt for the Pocahontas Parkway, Southern Connector, and Las Vegas Monorail projects.

The last three items on the list are related to the additional procurement and performance monitoring costs incurred by the public sector when deciding to have a PPP program. For example, unsolicited proposals require the state to devote time and resources for review (Buxbaum and Ortiz 2007). Although some PPP legislation allows states to charge a proposal fee, it may be insufficient to cover the actual costs of reviewing the proposal. Having a PPP program also requires the state DOT to either develop in-house expertise to evaluate and execute these deals or contract with legal and financial experts, both resulting in additional costs to the agency, compared with the status quo (i.e., using only traditional procurement). Beyond procurement, the agency will also incur monitoring costs, especially if the contract specifies performance measures to be met by the concessionaire.

Opinion/Comment from "Other Individuals/Interest Groups" Survey:

[If deciding to pursue a PPP] "It must be clearly established that the same up-front borrowing could not be done more cheaply by public entities. The public should not pay a premium for higher private borrowing costs, oversight costs for monitoring private entities, and shareholder profits."

Bonding, Bonding Capacity, Letters of Credit, and Initial Construction Warranties

Bonding Capacity of Contractors

Many PPP projects are of such a size (more than $100 million) that small contractors may have difficulty obtaining financing. And, even if a smaller contractor had the financing capacity, the level of financial risk would negatively affect its bonding capacity. Performance bonding is an important element to a PPP, as it provides the public sector some assurance that a project will get completed if the concessionaire has financial difficulty.

In its *Report to Congress on Public-Private Partnerships* (2004), U.S.DOT identified bonding capacity and warranty requirements as potential impediments to small businesses competing for PPP projects. This concern was echoed at a House Committee on Transportation and Infrastructure hearing on innovative contracting (April 2007) by various industry representatives. According to Thomas (2007), few sureties are willing to accept risk exceeding $250 million under any given bond. This situation is further affected by the requirement for extended warranties in many of these PPP projects. Warranties require larger bonds, driving project costs up, limiting participation as prime contractors of small and mid-sized companies. However, these companies can and do still participate as subcontractors.

In contrast, an FHWA representative stated in his testimony that, in the case of design-build, the higher bond requirements, among other factors, do not appear to affect small businesses participation (Ray 2007). In his written testimony, Ray indicated that data on design-build contracting show that "the percentage of design-build project costs going to small businesses is almost the same, on average, as the amount under the traditional design-bid-build" contracting.

A related concern is that states need to verify that their performance and payment bond statues allow flexibility that the private sector can respond to, because the amount and term of typical state statute bonds are not available in the marketplace.

Warranties

Warranties have been used for years in a wide variety of consumer products to protect consumers from inferior workmanship. Historically, however, state DOTs have not used warranties for road construction but have internalized the risk of poor workmanship. Warranty clauses in PPP agreements guarantee that a roadway will meet a certain level of quality or else repairs will be made at the private contractor's expense. The intent is to create incentives for the contractor to deliver a high quality product to reduce future maintenance and repair costs.

Two types of warranties are used in highway construction: (1) materials and workmanship warranties and (2) performance warranties. Under the former, the contractor is responsible only for defects caused by poor materials and workmanship. Under the latter, the contractor is responsible for the facility meeting certain agreed upon performance thresholds over an agreed upon period of time irrespective of whether materials and workmanship meet initial requirements (U.S.DOT 2004).

Warranties may have a higher initial cost because contractors may increase their initial bids to include contingency funds for correcting problems during the warranty period. However, warranties may result in lower life-cycle costs than those of traditionally contracted projects because there is an improvement in the quality of the initial project (U.S.DOT 2004). The Wisconsin DOT explored the relationship between quality and whether or not the project had a warranty, and found that warranted pavements performed significantly better. The Wisconsin DOT study indicates the warranted pavements are performing better than similar non-warranted pavements based on the measured International Rough Index and Performance Distress Index (Carpenter et al. 2003).

However, despite the performance advantages of warranties, some state transportation agencies cite the additional resources and expertise required to specifying them as a disadvantage. As mentioned earlier, the warranties requirement may preclude smaller contractors from competing against larger firms that have the financial capacity to acquire large bonds that support the warranty requirement. Also, some contractors are reluctant to enter into warranty agreements owing to the increased liability and risk (Carpenter et al. 2003).

Initial construction warranties (along with maintenance standard) were considered as an important concern by all respondents in our state DOT survey, with almost three-quarters of the U.S. respondents considering it as "very important."

Examples of warranties in practice are Virginia's State Route 288 and New Mexico's US Highway 550 (former SR-44). For Virginia's State Route 288, a design-build-warranty approach, was chosen for the construction of 10.5 miles of new highway, expansion of 7 miles of existing highway, construction of six new interchanges, modification of two interchanges, and construction of 23 bridges along the roadway to finish the road quickly and with minimal delays. The project is thought to have been completed 3.5 years earlier than if a traditional DBB approach was used (U.S.DOT 2004). The state saved $47 million in construction costs, and the project was completed seven months ahead of schedule.

New Mexico's construction of US Highway 550 encompassed an innovative warranty concept. In 1998, the state entered an agreement with a private partner to design, manage

construction, and provide innovative warranties for the 118-mile highway segment. The warranties expire based on time (20 years for pavement, 10 for structures), money ($110 million for pavement, $4 million for structures), or equivalent single axle loads (ESALs) ($4 million for pavement, $2 million for structures), whichever comes first. An ESAL is defined by the FHWA as "the damage per pass to a pavement caused by a specific axle load relative to the damage per pass of a standard 18,000 pound axle load moving on the same pavement." The warranties cost $60 million for pavement and $2 million for structures, essentially leaving the private partner with a maximum monetary risk of $50 million for pavement and $2 million for structures (from the total monetary value of $114 million of the warranty). New Mexico DOT has been independently verifying ESAL calculations provided by the private contractor. Accurate calculation of current ESALs and projection of future ESALs is important because over-calculation could result in early termination of the warranties, and much of the expensive maintenance work is expected to take place towards the end of the contract. Findings of a recent report indicate that whereas expected ESALs in the early part of the contract were overestimated, the growth rate of ESALs was underestimated. However, recent data suggest growth in ESALs appears to slowing down (McClure et al. 2008). Yet, if the higher growth experienced over the first few years is sustained, the date of warranty expiration might be accelerated, requiring the New Mexico DOT to incur pavement maintenance expenditures toward the later years of the infrastructure life cycle.

TRANSPARENCY

PPP agreements are complicated, and there have been criticisms over deals being rushed through without the public or their elected officials understanding the implications. The following sections address issues related to public participation in general, and involvement of the legislative branches of state government.

Transparency and Public Participation

The lack of transparency in the PPP process has been voiced as one of the main concerns throughout the literature review, including the newspapers and media reports, and it is mentioned as an important issue by both supporters and opponents of PPPs. Buxbaum and Ortiz (2007) noted that transparency in the PPP process is key for public support of long-term concession agreements. The Chicago Skyway and the Indiana Toll Road concessions are particularly noted as examples in which transparency was lacking from the public perspective (as reported through the news media), even though public officials involved in these deals believed the process to be transparent and both transactions were subject to legislative review and approval of final terms.

Both the Regional Plan Association of New York, New Jersey, and Connecticut (Regional Plan Association 2007) and the U.S. Public Interest Research Group released position papers highlighting the importance of transparency as various states (including New Jersey, Pennsylvania, and Texas) unveiled their intentions to pursue long-term concessions on existing and new toll facilities. The RPA (2007) suggests full disclosure of:

- Current and proposed contract standards,
- Toll policy under PPP,
- Revenue losses related to tolls used for other investments,
- Noncompete clauses or potential limitations to expansion of other transportation infrastructure, and
- Transaction costs incurred by public sector.

RPA further suggests that adequate opportunities for public input and legislative review are needed. Baxandall (2007) proposed that contract documentation should be available for public scrutiny at least six month before a deal is signed, and that legislators should have a vote on the final terms of a PPP deal. However, private parties may not be able or willing to hold their financial offers for such extended periods of time, and the political risk that this would entail could discourage private entities from submitting proposals.

Opinion/Comment from "Other Individuals/Interest Groups" Survey:

Balance needs for temporary confidentiality with full disclosure of selection criteria, scoring, and concession agreement details.

In our survey of state DOTs, only one state considered transparency as a "not important" concern, and this state has not considered or used PPPs to deliver highway projects. Approximately 30% of the interested parties survey respondents mentioned transparency as one of the main concerns related to and a factor to consider by decision makers on PPPs. When asked about measures used to protect the public interests, only one state (of 26 respondents) indicated that public access to information related to a PPP proposal was not important, whereas six states indicated this measure to be not applicable in their PPP process.

Opinion/Comment from "Other Individuals/Interest Groups" Survey:

The private entity needs to be held to the same standard of access to documents and information as a state DOT would be and implement full, effective public engagement methods.

A PPP delivery system is characterized by a multistage process for contractor's selection (expressions of interest, contractors' qualifications, proposals, and best offer and negotiation), a multi-criteria evaluation process for contractor's submissions for each stage, and an agreement that generally covers all project phases of design, construction, and operation (Abdel-Aziz 2007). Because this method seeks more innovation from private partners, those partners have more intellectual property to protect, and thus transparency is necessarily lessened.

Although public scrutiny of decision-making is important to accountability of government spending, all rationales for maintaining confidentiality during the proposal process relate to ensuring a competitive tendering process that provides private bidders with incentives to deliver innovative designs for the lowest possible cost (Siemiatycki 2007). In the USC study, Buxbaum and Ortiz (2007) suggested that the public sector should be clear and up front about what type of information should remain confidential and provide an explanation as to why confidentiality is necessary during the proposal process. Confidential information, however, could be kept at a minimum to ensure public support. A balance between temporary confidentiality and full disclosure of selection criteria, scoring and agreements was proposed in our interested parties' survey as a mitigation measure to the concern of transparency. It should be noted that final awards and contracts between the public and private sectors are subject to the state freedom of information acts. Both Victoria, Australia, and British Columbia, Canada, have developed public disclosure policies that are aimed at achieving transparency in procuring PPP projects. The guidance developed by Partnerships British Columbia on public disclosure (2007) includes guidance on the level of disclosure by milestone of the PPP process.

Best practices have been developed to promote transparency in the PPP procurement process (Australian National Audit Office 2001). The International Technology Scanning report issued by Jeffers et al. (2006) similarly notes the important role auditors play in the procurement of PPP projects. The scanning team's recommendations include:

- Implementing the use of a process auditor position for each PPP project;
- Conducting audits throughout the project life cycle, not just of the end construction costs;
- Involving internal audit staff and financial experts early in the tendering process to improve the quality of highway project Request for Proposal (RFP); and
- Specifying outcomes desired and allowing contractors the opportunity to determine the detailed specifications to construct, maintain, or operate the project based on the outcome specifics.

Although specifying outcomes rather than outputs is a major driver of the innovation found in a PPP, this best practice was actually the cause of a transparency issue in the case of The Canada Line. Siemiatycki (2007) reviews the confidentiality maintained during the tendering process of the extension of Vancouver's urban rail system by obtaining original technical, financial, and planning documents after bidding had ended. Using standards developed by the Australian National Audit Office (2001), he found that the tendering process followed, and in some case exceeded, best practices for maintaining confidentiality. These practices included withholding select technical and financial information from public scrutiny during the competitive tender process, releasing entire evaluation reports at the conclusion of the procurement process, and commissioning a series of independent reviews from consultants and a former Auditory General of British Columbia.

Siemiatycki concludes that despite these attempts at transparency, resulting public and elected public official dissatisfaction with one of the chosen implementation methods could have been alleviated by: (1) appointing an independent information commissioner to hear cases for and against disseminating information to the public, (2) sharing all information with elected officials so that they may better decide whether to approve or reject a project, and (3) requiring a government auditor general to certify that each summary report released throughout the project procurement represents the full range of issues contained within the full length document.

Jeffers et al. (2006) similarly recommend that an independent process auditor ensure that all necessary legal, accounting, business plan, and policy issues are addressed from the development of a PPP proposal through the final bid acceptance. Furthermore, states need to develop in-house capabilities to negotiate with, and oversee the operations of, private sector partners (Jeffers et al. 2006; Oberstar and DeFazio 2007). Non-in-house auditors and consultants may potentially have clients on both sides of an agreement and therefore may have conflicts of interest.

The complexity of a PPP can make it easy to hide true costs and benefits related to a project from the public (Bloomfield 2006). One of the true 'innovations' brought on by lease–purchase agreements is that payments made to the contractor are treated as operating expenses rather than capital expenditures. Thus, the public sector can enter into long-term leases without obtaining voter approval, maintain compliance with statutory debt limits, and avoid reporting long-term lease obligations as debts. These "off-budget" or "off-balance-sheet" financing methods avoid restrictions on debt, but do not avoid debt itself. Bloomfield recounts an example in Plymouth County, Massachusetts, in which misleading language suggested to the public that a private investor was paying for a new correctional facility, whereas tax payers were required to pay the entire project cost. Examples such as this underscore the need for government to make the PPP process as transparent as possible to the public.

The Virginia DOT has developed a process to review PPP submission that incorporates transparency and public participation. PPP proposals are reviewed by an Independent Review Panel that is comprised of members from various stakeholder groups. Furthermore, proposals are distributed to affected jurisdictions, and these are provided with a 60 day period to review and submit comments.

Transparency is not limited to the procurement process, and it is important that it remain beyond the procurement process, particularly when revenue sharing provisions are included in the PPP agreements (Samuel 2005). The public should have access to annual traffic and revenue information, audited financial statements, and other documents used to determine the toll revenue returned to the public sector. The concession agreements for Chicago Skyway, Indiana Toll Road, and SR 125 in California mandate public disclosure of annual finances and performance (Replogle 2007).

Public Participation

Any transportation planning exercise involves public participation to varying degrees. PPPs are new, and there are so many misconceptions about how they really work. Therefore, public participation in PPP projects is even more important.

The decisions surrounding the long-term lease of the Indiana Toll Road to a private concessionaire was the subject of intense debate and controversy both during and after the actual transaction. There are conflicting accounts on how well the public was kept informed about the facts of the transaction. Some legislature members complained that the deal was done in "secrecy" (GAO 2000b). That the Daniels administration held hearings after formally announcing the lease was also a subject of legislative criticism (Replogle 2007). On the other hand, staff from the Indiana DOT and the Indiana Finance Authority who were interviewed for the USC study (Buxbaum and Ortiz 2007) indicated that legislative hearings were held between January and March 2006, as part of the process to create enabling legislation for the Indiana Toll Road concession, and these hearings were open to the public. After PPP legislation approving the deal was enacted, additional hearings were conducted in Indianapolis and in the area where the toll road is located.

The perception of a lack of transparency has plagued other recent PPP deals, (e.g., the SH-130 in Texas), but after the public backlash, some PPP proponents and decision makers took notice and are making an effort to communicate and involve the public in the process. In New Jersey, the governor began to explore the feasibility of leasing public assets, including toll roads, eventually moving to pursue an asset monetization through the creation of a public corporation. The study conducted to develop the asset monetization plan was kept "under wraps" for several months, and legislators demanded that the administration make the study public, even resorting to court action, after being denied access to the report. The governor released his plan during his State of the State address in January 2008, and in an effort to gain support, the administration held public meetings in each county to present the plan.

Almost 60% of the respondents (26 states) in our state DOT survey consider the lack of opportunities for public input as a "very important" concern. Only 7% (three states) considered this issue to be "not important," all three of which are not considering highway PPPs.

As mentioned earlier, several respondents of our interested parties' survey included transparency as one of the main concerns and factors to consider in a PPP, citing items such as public access to concession documents, applying the same standards of public disclosure in the public sector to private entities in a PPP, delineation/limitations of what is proprietary information and what is not in the contract, and public oversight at all stages (i.e., from procurement, throughout construction, and operations of facility).

According to the recent GAO report on long-term concessions (GAO 2000b), both Victoria and New South Wales, in Australia, require transparency in their PPP process, by keeping the public informed, as laid out in the public interest criteria shown previously in Table 4.

Adequacy of Legislative Branch Review

The use of PPPs for transportation requires enabling legislation allowing the public sector to enter into agreements with the private sector to provide transportation infrastructure. According to FHWA's PPP website, 23 states and Puerto Rico have enabling legislation for PPPs. Some states' legislation only provides authority to implement specific projects contained in legislation. For instance, legislation in Indiana specifically approved the Indiana Toll Road concession, and future PPPs in this state will require further legislative approval. Design-build has been used more extensively, with 30 of the 44 states in our survey having used this PPP option, and 36 states indicating that they have considered design-build. Individual PPP proposals must be approved by the legislature in Alaska, California, Delaware, Florida, Indiana, Louisiana, Tennessee, and Washington State—about one-third of the states that have PPP-enabling legislation. In some of these states, projects are limited by a specified number of greenfield projects (e.g., Alaska, California, and Tennessee), whereas others only require legislative approval for brownfield concessions (i.e., Florida).

Over the last two years, a few high-profile long-term concession agreements intensified the debate of PPPs in general, and raised concerns about the extent to which the legislative branches of government have an opportunity to review,

understand, and influence PPP deals. Several events of 2007 demonstrate that state legislators are concerned about the speed and transparency of long-term concession contracts:

- The Texas legislature imposed a two-year moratorium on PPPs and directed the Texas Transportation Commission to accept a new bid from North Texas Tollway Authority for the construction of SH-121, which had been originally awarded to a private consortium;
- In Pennsylvania, the legislature moved to enact Act 44 to allow a "public-public" partnership between the Pennsylvania DOT and the Pennsylvania Turnpike Authority, after the governor had issued a request for "expressions of interest" for the potential lease of the Pennsylvania Turnpike;
- New Jersey legislators filed a lawsuit against the Corzine administration to make public a feasibility study on the "monetization" of existing toll roads in the state; and
- The House Transportation and Infrastructure Committee held hearings on PPP topics, including protecting the public interest, and Congressmen Oberstar and DeFazio issued a letter cautioning states entering into PPP agreements for transportation infrastructure.

In contrast to these legislative reactions, our "state DOT" survey found that a significant number of the respondents (18%) considered the concern of lack of time for legislative review or no legislative branch review as "not important" when compared with other PPP concerns from the survey. On the other hand, a respondent of the interested parties' survey, who represented an interest group that advocates for public interests, proposed that legislatures should not only provide enabling legislation for PPPs, but also approve final concession agreements.

Perceptions of Foreign Control of Domestic Assets and the Role of Local Contractors

Concerns of foreign control of public assets are based on the impression that allowing a foreign firm to control our nation's roadways may lead to national security and/or trade agreement issues. This concern has two potential components: foreign government control versus foreign private firm control. In PPPs, foreign control concerns are mostly related to the latter, although the former could be a factor when disagreements over PPPs may affect trade agreements with foreign governments.

Some commentators frown upon allowing foreign companies to operate, maintain, or control U.S. infrastructure (Dobbs 2007). In Tennessee, for example, the senate passed a bill (in March 2008) to limit contracting with foreign concessionaires. This type of restriction, however, may violate bilateral trade agreements, such as those between the United States and Australia.

Because toll roads were developed and operated almost exclusively by government and quasi-government toll authorities for the last century, non-U.S. companies are now best positioned to finance and operate private toll roads in the United States (Gilroy 2007). For example, Spain has a long history of toll concessions, with enabling legislation dating back to the 1950s, and Spanish companies have a strong presence in toll road concessions in other countries (Izquierdo and Vasallo 2004). Cintra, a Spanish concessionaire, is an equity partner in the Chicago Skyway, Indiana Toll Road, Trans Texas Corridor 35, and SH-130 in Texas, and also led the consortium for the Highway 407 Express Toll Route (ETR) in Toronto, Canada.

Another reason foreign companies have flocked to the United States is that they are attracted by the stability of the U.S. government and its legal system that enforces contracts (Buxbaum and Ortiz 2007). Private investors are hesitant to participate when the public partner has poor credit quality or political, legal, economic, and commercial circumstances that are unstable (Zhang 2005). As the United States market has matured, joint ventures between U.S. and non-U.S. companies (e.g., Fluor/Transurban, Zachry/Cintra, Kiewit/Macquarie, and JP Morgan/Cintra), and U.S. financial institutions have created multi-billion-dollar infrastructure investment funds (Samuel 2007).

Despite increased United States participation in concessions, other concerns remain, particularly related to whether local contractors and smaller firms will have an opportunity to participate. The question is whether a private concessionaire will use local contractors for construction work and/or have open bids for other tasks that might be contracted out, similar to current public sector practice. In Indiana, construction unions were demanding that the concessionaire sign a labor agreement to give 95% of the contracted work to trade unions, based on their estimated share of contracts before the Indiana Toll Road lease ("Unions Want Indiana Toll Road Jobs" 2007). The concessionaire indicated that no such deal would be signed. The concession agreement, however, requires that at least 90% of the concessionaire expenses be awarded to companies in Indiana, and it also sets goals for minority business enterprise and women business enterprise participation ("ITR Concession Company Contracting Goals Are Being Met" 2007).

Organizations related to the construction industry, such as the National Asphalt Pavement Association, the Associated General Contractors of America, and the American Road & Transportation Builders Association, have stated their support for PPPs as one tool to pay for infrastructure, among other funding and financing options.

Foreign control of domestic assets was an important concern for 75% of the state DOTs that were surveyed (33 states). The Canadian respondents, however, were less concerned, with 60% (three provinces) reporting that this

was not important. Of all the concerns evaluated in the survey, this is one of few that received the highest response of "not important."

On the other hand, the opportunity for local contractors and consultants to participate in PPPs was considered an important concern by most states, with only two negative responses. The latter came from states that are not considering PPPs.

National Security Concerns

After the events of September 11, 2001, the concern about national security and the call for protecting this country has become one of the top priorities of the government. Some critics of PPPs have raised concerns about the foreign origin of concessionaires and the possibility that this may be a threat to national security. During the Indiana Toll Road deal, opposition to the lease was fueled after public disclosure that the U.S. ports were operated by a company owned by the government of Dubai (Buxbaum and Ortiz 2007). Although there was no direct relation between these two deals, the latter served to strengthen and raise additional concerns about leasing the toll road to foreign investors. It should be noted that foreign investments in highways that could affect national security are subject to review by the Committee on Foreign Investment in the U.S., under the Foreign Investment and National Security Act of 2007.

The "non-DOT" survey brought up the national security concern as well by one respondent, specifically in defining what entity will have final oversight and decision making on PPPs, whether it is the public sector or the private concessionaire. The GAO (2000b) found that the federal government's involvement with PPPs has been limited to projects that have used or will use federal funding; however, some of these deals may have implications of national interest, such as interstate commerce or national security. The GAO recommended a reexamination of federal programs that will include a definition of national interests on PPP and how these interests can be protected.

International Trade Agreement Concerns

PPPs can raise international free trade issues. According to a website maintained by Cornell University (http://government.cce.cornell.edu/doc/reports/freetrade), state and local governments are concerned about losing some of their authority because federal law preempts state and local law where there is a conflict. Furthermore, under free trade agreement regulations, foreign investors "have a right to bring nations into international arbitration to defend government measures that affect their investments (property) negatively" (Gerbasi and Warner, n.d.). Literature addressing this concern in particular was found from the Canadian Council for Public-Private Partnerships. The Council, an organization that supports PPPs, published the "Public-Private Partnerships and Trade Agreements: Guidance for Municipalities" in 2003 to provide general guidance and information on the subject. It should be noted that there may be trade principles and treaties that bar discrimination against foreign investors, and such discrimination could be quite disruptive to many sectors of the economy.

An example of the potential conflict of trade agreements related to highway PPPs comes from the Highway 407 ETR in Toronto, Canada. As part of the political campaign in 2003, the liberal party promised to reduce tolls on this privately operated facility. The government brought the case to court and arbitration several times, but the court always ruled in favor of the concessionaire, who had contractual rights to set and increase toll rates. In addition, the dispute between the government and the concessionaire for 407 ETR escalated over time with several other issues, and included an attempt by the concessionaire to compel the Registrar of Motor Vehicles to deny vehicle plates and permits to drivers with outstanding toll payments. Both parties reached a settlement on all their issues in spring 2006. However, during the dispute period, the government of Spain threatened to veto a trade agreement if the government of Ontario continued interfering with the 407 ETR concessionaire's right to control tolls (Redlin 2004; *TollRoadNews,* various articles).

Of all our state DOT survey respondents (including U.S. DOTs and their Canadian counterparts), about 29% considered trade agreement implications to be "not important," all of which came from U.S. respondents. Over half of the respondents considered this concern to be "somewhat important," including all five Canadian agencies.

TERMS OF PUBLIC–PRIVATE PARTNERSHIP AGREEMENTS

Many of the public concerns related to PPPs are mainly related to the loss of public control over the facility, and whether the contract clauses adequately protect the public interest. PPP agreements include hundreds of pages of contract terms and standards that should be met by the concessionaire, and are developed to best address risk and the interests of both parties entering into the agreement. And, as the public sector builds experience in PPPs, many of the issues experienced in early PPP agreements become "legacies of the past" (Buxbaum and Ortiz 2007), which are reflected in the use of more "limited-compete" instead of "non-compete" clauses (see the section on Non-Compete and Other Unanticipated Event Provisions later in this chapter), or revenue sharing as opposed to a one-time up-front payment. Furthermore, PPP agreements include performance requirements and/or specifications that must be met by the concessionaire.

Asset Control and Ownership

In a PPP, the facility remains under ownership of the public sector; however, certain responsibilities are transferred to the

private partner, as specified by contract (Samuel 2005); these responsibilities revert back to the public sector once the contract expires. Regardless of this, however, there is a tendency to equate a PPP with complete "privatization" (Samuel 2005; Baxandall 2007), especially on very long-term deals. There was a consensus among the states surveyed that asset control is an important issue, with more than two-thirds of the states surveyed rating it as "very important."

The GAO and U.S. Public Interest Research Group reports on PPPs, and responses from our interested parties' survey identified the concerns on asset control and ownership:

- *Toll rate setting,* where toll rate changes do not require public sector approval. This includes annual increases and maximum rates allowed by contract, and public sector inability to modify toll rates for transportation network management.
- *Non-compete clauses* (such as those included in the SR-91 in California concession agreement) that prevented modifications to the leased asset or to competing facilities, or *limited-compete clauses* that allow modification and/or construction of competing facilities, albeit at a cost. This could include implementation of regional or state transportation plans to accommodate changes over time.
- *Some PPP agreements may create a "tax" on normal policy making,* by including compensation clauses that require the public sector to pay the private partner for any revenue losses as a result of transportation improvements sponsored by the public sector.
- *Safety and maintenance standards.* Inability to guarantee state-of-the-art safety and maintenance standards on the leased facility. These can always be included in a contract, but represent an additional cost that will affect the cost or valuation of the facility.
- *Project oversight.* Reduced ability to control various aspects of transportation asset management, from construction to maintenance and operations.

These asset control and ownership issues are major elements in the formulation of PPP contract terms and are discussed in more detail in the subsequent sections.

Tolling Policy

Highway PPPs are paid for either with direct user fees (such as tolls), government payments (generally from taxes or other general revenues), or both. Most government entities in the United States are struggling with the ability to keep the cost of developing, operating, and maintaining highway infrastructure under control, and also find it difficult to raise either general purpose taxes or motor fuel taxes. Recent surveys have found that there is higher support for the "user pays" concept of tolling than for taxes (Zmud and Arce 2008). Overall, more than two-thirds of our DOT survey respondents considered the toll setting policies related to PPPs to be a "very important" concern; however, a significant share of the respondents (18%; i.e., six states and three Canadian provinces) still indicated that it is "not important."

The PPP debate, specifically related to long-term concessions paid through tolls, is caught in the middle of a debate about tolling policy. In the past, most toll authorities acted on a toll policy (not necessarily explicit) of keeping tolls as low as possible to meet debt obligations on a toll facility or system of facilities. Toll increases were typically done as a last resort, and only after much agonizing public debate—similar to debates on transit rate increases. Unlocking the value of a transportation asset actually means allowing toll rates to be set at market levels and/or permitting them to increase in accordance with inflation, and leveraging that future revenue stream into up-front cash. When tolling as a revenue source and PPPs as a project delivery mechanism are pursued at the same time, toll rate setting control appears to move from the public sector, where elected officials are accountable, to private companies that are motivated by rates of return. Both the Chicago Skyway and Indiana Toll Road long-term concessions were done with the explicit purpose of increasing the asset value of the project through taking rate setting control away from politically motivated officials. The contract terms for both of these agreements allows for toll increases well above increases that have generally been seen in the United States, and elected officials no longer have the ability to intervene in toll increases that are within the caps specified in the contracts.

Opinion/Comment from "Other Individuals/Interest Groups" Survey:

In light of the fact that we can't just raise tolls, the P3 is the next best answer.

Indeed, the concept of "unlocking the trapped asset value" of transportation assets has been used as a key argument in favor of PPPs (Gribbin 2006; Replogle and Funderburg 2006). By moving to PPPs, elected officials are removed from the mix on individual toll rate setting decisions in legally binding contracts (although they do approve the overall structure allowing for future increases). This added value can then be used for a variety of public projects, in addition to providing a profit for the private concessionaire.

Allowing toll rates to escalate does increase the value of the transportation asset, but this is a public policy decision that arguably should be separate from the decision to pursue PPPs (Buxbaum and Ortiz 2007). However, this is not clear because the public sector has historically been unwilling or unable to raise tolls, derailed by political debate or popular disquiet (European Commission 2003; Gilroy 2007). The Florida Legislature has attempted to reverse this trend by passing a provision that requires annual toll rate indexing by

Consumer Price Index (CPI) no less than once every five years (Buxbaum and Ortiz 2007).

Responsibility for setting tolls depends on the nature of the partnership. Long-term lease agreements, otherwise known as concession agreements, have received a great deal of attention because they allow the concessionaire to set the tolls. Public control of toll setting policies is established within the contract and typically includes toll growth caps that cannot be exceeded by the private concessionaire. PPP-enabling legislation could include toll setting policy that has been agreed on by decision makers, and with public input (Buxbaum and Ortiz 2007).

Some suggest that the private sector cannot be trusted to raise tolls because it will do so inordinately to maximize profits. The private sector will set tolls based on market factors, which will be highly correlated to the level of competition from alternative facilities or modes (GAO 2000b); therefore, if competition is limited, the private sector may set toll rates within the allowable maximum rates by contract, and yet realize revenues that exceed the cost of the road and a reasonable rate of return. The concern is that besides gouging users, the private sector may be taking money that could be going to the public agency. Some suggest that it is not always in the best interests of private partners to raise tolls by the maximum allowable amount if it drives some users to alternative routes, thus eroding profits (Samuel 2007).

Careful contract negotiations can constrain maximum toll increases. The recent National Surface Transportation Policy and Revenue Commission report recommended capping toll rate increases at the level of the CPI, adjusted by productivity. Tolls on the Indiana Toll Road are scheduled by the Indiana legislature through June 2010. Thereafter, maximum annual increases for all vehicles are capped at the greater of 2%, CPI, or per capita nominal growth in gross domestic product (GDP). Tolls on the Chicago Skyway are scheduled in the lease agreement until 2017, with maximum annual increases capped at the greater of 2%, CPI, or per capita nominal GDP growth beyond 2017. Tolls on the Pocahontas Parkway in Richmond, Virginia, are specified until 2016, and annual increases are capped at the greater of 2.8%, CPI, or per capita real GDP growth thereafter (Subcommittee on Highways and Transit 2007a). Real GDP growth over the last 10 years has ranged between 0.8% and 4.5%, whereas CPI has fluctuated between 1.5% and 3.4%. The recent economic forecast from the Congressional Budget Office (2008) estimated long-term CPI growth at 2.2% and real GDP growth at 2.3%. However, Replogle (2007) cautioned Congress against setting toll rate caps that may limit or impede the application of value pricing to maintain free flow operations, which is in line with environmental objectives.

In the case of the 407 ETR in Ontario, Canada, the long-term concession agreement specifies toll rate increasing at inflation plus 2% over the first 15 years of the concession, and then increasing at the rate of inflation only thereafter. In reality, toll rate increases in the 407 ETR have exceeded the growth rates established by contract. For instance, in 2008, the rate for off-peak travel went from 16.8 cents/kilometer to 18 cents/kilometer, a 7.1% increase. By December 2007, the rate of inflation in Canada, according to statistics from the government of Canada was 2.4%. Therefore, the actual growth rate over the last year was significantly higher than the growth rate allowed by contract (e.g., 2.4% inflation + 2% = 4.4%), following a trend of excessive increases (compared with contract specifications) for several years.

Toll Setting Is Not Always About Profit

User tolls are said to lessen social inequities related to who pays and who benefits by charging drivers for the actual use of highways, tunnels, or bridges. User charges normally are set to recover the cost of the road project and maintain the predetermined operating condition of that road and are high enough to allow for the private partner's return on investment (Jeffers et al. 2006). Although user fees and congestion pricing schemes are often favored by economists as a way to manage demand, Congressmen Oberstar and DeFazio (2007) asserted that tolls are regressive because they charge drivers of all income levels the same amount and suggest that electronic toll collection technology can reduce or eliminate tolls paid by low income drivers. The RPA (2007) suggests considering the effect to middle- and low-income groups when developing the toll-increase schedules, such that these groups are not disproportionately affected.

PPP legislation and/or concession agreements may include provisions setting toll rates lower than required to support financing; however, in exchange, the public sector would provide funding or subsidies to attract private sector participation. In Chile, the public sector establishes the maximum toll rate, and the evaluation of PPP proposals takes into account the proposed toll rates, among other factors (Izquierdo and Vasallo 2004). Similarly, some PPPs in Australia have been awarded to bidders that propose operating the facilities with the lowest toll (GAO 2000b). Sixteen of the states with PPP-enabling legislation already allow the combination of public sector funding with private funding on a PPP project (FHWA PPP enabling legislation survey 2007).

Shadow Tolls and Availability Payments

Direct user fees are not the only way that private concessionaires can be compensated. With shadow tolls the government pays the private partner to operate and maintain the road based on throughput of vehicles on the highway, which means that the private partner shares in the risk of how many people actually use the highway. In the case of availability payments, payments made to the private partner are directly related to performance standards stated in the contract, and all demand risk is allocated to the government. Both options provide incentives for the private operator to maintain the facility to high standards. In the case of the shadow tolls, if

maintenance standards decline, fewer cars will use the road and government payments will decline. However, with this model, the private partner also assumes financial risks caused by other declines in demand.

Both methods drive innovation and competitive costs because they allow the private partner flexibility in design and approach. Instead of having to comply with materials standards used by the agency, performance-based specifications focus on the outcome of the end product. Performance specifications are established for each element of the asset and then clearly defined as to the minimum acceptable performance level and response time to fix deficiencies (Abdel-Aziz 2007). Availability payments/shadow toll agreements can also be designed to meet environmental objectives, by rewarding greater mobility and reduced congestion, which minimize emissions and fuel consumption (Replogle 2007).

Shadow tolls are widely used in Europe; however, there are indications of a move to more transparent methods of direct user charges there. Private financing of roads and bridges paid with shadow tolls or availability payments does not provide new revenue and does not create a relationship between who pays for the improvement and who gets the benefit (Jeffers et al. 2006). Shadow toll payments in Europe typically come from general funds.

In British Columbia, Canada, the Golden Ears Bridge will combine real tolls with availability payments. TransLink (public partner) will collect toll revenues that will be used to compensate the DBFO concessionaire through availability payments that have been established by contract. The Port of Miami Tunnel, a 35-year PPP agreement, will be financed through annual availability payments that will be indexed annually for inflation. The availability payment will be reduced if the tunnel is not open to traffic or other major performance measures are not met by the private operator. Although still in the negotiation process, the concession was awarded to the private investors who offered the lowest availability payment of $33 million (in 2007 dollars), compared with the public estimate of $55 million.

As PPPs continue to evolve in the United States, availability payments may become more common, as suggested by more recent deals. The public sector retains the demand risk, and it requires additional performance monitoring that should be accounted for as an additional cost to the public sector.

Opinion/Comment from "Other Individuals/Interest Groups" Survey:

Our experience with availability payments has been extremely positive . . . Emphasis could be given to institutionalizing the P3 process and providing the necessary training to make P3 part of the everyday toolkit for project implementation.

Private Sector Toll Setting and Diversion Impacts

A private firm operating a single highway may not consider the network effects of its road pricing. Its toll schedule may be set up to maximize profits, but this can move traffic to other roads, costing municipal and state governments more in the long run as a result of increased local congestion and damage done by trucks to local roads (Regional Plan Association 2007). Also, given that the toll setting rights are transferred to the private sector, the public sector is restricted from controlling the effect of traffic diversions into public roads, and would not have the power to reduce tolls to restore "normalcy" in other parts of the highway network. Past experience shows that significant toll increases will divert traffic, as was the case in New Jersey and Ohio, where toll increases were eased because of significant truck traffic diversions into local routes.

Several attempts have been made to quantitatively study the relationships between toll increases and traffic diversion that might come about from PPP projects. Belzer and Swan (2008) construct a regression model to demonstrate the diversion effects of private companies setting tolls based on profit maximization policies. Using historic data along the Ohio Turnpike, the research suggests the existence of toll rates that would simultaneously maximize private profit and shift a significant number of cars and trucks to alternate competing routes. Diversion to these competing routes, many of which are non-limited-access, could pose significant safety hazards and maintenance costs to the road system overall. Although not necessarily questioning the wisdom of pricing, the authors suggest allowing private operators to control individual roads will erode system performance overall, create economic inefficiencies (deadweight), and curtail interstate commerce.

In Oklahoma, opposition to a toll bridge PPP led residents near the proposed location for the bridge to take the case to court on the grounds that the public did not vote on the proposal and there were no open bids. One of the main concerns of this group was that the surrounding infrastructure could not handle potential traffic growth. The court struck down the project, although not for these reasons, but because the alignment for one of the bridge approaches fell outside the toll authority jurisdiction ("Municipal Toll Roads Become Likely Path" 2008).

States are aware and recognize the importance of this concern, as expressed through the state DOT survey. All respondents indicated that the impact of PPPs on the overall transportation networks was important.

Non-Compete and Other Unanticipated Event Provisions

PPP contracts typically provide protections of the future revenue stream when tolls are the finance mechanism. In

addition, addressing other unanticipated events is also a key element of any contract, including a PPP.

Non-Compete Clauses

Non-compete clauses limit improvements the public partner can make to nearby facilities so that demand for the PPP facility is not eroded. A more appropriate name for such clauses may often be "limited compete" if they do not ban improvements outright, but contain negotiated provisions for remedies. By limiting competition, the up-front value of a concession would increase; therefore, this becomes a trade-off consideration for decision makers.

Non-compete clauses are often cited by PPP critics, who object to tying the hands of government to deliver needed transportation improvements, and most states in our state DOT survey agreed that this is an important concern. The most-cited example of the dangers of non-compete clauses in the United States is California's SR-91. In the non-compete clause, the California DOT agreed not to make improvements within one-and-a-half miles of the HOT lanes on SR-91 without consulting the private operator, California Private Transportation Company (CPTC). In 1999, when the California DOT sought to add merging lanes to the existing free lanes for safety reasons, the CPTC objected. This objection raised public opposition and ultimately led to a lawsuit seeking nullification of the non-compete clause. In 2003, the Orange County Transportation Authority purchased the toll lanes from CPTC for $207.5 million and the non-compete clause was eliminated (U.S.DOT 2004; Subcommittee on Highways and Transit, House Transportation and Infrastructure Committee 2007a).

Other instances have been cited in Australia where the public sector has been unable to improve toll-free routes owing to similar agreements. In 2006, one concessionaire convinced the local government to close several competing local roads to through traffic to force drivers to use the tolled facilities, which were lagging traffic and revenue expectations (AECOM 2007a).

As a direct result of such cases, Congressmen Oberstar and DeFazio (2007) suggested avoiding non-compete clauses altogether. The 2005 federal SAFETEA-LU transportation law Section 1604(c) bars states from including such non-compete agreements for the Interstate System Construction Toll Pilot Program (Regional Plan Association 2007). Samuel (2007) agrees that earlier approaches such as SR-91 were flawed, but asserts that non-compete agreements are necessary in some situations to protect private partners from unfair competition arising from government subsidies. Most recent agreements include "limited-compete" clauses, generally allowing public partners to build everything in its current long-range transportation plan. Future roadways a state might build that are not in its existing plan and that do fall within a narrowly defined competition zone, may be compensated for using a formula for any damage done to toll revenues.

Recent deals have included such limited-compete clauses. For example:

- The Pocahontas Parkway includes a 6 mile non-compete zone, whereas the Indiana Toll Road agreement defines a 10 mile competition zone in which the state could provide compensation for projected loss revenues from building a new four-lane limited access highway, but can build anything else along the corridor (Buxbaum and Ortiz 2007; Samuel 2007).
- Denver's Northwest Parkway concession agreement requires the public authority to compensate the concessionaire if road or transit projects not already planned are built in the corridor and cause a loss in revenue. If the authority cannot pay, the concessionaire may keep revenue sharing money, increase tolls beyond set limits, or extend the lease ("Northwest Parkway Set to Close in October" 2007).
- The concession agreement for the CityLink in Melbourne, Australia, allows for compensation if a new project takes away traffic from the facility, either through cash or contract extension. Transurban has filed a $36 million claim for the construction of the Wurundjeri Way, and is contemplating filing another claim if the government proceeds to build a new east–west toll tunnel (Millar 2007).

The Chicago Skyway agreement is the exception in which no "non-compete" clauses were included in the lease agreement. However, the urban nature of the corridor makes it very difficult and costly for the public sector to make capacity improvements on parallel, competing facilities (Samuel 2005).

Contract terms also regulate the roles of the public and private sectors as a result of unanticipated events. For example, in Portugal, concessionaires are compensated for revenue losses owing to "force majeure" (Izquierdo and Vassallo 2004).

Use of Proceeds and Revenue Sharing

Several projects, including the Indiana Toll Road and the Chicago Skyway, yielded large up-front payments to governments by concessionaires in exchange for the right to operate transportation facilities. Proceeds from the Chicago Skyway concession were largely spent on repaying debt, creating a trust fund, and funding public social initiatives. Proceeds from the Indiana Toll Road were used to repay debt and fund the state's ten year transportation plan (Subcommittee on Highways and Transit, House Transportation and Infrastructure Committee 2007a). However, both deals have raised concerns regarding proper valuation of concession deals, the trade-offs between up-front and long-term payments, and who benefits and who pays (Baxandall 2007; Enright 2007).

The aforementioned concession deals transferred toll collection and road operations for 75 to 99 years to the private sector. Although the money has been used to meet immediate financial needs, and the repayment of debt benefits the government in the long term, the reality is that future generations might be paying for benefits that were substantially realized in the early years of the concession. On the other hand, up-front payments could also be invested in capital projects that may have a useful life beyond the term of the deals and generate public benefits over the long term.

Use of Proceeds

Large up-front concession fees, typical of brownfield concessions, are popular with politicians managing governments in financial difficulties (Thornton 2007). They provide a budgetary windfall that can be spent flexibly on any public purpose, transportation or otherwise (Brown 2007). Besides paying down debts and funding social programs, $500 million from the Chicago Skyway deal placed in a "rainy day" fund is earning $25 million annually, as much as the city used to earn from operating the Skyway itself (Thornton 2007). Applying proceeds in such ways can be seen as fiscally responsible ways of improving a city's credit rating and risk assessment. It is also possible to have the proceeds come as an annual rather than up-front payment. Although this appears to be an option, no specific examples were found through the literature review of PPP deals where the public sector is collecting annual payments from a concessionaire. A policy brief on greenfield PPPs from the Reason Foundation (Gilroy et al. 2007) indicated that this type of concession arrangement has been used in Europe.

Fitch Ratings, however, noted the need to match investment decisions made today with long-term sustainability of transportation. Fitch considers the choice of high up-front payments a risk to the government's fiscal position, as it may limit its flexibility to meet future transportation needs. However, Fitch positively assesses deals that generate large up-front payments "if proceeds are invested in comparable long-term assets that provide lasting economic benefits." Conversely, it will view negatively "the use of proceeds for short-term operating needs of the government" (Fitch Ratings 2006; Checherita and Gifford 2008).

The use of the proceeds is an important consideration, and most observers agree that it could be used for transportation; otherwise, government would be taxing future infrastructure for general needs today. Buxbaum and Ortiz (2007) recommended that decision makers consider debt service, transportation programs, and reserve funds as potential uses for concession proceeds, and that if revenues are used for non-transportation uses, decision makers should make a case for the relationship between the source and the uses of funds. In addition, the study suggests that funding could be allocated to projects that benefit the users of the lease facility and find mechanisms to ensure that projects can be funded over the life of the lease. By investing up-front or recurring revenues in capital projects, particularly from brownfield concessions, the public receives the benefit from other system improvements by monetizing the future revenue streams of an existing facility. Replogle (2007) recommended that surplus revenues (specifically in toll-managed lanes) be used for transit and impact mitigation.

PPP-enabling legislation in 12 states prohibits revenues from being diverted to the state's general fund or for unrelated uses. According to our state DOT survey, most states (excluding five respondents) consider the use of up-front proceeds to be an important concern. The Pennsylvania Turnpike valuation analysis by Foote et al. (2008) raised the concern that under a PPP agreement, up-front revenues from leasing the Turnpike might be redirected for non-transportation uses (such as budget relief), because there are no constitutional or statutory protections that could prevent such action, although the reason for considering a long-term lease of this facility is to provide much needed transportation funding. In Virginia, any up-front payments are to be used in the project corridor.

The appropriate amount that up-front payments should be is also difficult to calculate. Assumptions regarding discount rates, travel demand, or maintenance schedules may have a profound impact on the value of the project. The value of the facility is also driven by the length of concession, toll rates and toll increase assumptions, private equity, and risk. Some commentators are concerned that the public sector may be achieving less value than it should for its capital infrastructure (Baxandall 2007; Enright 2007).

For example, there are several instances in Europe of private partners earning so-called "super profits"—profits that grossly exceed the expected profits projected in the original contract (Jeffers et al. 2006). Such profits can result from unanticipated demand and windfalls from refinancing debt. To remedy this, European countries and some Australian states generally include a clause in PPP contracts that requires sharing of any refinancing profits that may otherwise provide windfall profits for private partners. In the case of TIFIA loans (a type of federal government subsidized loan), profits from refinancing could be used to expand or complete the project for which the loan was issued (Hedlund 2007). However, revenue sharing related to refinancing may not be appropriate in some contracts, because the value of the refinancing may have been included in the initial valuation analysis (GAO 2000b). In the case of the Chicago Skyway, equity was reduced after refinancing, but, according to an investment banker involved in the deal, no refinancing gains were realized, because this had been assumed in the financial offer to the city (GAO 2000b).

Profit can be difficult to measure, because this involves delving into the detailed accounting practices of companies that may have many lines of business and/or a portfolio of toll

projects that they spread management expenses among. In response, European PPP sponsors suggest structuring profit-sharing models based on revenue rather than profits because revenue is easier to monitor. They also suggest incorporating contract clauses that allow for the review of the concession contract clause every 7.5 years (Jeffers et al. 2006). Rebalancing provisions, which bring the contract terms back into the financial balance achieved in the original negotiation, are currently used in Spain and Portugal (Izquierdo and Vasallo 2004; Mayer 2007; GAO 2000b).

Revenue Sharing

Revenue sharing usually comes at the cost of a lower up-front payment. But, the public sector does benefit from future profit-sharing revenue, which can offset the reduction in up-front payment. A respondent in our interested parties' survey recommended the provision of policy that allows for sharing of upside revenue on toll lease (particularly for "brownfield"), and that such policy should be flexible enough that it can be tailored for each individual project. Texas's State Highway 130 and Virginia's Pocahontas Parkway PPPs provide examples of revenue-sharing agreements. Both include tiered revenue sharing that depend on the equity return and internal rate of return of each of the projects, respectively (AECOM 2007b). However, given the high return thresholds, it is unlikely the public partners will share significant revenues under these agreements (Page 2008).

Opinion/Comment from "Other Individuals/Interest Groups" Survey:

There should be strong consideration for policy provisions that require the governmental entity to share in the upside revenue on the lease of toll roads. This should not be overly prescriptive, but give the flexibility needed for each state to work within an overall policy and then apply this based on the specific situation.

Maintenance Standards and Hand-Back Provisions

Maintenance Standards

PPP contracts, especially those that transfer O&M for a period of time to the private sector, will have extensive terms related to maintenance standards. The goal of the public sector could be to ensure that the leased facility meets or exceeds these standards, and that these standards are in line with the public interest. In addition to these legally binding obligations, the private partner will have other interests in keeping up with maintenance needs, because these provide the best long-term return on their investment—small maintenance costs now can avoid larger repair bills later. Also, extreme neglect will lead to the facility being less attractive to toll paying customers, where tolls are involved. However, the public sector needs to be vigilant that the standards are being adhered to (Buxbaum and Ortiz 2007).

Hand-Back Provisions

At the end of the concession, the O&M of the facility, along with the right to collect tolls (if any), reverts back to the public sector. It is in the public interest that the facility is returned in good condition, preferably requiring none to minimal public investment. The PPP contract terms could specify the condition at which the facility must be returned to the public, and may include penalties to the private sector for not meeting these requirements.

Opinion/Comment from "Other Individuals/Interest Groups" Survey:

Not clear whether the private lessor will exercise good stewardship for the facility. When the lease is up, in what condition will the facility be returned to the public?

For example, hand-back requirements in the Port of Miami agreement include a hand-back reserve, which is built annually in the later years of the concession term. The hand-back reserve is used to ensure that the facility is turned over to the Florida DOT in top condition. Failure by the concessionaire to provide annual deposits to the hand-back reserve will result in deductions to the annual availability payments (Clary 2008).

The PPP agreement for the I-495 HOT lanes in Virginia requires the concessionaire to provide a letter of credit or performance bond that can be used by the Virginia DOT if the hand-back requirements are not met. A PPP contract with heavy emphasis on performance standards for compensation could also protect the public interest by ensuring that a specific condition is maintained on the facility throughout the full concession term. In the United Kingdom, the Highway Agency retains 40% of the payments during the last five years of the concession, and disburses the payment to the concessionaire once it determines that the facility has been returned to the government in good condition (Izquierdo and Vassallo 2004).

Environmental Safeguards

A PPP can potentially raise, but must not be permitted to lower, environmental standards for highway operation. In late December 2006, the Sierra Club and other groups spoke out against a potential PPP in New Jersey because environmental standards might not have been sufficiently met by the private sector. In that case the organization was concerned that the operator would choose to use less expensive de-icing products that damage the environment (Regional Plan Association 2007). Other environmental considerations included the effect

of congestion and emissions on the environment. In his testimony to Congress in May 2007, Replogle, representing the Environmental Defense Fund, expressed support to PPPs and tolls, as long as these are used to better manage demand and promote alternative transportation modes and environmentally sound behavior. Performance-based contracts that compensate the concessionaire for providing free-flow service and meeting environmental goals, variable toll rates for traffic management, and the use of revenues to support public transportation are some of the strategies presented in his testimony.

PPP contracts can make environmental performance standards enforceable as part of the environmental approvals process, as well as through incentive-based methods such as performance bonds, funding set-asides, and enforceable contingency measures (Regional Plan Association 2007). Other strategies used to address environmental issues in PPPs include:

- Holding regular meetings with local community groups during both construction and implementation phases to identify and mitigate construction-related impacts and operational impacts once opened;
- Negotiating agreements with major opposition groups and including environmental mitigation conditions in the concession agreement, such as the use of noise-reducing asphalt;
- Conducting comprehensive environmental studies before plan development including extensive public outreach and stakeholder communications; and
- Integrating environmental mitigation and improvement mechanisms early in the preliminary design process (AECOM 2007a).

Oberstar and DeFazio (2007) warned that states should not turn to privately financed projects to avoid meeting environmental requirements that come with federal funding. Most states in our survey (98%) indicated that environmental safeguards are very important in PPP contracting. Among other requirements, federal funding forces states to comply with the National Environmental Policy Act (NEPA). In addition to federal requirements, many states have their own environmental laws and requirements that should be met for any project. A respondent of the interested parties' survey suggested that PPP agreements should not be approved until after the completion of the NEPA process to ensure:

- A full, fair, and open planning process for transportation projects;
- Adequate consideration of all transportation alternatives; and
- Unbiased analysis of viable project alternatives and environmental impacts.

FHWA's Design-Build rule was amended in 2007, allowing states to release requests for proposals and award design-build contracts before the completion of NEPA, but neither final design nor construction can be initiated before the NEPA process is complete. The rule also requires that the design-build contract should include provisions ensuring that all environmental and mitigation measures identified through the NEPA process will be implemented, and precludes the design-builder from having any decision-making responsibilities in the NEPA process and from preparing the document. The provisions in the final rule appear to address the aforementioned concerns related to PPPs and the NEPA process.

Environmental risk is typically better managed by the public sector (GAO 2000b), and as such the public sector typically retains this risk in a PPP. In Texas, for example, concessionaires are not involved in the environmental assessment process, which remain under the responsibility of the Texas DOT; however, this is not always the case. The original investors for the South Bay Expressway (SR-125) in the San Diego area took on environmental risk and had to deal with an environmental planning process that took many more years and dollars than what the investors had anticipated, as discussed in the section on Roles of Public and private Sectors, Risk Allocation, and Rates of Return.

Labor Relation Issues

Labor relation issues are varied among PPP types. In a brownfield concession, labor issues are related to displacement of existing employees, ranging from engineers to administrative staff to road maintenance workers and others, including toll operators. Displaced (or potentially displaced) workers will have broad employment concerns including the continuation of employment, wages, health insurance, pensions and other benefits, working conditions, and, where applicable, union representation. In a greenfield project these issues are related more to the private sector meeting prevailing wage requirements. PPPs have created significant labor issues in Canada, the United Kingdom, and other European countries, even though it could be argued that the PPP enabled more projects to be built, thereby increasing employment, especially in the construction industry. In the United States, construction unions in Indiana demanded that the Indiana Toll Road's new operator, ITR Concession Company (ITRCC), provide them 95% of the construction work on the facility. However, ITRCC's concession agreement does not require it to follow public notification and bidding rules.

On the other hand, the concession agreement for the Chicago Skyway, also owned by Cintra and Macquarie (owners of ITRCC), requires all contracts to contain prevailing wage language. All contractors are required to submit certified pay vouchers corresponding to a particular job. Thus, the concessionaire can ensure its contractors are following predetermined wages as set by the Illinois Department of Labor ("Unions Want Indiana Toll Road Jobs" 2007). Nonetheless, even with these protections, local and smaller engineering and design firms may be excluded from benefiting from the work generated by a large PPP project, because large

engineering firms can have the design work done in other offices throughout the country, without tapping local resources (KCI Technologies 2005).

Also at issue are the potential for less favorable terms of employment in the private sector and the immediate reduction in headcount for those employees who operate the facilities. To resolve these issues, labor protections have been incorporated into some PPP agreements. Several countries have legislation that specifically addresses the transfer of public sector workers to the private sector with some or all of their benefits (Subcommittee on Highways and Transit, House Transportation and Infrastructure Committee 2007b).

On greenfield projects with federal funding, federal labor and contracting requirements (Davis–Bacon act) can address this concern; many states also have "little Davis–Bacon" laws that ensure the prevailing wage for projects. The New Jersey privatization legislation provides compensation for toll road workers (Samuel 2007), guaranteeing employment to union employees for up to six years. However, omitting such specifications from the PPP contract can permit private contractors to reduce staff levels or hire non-union employees, reducing costs, increasing private profits, and increasing the value of the project for the public sector. These benefits, however, may conflict with state labor policies, lead to public disapproval, and could result in potential litigation (Regional Plan Association 2007).

In the United States, recent PPP agreements have included contract provisions that address some of the concerns related to workforce protection in both long-term leases of new or existing toll roads. In the Chicago Skyway, the contract required the concessionaire to employ all unionized employees, and employees were given the option to move onto other city jobs. Most of the employees (100 of 105) took other city jobs, whereas the reminder chose to keep their jobs with the Skyway (GAO 2000b). The legislation that will allow the lease of the Midway Airport in Chicago has a range of labor provisions that include requiring the concessionaire to pay employees in line with the city of Chicago wages and benefits (Illinois Public Act 094-0750). In Indiana, employees were guaranteed that pay and benefits would not be reduced if they took a job with the concessionaire. About 85% of the employees took jobs with private operator at the same or higher pay, whereas others stayed with the state (GAO 2000b). A newspaper report from November 2007 indicates, however, that promised salary increases have not materialized for toll road collectors, prompting workers to become unionized (Potter 2007). The Texas' SH-130 lease agreement requires payment of prevailing wages to construction workers in accordance with governing law and the concessionaire should meet goals for hiring minorities, women, and disadvantaged business groups. The United Kingdom ensures workforce protection by requiring that new and transferred employees of concessionaires are offered "fair and reasonable" employment conditions (GAO 2000b).

Samuel (2007) suggests that workers who are paid reasonable labor-market wages and benefits are likely to be offered work by a private toll company because they have valuable skills and local knowledge. He also noted that government toll authorities are cutting back on staff themselves as electronic toll collection reduces or eliminates toll booths. Private sector groups agree that using local firms saves money and has the added benefit of existing relationships with the public sector (KCI Technologies 2005).

Another labor issue relates to the increase in contracting out of services that have been conducted in-house in the past, such as design and oversight of public works. The GAO (2008a) found that the most important factor in a state DOT's decision to contract out some of these services "is the need to access the manpower and expertise to ensure the timely delivery of their highway program"; cost savings is a secondary consideration. It reported that states protect the public interest through prequalification of contractors and consultants, regular monitoring procedures, assessment of work performed, and standards and requirements for certain types of work. Nevertheless, it appears that state DOTs are still facing some challenges in providing oversight, as they struggle to maintain the required in-house expertise to address demand. This concern was also mentioned in our interested parties' survey, indicating that as more projects are contracted out, it becomes more difficult for state DOTs to attract and retain talent.

In testimony to Congress in April 2007, the Professional Engineers in California Government (PECG), which represents public employees, presented its position on PPPs. The PECG recommends that all construction inspection be conducted by public employees, and that if the public agency is liable for a facility, then the public sector could design, construct, and inspect the facility. Furthermore, PECG indicated in the interested parties' survey that PPPs should require public oversight, design, and inspection to ensure public safety and cost control. The group claims that design-build has been unsuccessful in California, resulting in higher project costs. Other respondents in the interested parties' survey brought similar concerns, drawing specifically from the "Big Dig" experience in Boston. The Big Dig had cost overruns, delays, and several issues, including a fatal accident, owing to flawed construction. According to a labor union representative, oversight and enforcement for this project was not properly conducted and there was no demarcation between the public and private sector responsibilities, given that the relationship between both parties was "too cozy." From the state DOT perspective, most states reported that labor relations are a "somewhat important" concern; six states considered this a "not important" concern.

Length of Agreement

Long agreement terms, such as the 99 years for the Chicago Skyway, 85 years for the Capital Beltway HOT Lanes, and 75 years for the Indiana Toll Road are a frequent criticism of PPPs, in particular for DBFO or long-term concessions. Our

state DOT survey confirms the importance of this concern. Some respondents of the interested parties' survey suggested concession terms of no longer than 30 to 35 years. A study by Virtuosity Consulting for the OECD and the European Commission of Ministries of Transport on successful examples of PPPs concluded that the optimal concession length is between 30 and 35 years; a concession may be sub-optimal for taxpayers beyond that range (Stambrock 2005).

The Chicago Skyway and Indiana leases specified long terms to encourage larger up-front fees. While private operators aim to maximize the length of concessions to safeguard future cash flows, the European Commission (2003) aims to promote open competition and fair market access, reduce the possibility of monopolies, and ensure the public benefit. These objectives would suggest shorter concession agreements.

As the experience level has risen, European Union countries have restricted the length of PPP contracts to 21 to 35 years. (Jeffers et al. 2006). The shorter concession terms correspond with the accepted lengths of government bonds, commercial mortgages, and reasonable risk assessments. In addition, several countries include review and renegotiation of payments every 7.5 years to prevent private partners from earning more than could be earned through other investments given the same risk environment, so-called windfall profits. Some innovative procurement methods propose short concession terms (10–15 years), after which the state pays a residual value to the concessionaire, recouping this payment through another concession (Izquierdo and Vassallo 2004).

Abdel-Aziz (2007) advises against legislating maximum lengths of concession agreements, maintaining project timelines could be decided on a project-by-project basis considering unique conditions, whole life-cycle cost, likely term of senior debt, and financial structure. Public and private partners, for example, may decide to end the concession once the private debt is retired. A limit on the length of concessions; for example, the 35 years in California's AB 680 or the 50 years in Texas HB 2702, unless established for specific reasons, might unnecessarily affect achieving the best value for money. The experience in Mexico shows how very short concession terms (maximum of 12 years, and in some cases 5 years) resulted in high toll rates and uncertainty in traffic demand, which led to the failed concessions in the 1990s (Izquierdo and Vassallo 2004).

The length of concession agreements will affect the ability of the concessionaire to realize tax benefits from depreciation. Although lessees (concessionaires) of toll roads are not owners, if the term of the lease exceeds the remaining design life of an asset at the time of the transaction, the Internal Revenue Service treats the lessee as the owner for tax purposes (Subcommittee on Energy, Natural Resources, and Infrastructure 2008). Thus, the lessee may depreciate the portion of its up-front payment allocated to tangible physical assets in an accelerated manner over a period of 15 years instead of the entire term of the lease (Subcommittee on Highways and Transit, House Transportation and Infrastructure Committee 2007a). This amounts to a government subsidy to the concessionaire that may significantly reduce corporate taxes if the project proves profitable. Longer-term agreements thus allow the private partner to depreciate the asset in the most attractive manner possible and will be reflected in the amount the private partner is willing to pay for the concession (Giglio 1997; Brown 2007).

Termination and Buyouts

All PPP contracts could incorporate clear terms addressing termination, buyouts, and hand-back provisions, and define the roles and responsibilities of both public and private partners if such circumstances arise during the concession period. It is up to the state and its legal advisors to include provisions that protect the public interest.

The termination clause of a contract specifies how the PPP contractor 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 (AECOM 2007b). The majority of the states responding to the survey agreed that these are "very important" concerns. Performance contracts that commit the private partner to specific results are held to be the key to successful risk allocation, and contractual performance guarantees and termination provisions are safeguards that minimize the risk to the public of long-term contracts (Bloomfield 2006).

In the case of bankruptcy, the public sector may step in and take over operations of the facility, or contract with another private entity (Hedlund 2007). It also could allow the concessionaire to increase tolls or provide funding to avoid default (Stambrook 2005). In the case of the Indiana and Chicago long-term lease deals, the lenders have the opportunity to "cure the default," and they could take over the operation of the facility or assign a "successor," before the state could step in and regain control of the roadway (Foote et al. 2008). Ultimately, whether a facility immediately reverts back to the public sector as a result of bankruptcy will depend on the contract provisions that address this situation.

Buyback provisions specify the terms and compensation to the private sector of purchasing the rights to operate the facility before the end of the concession term. Typically, the state would pay "fair value" to the private operator in a buyback situation (Hedlund 2007). The "fair value" is estimated by calculating the net present value of net revenues over the remaining contract term (Poole 2007). This was the method used to estimate the buyback price for the SR-91 Express Lanes in California. Legislation in Texas (approved in 2007) allows the state to buy back profitable toll roads from private operators, with the buy-back amount based on the original estimates of toll revenues for the life of the project. According to Fitch

Ratings (2006), a buy-back at fair value may lead to higher taxes or high toll rates to support a termination payment, especially if valuations are much higher in the future.

Safety and Enforcement Issues

In a PPP, the private sector is expected to maintain safe operations of the facility, as regulated by the contract terms. Again, the public is concerned that the private sector will not provide proper maintenance to increase profit, leading to unsafe conditions. This argument is countered by the notion that private investors are encouraged to provide safe conditions to attract users (Buxbaum and Ortiz 2007) and to avoid liability.

Law enforcement services on highways are typically provided by police and paid by the state DOT or public toll authority. In a PPP these services can still be provided by the state, but paid by the private concessionaire, as was stipulated in the Texas SH-130 contract.

Safety concerns also relate to design standards that provide safe operation on these facilities and whether these are enforced and met in a PPP project. The 407 ETR in Toronto has been criticized for adhering to only minimum highway safety standards, not only after it opened to traffic in 1997, but also after it was leased to private investors (Mylvaganam and Borins 2005; Wikipedia 2008). According to the Ministry of Transportation, compared with the 407 ETR, publicly owned facilities typically exceed highway safety standards.

Commercial Development Rights

The literature review found few references to this topic. In the case of Denver's Northwest Parkway, Portuguese concessionaire Brisa may undertake activities such as commercial development. Rental revenues for two cell phone towers is split with the public parkway authority ("Northwest Parkway Set to Close in October" 2007).

The TTC 35 High Priority Trans-Texas Corridor Master Development Plan has provisions for several innovative financing arrangements that involve commercial development rights. These include having the option to lease a parcel or property from an owner to keep the land vacant before actual acquisition, purchase, and lease-back arrangements; license for exclusive or non-exclusive use of a facility; and facility franchises (such as gas stations and convenience stores).

The Massachusetts Route 3 North Project was a Design-Build-Operate-Maintain project, financed through debt issued by a 63-20 corporation. Debt service and O&M costs are paid by MassHighway through annual appropriations. The PPP agreement allows the developer to generate non-project revenues through ancillary development in the corridor. The developer receives 40% of the revenue generated through development in the corridor (FHWA PPP website; AASHTO Innovative Finance.org).

Data Privacy and Ownership

Data privacy and ownership is a concern raised for toll roads, for both privately and publicly operated, especially with the introduction of electronic toll collection, and as such, the concern was not further investigated for this synthesis. Toll road users are particularly concerned of the potential for tracking and being able to pinpoint their trips through the facility, as in some cases these data have been released, for instance, as evidence for criminal and civil cases.

Liability, Indemnification, and Insurance

As any agreement between two parties, PPP contracts will include clauses that define liability, indemnification obligations, and insurance requirements for both the public and private sectors. It is expected that these clauses are crafted such that the interests of each party entering the agreement are protected.

The FHWA PPP website describes some of the provisions that limit liability and the indemnity obligations of each party for some PPP projects, including the Chicago Skyway, the Pocahontas Parkway, and Texas SH-130, and the PPP legislation survey describes how these are addressed by state.

Private investors are concerned about tort liability, because the private sector is not protected by sovereign immunity as is the public sector. The risk of tort liability can be mitigated by using state maintenance and police service, public sponsorship, and insurance. The latter however can add a significant cost to the project, affecting its financial feasibility (U.S.DOT 2004). From the public sector perspective, governmental liability may not be fully transferable in a PPP, and the public sector may still be subject to lawsuits if deteriorating conditions of the roadway cause any harm to individuals (Fitch Ratings 2006).

CHAPTER FOUR

CONCLUSIONS

As governments struggle with the growing costs to develop, construct, maintain, and operate transportation infrastructure in the face of flat or declining revenues, public–private partnerships (PPPs) are likely to be looked on as a potential way of reducing costs and bringing in new financial resources. This NCHRP synthesis identified a wide variety of concerns about how decision makers can protect the public interest. In summary, there are three major themes drawn from this synthesis:

- How might government decide whether or not to pursue a PPP?
- How could the public interest be protected?
- Misperceptions about PPPs can be a distraction from the real issues.

Each of these themes is discussed here, along with suggestions for further research.

- **How might government decide whether or not to pursue a PPP?**

PPPs encompass a variety of project delivery options, with varying levels of private sector participation, based on risk transferred. A PPP is not a one-size-fits-all solution, and the decision to use one of the many PPP types or traditional approaches could consider and incorporate:

- Valuation of alternative approaches,
- Appropriate risk transfer,
- Transparency and public participation, and
- Unavoidable complexity of the transactions.

Although some states use some kind of valuation process, there is a need for a framework or process to carry out this analysis that is well understood by decision makers and define appropriate assumptions that characterize the differences between public versus private delivery. The value for money (VfM) is one of the most well-known techniques to evaluate PPP projects, and has been widely used internationally; three states in the United States (Florida, Oregon, and Virginia) have reported using it. Other states have applied alternative tools, other than VfM, to evaluate PPP projects. Local conditions and project characteristics will be the final determinant of the assumptions used in the valuation process, but it is essential that there be a clear understanding of those, and they could be subject to a sensitivity analysis. After the Chicago Skyway and Indiana Toll Road deals and attempts by observers to estimate the value of these and other toll facilities proposed for PPPs (e.g., SH-121 in Texas and the Pennsylvania Turnpike), it has become clear that the value of the facility depends on the assumptions used in the valuation process.

To accomplish valuation, there is a need for personnel with skills including value engineering, business modeling, capital budgeting, traditional financial problem-solving methodology, and performance auditing. Furthermore, different valuation techniques have their merits and limitations, and the decision makers might be informed of these. A sensitivity analysis could help to put in perspective some of the potential pitfalls and could assist the public sector to determine whether the disadvantages of pursuing PPPs are minor when compared with the public benefits of implementing the project.

The transfer and sharing of project risks is considered by many as one of the main benefits of a PPP. In a well-designed PPP, risk may be allocated to the party that can best manage such risk, and in some instances, there are risks to be shared by both partners. For example, construction risk is typically transferred to the private sector in any PPP that involves design-build, whereas the public sector is considered better able to manage environmental risks and right-of-way acquisition. The type of PPP to be pursued also dictates what risks are transferred and/or shared with the private sector.

PPP agreements are complicated, and there have been criticisms over deals being rushed through without the public or their elected officials understanding the implications. The lack of transparency in the PPP process has been voiced as one of the main concerns and it is mentioned as an important issue by both supporters and opponents of PPPs. The international experience provides lessons on how to incorporate the public interest into the PPP valuation, and a major element of this is community consultation and involvement through the PPP valuation and decision-making process. The Virginia PPP process provides a good example of how to ensure transparency and public participation during the review of PPP proposals.

Transparency is not limited to the procurement process, and public access to financial statements and performance over the project lifetime has been included as part of PPP contracts.

States are motivated to find creative solutions, and they are interested in quick results. However, the PPP process is

complex, from the valuation and procurement process through the duration of the partnership. There is no uniform set of rules or standards to follow for all projects; therefore, there is a high level of expertise required when pursuing a PPP.

Enabling legislation might provide an attractive environment for the private sector to invest, whereas the public sector is able to protect the public interest. Also, after the project is successfully procured and implemented, it is important that the public sector can monitor performance and ensure that the terms of the agreement are met if the PPP includes a long-term concession to operate and/or maintain the facility.

- **How could the public interest be protected?**

Transportation infrastructure, specifically highways, has been the responsibility of the public sector for many years. The traditional procurement for highways has been design-bid-build. The public sector develops designs, often with consultant support. The design is then let to the lowest bidder who then delivers the highway under government oversight. Long-term maintenance and operation of the highway is in public hands.

A PPP allows a much larger role for the private sector, from bundling design and construction in one contract (design-build) to long-term operations and maintenance of existing or new facilities (concessions). Some PPPs include equity contributions from the private partner, and may also transfer toll collection and rate setting responsibilities to the private sector. When transferring these responsibilities, it is important to ensure that the private sector has the proper motivations to protect the public interest, while allowing investors to meet a return on the investment that is in line with the risk they take.

Most of the concerns about PPPs can be managed through contract terms. Although recent contracts have addressed many of the issues that have caused concerns in the past, unforeseen situations may arise. That is when the strength and flexibility of the contract is tested, and clauses that allow for contract termination or buyout are important.

A PPP may be monitored over its sometimes long lifetime to ensure that the private sector meets safety, maintenance, and other standards specified by contract. When valuing the decision to pursue a PPP to protect the public interest it is essential that the public sector account for the additional cost of performance monitoring by qualified, independent, public sector/department of transportation staff.

Long-term asset leases of brownfield toll roads have arguably caused the most concern because a few transactions have resulted in large up-front payments to government. This revenue may be used for an appropriate public purpose consistent with public policy objectives. PPP-enabling legislation in some states prohibits revenues from being diverted to the states' general fund or for non-transportation uses. Some other uses of up-front proceeds include paying off debt and transportation investments that will bring long-term benefits to the public.

A PPP can potentially raise environmental standards for highway operation. Furthermore, PPP contracts can be designed to encourage environmentally sound behavior; for example, through incentives that encourage the concessionaire to provide free-flow service. As for environmental impacts, any PPP that will receive federal money is required to comply with the National Environmental Policy Act; and most states have environmental laws and requirements that need to be met for any major infrastructure project.

The public interest is also protected by addressing potential labor issues arising from a PPP. In a brownfield concession, labor issues are related to displacement of existing employees at the toll facility and the loss of pension plans; whereas in greenfield projects these issues are related more to the private sector meeting prevailing wage requirements. Past brownfield concessions have dealt with labor issues by providing opportunities to maintain jobs with the public sector (e.g., the Chicago Skyway) or by including contract terms that guarantee the pay and benefits for employees that remained working for the concessionaire. For greenfield projects using federal funding, it is necessary that the requirements of the Davis–Bacon Act relating to prevailing wages be met. In other cases, the contract may include terms to address labor issues and concerns.

- **Misperceptions about PPPs can be a distraction from the real issues**

Many public concerns are rooted in concerns raised over past transactions, even though more recent approaches have learned from the past and resolved the issues in contracts. Some negative perceptions about PPPs have remained over time. Also, a lack of public information and openness in the process (coupled with sensational press coverage and the political grandstanding that can arise) may lead to mistrust. Project sponsors might communicate with citizens and decision makers in an effort to build trust and to educate the public about some of the misperceptions related to PPPs, such as:

Misperception #1: Non-compete clauses are always part of a PPP with a long-term lease component. Actually, after the experience with strict non-compete clauses in the 91 Express Lanes PPP in California, most PPP deals have included "limited-compete" clauses, requiring the public partner to provide compensation for projected loss revenues resulting for certain types of improvements, although these have not been eliminated altogether (e.g., Denver's Northwest Parkway lease). The public sector can make the decision whether to include "non-compete" or "limited compete" provisions in a PPP, and explain why such provisions have been included in the contract. The exclusion of such provisions would lower the value of the contract, but will give the public sector more flexibility.

Misperception #2: A PPP is a synonym for tolls, and with that, sky-high toll increases are inevitable, resulting in windfall profits. The PPP debate, specifically related to long-term concessions paid through tolls, is caught in the middle of a debate about tolling policy. The recent long-term concession deals (again, one of the several PPP types) have transferred toll responsibility to the private concessionaire. However, the public sector still controls the toll setting policies by including toll growth caps in the agreement, even when the toll setting and collection responsibilities are transferred to the private sector. In an attempt to distance toll setting policy from PPPs, Florida adopted periodic increases for its public-sector toll roads. However, the public worries about super profits from increasing tolls, even within set growth caps. To counter this, some of the international experience, and other more recent PPP deals have included revenue sharing that ensure the public sector benefits of additional profits after the concessionaire reaches a certain return on investment.

There are several types of PPPs that do not require the implementation of tolls (e.g., design-build, maintenance contracts, agreements with availability payments/shadow tolls). Furthermore, direct user fees (i.e., tolls) are not the only way that the private sector can be compensated. The United Kingdom has used shadow tolls extensively to support its Private Finance Initiative, and availability payments are another alternative to compensate the concessionaire based on facility performance measures. The latter could be combined with tolls that are retained by the public sector, thereby providing the needed revenue stream, but insulating the project from concerns about the private partner getting rich at the expense of toll payers.

Misperception #3: The public sector loses total control of the facility. Under a PPP agreement, the public sector never loses ownership of the facility; however, some responsibilities are transferred to the private sector. The extent to which these responsibilities are transferred is defined by the contract. Well-crafted agreements may ensure that the public interests are protected.

An open process helps build trust and support, as long as project sponsors can demonstrate that decisions are being made with the public interest in mind.

- **Future Research Needs**

The most pressing research need surrounding PPPs is related to PPP valuation tools. There is very little public understanding about how PPP deals are evaluated. In 2008, Morallos and Amekudzi and the U.S. Government Accountability Office (GAO) documented some of the valuation tools (including VfW), citing some of the benefits and limitations of these methodologies. The GAO report found that there has not been a consistent application of methodologies, and other literature shows how the valuation of a PPP is highly dependent on the selection of certain value drivers (e.g., length of agreement, toll policy, and discount rates). The industry would benefit from a compilation of existing valuation methodologies, a description of the advantages and disadvantages of each of these tools, sample applications, and the development of a framework that would help project sponsors to evaluate potential PPP deals objectively. This framework could include recommended value drivers and require a sensitivity analysis to help drive decisions.

In the area of tolling policy, additional research is needed on appropriate escalation factors for toll rate caps. The literature review shows that recent PPP deals that transfer toll collection to the private sector has included Consumer Price Index and gross domestic product to determine the maximum annual toll rate increase, but little is known about what are the appropriate economic indicators that could be used.

There is also a continuing need for professional practitioners, elected officials, and their staff to stay abreast of developments in PPPs and, in particular, efforts to separate fact from fiction. Digestible, easy-to-understand primers on PPPs highlighting the key issues raised in this synthesis could go a long way toward encouraging states to use PPPs in appropriate ways that advance the public interest.

REFERENCES

Abdel-Aziz, A.M., "Successful Delivery of Public-Private Partnerships for Infrastructure Development," *Journal of Construction Engineering and Management,* Vol. 133, No. 12, 2007, pp. 918–931.

AECOM, "Case Studies of Transportation Public-Private Partnerships around the World," Final Report Work Order 05-002, prepared for Office of Policy and Governmental Affairs, Federal Highway Administration, U.S. Department of Transportation, Washington, D.C., July 7, 2007a.

AECOM, "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, Federal Highway Administration, U.S. Department of Transportation, Washington, D.C., July 7, 2007b.

American Association of State Highway and Transportation Officials (AASHTO), "Innovative Finance for Surface Transportation" website [Online]. Available: http://www.innovativefinance.org.

Apogee Research, Inc., "Implications of Change in Procedures and Laws to Advance Public-Private Partnerships," prepared for the Federal Highway Administration, Report FHWA-PL-95-026, Apr. 30, 1995, p. 11.

Australian National Audit Office, "The Use of Confidentiality Provisions in Commonwealth Contracts," Canberra, Commonwealth of Australia, 2001, 112 pp. [Online]. Available: http://www.anao.gov.au/uploads/documents/2000-01_Audit_Report_38.pdf [accessed Jan. 25, 2008].

Baxandall, P., "Road Privatization: Explaining the Trend, Assessing the Facts, and Protecting the Public," U.S. Public Interest Research Group Education Fund, Washington, D.C., Fall 2007, 29 pp.

Belzer, M.H. and P.F. Swan, "Empirical Evidence of Toll Road Traffic Diversion and Implications for Highway Infrastructure Privatization," *Proceedings of the 87th Annual Meeting of the Transportation Research Board,* Washington, D.C., Jan. 13–17, 2008.

Bettignies, J.E. and T.W. Ross, "The Economics of Public-Private Partnerships," *Canadian Public Policy,* Vol. 30, No. 2, June 2004, pp. 135–154.

Bloomfield, P., "The Challenging Business of Long-Term Public-Private Partnerships: Reflections on Local Experience," *Public Administration Review,* Vol. 66, No. 3, May 2006, pp. 400–411.

Brown, K., "Are Public-Private Transactions the Future of Infrastructure Finance?" *Public Works Management & Policy,* Vol. 12, No. 1, July 2007, pp. 320–324.

Buxbaum, J.N. and I.N. Ortiz, "Protecting the Public Interest: The Role of Long-Term Concession Agreements for Providing Transportation Infrastructure," Research Paper 07-02, USC Keston Institute for Public Finance and Infrastructure Policy, Los Angeles, Calif., June 2007, 59 pp.

Canadian Council for Public-Private Partnerships, "Public Private Partnerships and Trade Agreements: Guidance for Municipalities," Toronto, ON, Canada, Mar. 2003.

Carpenter, B., E. Fekpe, and D. Gopalakrishna, "Performance-Based Contracting for the Highway Construction Industry: An Evaluation of the Use of Innovative Contracting and Performance Specification in Highway Construction," Koch Industries, Inc., Washington, D.C., Feb. 2003, 56 pp. [Online]. Available: http://www.ncppp.org/resources/papers/battellereport.pdf [accessed Jan. 24, 2008].

Checherita, C. and J. Gifford, "Risk Sharing in Public Private Partnerships: General Considerations and an Evaluation of the U.S. Practice in Road Transportation," *Proceedings of the 87th Annual Meeting of the Transportation Research Board,* Washington, D.C., Jan. 13–17, 2008.

Clary, L., "Public-Private Partnerships in Florida," presented at the 87th Annual Meeting of the Transportation Research Board, Washington, D.C., Jan. 13–17, 2008.

Congressional Budget Office, Economic Projections, Sep. 9, 2008 [Online]. Available: http://www.cbo.gov/budget/econproj.shtml [accessed on Sep. 15, 2008].

Dobbs, L., "Lou Dobbs Tonight," Cable News Network (CNN), Jan. 9, 2007 [Online]. Available: http://transcripts.cnn.com/TRANSCRIPTS/0701/09/ldt.01.html [accessed Jan. 24, 2008].

Edwards, P., J. Shaoul, A. Stafford, and L. Arblaster, "Evaluating the Operation of PFI in Roads and Hospitals," Certified Accountants Educational Trust, London, 2004, 238 pp. [Online]. Available: http://image.guardian.co.uk/sys-files/Society/documents/2004/11/24/PFI.pdf [accessed Jan. 25, 2008].

Enright, D., "Texas Hold 'em: Will the State go "all-in" on Public Private Partnerships ("CDAs") and lose $2 Billion? An Economic Analysis of The Texas SH 121 Toll Road Concession," NW Financial Group, LLC, Jersey City, N.J., Apr. 12, 2007, 16 pp.

European Commission, "Guidelines for Successful Public-Private Partnerships," Brussels, Belgium, Mar. 2003, 100 pp.

Federal Highway Administration, "Typical PPP Risk Allocation," 2004 [Online]. Available: http://www.fhwa.dot.gov/ppp/faq_3.pdf [accessed on Jan. 28, 2008].

Federal Highway Administration, "Design-Build Contracting," Final Rule, August 14, 2007, *Federal Register,* Vol. 72, No. 156 [Online]. Available: http://www.fhwa.dot.gov/programadmin/contracts/fedreg071408.cfm [accessed June 10, 2008].

Federal Highway Administration, "Public Private Partnerships—Federal Highway Administration," 2008 [Online]. Available: http://www.fhwa.dot.gov/ppp/ [accessed on Jan. 25, 2008].

Federal Transit Administration (FTA), "Report to Congress on the Cost, Benefits, and Efficiencies of Public Private

Partnerships for Fixed Guideway Capital Projects," U.S. Department of Transportation, Washington, D.C., Dec. 2007, 62 pp.

Fishbein, G. and S. Babbar, "Private Financing of Toll Roads," World Bank, Washington, D.C., 2006.

Fitch Ratings, "U.S. Toll Road Privatizations: Seeking the Right Balance," Special Report, Mar. 2006, 10 pp.

Florian, M., J. Holt, and J. Frates, Goldman Sachs & Co., "Public-Private Partnerships: Examining the Key Drivers of Value," *Horizon: The Future of Transportation,* Summer 2007, pp. 4–12.

Foote, J., G.J. Gray, and P.J. Cusatis, "For Whom the Road Tolls: Corporate Asset of Public Good, An Analysis of Financial Strategic Alternatives for the Pennsylvania Turnpike," commissioned by the Democratic Caucus of the Pennsylvania House of Representatives, Feb. 2008.

Gerbasi, J. and M.E. Warner, "Restructuring Local Governments," n.d. [Online]. Available: http://government.cce.cornell.edu/doc/reports/freetrade/ [accessed Mar. 23, 2008].

Giglio, J.M., "Private Transportation and Public Benefits," Presented at Transportation Finance for the 21st Century, Dallas, Tex., April 23–25, 1997.

Ghavamifar, K. and A. Touran, "Alternative Project Delivery Systems: Applications and Legal Limits in Transportation Projects," *Journal of Professional Issues in Engineering Education and Practice,* Vol. 134, No. 1, 2008, pp. 106–111.

Gilroy, L.C., ed., "Reason Foundation Annual Privatization Report 2007," Reason Foundation, Los Angeles, Calif., July 2007.

Gilroy, L., R.W. Poole, P. Samuels, and G. Segal, "Building New Road through Public-Private Partnerships: Frequently Asked Questions," *Policy Brief No. 58,* Reason Foundation, Los Angeles, Calif., Mar. 2007.

Goldman Sachs & Co., "Columbia River Crossing: Funding Considerations," prepared for the Oregon Department of Transportation, Salem, Mar. 2008.

Gribbin, D.J., "Concession Agreements: The Key to Unlocking Capital," *Horizon: The Future of Transportation,* Fall 2006, pp. 16–22.

Grimsey, D. and M.K. Lewis, "Are Public Private Partnerships Value for Money? Evaluating Alternative Approaches and Comparing Academic and Practitioner Views," *Accounting Forum,* Vol. 29, 2005, pp. 345–378.

Grout, P.A., "Public and Private Sector Discount Rates in Public-Private Partnerships," *The Economic Journal,* Vol. 113, Mar. 2003, pp. C62–C68.

Hart, O., "Incomplete Contracts and Public Ownership: Remarks, and an Application to Public–Private Partnerships," *The Economic Journal,* Vol. 113, Mar. 2003, pp. C69–C76.

Hedlund, K., Nossaman, Guthner, Knox & Elliot LLP, Testimony to the Committee on Transportation and Infrastructure, Subcommittee on Highways and Transit, U.S. House of Representatives, Feb. 13, 2007.

Highway Public-Private Partnerships: More Rigorous Upfront Analysis Could Better Secure Potential Benefits and Protect the Public Interest, GAO-08-44, U.S. Government Accountability Office, Washington, D.C., Feb. 2008.

Hodges, J.T. and G. Dellacha, "Unsolicited Infrastructure Proposals: How Some Countries Introduce Competition and Transparency," *GridLines,* No. 19, Public-Private Infrastructure Advisory Facility, The World Bank, Washington, D.C., Mar. 2007, 4 pp. [Online]. Available: http://www.ppiaf.org/gridlines/19Unsolicitedproposals.pdf [accessed Jan. 25, 2008].

Illinois Public Act 094-0750, Senate Bill SB2872, 94th Session, "Local Government Facility Act" [Online]. Available: http://12.43.67.2/legislation/publicacts/fulltext.asp?Name=094-0750.

Infrastructure Partnership Australia, "Performance of PPPs and Traditional Procurement in Australia: Final Report," Nov. 2007, prepared by The Allen Consulting Group and the University of Melbourne [Online]. Available: http://www.infrastructure.org.au/Content/PPP.aspx.

"ITR Concession Company Contracting Goals Are Being Met," *Public Works Financing,* Vol. 219, Sep. 2007, pp. 6–7.

Izquierdo, R. and J.M. Vasallo, *Nuevos Sistemas de Gestión y Financiación de Infrastructuras de Transporte,* Colegio de Ingenieros de Caminos, Canales y Puertos, 2004.

Jeffers, J.P., et al., "Audit Stewardship and Oversight of Large and Innovatively Funded Projects in Europe," FHWA-PL-07-001, Federal Highway Administration, Washington, D.C., 2006, 60 pp.

KCI Technologies Inc., "Current Practices in Public-Private Partnerships for Highways," prepared in cooperation with Maryland Transportation Authority, Maryland Department of Transportation, and Maryland State Highway Administration, June 2005.

Leavitt, W. and J.C. Morris, "Public Works Service Arrangements in the 21st Century: The Multiple-Sector Partnership as an Alternative to Privitization," *Public Works Management & Policy,* Vol. 12, No. 1, 2007, pp. 325–330.

Lehman, M., Chief Operating Officer of Chazen Companies, Testimony of the American Society of Civil Engineers on Public Private Partnerships: Innovative Contracting, presented to the Subcommittee on Highway and Transit of the House Committee on Transportation and Infrastructure, Apr. 17, 2007, 11 pp.

Mayer, J., "Private Returns, Public Concerns: Addressing Private Sector Returns in Public-Private Highway Toll Concessions," presented at the 86th Annual Meeting of the Transportation Research Board, Jan. 21–25, 2007.

McClure, S., J. Lowry, R. Risvi, and J. Woodland, "Public-Private Partnerships: A Case Study in Evaluating ESALs for Long-Term Performance Warrantees in New Mexico," *Proceedings of the 87th Annual Meeting of the Transportation Research Board,* Washington, D.C., Jan. 13–17, 2008.

Millar, R., "CityLink May Demand Millions over East–West Road," TheAge.com.au, Dec. 17, 2007.

Morallos, D. and A. Amekudzi, "The State of the Practice of Value for Money (VfM) Analysis in Comparing Public

Private Partnerships to Traditional Procurement," Paper submitted for the University of Southern California, Keston Institute for Public Finance and Infrastructure Policy Workshop, *Lessons Learned from Public Private Partnership for Infrastructure,* Los Angeles, Calif., Mar. 28, 2008.

Morallos, D. and A. Amekudzi, "A Review of Value for Money (VfM) Analysis for Comparing Public Private Partnerships to Traditional Procurements," presented at the University of Southern California, Keston Institute for Public Finance and Infrastructure Policy Workshop, *Lessons Learned from Public Private Partnership for Infrastructure,* Los Angeles, Calif., Mar. 28, 2008 [Online]. Available: http://www.usc.edu/schools/sppd/keston/ [accessed Apr. 14, 2008].

"Municipal Toll Roads Become Likely Path," *The Journal Record,* Jan. 28, 2008.

Mylvaganam, C. and S. Borins, *If You Build It ... Business, Government and Ontario's Electronic Toll Highway,* University of Toronto Center for Public Management, 2005.

"Northwest Parkway Set to Close in October," *Public Works Financing,* Vol. 219, Sep. 2007, pp. 17–18.

Oakley, B., "Financial Model Considerations for P-3s," presented at the 87th Annual Meeting of the Transportation Research Board, Washington, D.C., Jan. 13–17, 2008.

Oberstar, J. and P. DeFazio, "Public Interest Concerns of Public-Private Partnerships," Position Paper, U.S. Congress, 2007 [Online]. Available: http://transportation.house.gov/Media/File/press/PPP%2006-04-07.pdf [accessed Jan. 16, 2008].

Organisation for Economic Co-operation and Development (OECD), *OECD Principles for Private Sector Participation in Infrastructure,* Paris, France, 2007.

Page, S., "Helping the Public Sector Analyze the Valuation of Concessions from Multiple Perspectives," presented at the 87th Annual Meeting of the Transportation Research Board, Washington, D.C., Jan. 13–17, 2008.

Pakkala, P.A., W.M. de Jong, and J. Aijo, "International Overview of Innovative Contracting Practices for Roads," Finnish Road Administration, Helsinki, 2007, 108 pp.

Partnerships British Columbia, "Procurement Related Disclosure for Public-Private Partnerships," March 2007, 5 pp. [Online]. Available: http://www.partnershipsbc.ca/pdf/pbc-disclosure_guidance-25-apr-07.pdf [accessed June 10, 2008].

Poole, R.W., "Tolling and Public-Private Partnerships in Texas: Separating Myth from Fact," *Privatization Watch,* Vol. 31, No. 3, 2007, pp. 4, 5, 8–12.

Poole, R.W. and P. Samuel, "Pennsylvania Turnpike Alternatives: A Review and Critique of the Democratic Caucus Study," Reason Foundation Policy Brief No. 70, Apr. 2008, 16 pp.

Potter, E., "Indiana Toll Road Employees to Vote on Joining Teamsters," *Post Tribune* (post-trib.com), Nov. 21, 2007.

Ray, J., Federal Highway Administration, Testimony to the Committee on Transportation and Infrastructure, Subcommittee on Highways and Transit, U.S. House of Representatives, Apr. 17, 2007.

Redlin, B., Canadian Union of Public Employees (CUPE) Research, "How Public-Private Partnerships Are Bad for Democracy," presented at the Parkland Institute Conference, *Uncommon Dreams: Visions of the Public Good,* Edmonton, AB, Canada, Nov. 21, 2004.

Regional Plan Association, "Proceed With Caution: Ground Rules for a Public Private Partnership in New Jersey," A Regional Plan Association White Paper, Jan. 8, 2007, 20 pp.

Replogle, M., Environmental Defense, Testimony to the Committee on Transportation and Infrastructure, Subcommittee on Highways and Transit, U.S. House of Representatives, May 24, 2007.

Replogle, M. and K. Funderburg, "No More Just Throwing Money Out of the Window: Using Road Tolls to Cut Congestion, Protect the Environment, and Boost Access for All," Environmental Defense Fund, Washington, D.C., 2006, 40 pp.

Samuel, P., "Should States Sell Their Toll Roads?" Reason Foundation, Los Angeles, Calif., May 2005, 62 pp.

Samuel, P., "Leasing State Toll Roads: Frequently Asked Questions," Reason Foundation, Los Angeles, Calif., Mar., 2007.

Siemiatycki, M., "Confidentiality in Planning Infrastructure Using Public/Private Partnerships," *Journal of the American Planning Association,* Vol. 73, No. 4, 2007, pp. 388–403.

Stambrook, D., "Final Report: Successful Examples of Public-Private Partnerships and Private Sector Involvement in Transport Infrastructure Development," Produced by Virtuosity Consulting for the OECD/ECMT Transport Research Centre, Paris, France, May 28, 2005.

Subcommittee on Energy, Natural Resources, and Infrastructure, U.S. Senate Committee on Finance, "Tax and Financing Aspects of Highway Public-Private Partnerships," July 24, 2008 [Online]. Available: http://www.senate.gov/~finance/sitepages/hearing072408A.htm [accessed Sep. 15, 2008].

Subcommittee on Highways and Transit, House Transportation and Infrastructure Committee, "Public Private Partnerships: Financing and Protecting the Public Interest," U.S. House of Representatives, Feb. 13, 2007a [Online]. Available: http://transportation.house.gov/hearings/hearingdetail.aspx?NewsID=51 [accessed Jan. 24, 2008].

Subcommittee on Highways and Transit, House Transportation and Infrastructure Committee, "Testimony of Alistair Sawers," U.S. House of Representatives, Feb. 13, 2007b, 7 pp.

Thornton, E., "Roads to Riches: Why Investors Are Clamoring to Take Over America's Highways, Bridges, and Airports—and Why the Public Should Be Nervous," *Business Week,* No. 4033, May 7, 2007, p 50.

Thomas, R., Ames Construction, Testimony presented to the Subcommittee on Highway and Transit of the House Committee on Transportation and Infrastructure, Apr. 17, 2007, 3 pp.

TollRoadsNews [Online]. Available: http://www.tollroadsnews.com.

"Unions Want Indiana Toll Road Jobs," *Public Works Financing,* Vol. 219, Sep. 2007, pp. 5–6.

Unnikrishnan, A., V. Valsaraj, I. Damnjanovic, and S.T. Waller, "Modeling Private Public Partnerships in Maintenance, Rehabilitation and Construction of Roadway Infrastructure Systems," *Proceedings of the 87th Annual Meeting of the Transportation Research Board,* Washington, D.C., Jan. 13–17, 2008.

U.S. Department of Transportation, "Report to Congress on Public-Private Partnerships," Dec. 2004, 193 pp.

U.S. Government Accountability Office, "Highways and Transit: Private Sector Sponsorship of and Investment in Major Projects Has Been Limited," GAO 04-419, U.S. GAO, Washington, D.C., Mar. 2004.

U.S. Government Accountability Office, "Highway Public-Private Partnerships: More Rigorous Up-front Analysis Could Better Secure Potential Benefits and Protect the Public Interest," GAO 08-44, U.S. GAO, Washington, D.C., Feb. 2008a.

U.S. Government Accountability Office, "Federal-aid Highways: Increasing Reliance on Contractors Can Pose Oversight Challenges for Federal and State Officials," GAO 08-198, U.S. GAO, Jan. 2000b.

Wettenhall, R., "The Rhetoric and Reality of Public-Private Partnerships," *Public Organization Review: A Global Journal,* Vol. 3, 2003, pp. 77–107.

Wikipedia, Highway 407 (Ontario) [Online]. Available: http://en.wikipedia.org/wiki/407_Express_Toll_Route [accessed on June 10, 2008].

Zhang, X., "Critical Success Factors for Public-Private Partnership in Infrastructure Development," *Journal of Construction Engineering and Management,* Vol. 131, No. 1, Jan. 2005.

Zhang, L., "Welfare and Financial Implications of Unleashing Private-Sector Investment Resources on Transportation Networks," *Proceedings of the 87th Annual Meeting of the Transportation Research Board,* Washington, D.C., Jan. 13–17, 2008.

Zmud, J. and C. Arce, *NCHRP Synthesis 377: Compilation of Public Opinion Data on Tolls and Road Pricing,* Transportation Research Board, National Research Council, Washington, D.C., 2008, 57 pp.

BIBLIOGRAPHY

American Federation of State, County, and Municipal Employees (AFSCME), "Transportation Assets: Cash Cows?" AFSCME, Washington, D.C., Jan. 2008.

Blanning, B., Professional Engineers in California Government, Testimony to the Committee on Transportation and Infrastructure, Subcommittee on Highways and Transit, U.S. House of Representatives, April 17, 2007.

Busalacchi, F., Secretary, Wisconsin Department of Transportation, Testimony to the Committee on Transportation and Infrastructure, Subcommittee on Highways and Transit, U.S. House of Representatives, Feb. 13, 2007.

Canadian Centre for Policy Alternatives, "The True Costs of P3s," *The Real Bottom Line,* Issue No. 2, Apr. 2003.

Commonwealth of Pennsylvania, Solving the Transportation Crisis (website) [Online]. Available: http://www.rideonpa.org.

Ellis, R., J.H. Pyeon, Z. Herbsman, E. Minchin, and K. Molenaar, University of Florida, "Evaluation of Alternative Contracting Techniques on FDOT Construction Projects," prepared for the Florida Department of Transportation, Tallahassee, July 2007, 115 pp.

Enright, D., NW Financial Group, LLC, Testimony to the Committee on Transportation and Infrastructure, Subcommittee on Highways and Transit, U.S. House of Representatives, Feb. 13, 2007.

Federal Highway Administration, *Manual for Using Public-Private Partnerships on Highway Projects,* 2005, 43 pp. [Online]. Available: http://www.fhwa.dot.gov/ppp/manual_0905.pdf [accessed on Jan. 25, 2008].

Kaine, T., Governor of Virginia, Testimony to the Committee on Transportation and Infrastructure, Subcommittee on Highways and Transit, U.S. House of Representatives, May 24, 2006.

National Asphalt Pavement Association (NAPA), "A New Transportation Commitment for America: Recommendations to the U.S. Congress on the Future of the Federal-aid Highway Program," *Special Report No. 197,* Dec. 2007, p. 27.

Partnerships British Columbia, Golden Ears Bridge website [Online]. Available: http://www.partnershipsbc.ca/files/project-goldenears.html [accessed Apr. 15, 2008].

Partnerships Victoria, "Public Disclosure Policy," Mar. 2007, 12 pp. [Online]. Available: http://www.partnerships.vic.gov.au/ [accessed on June 10, 2008].

Phang, S., "Urban Rail Transit PPPs: Survey and Risk Assessment of Recent Strategies," *Transport Policy,* Vol. 14, Apr. 2007, pp. 214–231.

Rodríguez, D.A., "Expanding the Urban Transportation Infrastructure Through Concession Agreements: Lessons from Latin America," *Transportation Research Record 1659,* Transportation Research Board, National Research Council, Washington, D.C., 1999, pp. 3–10.

Spiegel, P., "Free Money and 130,000 Jobs: Neoliberal State Strategies for Infrastructure Privitization," *Urban Anthropology,* Vol. 35, No. 4, 2006, pp. 433–470.

Subcommittee on Highways and Transit, House Transportation and Infrastructure Committee, "Testimony of Robert W. Poole, Jr., Director of Transportation Studies, Reason Foundation," U.S. House of Representatives, Feb. 13, 2007, 7 pp.

Texas Department of Transportation, "Right-of-Way Acquisition Process," Chapter 11, In *Trans-Texas Corridor 35 (TTC-35) Master Development Plan,* Sep. 2006.

Warranty Contracting, "Warranty Best Practices Guide," Utah State University [Online]. Available: http://www.ic.usu.edu/ic_over/warranty/imp_best.php?heading=11 [accessed Jan. 24, 2008].

ELECTRONIC NEWSPAPER/BLOG ARTICLES

Alabama

MacDonald, G., "U.S. roads chief seeks boost for toll lanes," *The Birmingham News* (al.com), Jan. 26, 2008.

Arizona

Creno, G., "Strapped for highway funds, Arizona considering tolls," *The Arizona Republic* (azcentral.com), Feb. 17, 2008.

Fischer, H., Capitol Media Services, "Lawmakers nix private firms for toll roads proposals," *Tribune East Valley,* Scottsdale, Feb. 20, 2008.

California

Rothfeld, M., "Schwarzenegger calls for new tack on infrastructure," *Los Angeles Times* (latimes.com), Nov. 28, 2007.

Reyes, D., "Tolls to hit $1 a mile on 91 Express Lanes," *Los Angeles Times,* Dec. 28, 2007.

Lin, J., "Change sought on state projects, more public-private partnerships proposed by governor," *The Sacramento Bee,* Dec. 27, 2007.

Canada

Thorpe, J., "Good times in Canada—high loonie, high oil, low unemployment—shine a harsh light on Canada's decaying infrastructure. After decades of neglect, governments and private equity are now looking down the road to the next boom," *Financial Post,* Canada.com, Nov. 10, 2007.

Boesveld, S., "Hwy 407 raising tolls again," The Star.com, Dec. 29, 2007.
Smith, A., "New or rebuilt VG on priority list," Nova Scotia News, *The Chronicle Herald,* Mar. 28, 2008.

Colorado

"NW Parkway lease approved," *Boulder County Business Report,* Aug. 29, 2007.
"NW Parkway leased to European companies," *The Denver Business Journal,* Aug. 29, 2007.
Tanner, D., "Portuguese, Brazilian firms lease part of Denver Beltway," *Landline Magazine,* Aug. 31, 2007.
Lewis, A., "Parkway lease fool's gambit," *The Denver Post* (denverpost.com), Sep. 2, 2007.
Quinn, M., "Toll road lease irks opponents, City officials: Move increases chances for extension," MileHighNews.com, Sep. 5, 2007.
Unruh, B., "Toll road deal imposes 'century of traffic congestion'," World Net Daily, Sep. 7, 2007.
Madigan, P., "Was a state law broken?," YourHub.com (Broomsfield), Sep. 17, 2007.
Proctor, C., "GOP unveils transportation proposal," *The Denver Business Journal,* Nov. 12, 2007.
"Northwest Parkway operators intend to raise tolls," *The Denver Business Journal,* Feb. 7, 2008.
"Colorado House passes bill to study private toll roads," *The Denver Business Journal,* Feb. 15, 2008.

Delaware

Harlow, S., "Big Plans for I-95 service plaza," Delaware Online, Feb. 23, 2007.

Florida

Deslatte, A., "BeachLine joins rent-a-road mix, Crist eyes plan to fill budget gap," OrlandoSentinel.com, Sep. 22, 2007.
Stockfisch, J., "Would lottery lease by state's winning ticket?" *Tampa Tribune,* Tampa Bay Online (tbo.com), Sep. 27, 2007.
Times Editorial, "Private roads are dead end for Florida," TampaBay.com, Sep. 30, 2007.
"Leasing the way to go," Sun-Sentinel.com, Oct. 14, 2007.
Associated Press, "Florida considers Alligator Alley lease to private entity for big bucks," Scripps Newspaper Group—Online, Nov. 25, 2007.
Brassfield, M., "Leasing roads could cost drivers," TheLedger.com, Nov. 26, 2007.
"Spanish Company Introduces New Road Construction Approach to Florida: Global via Enters US through Office in Miami," Press Release Newswire (prweb), Nov. 27, 2007.
Cepero, C., "Citigroup offers bridge game," News-Press.com, Dec. 29, 2007.
Fineout, G., "Alligator Alley may be up for lease," *Miami Herald* (miamiherald.com), Mar. 21, 2008.

General

Saunders, M., "The Role of PPPs in Addressing Congestion," *Public Roads,* Vol. 71, No. 1, July/Aug. 2007.
Krause, R., "Private Infrastructure Booming In Most Places, But Not In U.S.," *Investor's Business Daily,* Aug. 17, 2007.
Dougherty, S., "Infrastructure deficit creates investment opportunities," *The Telegram,* Sep. 16, 2007.
Cook, J., "An innovative solution for financing U.S. highways—lessons from abroad," Peckar & Abramson, P.C., Sep. 21, 2007.
Kiviat, B., "They really own the road," *Time Magazine,* Oct. 18, 2007.
Orski, K., "A discriminating view of public-private partnerships," *Cascadia Prospectus,* Nov. 8, 2007.
Olivas, M.A., "Investors want to acquire large public assets; here why that's a bad idea," *Houston Chronicle* (chron.com), Nov. 10, 2007.
Orski, K., "Turning Capitalism Loose on Roads," *Bacon's Rebellion,* Nov. 26, 2007.
Lee, M., "Privatization of roads wouldn't best serve the public interest," *Star Bulletin,* Dec. 2, 2007.
Sammon, R., "In Many States, Privatization Spells Opportunity for Business," WBOC, Dec. 30, 2007.
Hughes, J., and A.G. Keane, "U.S. Panel may push 40-cent gas tax rise, person says," Bloomberg.com, Jan. 9, 2008.
Layton, L., S.S. Hsu, "Letting the market drive transportation," *Washington Post,* Mar. 17, 2008.

Georgia

"State looks to private sector for road money," *Savannah Morning News,* SavannahNow.com, Sep. 8, 2007.
Eckenrode, V., "State seeks private funds to ease jams," *Morris News Service,* OnlineAthens.com, Sep. 9, 2007.
Hart, A., "DOT considers colossus of roads," *The Atlanta-Journal Constitution* (ajc.com), Oct. 7, 2007.
Mahoney, R., "Perdue to take bigger role in transportation," *Atlanta Business Chronicle,* Oct. 12–18, 2007.
Harris, L.V., "Big picture for roads will be costly," *The Atlanta-Journal Constitution* (ajc.com), Oct. 15, 2007.

Illinois

Spielman, F., "Glitch takes its toll on rush," *Chicago Sun Times* (suntimes.com), Mar. 1, 2008.

Indiana

Spivak, D.K., "State rep wants to help ex toll worker with cancer," *Post Tribune* (post-trib.com), Sep. 8, 2007.
Benman, K., "Toll road money winds its way south," *NWI Times* (nwitimes.com), Sep. 21, 2007.
Potter, E., "Indiana Toll Road employees to vote on joining Teamsters," *Post Tribune* (post-trib.com), Nov. 21, 2007.

Becker, R., "Northern counties not getting fair share of toll road funds," *South Bend Tribune* (southbendtribune.com), Nov. 25, 2007.
Huh, J., "Toll Road lease helps county pay for road projects," *Post Tribune* (post-trib.com), Dec. 10, 2007.
"Indiana Toll Road workers vote to join Teamsters union," South Bend news station, wsbt.com, Dec. 17, 2007.
"Major Moves paying Porter Co. dividends," *Post Tribune* (post-trib.com), Dec. 15, 2007.
Tully, M., "Governor sweeps The Mitchies," *The Indianapolis Star* (indystar.com), Dec. 28, 2007.
Associated Press, "Electronic tolling months away for Indiana Toll Road," *Chicago Tribune* (chicagotribune.com), Jan. 13, 2008.
"Feds wrong to weigh gasoline tax increase," *Post-Tribune,* Jan. 28, 2008.
"Toll Road interest pleases state treasurer," *The Indianapolis Star* (indystar.com), Mar. 11, 2008.
Becker, M., "Governor appoints two to Indiana Toll Road oversight board," IndyStar.com, Mar. 26, 2008.

International

"Vinci named preferred bidder for German motorway concession," *Construction & Maintenance,* Sep. 4, 2007.
Retnanathan, S., "New scheme for toll concessions in the offing," The New Straits Times Online, Sep. 19, 2007.
Medalla, E., "Copsa seeks to expand concessions framework—Chile," *Business News Americas,* Oct. 8, 2007.
"China could freeze out mining competitors in Africa," *HedgeFunds Review,* Oct. 8, 2007.
Haddad, C.L.S., "Brazil—The different ways of privatizing," RGEMonitor.com, Oct. 26, 2007.
Jönsson, A., "Indonesia privatizes part of toll road company," FinanceAsia.com, Oct. 29, 2007.
Reier, S., "Infrastructure—big projects create a small fortune," *International Herald Review,* Nov. 16, 2007.
Bush, J., "Paving 'a road to Russia's future'," *BusinessWeek,* Nov. 21, 2007.
Millar, R., "CityLink may demand millions over east-west road," TheAge.com.au, Dec. 17, 2007.
Mukul, J., "L&T, IRB among 5 to bag Rs 11k cr road projects," *Daily News and Analysis,* Feb. 23, 2008.
West, M., "The oil price is no big deal for toll roads," *Fairfax Digital,* Mar. 25, 2008.

Kentucky

Green, M., and S. Steitzer, "Senator proposes toll power," Courier-Journal.com, Aug. 25, 2007.

Louisiana

Guillet, J., "Roadwork takes private turn," *New Orleans City Business,* Nov. 26, 2007.

Massachusetts

Ross, C., "Deval eyes road to lea$ing," *Boston Herald,* Sep. 11, 2007.

New Hampshire

Halliday, R., "Clegg may oppose bridge bill he backed," *Nashua Telegraph,* Dec. 28, 2007.

New Jersey

"Republicans demand Corzine reveal asset sale offer and advice," NorthJersey.com, Aug. 6, 2007.
"Turnpike proposal," *The Times,* Aug. 10, 2007.
Jennemann, T., "GOP Lawmakers threaten to sue for report on toll increases," *Campaign and Elections Magazine* (NJPols.com), Aug. 22, 2007.
Donohue, J., "GOP threatens lawsuit on toll road study," NJ.com, Aug. 22, 2007.
Associated Press, "Corzine toll road plan might face Wall Street uncertainty," *Asbury Park Press* (app.com), Aug. 24, 2007.
Myzak, S.C., "Merkt Calls on Corzine to Stop Playing Politics with Toll Road Scheme," PoliticsNJ.com, Aug. 29, 2007.
Antonello, K., "O'scanlon and Casagrade backs lawsuit on taxpayer funded toll road report," *The New York Observer,* Sep. 28, 2007.
Jennemann, T., "GOP keeps riding the toll road war path," *Campaign and Elections Magazine,* Oct. 1, 2007.
Meggitt, J., "Millstone against selling of New Jersey toll roads," *Examiner,* Oct. 4, 2008.
Guhl, B., "GOP Candidates call on Roberts to Codey to declare their toll road intentions," *Campaign and Elections Magazine* (njpols.com), Oct. 30, 2007.
Lu, A., "Road sale, lease not big voter issue," NorthJersey.com, *Trenton Bureau,* Nov. 3, 2007.
"Monetization must wait until next year," CourierPost Online, Nov. 5, 2007.
Howlett, D., "Corzine says he'll risk job to lease roads," *Star Ledger,* NJ.com, Nov. 15, 2007.
Associated Press, "Judge to consider public access to Corzine's toll road lease plan," NJ.com, Nov. 16, 2007.
"Finding road to fiscal stability requires open minds," *Home News Tribune,* Nov. 19, 2007.
Higgs, L., "Corzine's program could cost Jerseyans," *Home News Tribune,* Nov. 25, 2007.
"How Corzine's toll road plan could affect you," *Courier News,* Nov. 26, 2007.
"Governor Corzine's remarks to the League of Municipalities," State of New Jersey Office of the Governor, Nov. 28, 2007.
Hester, T., "Corzine to seek 50 percent toll hike every 4 years," *Associated Press,* Newsday.com, Jan. 7, 2008.
Chen, D., and K. Belson, "Corzine proposes steep rise in tolls," *New York Times,* Jan. 9, 2008.
Dunn J., "Tolls will save NJ, governor says," Trucker.com, Jan. 11, 2008.

Mulshine, P., "Okay, Corzine, here's a better plan," NJ.com, Jan. 13, 2008.
"Fixing a budget at the toll booth," *The New York Times,* Jan. 19, 2008.
Hester, T., *Associated Press,* "NJ weighs new way to pay for roads," *US Today,* Jan. 27, 2008.
Myzak, S.C., "Karrow proposes constitutional amendment allowing voters to decide sale, lease of state assets," PolitickerNJ.com, Feb. 7, 2008.
Feeney, T., "Passaic presents governor with a toll-talk surprise: civility," *The Star Ledger,* Feb. 7, 2008.
Reitmeyer, J., "Curtains for toll plan?" *The Record* (northjersey.com), Feb. 22, 2008.
Feeney, T., "Bush official praises Corzine toll 'courage'," *The Star-Ledger* (nj.com), Mar. 1, 2008.

Nevada

Vogel, E., "Highway Finance—Private toll roads proposed," ReviewJournal.com, Oct. 26, 2007.

Oklahoma

"Municipal toll roads become likely path," *The Journal Record,* Jan. 28, 2008.

Pennsylvania

Tanner, D., "Pennsylvania transportation officials apply to toll I-80," *Land Line Magazine,* Aug. 21, 2007.
Rehill, J., "Turnpike lease idea continues to lose favor in PA," *Public Radio Capitol News,* Aug. 22, 2007.
Tanner, D., "PA Turnpike official says I-80 tolls better than privatization," *Land Line Magazine,* Aug. 29, 2007.
"Lawmakers need open minds on roads, bridges," *The Daily and Sunday Review,* Aug 30, 2007.
Brouillette, M., "Paying interest, not earning it," *Pittsburg Tribune-Review,* Sep. 9, 2007.
Etzel, J.O., "Clarion lawmaker slams I-80 toll plan," The Derrick.com, Sep. 19, 2007.
Barnes, T., "Interstate 80 toll foes drive on capital," *Pittsburgh Post-Gazette,* Sep. 20, 2007.
Silver, J.D., "I-80 tolls may be inevitable, turnpike chief says," *Post-Gazette Now,* Sept 21, 2007.
Thomas, J., "Tolls to raise price of goods," CentreDaily.com, Sep. 23, 2007.
"Fitch rates Pennsylvania Turnpike Commission's $530 mm BAN's 'F1+,' Affirms long-term revs at 'AA-'," *Business Wire,* Sep. 24, 2007.
Biddle, S., "PennDOT receives submissions from companies who want to lease PA turnpike," Penn State Public Broadcasting, Oct. 2, 2007.
Nussbaum, P., "Interest to lease turnpike is broad," *The Philadelphia Inquirer,* Oct. 2, 2007.
Nussbaum, P., "Pa. Turnpike chief limit I-80 toll use," *The Philadelphia Inquirer,* Oct. 4, 2007.
Grata, J., "I-80 tolls conversion speed on," *Post-Gazette Now,* Oct. 12, 2007.
"I-80 tolling lease is unethical, illegal," Owner-Operator Independent Driver Association (OOIDA), Oct. 12, 2007.
"Step taken to toll I-80," *Pittsburgh Business Times,* Oct. 16, 2007.
Carroll, J., "Toll opponents criticize turnpike's lease of I-80," Goerie.com, Oct. 17, 2007.
"Congress or FHA likely to halt mistake of tolling Interstate 80," *The Patriot News,* Oct. 22, 2007.
"PSU travelers split on I-80 partnership," The Daily Collegian Online, Oct. 24, 2007.
"OOIDA officials protest I-80 tolls, signing of lease," TheTrucker.com, Oct. 26, 2007.
Brelje, B., "Rendell pursues leasing turnpike, still lukewarm to tolls on Interstate 80," *Pocono Record,* Oct. 31, 2007.
Tanner, D., "Special Report—Pennsylvania goes public with I-80 lease," *Land Line Magazine,* Nov. 2, 2007.
"McIlhattan criticizes PennDOT payment," TheDerrick.com, Nov. 5, 2007.
"PA voters—don't lease Pike or toll interstate," *Reuters,* Nov. 7, 2007.
Armas, G.C., "Pa's toll plan met with skepticism," Forbes.com, Nov. 8, 2007.
"I-80 toll opposition not based on facts," Republican Herald.com, Nov. 9, 2007.
Brouillette, M., "New life for turnpike-lease plan," *The Philadelphia Inquirer,* Nov. 12, 2007.
Parker, C., "Questions and concerns at I-80 toll meeting," TheMorningCall.com, Nov. 12, 2007.
"Advocates of I-80 toll plan find plenty of opposition," TradingMarkets.com, Nov. 15, 2007.
Cioffi, L., "English decries I-80 toll meeting," Vindy.com, Nov. 18, 2007.
"A toll on business—companies say I-80 plan to cost them millions," TradingMarkets.com, Nov. 18, 2007.
"Tolling I-80—Backward thinking," *Pittsburg Tribune Review,* Nov. 19, 2007.
Nussbaum, P., "PA puts a heavy stake on I-80 tolls," *Philadelphia Inquirer,* Nov. 19, 2007.
"Better road require more funding," *The Daily Collegian,* Nov. 26, 2007.
Tanner, D., "OOIDA drives home anti-toll opposition at I-80 symposium," *Land Line Magazine,* Nov. 30, 2007.
Grad, J., "Impact of I-80 tolls wide," TimesLeader.com, Dec. 3, 2007.
Grad, J., "Kanjorski—Toll all PA interstates," Times Leader.com, Dec. 3, 2007.
Mauriello, T., "Bill would allow tax credit for road tolls," *Pittsburg Post Gazette,* Dec. 10, 2007.
Bumsted, B., "Republicans warm a bit to leasing turnpike," *Pittsburg Tribune Review,* Dec. 10, 2007.
Nussbaum, P., "Plan to toll I-80 is dealt a setback," *Philadelphia Inquirer,* Dec. 13, 2007.
"PA Gov—turnpike lease figures coming," *Associated Press,* Dec. 14, 2007.
Levy, M., *Associated Press,* "Rendell says Turnpike lease can still work," TheMorningCall.com, Dec. 15, 2007.

Vasoli, B., "Turnpike commission hired lobbyist to oppose leasing," *The Bulletin,* Dec. 20, 2007.
Associated Press, "Bill proposes leasing Pa. Turnpike in 3 parts," *Pittsburgh Tribune Review,* Jan. 15, 2008.
Nussbaum, P., "Study—Gas tax hike the way to go," *Philadelphia Inquirer,* Jan. 16, 2008.
Scolforo, M., Associated Press, "Pa—growing front pressures toll plan," *Houston Chronicle,* Jan. 18, 2008.
Belson, K., "Work is afoot to take the free out of freeway," *The New York Times,* Jan. 19, 2008.
Nussbaum, P., "Bigger cast in play for PA turnpike," *The Philadelphia Inquirer,* Jan. 20, 2008.
Hirschhorn, D., "Toll hikes could be capped for turnpike bidders," *The Evening Bulletin,* Jan. 25, 2008.
Grate, J., "Turnpike bankrolls PennDOT again," *Pittsburgh Post-Gazette,* Jan. 26, 2008.
McNickle, C., "Orwellians, Rendellians and 'uniforms'," *Pittsburgh Tribune Review,* Jan. 27, 2008.
Ryan, J.T., "Turnpike revisited," *Central Penn Business Journal,* Feb. 1, 2008.
Goble, K., "Pennsylvania bill would authorize lease of turnpike," *Land Line Magazine,* Feb. 8, 2008.
Bair, J., "Budget watch—transportation budget calls for partnerships, infrastructure improvements," *Central Penn Business Journal,* Feb. 8, 2008.
"$3B debt for roads, transit may cut turnpike lease price," *Pittsburgh Tribune Review,* Feb. 11, 2008.
"This time, use due diligence before acting on road programs," *The Patriots News,* Feb. 15, 2008.
Scolforo, M., Associated Press, "House Dems: Tolling I-80 preferable to leasing Turnpike," The Morning Call.com, Mar. 4, 2008.
"House Democratic study criticizes idea of leasing PA turnpike," *Associated Press,* Mar. 4, 2008.
"Private bidders sought to finish toll roads," *Pittsburgh Post Gazette,* Mar. 5, 2008.
"PA legislative Democrats' I-80 report worthless," *The Daily & Sunday Review,* Mar. 6, 2008.
Scolforo, M., *Associated Press,* "Flat PA gas tax revenues may take a toll on state finances," Philly.com, Mar. 8, 2008.
"Don't be driven by hyped fears," Altoonamirror.com, Mar. 9, 2008.
Swift, R., "Study—turnpike lease would mean higher tolls," *Standard Speaker,* Mar. 10, 2008.
Scalforo, M., "PA mulls transportation funding options," *Associated Press,* Mar. 10, 2008.
Walter, K., "Toll road lease inspections run up bill," *The Herald-Standard,* Mar. 15, 2008.
Ritchie, J., "Turnpike study called one-sided," *Pittsburgh Tribune Review,* Mar. 18, 2008.
"Weak economy could reduce turnpike bids, hike borrowing costs," *The Evening Bulletin,* CapitolWire.com, Mar. 27, 2007.

Rhode Island

Landis, B., "Buyers interested in state's bridges," *The Providence Journal,* Dec. 13, 2007.

Tennessee

Emery, T., "Bill would make state toll routes American-owned," Tennessean.com, Feb. 29, 2008.
Malan, T., "Bill limiting foreign contracts would cost taxpayers," Tennessean.com, Mar. 27, 2008.

Texas

Hughes, P.R., "TxDOT plans to convert some interstates to toll roads," *Houston Chronicle,* Aug. 31, 2007.
Driscoll, P., "Toll road control splits state and locals," MySA.com, Sep. 22, 2007.
Lindenberger, M.A., "State running out of cash for new roads," *Dallas Morning News,* Sep. 28, 2007.
"Local control best for SA toll projects," MySA.com, Sep. 28, 2007.
Driscoll, P., "Three to bid on US 281 toll road project," MySA.com, Oct. 24, 2007.
"Development of D/FW connector moves ahead," *TxDOT's Keep Texas Moving E-Newsletter,* Oct. 29, 2007.
Lindenberger, M.A., "NTTA to borrow $3.75 billion for Highway 121 toll road," *The Dallas Morning News,* Nov. 12, 2007.
Lindenberger, M.A., "North Texas Tollway Authority borrows $3.49 billion for Highway 121 toll project," *The Dallas Morning News,* Nov. 21, 2007.
Dickson, G., "Toll roads are the right move, lawmaker says," Star-Telegram.com, Nov. 27, 2007.
"Toll road critics were turned down in their request for wide-ranging transportation department documents, but a judge gave them more time to narrow their request as part of a lawsuit against the state," *Houston Chronicle,* Dec. 21, 2007.
"Productive conversation sought by TxDOT on I-69 Trans-Texas Corridor," *Fort Bend Now,* Dec. 24, 2007.
Lindenberger, M.A., and B. Formby, "Dallas transit may try to engineer public-private rail solution," *The Dallas Morning News,* Jan. 8, 2007.
Dickson, G., "Official want to keep North Texas toll collections out of state's hands," *Star Telegram,* Jan. 25, 2008.
Sallee, R., and E. Hanson, "Perry's Trans-Texas Corridor plan is a tough sell," *Houston Chronicle,* Jan. 27, 2008.
Tanner, D., "Spanish firm using loan from U.S. to build segments of Texas toll road," *Land Line Magazine,* Mar. 13, 2008.

Virginia

"Virginia announces HOT lanes on Capital Beltway," *AASHTO Journal,* Sep. 14, 2007.
Kafka, L., "Major changes in store for the Beltway," Potomac News Online, Dec. 21, 2007.
Gardner, A., "Private interest in rail to Dulles," *Washington Post* (washingtonpost.com), Jan. 28, 2008.
Weiss, E., "Toll-lane revenue proposal gets a rewrite in Richmond," *Washington Post,* Mar. 28, 2008.

GLOSSARY OF TERMS, ABBREVIATIONS, AND ACRONYMS

Glossary of Terms

63-20 Non-Profit Corporations—Corporations established under IRS Revenue Rule 63-20, which permits nonprofit corporations other than solely governmental bodies to issues tax-exempt debt.

Availability payments—Periodic typically annual payments made by sponsoring agency to private investors on the basis of the availability of facility capacity or other performance measures considered important to users, as defined by contract.

Brownfield—Concession agreements involving an existing roadway, and may include operations, maintenance and expansion/extension of the facility.

Build-Operate-Transfer (BOT)—See Design-Build-Operate-Maintain.

Build-Own-Operate (BOO)—A private contractor constructs and operated a facility while retaining ownership.

Build-Transfer-Operate (BTO)—See Design-Build-Operate-Maintain.

Commercial debt—Any type of loan or credit instrument that is issued by a private investor.

Construction Manager @ 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.

Design-Bid-Build (DBB)—Traditional project delivery method where design and construction are sequential steps in the project development process, with both activities bid separately.

Design-Build (DB)—A procurement or project delivery method whereby a single entity (which can be a consortium of various parties, including engineers/architects and contractors, for instance) is responsible for both the design and construction of a project.

Design-Build with Warranty—A design-build in which the design-builder guarantees to meet material, workmanship, and/or performance measures for a specified period after the project has been delivered.

Design-Build-Operate-Maintain (DBOM)—Also Build-Operate-Transfer (BOT) or Build-Transfer-Operate (BTO). A procurement method in which the selected contractor is responsible for the design, construction, operations, and maintenance of the facility for a specified time.

Equivalent single-axle load (ESALs)—Damage per pass to a pavement caused by a specific axle load relative to the damage per pass of a standard 18,000 lb axle load moving on the same pavement.

Greenfield—Concession agreements involving the construction of a new facility.

High-occupancy toll (HOT) lanes—On HOT lanes, low-occupancy vehicles are charged a toll, while high-occupancy vehicles (HOVs) are allowed to use the lanes for free or at a discounted toll rate.

Life-cycle costs—Costs of a project over its entire useful life, from project inception to the end of its design life.

Long-term concessions—Publicly financed facilities are leased to private sector concessionaires for specified time periods. The concessionaire may pay an upfront fee to the public agency in return for revenue generated by the facility. The concessionaire must operate and maintain the facility and sometimes make capital improvements.

Private Activity Bonds—Tax-exempt bonds issued by states and local governments for project sponsored by a private entity.

Public–private partnership—Contractual agreement between a public agency and the private sector that allows for greater private sector participation in the delivery of transportation projects.

Shadow tolls—Per-vehicle amount paid to a facility operator by the facility owner or sponsoring agency. Shadow tolls are not paid by facility users.

Special Experimental Project Number 14 (SEP-14)—Program established in 1990 to identify, evaluate, and document innovative contracting practices that have the potential to reduce the life cycle cost of projects while maintaining product quality.

Special Experimental Project Number 15 (SEP-15)—SAFETEA-LU enacted program that allows FHWA to experiment in four areas of project delivery: contracting, right-of-way acquisition, project finance and compliance with the National Environmental Policy Act (NEPA) and other environmental requirements.

State Infrastructure Bank (SIB)—A state or multi-state revolving fund that provides loans, credit enhancement, and other forms of financial assistance to surface transportation projects.

Tax-exempt debt—Bonds, issued by a state or local government, whose interest payments are not subject to federal income tax, and sometimes are also exempt of state or local income tax.

Transportation Infrastructure Finance and Innovation Act of 1998 (TIFIA)—Federal transportation credit program enacted under TEA-21, and modified by SAFETEA-LU, that provides direct federal loans, lines of credit, or loan guarantees provided through the U.S.DOT to large projects of national significance, under criteria developed by Congress.

Unsolicited proposals—A bid by a private company to the government for a project for which bids have not been solicited.

Warranty—When used in public–private partnerships for the construction of roads, a clause that guarantees that the roadway will meet certain level of quality or repairs will be made at the private contractor's expense.

Weighted Average Cost of Capital (WACC)—The rate that a company is expected to pay to finance its assets. WACC is the minimum return that a company must earn on existing asset base to satisfy its creditors, owners, and other providers of capital. It is calculate by combining the invested equity and debt with their respective rates of return.

Abbreviations and Acronyms

BOO	Build-Own-Operate
BOT	Build-Operate-Transfer
CM@R	Construction Manager @ Risk
DB	Design-Build
DBB	Design-Bid-Build
DBFO	Design-Build-Finance-Operate
DOT	Department of transportation
ESAL	Equivalent single-axle load
GAO	Government Accountability Office
HOT lanes	High-occupancy toll lanes
OECD	Organisation for Economic Cooperation and Development
O&M	Operations and Maintenance
PAB	Private Activity Bonds
PPP or P3	Public–Private Partnerships
SEP-14	Special Experimental Project Number 14
SEP-15	Special Experimental Project Number 15
SIB	State Infrastructure Bank
TIFIA	Transportation Infrastructure Finance and Innovation Act of 1998
WACC	Weighted Average Cost of Capital

APPENDIX A

State DOT Survey Questionnaire

TO: State DOT Executive Directors/CEOs

FROM: Jack Basso, **Director of Management and Business Development**

Joung Lee, **Senior Analyst for Transportation Finance and Business Development**

SUBJECT: Request for Participation in 50-State Survey on Public Private Partnerships Experience and Decision Making

I am writing to request your participation in a groundbreaking study of state DOT experiences with public-private partnerships (PPPs). By completing a short Web-based survey, the study partners—AASHTO, NCHRP, and FHWA—will be able to compile and analyze data on the use of PPPs, how agencies make decisions about PPP models, and critical professional skills and capabilities in this area.

You may recall that AASHTO and FHWA partnered together in 2005 to assess each state's level of experience with and readiness to undertake various types of partnerships. That survey also identified high-priority topics of interest, skills needed to consider PPPs for transportation projects, and types of technical assistance or professional capacity building resources.

This 2008 survey includes many of the same questions that appeared in the 2005 Web-based survey, but adds another important dimension. A new series of questions relate to NCHRP Synthesis Topic 39-06, an examination of Public Decision Making in Public Private Partnerships. Cambridge Systematics, Inc., is preparing the NCHRP synthesis report; the U.S. DOT's Volpe National Transportation Systems Center conducted the 2005 analysis on behalf of AASHTO and FHWA, and will prepare the 2008 assessment of PPP experience and professional capacity.

We request that you complete the survey yourself, or forward this message to the most appropriate person in your agency and ask him or her to complete the survey. If you delegate

to someone else, please send me an e-mail with the name and contact information of that person, so that we can follow up with him or her directly.

The survey is available as an on-line web-based survey that can be accessed at the following link:

http://www.trb.org/ss/wsb.dll/s/1bg3a

A copy of the survey in PDF format is being provided to assist you in determining who in your organization should fill it out. The actual survey MUST be filled out on-line.

If you have any questions about the survey, you may contact Iris Ortiz at iortiz@camsys.com/617-354-0167, or Theresa Perrone at Theresa.Perrone@Volpe.DOT.gov/617-494-1344.

Please complete the survey by **February 15, 2008**.

Thank you for your time and attention.

State DOT Experience with Public-Private Partnerships: Making Decisions and Building Knowledge

This survey on Public Private Partnerships (PPPs) is a collaborative effort among AASHTO, NCHRP, and the FHWA, with support from Cambridge Systematics and the U.S. DOT's Volpe National Transportation Systems Center.

The survey has two primary objectives: (a) to assess your state's level of experience with PPPs and level of interest in technical assistance resources, and (b) to examine how public sector decision-makers in your state have handled the public's concerns regarding PPPs.

The NCHRP Synthesis, Public Decision Making in Public Private Partnerships (Project 20-05, Task 39-06), will examine the information available in the U.S. and internationally that is needed to properly evaluate the benefits and risks associated with allowing the private sector to have financial stakes in transportation infrastructure, and how that information can be used in the decision-making process. It will also investigate the reliability of that information, and how the broader public interest can be protected, and will identify gaps in public sector expertise, experience, and information.

In 2005, the FHWA and AASHTO partnered to survey state DOTs' experience with PPPs for highway projects. That survey allowed state DOTs to characterize their level of readiness to undertake highway-related partnerships, and identified specific topics of interest regarding PPPs. This 2008 survey will provide similar but up-to-date information.

The survey should take approximately 15 minutes to complete.

If you have any questions about the survey, you may contact Iris Ortiz at iortiz@camsys.com (617-354-0197), or Theresa Perrone at theresa.perrone@volpe.dot.gov (617-494-1344).

1) What types of Public-Private Partnerships (PPPs) have been considered in your agency? Select all that apply:

- ❑ Design-build
- ❑ Build-Operate-Transfer (BOT)
- ❑ Development and long-term concession of a new toll road with transfer of revenue risk
- ❑ Development and long-term concession of a new toll road with availability payments or shadow tolls
- ❑ Long-term asset lease of an existing toll road with transfer of revenue risk
- ❑ Long-term asset lease of an existing toll road with availability payments or shadow tolls
- ❑ Added toll lanes on existing facilities with transfer of revenue risk
- ❑ Added toll lanes on existing facilities with availability payments or shadow tolls
- ❑ Congestion pricing (e.g., cordon tolls) with a PPP element
- ❑ Operations and Maintenance (O&M) Fee Service Contracts
- ❑ Program and Financial Management Fee Service Contracts
- ❑ None
- ❑ Other (please specify)

If you selected other please specify:

_____

2) Which one statement below best characterizes your agency's overall experience with PPPs?

- ❍ We have not yet seriously assessed possibilities for any highway-related PPPs.
- ❍ We have one or more projects that may be candidates for a PPP.
- ❍ We have received one or more proposals (solicited or unsolicited) from potential private partners.
- ❍ We have negotiated (or are negotiating) one or more contracts to enter into a PPP.
- ❍ We have completed at least one project that involved a PPP.

3) Which one statement below best describes your agency's overall readiness to identify and implement innovative finance methods, such as PPPs?

- ❍ The agency needs to build a basic understanding of PPPs.
- ❍ The agency needs some additional technical expertise to establish a partnership.
- ❍ The agency has experience with design-build, but is not yet involved in any projects financed with private capital.
- ❍ The agency needs minimal training or technical assistance.

4) Please rate the extent to which your agency uses the following methods of financing transportation projects, other than PPPs.
Please use the "Additional Comments" box to describe "other" methods.

	Use Frequently	Use Sometimes	Use Rarely	N/A (do not use)
Traditional procurement	❍	❍	❍	❍
Public financing	❍	❍	❍	❍
Federal financing tools (e.g., TIFIA, GARVEES)	❍	❍	❍	❍
Creation of non-profit, quasi-public entities	❍	❍	❍	❍
Design-build	❍	❍	❍	❍
Others (please describe below):	❍	❍	❍	❍

The next few questions pertain to how you (or your agency) make decisions regarding PPPs. If your agency has not yet seriously assessed possibilities for any highway-related PPPs, please click "Next Page" at the bottom of the screen and skip ahead to question #7.

5) What criteria are used to decide whether a PPP approach should be used for project delivery in your agency?

	Extremely Important	Somewhat Important	Not Important	N/A
Project is an urgent transportation need	❍	❍	❍	❍
Strong political, public, and institutional support	❍	❍	❍	❍
Project acceleration potential	❍	❍	❍	❍
Project could generate sufficient revenues to attract private investment	❍	❍	❍	❍
Lack of traditional funding	❍	❍	❍	❍
High-risk project that could be better managed by private sector	❍	❍	❍	❍
Unsolicited proposal	❍	❍	❍	❍
Other (specify below):	❍	❍	❍	❍

6) How important have the following measures been in protecting the public's interest in your state? If your agency has not used a particular measure, please indicate "not applicable" (N/A).

	Extremely Important	Somewhat Important	Not Important	N/A
Comprehensive evaluation of benefits and costs of PPP proposals	❍	❍	❍	❍
Public participation and opportunities for input in decision-making process	❍	❍	❍	❍
Providing public access to information related to PPP proposals	❍	❍	❍	❍
Avoidance of conflict of interests	❍	❍	❍	❍
Terms of agreement are developed taking into consideration public concerns	❍	❍	❍	❍
Development of construction, maintenance and operations standards that meet or exceed standards for non-PPP projects	❍	❍	❍	❍
Continuous project monitoring and evaluation based on performance measures	❍	❍	❍	❍
Roles, responsibilities, and risks are both clearly defined and allocated between public and private partners	❍	❍	❍	❍
Other (specify):	❍	❍	❍	❍

7) The following tables list some of the public concerns that could be raised throughout the decision-making and negotiation process of PPPs. In your opinion, how important are the following concerns? Please note that questions 7a through 7d are required.

7a. Concerns related to project selection and delivery

	Very Important	Somewhat Important	Not Important
Unclear/unavailability of criteria for selection of PPPs	❍	❍	❍
Considerations of alternative PPP models	❍	❍	❍
Consistency with 3C (i.e., continuing, comprehensive, and cooperative) transportation planning process	❍	❍	❍
Effect on overall transportation network/system	❍	❍	❍

7b. Concerns related to evaluation of PPP proposals

	Very Important	Somewhat Important	Not Important
Availability and consistent application of evaluation tools, such as Value for Money and benefit-cost analysis	❍	❍	❍
Risk allocation between public and private sectors	❍	❍	❍
Potential excessive rates of return to private investors	❍	❍	❍
Relative roles of public and private sector	❍	❍	❍
Effect of PPPs on state or local bonding capacity	❍	❍	❍

7c. Concerns related to transparency and public process

	Very Important	Somewhat Important	Not Important
Lack of public input opportunities through decision-making process	❍	❍	❍
Transparency and efficacy of the PPP process, including confidentiality, conflict of interests, intellectual property.	❍	❍	❍
Lack of time for appropriate legislative branch review or no legislative branch review	❍	❍	❍
Use of upfront proceeds	❍	❍	❍

7d. Concerns related to terms of PPP agreement

	Very Important	Somewhat Important	Not Important
Extent to which terms of agreement protect the public interest	❍	❍	❍
Liability, indemnification, insurance provisions	❍	❍	❍
Revenue sharing formula	❍	❍	❍
Clauses that limit public ability to make competing improvements	❍	❍	❍
Unanticipated event provisions	❍	❍	❍
Impacts on existing revenues	❍	❍	❍
Toll-setting policies (e.g., schedule of rate increases and indexing factors)	❍	❍	❍
Safety, enforcement, and national security issues	❍	❍	❍
Initial construction warranties and maintenance standards	❍	❍	❍
Termination, buyouts, and hand-back provisions	❍	❍	❍
Environmental safeguards	❍	❍	❍

Labor relations issues	❍	❍	❍
Asset control and ownership, including commercial development rights	❍	❍	❍
Terms related to condition of asset at end of concession	❍	❍	❍
Implications of foreign control of domestic assets and work	❍	❍	❍
Opportunity for local contractors/consultants to participate	❍	❍	❍
Data privacy and ownership	❍	❍	❍
Impact of project on alternative routes	❍	❍	❍
Trade agreement implications	❍	❍	❍
Length of agreement	❍	❍	❍

7e. In the box below, please list any other concerns, and how important they are to you or your agency.

_____

_____

_____

8) The table below contains a list of technical skills that may be used to support more effective consideration of PPPs. For each one, please indicate whether your agency currently has high, moderate, or low capability in each of these areas.

	High capability	Moderate capability	Low capability
Non-standard procurement or bidding capabilities	❍	❍	❍
Legislative research and analysis	❍	❍	❍
Asset planning and evaluation	❍	❍	❍
Performance specification	❍	❍	❍
Risk assessment	❍	❍	❍
Benefit-cost analyses	❍	❍	❍
Financial management and analysis	❍	❍	❍
Management oversight	❍	❍	❍
Contract negotiation and performance-based contracting	❍	❍	❍
Other technical skills not listed above (free text box)	❍	❍	❍

9) The table below lists various tools that may be used to select a private partner. Please indicate the degree to which your agency uses any of these tools when considering a PPP proposal.

	Use Frequently	Use Sometimes	Use Rarely	N/A (do not use)
Benefit-cost analyses	❍	❍	❍	❍
Internal Rate of Return/Net Present Value analyses	❍	❍	❍	❍
Value-for-Money/Public Sector comparators	❍	❍	❍	❍
Traffic and Revenue Studies	❍	❍	❍	❍
Risk assessment	❍	❍	❍	❍
Availability Payment Amount/Net Present Value	❍	❍	❍	❍
Independent evaluation from legal and/or financial consultants	❍	❍	❍	❍
Other (specify below):	❍	❍	❍	❍

The next two questions pertain to information used in making decisions about PPPs. If your agency has not yet seriously assessed possibilities for any highway-related PPPs, please click "Next Page" at the bottom of the screen and skip ahead to question #12.

10) What information on PPP proposals is available to decision makers, and who provides the information? Select all that apply:

	Project Sponsor (e.g. state DOT, toll authority)	Consultants and legal/financial advisors contracted by project sponsor	Private Investors bidding on the project	Interest groups	Media (e.g., newspaper, TV, blogs)	This information is not available
Terms of agreement	❑	❑	❑	❑	❑	❑
Experience/qualification of proposers	❑	❑	❑	❑	❑	❑
Risks transferred from and retained by public sector	❑	❑	❑	❑	❑	❑
Evaluation of benefits/disbenefits to public sector	❑	❑	❑	❑	❑	❑
PPP valuation studies (e.g., benefit-cost analysis, value-for-money analysis/public sector comparators, traffic and revenue studies) provided by in-house staff or consultants	❑	❑	❑	❑	❑	❑
Project cost estimates and schedule	❑	❑	❑	❑	❑	❑
Amount of upfront payment/revenue sharing (if long-term concession)	❑	❑	❑	❑	❑	❑
Assumptions used by private investors to determine project value	❑	❑	❑	❑	❑	❑
Technical approach	❑	❑	❑	❑	❑	❑
Other (specify in "Additional Comments" box below):	❑	❑	❑	❑	❑	❑

11) In your opinion and based on the outcomes of your PPP project(s), was there some information that you did not have, but that could have been beneficial in the decision-making process?

❍ Yes
❍ No

If you answered "yes," please explain:

_____
_____
_____

The next two questions pertain to training or educational resources related to PPPs.

The questions below list various topics related to PPPs. For each of the following topics, please indicate whether you believe staff in your agency would benefit from training or other educational resources. Questions 12a through 12g are required.

12a. Getting Started with PPPs

	Definitely would benefit	Probably would benefit	Not likely to benefit
The PPP concept, basic types, features, and tradeoffs among them	❍	❍	❍
How federal and state law can influence the use of PPPs	❍	❍	❍
What skills your agency needs in house, and what it can outsource	❍	❍	❍

12b. Risk Management:

	Definitely would benefit	Probably would benefit	Not likely to benefit
Diagnosing risks to both partners at each phase of a project	❍	❍	❍
Where and when risk is best managed	❍	❍	❍
Valuation of different types of risk	❍	❍	❍

12c. Finance Issues:

	Definitely would benefit	Probably would benefit	Not likely to benefit
How to assess the economic costs and benefits of a given project	❍	❍	❍
How to use debt (including private activity bonds)	❍	❍	❍
How to utilize private capital	❍	❍	❍
Opportunities for in-kind contributions	❍	❍	❍
Possible revenue sources and negotiating terms of use	❍	❍	❍
Differences in public and private sector financial considerations	❍	❍	❍

12d. Procurement Considerations and Techniques:

	Definitely would benefit	Probably would benefit	Not likely to benefit
How to write RFPs that incorporate PPP concepts	❍	❍	❍
Anticipating and managing private sector concerns with process	❍	❍	❍

12e. Contracting:

	Definitely would benefit	Probably would benefit	Not likely to benefit
How to write a contract that encourages innovation and sharing of risk and rewards	❍	❍	❍
Best practices in leveraging private resources	❍	❍	❍
Common failures of PPP contracts, and how they are addressed	❍	❍	❍

12f. Managing PPP Projects:

	Definitely would benefit	Probably would benefit	Not likely to benefit
Unique oversight challenges of PPP projects	❍	❍	❍
Techniques for monitoring technical and financial performance	❍	❍	❍

12g. Public Awareness and Stakeholder Consultation:

	Definitely would benefit	Probably would benefit	Not likely to benefit
Identifying and engaging with key stakeholders	❍	❍	❍
Anticipating and managing common public concerns about PPPs	❍	❍	❍

12h. Please list any other topics, and how your agency might benefit from resources on this topic, in the box below.

_____

_____

_____

FHWA provides some resources via the PPP Toolkit, partner websites such as the FHWA PPP website, and other relevant sites that can be accessed through the FHWA PPP website, including www.innovativefinance.org. This question contains two parts, and pertains to PPP websites, as well as other types of resources.

First, please indicate how likely you or staff in your agency would be to use or participate in each of the following types of educational activities. Then, please indicate if you or staff in your agency has used these kinds of resources within the past two years.

	Likelihood that Staff Would Benefit			Participated Within Past 2 (two) Years?	
	Very likely	Somewhat likely	Not likely	Yes	No
Scan of 2–3 agencies with significant experience in PPPs (3–4 days, including overnight stay)	❍	❍	❍	❍	❍
Classroom training (1–2 days at or near your office)	❍	❍	❍	❍	❍
Classroom training (1–2 days, including overnight stay)	❍	❍	❍	❍	❍

Interactive workshop (half to full day, at or near your office)	❍	❍	❍	❍	❍
Interactive workshop (half to full day, off site, including overnight stay)	❍	❍	❍	❍	❍
Peer-to-peer exchange (one day, at or near your office)	❍	❍	❍	❍	❍
Peer-to-peer exchange (one day, off site, including overnight stay)	❍	❍	❍	❍	❍
On-line training modules (self-paced)	❍	❍	❍	❍	❍
Webinar (web- and telephone-assisted seminar)	❍	❍	❍	❍	❍
Web-based repository of case studies and effective practices	❍	❍	❍	❍	❍

14) Are there any other public transportation agencies or authorities in your state that have used a PPP model for a project?

❍ Yes
❍ No

If you answered yes, please list the agency and the name of the project below:

_____
_____
_____

15) Please tell us more about the organizational structure of your agency.

What is the name of your office? _____
To whom does the lead of that office report? Please provide a title, such as "Director of Finance." There is no need to provide a specific individual's name. _____
What is the full-time equivalent (FTE) staffing for the office? _____
How many FTEs are dedicated to innovative financing? _____
What is the annual cost for operating your office? _____
If your organization changed its structure *within the past two years* in order to expand or accommodate work on innovative finance or public-private partnerships, please use the space below to describe these changes. _____

Thank you for completing this survey. Please take a moment to tell us more about yourself. (Please note that all fields are required.)

Your name: _____
Your title: _____
Briefly describe your responsibilities: _____
Your agency: _____

Mailing address: _____
City: _____
State: _____
Zip code: _____
Telephone number: _____

May we contact you by phone or email with some follow up questions?

- ❍ Yes
- ❍ No

Do you have any other comments or thoughts you would like to share?

_____
_____
_____

Thank you for completing this survey. To learn more about PPPs, visit the FHWA's PPP website or its PPP Toolkit for Highways.

APPENDIX B

State DOT Survey Summaries

I. Summary of Survey Responses (all respondents)

1) What types of Public-Private Partnerships (PPPs) have been considered in your agency? Select all that apply:

	Yes	No
Design-build	39 79.6%	10 20.4%
Build-Operate-Transfer (BOT)	8 16.3%	41 83.7%
Development and long-term concession of a new toll road with transfer of revenue risk	18 36.7%	31 63.3%
Development and long-term concession of a new toll road with availability payments or shadow tolls	10 20.4%	39 79.6%
Long-term asset lease of an existing toll road with transfer of revenue risk	2 4.1%	47 95.9%
Long-term asset lease of an existing toll road with availability payments or shadow tolls	2 4.1%	47 95.9%
Added toll lanes on existing facilities with transfer of revenue risk	10 20.4%	39 79.6%
Added toll lanes on existing facilities with availability payments or shadow tolls	7 14.3%	42 85.7%
Congestion pricing (e.g., cordon tolls) with a PPP element	11 22.4%	38 77.6%
Operations and Maintenance (O&M) Fee Service Contracts	16 32.7%	33 67.3%
Program and Financial Management Fee Service Contracts	3 6.1%	46 93.9%
None	4 8.2%	45 91.8%
Other (please specify):	11 22.4%	38 77.6%

Comments related to the respondents who specified “Other”:

- Design-build-finance warranty
- Design-build-own-operate
- New toll bridge
- Developer paying for interchanges
- We have “considered” design-build for special circumstances, but do not have legislative authority currently.
- The [DOT] currently does not have statutory authority to undertake any type of PPP; however, legislation has been introduced to allow such contracts.
- Hired Management Consultants to oversee our Local Program delivery. Used a Public Private venture to redevelop the [city] Intermodal Station (formerly the Amtrak Depot). Investigated P3’s for Park & Ride lots.
- Hospital
- Bond Acceleration Program
- Long-term concession of existing non-tolled facility with availability payments and long-term lease of existing non-state owned toll facility with availability payments

- Rail Station and Parking

2) Which *one statement* below best characterizes your agency's overall experience with PPPs?

We have not yet seriously assessed possibilities for any highway-related PPPs.	20 40.8%
We have one or more projects that may be candidates for a PPP.	10 20.4%
We have received one or more proposals (solicited or unsolicited) from potential private partners.	5 10.2%
We have negotiated (or are negotiating) one or more contracts to enter into a PPP.	3 6.1%
We have completed at least one project that involved a PPP.	11 22.4%

3) Which *one statement* below best describes your agency's overall readiness to identify and implement innovative finance methods, such as public-private partnerships?

The agency needs to build a basic understanding of PPPs.	7 14.3%
The agency needs some additional technical expertise to establish a partnership.	13 26.5%
The agency has experience with design-build, but is not yet involved in any projects financed with private capital.	14 28.6%
The agency needs minimal training or technical assistance.	15 30.6%

4) Please rate the extent to which your agency uses the following methods of financing transportation projects, other than PPPs.
Please use the "Additional Comments" box to describe "other" methods.

	Use Frequently	Use Sometimes	Use Rarely	N/A (do not use)
Traditional procurement	48 98.0%	—	—	1 2.0%
Public financing	25 51.0%	9 18.4%	3 6.1%	12 24.5%
Federal financing tools (e.g., TIFIA, GARVEES)	4 8.2%	19 38.8%	10 20.4%	16 32.7%
Creation of non-profit, quasi-public entities	1 2.0%	4 8.2%	12 24.5%	32 65.3%
Design-build	6 12.2%	15 30.6%	11 22.4%	17 34.7%
Others (please describe below):	3 6.1%	2 4.1%	1 2.0%	16 32.7%

Comments related to the respondents who specified "Other":

- Use frequently
- None
- Commission issued bonds

- We have considered TIFIA and creation of non-profit and quasi-public entities, but have yet to use find the appropriate application.
- We have worked a number of PPP with communities around [state]. When businesses develop they install turn lanes and signals at their cost. Communities have also added dollars to projects that facilitate the movement of traffic.
- [DOT] uses pass-thru financing tolls that are privately financed and publicly repaid.
- [DOT] has had design-build projects—but they are developed for accelerated construction—not as a financing mechanism.
- Revenue bond financing
- Infrastructure Bank
- We are in the process of trying to get PPP legislation passed.
- [State] has the statutory authority to utilize a Design-Build-Finance (DBF) approach to advance projects programmed in the adopted work program of the department.
- Enterprise funded airport

The next few questions pertain to how you (or your agency) make decisions regarding PPPs. If your agency has not yet seriously assessed possibilities for any highway-related PPPs, please click "Next Page" at the bottom of the screen and skip ahead to question #7.

5) What criteria are used to decide whether a PPP approach should be used for project delivery in your agency ?

	Total Responses	Extremely Important	Somewhat Important	Not Important	N/A
Project is an urgent transportation need	29	16 32.7%*	7 14.3%	2 4.1%	4 8.2%
Strong political, public, and institutional Support	30	17 34.7%	8 16.3%	—	5 10.2%
Project acceleration potential	30	17 34.7%	8 16.3%	—	5 10.2%
Project could generate sufficient revenues to attract private investment	30	15 30.6%	6 12.2%	—	9 18.4%
Lack of traditional funding	29	18 36.7%	5 10.2%	1 2.0%	5 10.2%
High-risk project that could be better managed by private sector	29	8 16.3%	10 20.4%	6 12.2%	5 10.2%
Unsolicited proposal	30	1 2.0%	5 10.2%	11 22.4%	13 26.5%
Other (specify below):	14	1 2.0%	—	—	13 26.5%

*Percentage indicates proportion of total surveys, including those that returned no response to Q5.

- All items will be important if/when PPP proposals become active
- [State] does not routinely use PPPs.
- These are the considerations that we have used in trying to get legislation passed.

6) How important have the following measures been in protecting the public's interest in your state? If your agency has not used a particular measure, please indicate "(N/A). "

	Total	Extremely	Somewhat	Not	

	Responses	Important	Important	Important	N/A
Comprehensive evaluation of benefits and costs of PPP proposals	28	17 34.7%*	4 8.2%	—	7 14.3*
Public participation and opportunities for input in decision-making process	28	15 30.6%	8 16.3%	—	5 10.2%
Providing public access to information related to PPP proposals	28	11 22.4%	10 20.4%	1 2.0%	6 12.2%
Avoidance of conflict of interests	27	19 38.8%	5 10.2%	—	3 6.1%
Terms of agreement are developed taking into consideration public concerns	28	19 38.8%	4 8.2%	—	5 10.2%
Development of construction, maintenance and operations standards that meet or exceed standards for non-PPP projects	28	19 38.8%	2 4.1%	—	7 14.3%
Continuous project monitoring and evaluation based on performance measures	28	16 32.7%	6 12.2%	—	6 12.2%
Roles, responsibilities, and risks are both clearly defined and allocated between public and private partners	28	22 44.9%	1 2.0%	—	5 10.2%
Other (specify):	13	2 4.1%	—	—	11 22.4%

*Percentage indicates proportion of total surveys, including those that returned no response to Q6.

- All items will be important if/when PPP proposals become active
- [State] does not routinely use PPPs.
- These are the considerations that we have used in trying to get legislation passed.

7) The following tables list some of the public concerns that could be raised throughout the decision-making and negotiation process of PPPs. In your opinion, how important are the following concerns? Please note that Questions 7a through 7d are required.

7a. Concerns related to project selection and delivery

	Very Important	Somewhat Important	Not Important
Unclear/unavailability of criteria for selection of PPPs	22 44.9%	22 44.9%	5 10.2%
Considerations of alternative PPP models	15 30.6%	30 61.2%	4 8.2%
Consistency with 3C (i.e., continuing, comprehensive, and cooperative) transportation planning process	26 53.1%	19 38.8%	4 8.2%
Effect on overall transportation network/system	35 71.4%	14 28.6%	—

7b. Concerns related to evaluation of PPP proposals

	Very Important	Somewhat Important	Not Important
Availability and consistent application of evaluation tools, such as Value for Money and benefit-cost analysis	40 81.6%	8 16.3%	1 2.0%

Risk allocation between public and private sectors	43 87.8%	6 12.2%	—
Potential excessive rates of return to private investors	35 71.4%	13 26.5%	1 2.0%
Relative roles of public and private sector	35 71.4%	12 24.5%	2 4.1%
Effect of PPPs on state or local bonding capacity	21 42.9%	17 34.7%	11 22.4%

7c. Concerns related to transparency and public process

	Very Important	Somewhat Important	Not Important
Lack of public input opportunities through decision-making process	27 55.1%	19 38.8%	3 6.1%
Transparency and efficacy of the PPP process, including confidentiality, conflict of interests, intellectual property.	33 67.3%	15 30.6%	1 2.0%
Lack of time for appropriate legislative branch review or no legislative branch review	23 46.9%	17 34.7%	9 18.4%
Use of upfront proceeds	22 44.9%	20 40.8%	7 14.3%

7d. Concerns related to terms of PPP agreement

	Very Important	Somewhat Important	Not Important
Extent to which terms of agreement protect the public interest	46 93.9%	3 6.1%	—
Liability, indemnification, insurance provisions	39 79.6%	9 18.4%	1 2.0%
Revenue sharing formula	34 69.4%	13 26.5%	2 4.1%
Clauses that limit public ability to make competing improvements	24 49.0%	22 44.9%	3 6.1%
Unanticipated event provisions	24 49.0%	23 46.9%	2 4.1%
Impacts on existing revenues	31 63.3%	11 22.4%	7 14.3%
Toll-setting policies (e.g., schedule of rate increases and indexing factors)	33 67.3%	7 14.3%	9 18.4%
Safety, enforcement, and national security issues	27 55.1%	21 42.9%	1 2.0%
Initial construction warranties and maintenance standards	37 75.5%	12 24.5%	—
Termination, buyouts, and hand-back provisions	40 81.6%	8 16.3%	1 2.0%
Environmental safeguards	35 71.4%	13 26.5%	1 2.0%
Labor relations issues	15 30.6%	26 53.1%	8 16.3%
Asset control and ownership, including commercial	33	13	3

development rights	67.3%	26.5%	6.1%
Terms related to condition of asset at end of concession	41 83.7%	7 14.3%	1 2.0%
Implications of foreign control of domestic assets and work	12 24.5%	24 49.0%	13 26.5%
Opportunity for local contractors/consultants to participate	33 67.3%	13 26.5%	3 6.1%
Data privacy and ownership	18 36.7%	25 51.0%	6 12.2%
Impact of project on alternative routes	27 55.1%	19 38.8%	3 6.1%
Trade agreement implications	9 18.4%	26 53.1%	14 28.6%
Length of agreement	30 61.2%	17 34.7%	2 4.1%

7e. In the box below, please list any other concerns, and how important they are to you or your agency.

- Competition between new border crossing and existing private toll bridge—very important.
- As [DOT] has not used PPPs, these are the anticipated levels of concern we would consider upon considering entering a PPP. [State]'s rural nature and low traffic volumes (relative) preclude tolling as a viable revenue option.
- There is not currently legislation in [state] to allow PPP other than design build. Some interest has been generated by the [Legislature] on PPPs. [DOT] needs to gain expertise in this area quickly.
- Our responses to this survey mostly apply to our design-build contracts—not to other kinds of PPPs.
- All public concerns are critical to the [DOT]. The public represents our primary customer base. [State] is a right to work state with respect to labor issues and has a [mandate] with respect to access to any and all project documentation that is very strict with respect to making any information confidential.

8) The table below contains a list of technical skills that may be used to support more effective consideration of PPPs. For each one, please indicate whether your agency currently has high, moderate, or low capability in each of these areas.

	High capability	Moderate capability	Low capability
Non-standard procurement or bidding capabilities	14 28.6%	19 38.8%	16 32.7%
Legislative research and analysis	24 49.0%	20 40.8%	5 10.2%
Asset planning and evaluation	17 34.7%	25 51.0%	7 14.3%
Performance specification	24 49.0%	17 34.7%	8 16.3%
Risk assessment	12 24.5%	28 57.1%	9 18.4%
Benefit-cost analyses	13 26.5%	30 61.2%	6 12.2%
Financial management and analysis	24 49.0%	22 44.9%	3 6.1%

Management oversight	27 55.1%	21 42.9%	1 2.0%
Contract negotiation and performance-based Contracting	18 36.7%	28 57.1%	3 6.1%
Other technical skills not listed above	1 2.0%	19 38.8%	29 59.2%

- Economic/risk analysis skills for evaluation purposes are lacking. Engineering skills much better developed.
- With respect to those items marked as moderate, we are currently in the process of negotiating several P3 contracts. As we progress through these negotiations our skill sets with respect to each of these areas continues to grow.
- [DOT] has highly capable staff, the rural nature of the state place limitations on the viability of implementing PPPs. Transportation system use fees are not a viable source of revenue—the federal program is critical.
- Limited experience from which to respond.

9) The table below lists various tools that may be used to select a private partner. Please indicate the degree to which your agency uses any of these tools when considering a PPP proposal.

	Use Frequently	Use Sometimes	Use Rarely	N/A (Do Not Use)
Benefit-cost analyses	14 28.6%	15 30.6%	2 4.1%	18 36.7%
Internal Rate of Return/Net Present Value analyses	13 26.5%	9 18.4%	5 10.2%	22 44.9%
Value-for-Money/Public Sector comparators	9 18.4%	9 18.4%	6 12.2%	25 51.0%
Traffic and Revenue Studies	17 34.7%	5 10.2%	6 12.2%	21 42.9%
Risk assessment	16 32.7%	7 14.3%	4 8.2%	22 44.9%
Availability Payment Amount/Net Present value	11 22.4%	8 16.3%	8 16.3%	22 44.9%
Independent evaluation from legal and/or financial consultants	14 28.6%	10 20.4%	4 8.2%	21 44.9%
Other (specify below):	3 7.1%	—	1 2.4%	38 90.5%

- Technical competency
- We do not use PPPs
- As [DOT] has not used PPPs, these are anticipated levels of use if PPPs are considered.
- Agency would use all tools if/when P3 proposals actively considered
- None are currently applicable in [State], as we don't currently consider PPP proposals.
- Not currently considering a PPP
- Cannot respond due to minimal use of PPPs.
- Have not engaged in PPPs to date
- To date we have used all or some form of combination of these tolls for our internal vetting purposes as well as for external reporting requirements of [mandate].
- Rated all N/A because we have not evaluated a proposal.

- Haven't considered highway related PPPs to any extent; therefore, have not had occasion to assess this question.

The next two questions pertain to information used in making decisions about PPPs. If your agency has not yet seriously assessed possibilities for any highway-related PPPs, please click "Next Page" at the bottom of the screen and skip ahead to Question #12.

10) What information on PPP proposals is available to decision makers, and who provides the information? Select all that apply:

	Project sponsor (e.g., state DOT, toll authority)	Consultants and legal/financial advisors contracted by project sponsor	Private investors bidding on the project	Interest groups	Media (e.g., newspaper, TV, blogs)	This information is not available
Terms of agreement	14 28.6%*	13 26.5%	11 22.4%	5 10.2%	4 8.2%	1 2.0%
Experience/qualification of Proposers	12 24.5%	12 24.5%	10 20.4%	3 6.1%	4 8.2%	1 2.0%
Risks transferred from and retained by public sector	15 30.6%	11 22.4%	8 16.3%	3 6.1%	2 4.1%	2 4.1%
Evaluation of benefits/disbenefits to public sector	14 28.6%	13 26.5%	4 8.2%	3 6.1%	3 6.1%	2 4.1%
PPP valuation studies (e.g., benefit-cost analysis, value-for-money analysis/public sector comparators, traffic and revenue studies) provided by in-house staff or consultants	14 28.6%	14 28.6%	5 10.2%	2 4.1%	2 4.1%	1 2.0%
Project cost estimates and Schedule	14 28.6%	12 24.5%	9 18.4%	3 6.1%	3 6.1%	1 2.0%
Amount of upfront payment/revenue sharing (if long-term concession)	10 20.4%	9 18.4%	9 18.4%	2 4.1%	2 4.1%	5 10.2%
Assumptions used by private investors to determine project value	7 14.3%	9 18.4%	6 12.2%	1 2.0%	1 2.0%	5 10.2%
Technical approach	14 28.6%	12 24.5%	11 22.4%	3 6.1%	2 4.1%	1 2.0%
Other (specify in "Additional Comments" box below):	1 2.0%	—	—	—	—	11 22.4%

*Percentage indicates proportion of total surveys, including those that returned no response to Q10.

- [DOT] develops an internal project costs and finance plan that is used as a comparator to the proposer's submission. Our responses with respect to this question are directly related to who develops each subject area.
- By state law, all the above information is required to be provided to the public.

11) In your opinion and based on the outcomes of your PPP project(s), was there some information that you did not have, but that could have been beneficial in the decision-making process?

Of 15 responses:

Yes	6 40%
No	9 60%

If you answered "yes," please explain:

- Costs/value of transferred risk
- Private investor's internal rate of return calculations
- No PPP projects completed. Knowledge of future would be helpful.
- Best practices or case studies would be beneficial
- Current toll PPPs are in development stages.
- More detailed Traffic and Revenue at onset of proposal review
- Public sector financing alternatives

The next two questions pertain to training or educational resources related to PPPs.

The questions below list various topics related to PPPs. For each of the following topics, please indicate whether you believe staff in your agency would benefit from training or other educational resources. Questions 12a through 12g are required.

12a. Getting Started with PPPs

	Definitely would benefit	Probably would benefit	Not likely to benefit
The PPP concept, basic types, features, and tradeoffs among them	24 49.0%	14 28.6%	11 22.4%
How federal and state law can influence the use of PPPs	19 38.8%	15 30.6%	15 30.6%
What skills your agency needs in house, and what it can outsource	24 49.0%	13 26.5%	12 24.5%

12b. Risk Management:

	Definitely would benefit	Probably would benefit	Not likely to benefit
Diagnosing risks to both partners at each phase of a project	31 63.3%	13 26.5%	5 10.2%
Where and when risk is best managed	30 61.2%	13 26.5%	6 12.2%
Valuation of different types of risk	32 65.3%	12 24.5%	5 10.2%

12c. Finance Issues:

	Definitely would benefit	Probably would benefit	Not likely to benefit

How to assess the economic costs and benefits of a given project	32 65.3%	12 24.5%	5 10.2%
How to use debt (including private activity bonds)	23 46.9%	12 24.5%	14 28.6%
How to utilize private capital	27 55.1%	13 26.5%	9 18.4%
Opportunities for in-kind contributions	23 46.9%	16 32.7%	10 20.4%
Possible revenue sources and negotiating terms of use	30 61.2%	13 26.5%	6 12.2%
Differences in public and private sector financial considerations	31 63.3%	13 26.5%	5 10.2%

12d. Procurement Considerations and Techniques:

	Definitely would benefit	Probably would benefit	Not likely to benefit
How to write RFPs that incorporate PPP concepts	24 49.0%	16 32.7%	9 18.4%
Anticipating and managing private sector concerns with process	23 46.9%	19 38.8%	7 14.3%

12e. Contracting:

	Definitely would benefit	Probably would benefit	Not likely to benefit
How to write a contract that encourages innovation and sharing of risk and rewards	30 61.2%	15 30.6%	4 8.2%
Best practices in leveraging private resources	28 57.1%	15 30.6%	6 12.2%
Common failures of PPP contracts, and how they are addressed	35 71.4%	11 22.4%	3 6.1%

12f. Managing PPP Projects:

	Definitely would benefit	Probably would benefit	Not likely to benefit
Unique oversight challenges of PPP projects	31 63.3%	14 28.6%	4 8.2%
Techniques for monitoring technical and financial performance	33 67.3%	11 22.4%	5 10.2%

12g. Public Awareness and Stakeholder Consultation:

	Definitely would benefit	Probably would benefit	Not likely to benefit
Identifying and engaging with key stakeholders	20 40.8%	24 49.0%	5 10.2%
Anticipating and managing common public concerns about PPPs	22 50%	22 50%	—

FHWA provides some resources via the PPP Toolkit, partner websites such as the FHWA PPP website, and other relevant sites which can be accessed through the FHWA PPP website, including www.innovativefinance.org. This question contains two parts, and pertains to PPP websites, as well as other types of resources.

First, please indicate how likely you or staff in your agency would be to use or participate in each of the following types of educational activities. Then, please indicate if you or staff in your agency has used these kinds of resources within the past two years.

	Likelihood that Staff Would Benefit			Participated Within Past 2 (Two) Years?	
	Very likely	Somewhat likely	Not likely	Yes	No
Scan of 2–3 agencies with significant experience in PPPs (3–4 days, including overnight stay)	15 30.6%	22 44.9%	12 24.5%	21 42.9%	28 57.1%
Classroom training (1–2 days at or near your office)	23 46.9%	16 32.7%	10 20.4%	11 22.4%	38 77.6%
Classroom training (1–2 days, including overnight stay)	11 22.4%	21 42.9%	17 34.7%	10 20.4%	39 79.6%
Interactive workshop (half to full day, at or near your office)	20 40.8%	18 36.7%	11 22.4%	14 28.6%	35 71.4%
Interactive workshop (half to full day, off site, including overnight stay)	8 16.3%	24 49.0%	17 34.7%	8 16.3%	41 83.7%
Peer-to-peer exchange (one day, at or near your office)	21 42.9%	15 30.6%	13 26.5%	14 28.6%	35 71.4%
Peer-to-peer exchange (one day, off site, including overnight stay)	9 18.4%	23 46.9%	17 34.7%	17 34.7%	32 65.3%
On-line training modules (self-paced)	7 14.3%	19 38.8%	23 46.9%	2 4.1%	47 95.9%
Webinar (Web- and telephone-assisted seminar)	11 22.4%	19 38.8%	19 38.8%	10 20.4%	39 79.6%
Web-based repository of case studies and effective practices	14 28.6%	21 42.9%	14 28.6%	15 30.6%	34 69.4%

14) Are there any other public transportation agencies or authorities in your state that have used a PPP model for a project?

Yes	14 28.6%
No	35 71.4%

Do you have any other comments or thoughts you would like to share?

- Our current PPP experience is limited in [state], but we anticipate that the Turnpike Authority will utilize this approach a great deal.
- No
- Encountered difficulties with survey program—Q15, I entered budget as $14 M and was not recognized. Took me a while to figure out where. Same for last Q—I entered our postal code (as we don't have zip codes). Same error statement was given as field is only designed for numbers (no letters). All is good tho!

- The small size of [DOT]'s capital program and limited applicability of road tolling in [state] have prevented us from making use of PPPs so far. Nonetheless, we are developing this agency's capacity to invite and evaluate PPP proposals.
- [DOT] is interested in pursuing innovative financing mechanisms that are viable considering the rural characteristics of our state. If vehicle use or road user fees are pursued as a source of revenue for the Federal program, the distribution of those funds must reflect the need to invest in rural state transportation systems that provide critical connectivity between the country's population and industry centers.
- No attention to definition of PPP
- THE RESPONSES ARE NOT INTENDED TO APPLY TO INQUIRIES ABOUT TOLL ROADS
- There is no enabling legislation for PPPs in [state] other than tolling authority and design-build authority. No opportunities for PPPs in [state] have proven to be viable options.
- Currently, [DOT] is not actively pursuing the use of PPPs for delivery of our highway program.
- We have expressed several times our concern with the growing federal emphasis on PPP at the expense of continued federal support. In smaller states, we do not find this helpful and are scrambling to find opportunities for using PPP when our focus is on maintenance/preservation, we aren't building new capacity, and our AADT and populations don't appear sufficient to support most PPP constructs.
- We are in the process of trying to obtain PPP legislation. Most of our answers are predicated on our work to gather data for this and the feasibility studies along with our pilot experience on the [Project] with [firm] as our private partner.

II. Summary of Responses from U.S. States

1) What types of Public-Private Partnerships (PPPs) have been considered in your agency? Select all that apply:

	Yes	No
Design-build	36 81.8%	8 18.2%
Build-Operate-Transfer (BOT)	5 11.4%	39 88.6%
Development and long-term concession of a new toll road with transfer of revenue risk	16 36.4%	28 63.6%
Development and long-term concession of a new toll road with availability payments or shadow tolls	8 18.2%	36 81.8%
Long-term asset lease of an existing toll road with transfer of revenue risk	2 4.5%	42 95.5%
Long-term asset lease of an existing toll road with availability payments or shadow tolls	10 22.7%	34 77.3%
Added toll lanes on existing facilities with transfer of revenue risk	7 15.9%	37 84.1%
Added toll lanes on existing facilities with availability payments or shadow tolls	10 22.7%	34 77.3%
Congestion pricing (e.g., cordon tolls) with a PPP element	14 31.8%	30 68.2%
Operations and Maintenance (O&M) Fee Service Contracts	3 6.8%	41 93.2%
Program and Financial Management Fee Service Contracts	4 9.1%	40 90.9%

None	10 22.7%	34 77.3%
Other (please specify):	10 22.7%	34 77.3%

Comments related to the respondents who specified "Other":

- Design-build-finance warranty
- Design-build own operate
- New toll bridge
- Developer paying for interchanges
- We have "considered" design-build for special circumstances, but do not have legislative authority currently.
- The [DOT] currently does not have statutory authority to undertake any type of PPP; however, legislation has been introduced to allow such contracts.
- Hired Management Consultants to oversee our Local Program delivery. Used a Public Private venture to redevelop the [city] Intermodal Station (formerly the Amtrak Depot). Investigated P3's for Park & Ride lots.
- Bond Acceleration Program
- Long-term concession of existing non-tolled facility with availability payments and long-term lease of existing non-state owned toll facility with availability payments
- Rail Station and Parking

2) Which *one statement* below best characterizes your agency's overall experience with PPPs?

We have not yet seriously assessed possibilities for any highway-related PPPs.	18 40.9%
We have one or more projects that may be candidates for a PPP.	9 20.5%
We have received one or more proposals (solicited or unsolicited) from potential private partners.	5 11.4%
We have negotiated (or are negotiating) one or more contracts to enter into a PPP.	3 6.8%
We have completed at least one project that involved a PPP.	9 20.5%

3) Which *one statement* below best describes your agency's overall readiness to identify and implement innovative finance methods, such as public-private partnerships?

The agency needs to build a basic understanding of PPPs.	6 13.6%
The agency needs some additional technical expertise to establish a partnership.	11 25.0%
The agency has experience with design-build but is not yet involved in any projects financed with private capital.	14 31.8%
The agency needs minimal training or technical assistance.	13 29.5%

4) Please rate the extent to which your agency uses the following methods of financing transportation projects, other than PPPs.
Please use the "Additional Comments" box to describe "other" methods.

	Use Frequently	Use Sometimes	Use Rarely	N/A (Do Not Use)
Traditional procurement	43 97.7%	—	—	1 2.3%
Public financing	25 56.8%	8 18.2%	2 4.5%	9 20.5%
Federal financing tools (e.g., TIFIA, GARVEES)	4 9.1%	18 40.9%	9 20.5%	13 29.5%
Creation of non-profit, quasi-public entities	1 2.3%	4 9.1%	11 25.0%	28 63.6%
Design-build	6 13.6%	15 34.1%	9 20.5%	14 31.8%
Others (please describe below):	3 6.8%	2 4.5%	1 2.3%	13 29.5%

Comments related to the respondents who specified "Other":

- Use frequently
- None
- Commission issued bonds
- We have considered TIFIA and creation of non-profit and quasi-public entities, but have yet to use find the appropriate application.
- We have worked a number of PPPs with communities around [state]. When businesses develop they install turn lanes and signals at their cost. Communities have also added dollars to projects that facilitate the movement of traffic.
- [DOT] uses pass-thru financing tolls that are privately financed and publicly repaid.
- [DOT] has had design build projects—but they are developed for accelerated construction—not as a financing mechanism.
- Revenue bond financing
- Infrastructure Bank
- We are in the process of trying to get PPP legislation passed.
- [State] has the statutory authority to utilize a Design-Build-Finance (DBF) approach to advance projects programmed in the adopted work program of the department.
- Enterprise funded airport

The next few questions pertain to how you (or your agency) make decisions regarding PPPs. If your agency has not yet seriously assessed possibilities for any highway-related PPPs, please click "Next Page" at the bottom of the screen and skip ahead to Question #7.

5) What criteria are used to decide whether a PPP approach should be used for project delivery in your agency?

	Total Responses	Extremely Important	Somewhat Important	Not Important	N/A
Project is an urgent transportation need	26	15 34.1%*	6 13.6%	1 2.3%	4 9.1%
Strong political, public, and institutional support	27	16 36.4%	6 13.6%	—	5 11.4%
Project acceleration potential	27	15 34.1%	7 15.9%	—	5 11.4%
Project could generate sufficient revenues to attract private investment	27	14 31.8%	6 13.6%	—	7 15.9%

Lack of traditional funding	26	17 38.6%	4 9.1%	—	5 11.4%
High-risk project that could be better managed by private sector	26	7 15.9%	9 20.5%	5 11.4%	5 11.4%
Unsolicited proposal	27	1 2.3%	5 11.4%	10 22.7%	11 25.0%
Other (specify below):	12	1 2.3%	—	—	11 25.0%

*Percentage indicates proportion of total surveys, including those that returned no response to Q5.

- All items will be important if/when PPP proposals become active
- [State] does not routinely use PPPs.
- These are the considerations that we have used in trying to get legislation passed.

6) How important have the following measures been in protecting the public's interest in your state? If your agency has not used a particular measure, please indicate "(N/A)."

	Total Responses	Extremely Important	Somewhat Important	Not Important	N/A
Comprehensive evaluation of benefits and costs of PPP proposals	25	14 31.8%*	4 9.1%	—	7 15.9%
Public participation and opportunities for input in decision-making process	25	14 31.8%	6 13.6%	—	5 11.4%
Providing public access to information related to PPP proposals	25	10 22.7%	8 18.2%	1 2.3%	6 13.6%
Avoidance of conflict of interests	24	16 36.4%	5 11.4%	—	3 6.8%
Terms of agreement are developed taking into consideration public concerns	25	17 38.6%	3 6.8%	—	5 11.4%
Development of construction, maintenance and operations standards that meet or exceed standards for non-PPP projects	25	16 36.4%	2 4.5%	—	7 15.9%
Continuous project monitoring and evaluation based on performance measures	25	13 29.5%	6 13.6%	—	6 13.6%
Roles, responsibilities, and risks are both clearly defined and allocated between public and private partners	25	19 43.2%	1 2.3%	—	5 11.4%
Other (specify):	11	2 4.5%	—	—	9 20.5%

*Percentage indicates proportion of total surveys, including those that returned no response to Q6.

- All items will be important if/when PPP proposals become active
- [State] does not routinely use PPPs.
- These are the considerations that we have used in trying to get legislation passed.

7) The following tables list some of the public concerns that could be raised throughout the decision-making and negotiation process of PPPs. In your opinion, how important are the following concerns? Please note that Questions 7a through 7d are required.

7a. Concerns related to project selection and delivery

	Very Important	Somewhat Important	Not Important
Unclear/unavailability of criteria for selection of PPPs	21 47.7%	19 43.2%	4 9.1%
Considerations of alternative PPP models	15 34.1%	26 59.1%	3 6.8%
Consistency with 3C (i.e., continuing, comprehensive, and cooperative) transportation planning process	24 54.5%	18 40.9%	2 4.5%
Effect on overall transportation network/system	32 74.7%	12 27.3%	—

7b. Concerns related to evaluation of PPP proposals

	Very Important	Somewhat Important	Not Important
Availability and consistent application of evaluation tools, such as Value for Money and benefit-cost analysis	36 81.8%	7 15.9%	1 2.3%
Risk allocation between public and private sectors	38 86.4%	6 13.6%	—
Potential excessive rates of return to private investors	31 70.5%	12 27.3%	1 2.3%
Relative roles of public and private sector	33 75.0%	10 22.75	1 2.3%
Effect of PPPs on state or local bonding capacity	21 47.7%	15 34.1%	8 18.2%

7c. Concerns related to transparency and public process

	Very Important	Somewhat Important	Not Important
Lack of public input opportunities through decision-making process	23 52.3%	15 34.1%	3 6.8%
Transparency and efficacy of the PPP process, including confidentiality, conflict of interests, intellectual property.	30 68.2%	13 29.5%	1 2.3%
Lack of time for appropriate legislative branch review or no legislative branch review	22 50.0%	14 31.8%	8 18.2%
Use of upfront proceeds	21 47.75	18 40.9%	5 11.4%

7d. Concerns related to terms of PPP agreement

	Very Important	Somewhat Important	Not Important
Extent to which terms of agreement protect the public interest	41 93.2%	3 6.8%	—
Liability, indemnification, insurance provisions	34 77.3%	9 20.5%	1 2.3%
Revenue sharing formula	31 70.55%	12 27.3%	1 2.3%

Clauses that limit public ability to make competing improvements	22 50.0%	20 45.5%	2 4.5%
Unanticipated event provisions	22 50.0%	20 45.5%	2 4.5%
Impacts on existing revenues	29 65.9%	10 22.7%	5 11.4%
Toll-setting policies (e.g., schedule of rate increases and indexing factors)	31 70.5%	7 15.9%	6 13.6%
Safety, enforcement, and national security issues	24 54.5%	20 45.5%	—
Initial construction warranties and maintenance standards	32 72.7%	12 27.3%	—
Termination, buyouts, and hand-back provisions	36 81.8%	7 15.9%	1 2.3%
Environmental safeguards	31 70.5%	12 27.3%	1 2.3%
Labor relations issues	13 29.5%	25 56.8%	6 13.6%
Asset control and ownership, including commercial development rights	30 68.2%	12 27.3%	2 4.5%
Terms related to condition of asset at end of concession	36 81.8%	7 15.9%	1 2.3%
Implications of foreign control of domestic assets and work	12 27.3%	22 50.0%	10 22.7%
Opportunity for local contractors/consultants to participate	31 70.5%	11 25.0%	2 4.5%
Data privacy and ownership	16 36.4%	23 52.3%	5 11.4%
Impact of project on alternative routes	25 56.8%	18 40.9%	1 2.3%
Trade agreement implications	9 20.5%	21 47.7%	14 31.8%
Length of agreement	26 59.1%	16 36.4%	2 4.5%

7e. In the box below, please list any other concerns, and how important they are to you or your agency.

- Competition between new border crossing and existing private toll bridge—very important.
- As [DOT] has not used PPPs, these are the anticipated levels of concern we would consider upon considering entering a PPP. [State]'s rural nature and low traffic volumes (relative) preclude tolling as a viable revenue option.
- There is not currently legislation in [state] to allow PPP other than design build. Some interest has been generated by the [Legislature] on PPP. [DOT] needs to gain expertise in this area quickly.
- Our responses to this survey mostly apply to our design-build contracts—not to other kinds of PPP.
- All public concerns are critical to the [DOT]. The public represents our primary customer base. [State] is a right to work state with respect to labor issues and has a [mandate] with respect to access to any and all project documentation that is very strict with respect to making any information confidential.

8) The table below contains a list of technical skills that may be used to support more effective consideration of PPPs. For each one, please indicate whether your agency currently has high, moderate, or low capability in each of these areas.

	High capability	Moderate capability	Low capability
Non-standard procurement or bidding capabilities	12 27.3%	19 43.2%	13 29.5%
Legislative research and analysis	23 52.3%	17 38.6%	4 9.1%
Asset planning and evaluation	15 34.1%	23 52.3%	6 13.6%
Performance specification	22 50.0%	16 36.4%	6 13.6%
Risk assessment	9 20.5%	27 61.4%	8 18.2%
Benefit-cost analyses	11 25.0%	28 65.9%	5 11.4%
Financial management and analysis	21 47.7%	21 47.7%	2 4.5%
Management oversight	23 52.3%	20 45.5%	1 2.3%
Contract negotiation and performance-based contracting	14 31.8%	27 61.4%	3 6.8%
Other technical skills not listed above	—	16 36.4%	28 63.6%

- Economic/risk analysis skills for evaluation purposes are lacking. Engineering skills much better developed.
- With respect to those items marked as moderate, we are currently in the process of negotiating several P3 contracts. As we progress through these negotiations our skill sets with respect to each of these areas continues to grow.
- [DOT] has highly capable staff, the rural nature of the state place limitations on the viability of implementing PPPs. Transportation system use fees are not a viable source of revenue—the federal program is critical.
- Limited experience from which to respond.

9) The table below lists various tools that may be used to select a private partner. Please indicate the degree to which your agency uses any of these tools when considering a PPP proposal.

	Use Frequently	Use Sometimes	Use Rarely	N/A (do not use)
Benefit-cost analyses	12 27.3%	13 29.5%	2 4.5%	17 38.6%
Internal Rate of Return/Net Present Value analyses	11 25.0%	8 18.2%	5 11.4%	20 45.5%
Value-for-Money/Public Sector comparators	7 15.9%	8 18.2%	5 11.4%	24 54.5%
Traffic and Revenue Studies	17 38.6%	4 9.1%	5 11.4%	18 40.9%
Risk assessment	15 34.1%	5 11.4%	3 6.8%	21 47.7%
Availability Payment Amount/Net Present Value	8 18.2%	8 18.2%	7 15.9%	21 47.7%
Independent evaluation from legal and/or financial consultants	13 29.5%	8 18.2%	3 6.8%	20 45.5%
Other (specify below):	3 6.8%	8 18.2%	1 2.3%	34 77.3%

- Technical competency
- We do not use PPPs
- As [DOT] has not used PPPs, these are anticipated levels of use if PPPs are considered.
- Agency would use all tools if/when P3 proposals actively considered
- None are currently applicable in [State], as we don't currently consider PPP proposals.
- Not currently considering a PPP
- Can not respond due to minimal use of PPPs.
- Have not engaged in PPPs to date
- To date we have used all or some form of combination of these tolls for our internal vetting purposes as well as for external reporting requirements of [mandate].
- Rated all N/A because we have not evaluated a proposal.
- Haven't considered highway related PPP's to any extent therefore have not had occasion to assess this question.

The next two questions pertain to information used in making decisions about PPPs. If your agency has not yet seriously assessed possibilities for any highway-related PPPs, please click "Next Page" at the bottom of the screen and skip ahead to Question #12.

10) What information on PPP proposals is available to decision makers, and who provides the information? Select all that apply:

	Project Sponsor (e.g., state DOT, toll authority)	Consultants and legal/financial advisors contracted by project sponsor	Private Investors bidding on the project	Interest groups	Media (e.g., newspaper, TV, blogs)	This information is not available
Terms of agreement	12 27.3%*	12 27.3%	10 22.7%	5 11.4%	4 9.1%	1 2.3%
Experience/qualification of proposers	10 22.7%	11 25.0%	10 22.7%	3 6.8%	4 9/1%	1 2.3%
Risks transferred from and retained by public sector	13 27.3%	10 22.7%	8 18.2%	3 6.8%	2 4.5%	2 4.5%
Evaluation of benefits/disbenefits to public sector	12 27.3%	12 27.3%	4 9.1%	3 6.8%	3 6.8%	2 4.5%
PPP valuation studies (e.g., benefit-cost analysis, value-for-money analysis/public sector comparators, traffic and revenue studies) provided by in-house staff or consultants	12 27.3%	13 29.5%	5 11.4%	2 4.5%	2 4.5%	1 2.3%
Project cost estimates and schedule	12 27.3%	11 25.0%	9 20.5%	3 6.8%	3 6.8%	1 2.3%
Amount of upfront payment/revenue sharing (if long-term concession)	9 20.5%	9 20.5%	9 20.5%	2 4.5%	2 4.5%	4 9.1%
Assumptions used by private investors to determine project value	6 13.6%	9 20.5%	6 13.6%	1 2.3%	1 2.3%	4 9.1%
Technical approach	12 27.3%	11 25.0%	11 25.0%	3 6.8%	2 4.5%	1 2.3%
Other (specify in “Additional Comments” box below):	1 2.3%	—	—	—	—	9 20.5%

*Percentage indicates proportion of total surveys, including those that returned no response to Q10.

- [DOT] develops an internal project costs and finance plan that is used as a comparator to the proposer’s submission. Our responses with respect to this question are directly related to who develops each subject area.
- By state law, all the above information is required to be provided to the public.

11) In your opinion and based on the outcomes of your PPP project(s), was there some information that you did not have, but that could have been beneficial in the decision-making process?

Of 13 responses:

Yes	6 46.1%
No	7 53.9%

If you answered "yes," please explain:

- Costs/value of transferred risk
- Private investor's internal rate of return calculations
- No PPP projects completed. Knowledge of future would be helpful.
- Best practices or case studies would be beneficial
- Current toll PPPs are in development stages.
- More detailed Traffic and Revenue at onset of proposal review
- Public sector financing alternatives

The next two questions pertain to training or educational resources related to PPPs.

The questions below list various topics related to PPPs. For each of the following topics, please indicate whether you believe staff in your agency would benefit from training or other educational resources. Questions 12a through 12g are required.

12a. Getting Started with PPPs

	Definitely would benefit	Probably would benefit	Not likely to benefit
The PPP concept, basic types, features and tradeoffs among them	22 50.0%	14 31.8%	8 18.2%
How federal and state law can influence the use of PPPs	18 40.9%	15 34.1%	11 25.0%
What skills your agency needs in house, and what it can outsource	22 50.0%	13 29.5%	9 20.5%

12b. Risk Management:

	Definitely would benefit	Probably would benefit	Not likely to benefit
Diagnosing risks to both partners at each phase of a project	29 65.9%	11 25.0%	4 9.1%
Where and when risk is best managed	27 61.4%	12 27.3%	5 11.4%
Valuation of different types of risk	28 63.6%	12 27.3%	4 9.1%

12c. Finance Issues:

	Definitely would benefit	Probably would benefit	Not likely to benefit
How to assess the economic costs and benefits of a given project	30 68.2%	10 22.7%	4 9.1%
How to use debt (including private activity bonds)	22 50.0%	12 27.3%	10 22.7%
How to utilize private capital	25 56.8%	13 29.5%	6 13.6%
Opportunities for in-kind contributions	22 50.0%	15 34.1%	7 15.9%
Possible revenue sources and negotiating terms of use	28 63.6%	13 29.5%	3 6.8%
Differences in public and private sector financial considerations	27 61.4%	13 29.5%	4 9.1%

12d. Procurement Considerations and Techniques:

	Definitely would benefit	Probably would benefit	Not likely to benefit
How to write RFPs that incorporate PPP concepts	22 50.0%	15 34.1%	7 15.9%
Anticipating and managing private sector concerns with process	21 47.7%	17 38.6%	6 13.6%

12e. Contracting:

	Definitely would benefit	Probably would benefit	Not likely to benefit
How to write a contract that encourages innovation and sharing of risk and rewards	27 61.4%	14 31.8%	3 6.8%
Best practices in leveraging private resources	26 59.1%	15 34.1%	3 6.8%
Common failures of PPP contracts, and how they are addressed	32 72.7%	10 22.7%	2 4.5%

12f. Managing PPP Projects:

	Definitely would benefit	Probably would benefit	Not likely to benefit
Unique oversight challenges of PPP projects	28 63.6%	13 29.5%	3 6.8%
Techniques for monitoring technical and financial performance	31 70.5%	9 20.5%	4 9.1%

12g. Public Awareness and Stakeholder Consultation:

	Definitely would benefit	Probably would benefit	Not likely to benefit
Identifying and engaging with key stakeholders	19 43.2%	21 47.7%	4 9.1%
Anticipating and managing common public concerns about PPPs	20 45.5%	20 45.5%	4 9.1%

FHWA provides some resources via the PPP Toolkit, partner websites like the FHWA PPP website, and other relevant sites that can be accessed through the FHWA PPP website, including www.innovativefinance.org. This question contains two parts, and pertains to PPP websites, as well as other types of resources.

First, please indicate how likely you or staff in your agency would be to use or participate in each of the following types of educational activities. Then, please indicate if you or staff in your agency has used these kinds of resources within the past two years.

	Likelihood that Staff Would Benefit			Participated Within Past 2 (Two) Years?	
	Very likely	Somewhat likely	Not likely	Yes	No
Scan of 2–3 agencies with significant experience in PPPs (3–4 days, including overnight stay)	14 31.8%	21 47.7%	9 20.5%	19 43.2%	25 56.8%
Classroom training (1–2 days at or near your office)	21 47.7%	15 34.1%	8 18.2%	9 20.5%	35 79.5%
Classroom training (1–2 days, including overnight stay)	9 20.5%	20 45.5%	15 34.1%	8 18.2%	36 81.8%
Interactive workshop (half to full day, at or near your office)	18 40.9%	17 38.6%	9 20.5%	12 27.3%	32 72.7%
Interactive workshop (half to full day, off site, including overnight stay)	7 15.9%	22 50.0%	15 34.1%	6 13.6%	38 86.4%
Peer-to-peer exchange (one day, at or near your office)	18 40.9%	15 34.1%	11 25.0%	12 27.3%	32 72.7%
Peer-to-peer exchange (one day, off site, including overnight stay)	7 15.9%	22 50.0%	15 34.1%	15 34.1%	29 65.9%
On-line training modules (self-paced)	6 13.6%	18 40.9%	20 45.5%	1 2.3%	43 97.7%
Webinar (web- and telephone-assisted seminar)	11 25.0%	16 36.4%	17 38.6%	8 18.2%	36 81.8%
Web-based repository of case studies and effective practices	14 31.8%	18 40.9%	12 27.3%	14 31.8%	30 68.2%

14) Are there any other public transportation agencies or authorities in your state that have used a PPP model for a project?

Yes	12 27.3%
No	32 72.7%

Do you have any other comments or thoughts you would like to share?

- Our current PPP experience is limited in [state], but we anticipate that the Turnpike Authority will utilize this approach a great deal.
- No
- The small size of [DOT]'s capital program and limited applicability of road tolling in [state] have prevented us from making use of PPPs so far. Nonetheless, we are developing this agency's capacity to invite and evaluate PPP proposals.
- [DOT] is interested in pursuing innovative financing mechanisms that are viable considering the rural characteristics of our state. If vehicle use or road user fees are pursued as a source of revenue for the Federal program, the distribution of those funds must reflect the need to invest in rural state transportation systems that provide critical connectivity between the country's population and industry centers.
- No attention to definition of PPP
- THE RESPONSES ARE NOT INTENDED TO APPLY TO INQUIRIES ABOUT TOLL ROADS
- There is no enabling legislation for PPPs in [state] other than tolling authority and design-build authority. No opportunities for PPPs in [state] have proven to be viable options.
- Currently, [DOT] is not actively pursuing the use of PPP's for delivery of our highway program.
- We have expressed several times our concern with the growing federal emphasis on PPP at the expense of continued federal support. In smaller states, we do not find this helpful and are scrambling to find opportunities for using PPP when our focus is on maintenance/preservation, we aren't building new capacity, and our AADT and populations don't appear sufficient to support most PPP constructs.
- We are in the process of trying to obtain PPP legislation. Most of our answers are predicated on our work gather data for this and the feasibility studies along with our pilot experience on the [Project] with [firm] as our private partner.

III. Summary of Responses from Canadian Provinces

1) What types of Public-Private Partnerships (PPPs) have been considered in your agency? Select all that apply:

	Yes	No
Design-build	3 60%	2 40%
Build-Operate-Transfer (BOT)	3 60%	2 40%
Development and long-term concession of a new toll road with transfer of revenue risk	2 40%	3 60%
Development and long-term concession of a new toll road with availability payments or shadow tolls	2 40%	3 60%
Long-term asset lease of an existing toll road with transfer of revenue risk	—	5 100%
Long-term asset lease of an existing toll road with availability payments or shadow tolls	—	5 100%
Added toll lanes on existing facilities with transfer of revenue risk	—	5 100%
Added toll lanes on existing facilities with availability payments or shadow tolls	—	5 100%
Congestion pricing (e.g., cordon tolls) with a PPP element	1 20%	4 80%
Operations and Maintenance (O&M) Fee Service Contracts	2 40%	3 60%
Program and Financial Management Fee Service Contracts	—	5 100%
None	—	5 100%
Other (please specify):	1 20%	4 80%

Comments related to the respondents who specified "Other":

- Hospital

2) Which *one statement* below best characterizes your agency's overall experience with PPPs?

We have not yet seriously assessed possibilities for any highway-related PPPs.	2 40%
We have one or more projects that may be candidates for a PPP.	1 20%
We have received one or more proposals (solicited or unsolicited) from potential private partners.	—
We have negotiated (or are negotiating) one or more contracts to enter into a PPP.	—
We have completed at least one project that involved a PPP.	2 40%

3) Which *one statement* below best describes your agency's overall readiness to identify and implement innovative finance methods, such as public-private partnerships?

The agency needs to build a basic understanding of PPPs.	1 20%
The agency needs some additional technical expertise to establish a partnership.	2 40%
The agency has experience with design-build but is not yet involved in any projects financed with private capital.	—
The agency needs minimal training or technical assistance.	2 40%

4) Please rate the extent to which your agency uses the following methods of financing transportation projects, other than PPPs.
Please use the "Additional Comments" box to describe "other" methods.

	Use Frequently	Use Sometimes	Use Rarely	N/A (do not use)
Traditional procurement	5 100%	—	—	—
Public financing	—	—	2 40%	3 60%
Federal financing tools (e.g., TIFIA, GARVEES)	—	—	2 40%	3 60%
Creation of non-profit, quasi-public entities	—	—	1 20%	4 80%
Design-build	—	—	2 40%	3 60%
Others (please describe below):	—	—	—	3 60%

No additional comments.

The next few questions pertain to how you (or your agency) make decisions regarding PPPs. If your agency has not yet seriously assessed possibilities for any highway-related PPPs, please click "Next Page" at the bottom of the screen and skip ahead to Question #7.

5) What criteria are used to decide whether a PPP approach should be used for project delivery in your agency?

	Total Responses	Extremely Important	Somewhat Important	Not Important	N/A
Project is an urgent transportation need	3	1 20%*	1 20%	1 20%	—
Strong political, public, and institutional support	3	1 20%	2 40%	—	—
Project acceleration potential	3	2 40%	1 20%	—	—
Project could generate sufficient revenues to attract private investment	3	1 20%	—	—	2 40%
Lack of traditional funding	3	1 20%	1 20%	1 20%	—

High-risk project that could be better managed by private sector	3	1 20%	1 20%	1 20%	—
Unsolicited proposal	3	—	—	1 20%	2 40%
Other (specify below):	2	—	—	—	2 40%

*Percentage indicates proportion of total surveys, including those that returned no response to Q5.

No additional comments.

6) How important have the following measures been in protecting the public's interest in your state? If your agency has not used a particular measure, please indicate "(N/A)."

	Total Responses	Extremely Important	Somewhat Important	Not Important	N/A
Comprehensive evaluation of benefits and costs of PPP proposals	3	3 60%*	—	—	—
Public participation and opportunities for input in decision-making process	3	1 20%	2 40%	—	—
Providing public access to information related to PPP proposals	3	1 20%	2 40%	—	—
Avoidance of conflict of interests	3	3 60%	—	—	—
Terms of agreement are developed taking into consideration public concerns	3	2 40%	1 20%	—	—
Development of construction, maintenance and operations standards that meet or exceed standards for non-PPP projects	3	3 60%	—	—	—
Continuous project monitoring and evaluation based on performance measures	3	3 60%	—	—	—
Roles, responsibilities, and risks are both clearly defined and allocated between public and private partners	3	3 60%	—	—	—
Other (specify):	2	—	—	—	2 40%

* Percentage indicates proportion of total surveys, including those that returned no response to Q6.

No additional comments.

7) The following tables list some of the public concerns that could be raised throughout the decision-making and negotiation process of PPPs. In your opinion, how important are the following concerns? Please note that questions 7a through 7d are required.

7a. Concerns related to project selection and delivery

	Very Important	Somewhat Important	Not Important
Unclear/unavailability of criteria for selection of PPPs	1 20%	3 60%	1 20%
Considerations of alternative PPP models	—	4	1

		80%	20%
Consistency with 3C (i.e., continuing, comprehensive and cooperative) transportation planning process	2 40%	1 20%	2 40%
Effect on overall transportation network/system	3 60%	2 40%	—

7b. Concerns related to evaluation of PPP proposals

	Very Important	Somewhat Important	Not Important
Availability and consistent application of evaluation tools, such as Value for Money and benefit-cost analysis	4 80%	1 20%	—
Risk allocation between public and private sectors	5 100%	—	—
Potential excessive rates of return to private investors	4 80%	1 20%	—
Relative roles of public and private sector	2 40%	2 40%	1 20%
Effect of PPPs on state or local bonding capacity	—	2 40%	3 60%

7c. Concerns related to transparency and public process

	Very Important	Somewhat Important	Not Important
Lack of public input opportunities through decision-making process	1 20%	4 80%	—
Transparency and efficacy of the PPP process, including confidentiality, conflict of interests, intellectual property.	3 60%	2 40%	—
Lack of time for appropriate legislative branch review or no legislative branch review	1 20%	3 60%	1 20%
Use of upfront proceeds	1 20%	2 40%	2 40%

7d. Concerns related to terms of PPP agreement

	Very Important	Somewhat Important	Not Important
Extent to which terms of agreement protect the public interest	5 100%	—	—
Liability, indemnification, insurance provisions	5 100%	—	—
Revenue sharing formula	3 60%	1 20%	1 20%
Clauses that limit public ability to make competing improvements	2 40%	2 40%	1 20%
Unanticipated event provisions	2 40%	3 60%	
Impacts on existing revenues	2 40%	1 20%	2 40%
Toll-setting policies (e.g., schedule of rate increases and	2	—	3

indexing factors)	40%		60%
Safety, enforcement and national security issues	3 60%	1 20%	1 20%
Initial construction warranties and maintenance standards	5 100%	—	—
Termination, buyouts, and hand-back provisions	4 80%	1 20%	—
Environmental safeguards	4 80%	1 20%	—
Labor relations issues	2 40%	1 20%	2 40%
Asset control and ownership, including commercial development rights	3 60%	1 20%	1 20%
Terms related to condition of asset at end of concession	5 100%	—	—
Implications of foreign control of domestic assets and work		2 40%	3 60%
Opportunity for local contractors/consultants to participate	2 40%	2 40%	1 20%
Data privacy and ownership	2 40%	2 40%	1 20%
Impact of project on alternative routes	2 40%	1 20%	2 40%
Trade agreement implications	—	5 100%	—
Length of agreement	4 80%	1 20%	—

7e. In the box below, please list any other concerns, and how important they are to you or your agency.

No responses.

8) The table below contains a list of technical skills that may be used to support more effective consideration of PPPs. For each one, please indicate whether your agency currently has high, moderate, or low capability in each of these areas.

	High capability	Moderate capability	Low capability
Non-standard procurement or bidding capabilities	2 40%	—	3 60%
Legislative research and analysis	1 20%	3 60%	1 20%
Asset planning and evaluation	2 40%	2 40%	1 20%
Performance specification	2 40%	1 20%	2 40%
Risk assessment	3 60%	1 20%	1 20%
Benefit-cost analyses	2 40%	2 40%	1 20%
Financial management and analysis	3	1	1

	60%	20%	20%
Management oversight	4 80%	1 20%	—
Contract negotiation and performance-based contracting	4 80%	1 20%	—
Other technical skills not listed above	1 20%	3 60%	1 20%

No responses.

9) The table below lists various tools that may be used to select a private partner. Please indicate the degree to which your agency uses any of these tools when considering a PPP proposal.

	Use Frequently	Use Sometimes	Use Rarely	N/A (do not use)
Benefit-cost analyses	2 40%	2 40%	—	1 20%
Internal Rate of Return/Net Present Value analyses	2 40%	1 20%	—	2 40%
Value-for-Money/Public Sector comparators	2 40%	1 20%	1 20%	1 20%
Traffic and Revenue Studies	—	1 20%	1 20%	3 60%
Risk assessment	1 20%	2 40%	1 20%	1 20%
Availability Payment Amount/Net Present Value	3 60%	—	1 20%	1 20%
Independent evaluation from legal and/or financial consultants	1 20%	2 40%	1 20%	1 20%
Other (specify below):	—	—	—	—

No responses.

The next two questions pertain to information used in making decisions about PPPs. If your agency has not yet seriously assessed possibilities for any highway-related PPPs, please click "Next Page " at the bottom of the screen and skip ahead to Question #12.

10) What information on PPP proposals is available to decision makers, and who provides the information? Select all that apply:

	Project sponsor (e.g., state DOT, toll authority)	Consultants and legal/financial advisors contracted by project sponsor	Private investors bidding on the project	Interest groups	Media (eg.,. newspaper, TV, blogs)	This information is not available
Terms of agreement	2 40%*	1 20%	1 20%	—	—	—
Experience/qualification of proposers	2 40%	1 20%	—	—	—	—
Risks transferred from and retained by public sector	2 40%	1 20%	—	—	—	—

Evaluation of benefits/disbenefits to public sector	2 40%	1 20%	—	—	—	—
PPP valuation studies (e.g., benefit-cost analysis, value-for-money analysis/public sector comparators, traffic and revenue studies) provided by in-house staff or consultants	2 40%	1 20%	—	—	—	—
Project cost estimates and schedule	2 40%	1 20%	—	—	—	—
Amount of upfront payment/revenue sharing (if long-term concession)	1 20%	—	—	—	—	1 20%
Assumptions used by private investors to determine project value	—	—	—	—	—	1 20%
Technical approach	2 40%	1 20%	—	—	—	—
Other (specify in "Additional Comments" box below):	—	—	—	—	—	2 40%

*Percentage indicates proportion of total surveys, including those that returned no response to Q10.

11) In your opinion and based on the outcomes of your PPP project(s), was there some information that you did not have, but that could have been beneficial in the decision-making process?

Of two responses:

Yes	—
No	2 100%

If you answered "yes," please explain:
No responses.

The next two questions pertain to training or educational resources related to PPPs.

The questions below list various topics related to PPPs. For each of the following topics, please indicate whether you believe staff in your agency would benefit from training or other educational resources. Questions 12a through 12g are required.

12a. Getting Started with PPPs

	Definitely would benefit	Probably would benefit	Not likely to benefit
The PPP concept, basic types, features and	2	—	3

tradeoffs among them	40%		60%
How federal and state law can influence the use of PPPs	1 20%	—	4 80%
What skills your agency needs in house, and what it can outsource	2 40%	—	3 60%

12b. Risk Management:

	Definitely would benefit	Probably would benefit	Not likely to benefit
Diagnosing risks to both partners at each phase of a project	2 40%	2 40%	1 20%
Where and when risk is best managed	3 60%	1 20%	1 20%
Valuation of different types of risk	4 80%	—	1 20%

12c. Finance Issues:

	Definitely would benefit	Probably would benefit	Not likely to benefit
How to assess the economic costs and benefits of a given project	2 40%	2 40%	1 20%
How to use debt (including private activity bonds)	1 20%	—	4 80%
How to utilize private capital	2 40%	—	3 60%
Opportunities for in-kind contributions	1 20%	1 20%	3 60%
Possible revenue sources and negotiating terms of use	2 40%	—	3 60%
Differences in public and private sector financial considerations	4 80%	—	1 20%

12d. Procurement Considerations and Techniques:

	Definitely would benefit	Probably would benefit	Not likely to benefit
How to write RFPs that incorporate PPP concepts	2 40%	1 20%	2 40%
Anticipating and managing private sector concerns with process	2 40%	2 40%	1 20%

12e. Contracting:

	Definitely would benefit	Probably would benefit	Not likely to benefit
How to write a contract that encourages innovation and sharing of risk and rewards	3 60%	1 20%	1 20%
Best practices in leveraging private resources	2 40%	—	3 60%

Common failures of PPP contracts, and how they are addressed	3 60%	1 20%	1 20%

12f. Managing PPP Projects:

	Definitely would benefit	Probably would benefit	Not likely to benefit
Unique oversight challenges of PPP projects	3 60%	1 20%	1 20%
Techniques for monitoring technical and financial performance	2 40%	2 40%	1 20%

12g. Public Awareness and Stakeholder Consultation:

	Definitely would benefit	Probably would benefit	Not likely to benefit
Identifying and engaging with key stakeholders	1 20%	3 60%	1 20%
Anticipating and managing common public Concerns about PPPs	2 40%	2 40%	1 20%

FHWA provides some resources via the PPP Toolkit, partner websites like the FHWA PPP website, and other relevant sites which can be accessed through the FHWA PPP website, including www.innovativefinance.org. This question contains two parts, and pertains to PPP websites, as well as other types of resources.
First, please indicate how likely you or staff in your agency would be to use or participate in each of the following types of educational activities. Then, please indicate if you or staff in your agency has used these kinds of resources within the past two years.

	Likelihood that Staff Would Benefit			Participated Within Past 2 (Two) Years?	
	Very likely	Somewhat likely	Not likely	Yes	No
Scan of 2–3 agencies with significant experience in PPPs (3–4 days, including overnight stay)	1 20%	1 20%	3 60%	2 40%	3 60%
Classroom training (1–2 days at or near your office)	2 40%	1 20%	2 40%	2 40%	3 60%
Classroom training (1–2 days, including overnight stay)	2 40%	1 20%	2 40%	2 40%	3 60%
Interactive workshop (half to full day, at or near your office)	2 40%	1 20%	2 40%	2 40%	3 60%
Interactive workshop (half to full day, off site, including overnight stay)	1 20%	2 40%	2 40%	2 40%	3 60%
Peer-to-peer exchange (one day, at or near your office)	3 60%	—	2 40%	2 40%	3 60%
Peer-to-peer exchange (one day, off site, including overnight stay)	2 40%	1 20%	2 40%	2 40%	3 60%
On-line training modules (self-paced)	1 20%	1 20%	3 60%	1 20%	4 80%
Webinar (web- and telephone-assisted seminar)	—	3	2	2	3

		60%	40%	40%	60%
Web-based repository of case studies and Effective practices	—	3 60%	2 40%	1 20%	4 80%

14) Are there any other public transportation agencies or authorities in your state that have used a PPP model for a project?

Yes	2 40%
No	3 60%

Do you have any other comments or thoughts you would like to share?

- Encountered difficulties with survey program—Q15, I entered budget as 14 M and was not recognized. Took me a while to figure out where. Same for last Q—I entered our Postal Code (as we don't have zip codes). Same error statement was given as field is only designed for numbers (no letters). All is good tho!

APPENDIX C

Other Individuals/Interest Groups Survey Questionnaire

NCHRP Questionnaire for Public Private Partnerships Issues

The NCHRP Synthesis, *Public Decision Making in Public Private Partnerships* (Project 20-05, Task 39-06), will examine the information available in the U.S. and internationally that is needed to properly evaluate the benefits and risks associated with allowing the private sector to have financial stakes in transportation infrastructure, and how that information can be used in the decision making process. It will also investigate the reliability of that information, and how the broader public interest can be protected, and will identify gaps in public sector expertise, experience, and information.

The purpose of this survey is to find your views on benefits of and concerns on Public–Private Partnership (PPPs) related to protecting the public interest, and how decision makers should address these concerns.

If you have any questions about the survey, you may contact Iris Ortiz at iortiz@camsys.com or at 617-354-0167.

Please complete the survey by **February 15, 2008**.

1. Name: _____
2. Name of organization: _____
3. What type of organization do you work for?
    a. State department of transportation
    b. Toll authority
    c. Legislature

d. Other state agency (specify): _____

e. Executive branch of state government

f. Metropolitan planning organization

g. Local government

h. Other government (specify): _____

i. Interest groups (specify): _____

j. Contractor

k. Design firm

l. Transportation consulting

m. Financial advisor

n. Investment bank

o. Equity firm

p. Legal advisor

q. Other: _____

4. From your perspective, what do you see as the top benefits of public-private partnerships (PPPs) for the public? List up to **five**:

1.

2.

3.

4.

5.

5. What are your main concerns related to PPPs? How can each of these concerns be mitigated? List up to **five**:

Concerns on PPPs	Mitigation Measures
a.	
b.	
c.	

d.	
e.	

6. What are the **five** most important factors that decision makers should consider with respect to PPPs?

    1.
    2.
    3.
    4.
    5.

7. What contract structures or techniques would lead to PPPs that best advance the public interest?

8. Are there any other comments or perspectives you would like to offer?

9. As we develop our report, we may find it helpful to follow up with selected individuals. Would you be willing to be interviewed by telephone? If so, please provide your contact information:

    1. E-mail address
    2. Phone

APPENDIX D

Other Individuals/Interest Groups Survey Summaries

List of Respondents*

Name	Organization
Anonymous	Legislature
Achterman, Gail	Oregon Transportation Commission
Baxandall, Phineas	U.S. Public Interest Research Group
Clary, Lowell	Lowell Consulting, LLC
DiPietro, Susanne	Citizen
Diedrich, Roger	Sierra Club, Virginia Chapter
Enright, Dennis	NW Financial Group
Epstein, Lois	Alaska Transportation Priorities Project
Ford, Richard	Washington Transportation Commission
Holman, Bill	Nicholas Institute, Duke University
Jacobs, Carl	Aeia NB #20
Levenson, Dana	RBS Greenwich Securities
Mandel, Nick	New Mexico Department of Transportation
Muchnick, Allen	Arlington Coalition for Sensible Transportation
Neumann, Dennis	BNY Capital Funding
Pagano, Anthony	University of Illinois at Chicago
Parker, Jeffrey	Jeffrey A. Parker and Associates
Pollard, Trip	Southern Environmental Law Center
Poole, Robert	Reason Foundation
Redfield, Beth	Office of Program Research, Washington State Legislature
Richards, Mary	Massachusetts Organization of State Engineers and Scientists
Staley, Samuel	Reason Foundation
Toppin, Ted	Professional Engineers in California Government
Woodland, John	New Mexico Department of Transportation

*Note: The list of respondents is organized by alphabetical order, and in no way does it reflect the order of responses provided in the following pages.

Respondent #1

Type of Organization	c. Legislature
Top benefits of PPP	1. Rapid construction 2. Less costly
PPP Concern 1	Another alternative
PPP Concern Mitigation 1	[State] passed an Act that made it possible to have a regional highway provider
PPP Concern 2	
PPP Concern Mitigation 2	
PPP Concern 3	
PPP Concern Mitigation 3	
PPP Concern 4	
PPP Concern Mitigation 4	
PPP Concern 5	
PPP Concern Mitigation 5	
Factors to consider by decision-makers	State loses control
Contract structures/techniques to protect public interests	
Other perspectives	

Respondent #2

Type of Organization	c. Legislature
Top benefits of PPP	1. Cash flow 2. More flexibility in use of resources
PPP Concern 1	Less control over toll rates
PPP Concern Mitigation 1	Law and contract terms to include public role in setting toll rates.
PPP Concern 2	Contractual provisions that tie the hands of public entities
PPP Concern Mitigation 2	More knowledgeable public contract negotiators
PPP Concern 3	More expensive toll rates for longer periods of time with less public benefit
PPP Concern Mitigation 3	Public financing
PPP Concern 4	Not clear whether the private lessor will exercise good stewardship for the facility. When the lease is up, in what condition will the facility be returned to the public?
PPP Concern Mitigation 4	Performance measures
PPP Concern 5	
PPP Concern Mitigation 5	
Factors to consider by decision-makers	Is it really cheaper? Are the benefits from using a PPP worth any additional costs borne by the public? Are the benefits worth loss of control of the facility?
Contract structures/techniques to protect public interests	
Other perspectives	

Respondent #3

Type of Organization	l. Transportation Consulting
Top benefits of PPP	1. Private Sector Expertise 2. Use Others Money 3. Promote Innovation in Project Development and Delivery/Profit Motive 4. Accelerate High Profile Projects
PPP Concern 1	Lack of understanding and clear communication on what a PPP is and is not such as PPPs do not solve funding shortfalls and are a delivery tool. A funding option, such as tolls, is needed for a PPP to be successful.
PPP Concern Mitigation 1	Education of key policy makers at a high level of PPPs and also training programs for key staff such as CFOs, chief engineers, etc.
PPP Concern 2	A few "risky-on the edge" PPP deals cause concerns among the key policy makers and a good delivery tool is thrown out. For example, some risky toll roads built by public entities have struggled, yet toll roads continue to get promoted. It should be the same with PPPs.
PPP Concern Mitigation 2	Put in place solid PPP processes that help promote the best projects and finance plans moving forward and limit the highly risky projects/schemes from moving forward.
PPP Concern 3	Brownfield toll roads being leased over long period without the public owner sharing in the upside of the revenue stream.
PPP Concern Mitigation 3	There should be strong consideration for policy provisions that require the governmental entity to share in the upside revenue on the lease of toll roads. This should not be overly prescriptive, but give the flexibility needed for each state to work within an overall policy and then apply this based on the specific situation.
PPP Concern 4	Some PPP projects seem to be starting way too early in the project development process. This may lead to "negotiated" deals that might or might not generate the best bang for the public owner.
PPP Concern Mitigation 4	This is a tough one. How do you prescribe a one size fits all policy without killing innovation? Possibly requiring a solid Value for Money analysis at a minimum before moving forward and then based on the final proposal would help ensure a good analysis is provided before signing the deal.
PPP Concern 5	Congress might become overly prescriptive on the PPP process and toll roads.
PPP Concern Mitigation 5	States must educate their Congressional members that all tools must be provided in today's environment to provide states the flexibility needed to deliver timely transportation improvements.
Factors to consider by decision-makers	1. Pick the right projects that fit the PPP profile 2. Be patient and start at the right time in the project development process (generally with environmental clear or almost clear) 3. Hire good PPP advisors (legal and financial are most important) 4. Develop a clear and consistent PPP process 5. Be patient and persistent—large PPPs are not for the faint of heart!

Contract structures/techniques to protect public interests	This depends on the goals to be accomplished. The best answer is to build a solid transparent PPP process that is competitive and the results will speak for themselves.
Other perspectives	It seems the survey focuses mostly on the "needs improvement" side of the PPP discussion. This may tend to convey there are "problems" when the facts are showing the states that have been working with PPPs for several years have good solid PPP processes. The key seems to be to find a way to shorten the learning curve for those new to PPPs.

Respondent #4

Type of Organization	Other; Public Policy Think Tank
Top benefits of PPP	1. new capital brought into infrastructure, 2. economic life-cycle management, 3. customer driven focus, 4. access to private equity markets, and 5. long-term incentives to maintain facilities
PPP Concern 1	Consistent, sustained investment in facilities
PPP Concern Mitigation 1	Solved by including performance outcomes in contracts, including pavement standards, LOS goals/targets
PPP Concern 2	Financial viability of projects as stand alone facilities
PPP Concern Mitigation 2	Solved by supplementing user fees (e.g., tolls) with public funds, altering the length of the lease agreement, or allowing alternative revenues to be raised by private company to supplement user fees
PPP Concern 3	Interoperability of technology among facilities
PPP Concern Mitigation 3	Solved by ensuring technology is open-ended and RFP specifies the ability to operate with competing technologies
PPP Concern 4	
PPP Concern Mitigation 4	
PPP Concern 5	
PPP Concern Mitigation 5	
Factors to consider by decision-makers	1. Ability to improve facility or service performance; 2. Performance measures are included in the PPP agreement, allowing either party to "walk away" of one does not fulfill its part of the contract; 3. Ensure the length of the PPP agreement is appropriate for the service or facility; 4. Ensure the private entity shoulders most of the risk for failure to perform
Contract structures/techniques to protect public interests	
Other perspectives	

Respondent #5

Type of Organization	n. Investment Bank
Top benefits of PPP	1. Transfer of financial and operating risk from a public to a private entity; 2. Up-front benefit paid to leaser; 3. Deployment of up-front benefit to other capital projects
PPP Concern 1	1. Misuse of up-front benefit; 2. Hijacking of up-front benefit by subsequent political regimes
PPP Concern Mitigation 1	Public statements and commitments to authorizing bodies about the intended use of the up-front proceeds.
PPP Concern 2	Placing the up-front proceeds in an irrevocable trust, to be governed in accordance with the trust agreement for the purposes enumerated by the trust.
PPP Concern Mitigation 2	
PPP Concern 3	
PPP Concern Mitigation 3	
PPP Concern 4	
PPP Concern Mitigation 4	
PPP Concern 5	
PPP Concern Mitigation 5	
Factors to consider by decision-makers	1. That the user of the facility receives the same if not better service from the facility being leased or sold; 2. That the new operator is capable from both a financial and operating standpoint to provide the service to the user; 3. That the leaser or seller uses the proceeds in an appropriate Manner; i.e., a capital-for-capital exchange.
Contract structures/techniques to protect public interests	Duplicating the concession agreements from the [project] and [project] deals.
Other perspectives	

Respondent #6

Type of Organization	m. Financial Advisor
Top benefits of PPP	- More favorable risk allocation; - New business model for infrastructure development; - New entrants to the marketplace increasing competition; - New technologies and improved attention to life cycle cost
PPP Concern 1	Excessive focus on revenue maximization
PPP Concern Mitigation 1	Greater public policy focus on underlying goals for each P3 project
PPP Concern 2	Deal terms that are perceived to be contrary to the public interest
PPP Concern Mitigation 2	Provide meaningful caps on toll rate escalation, limit concession tenors, focus competition on lowest toll rates, etc.
PPP Concern 3	Inadequate criteria for selecting candidate projects for P3 implementation
PPP Concern Mitigation 3	Better public sector understanding of the trade-offs inherent in P3—private sector money is not "free" and P3 is not necessarily the answer when everything else has failed
PPP Concern 4	Attempting to apply existing finance, contracting and O&M tools to P3
PPP Concern Mitigation 4	Study commercially-acceptable practice so that the public owner understands the P3 framework and doesn't either give away the store or offer a deal that can't be financed. Seek industry input on project concepts.
PPP Concern 5	Separate P3 activity from the agency's core production and contracting functions
PPP Concern Mitigation 5	Make the investment in time and energy to involve District-level staff in the procurement process. They know the project best and will maintain a balance between technical and financial considerations. Lessons learned will migrate to the overall work program, magnifying benefits from new approaches to risk allocation.
Factors to consider by decision-makers	- Project readiness—don't put projects out for tender before they are ready; - Clear goals—risk transfer and revenue risk; - Use a competitive process—avoid losing control through unsolicited proposals; - There is no free lunch—private equity
Contract structures/techniques to protect public interests	Our experience with availability payments has been extremely positive in [project] and [project] in [state]. Emphasis must be given to institutionalizing the P3 process and providing the necessary training to make P3 part of the everyday toolkit for project implementation.
Other perspectives	

Respondent #7

Type of Organization	Other; commercial bank
Top benefits of PPP	The key feature is bringing private money to Infrastructure that governments at all levels from Federal down to local do not have the money to improve, let alone provide for growth.
PPP Concern 1	Documents in the P3 arena are very specific about the service level the private firm will provide. The concern is how high and how fast tolls will rise. Clearly if raising tolls were politically expedient we would not need a P3. To much concern about congestion pricing and simply increasing tolls to the point where governmental bodies can provide for repair and growth.
PPP Concern Mitigation 1	Raise the tolls
PPP Concern 2	
PPP Concern Mitigation 2	
PPP Concern 3	
PPP Concern Mitigation 3	
PPP Concern 4	
PPP Concern Mitigation 4	
PPP Concern 5	
PPP Concern Mitigation 5	
Factors to consider by decision-makers	Long-term costs; Control of the asset; Clearly spelled out documents; Ability to reclaim the asset if there is a failure.
Contract structures/techniques to protect public interests	
Other perspectives	In light of the fact that we can't just raise tolls the P3 is the next best answer. Over time these deals will be negotiated in a better fashion than the [state] Toll Road.

Respondent #8

Type of Organization	i. Interest Groups (Please specify in question 3a) Non-partisan, non-profit membership group that takes no money from corporations or unions. Our mission is to take on powerful special interests to protect the public.
Top benefits of PPP	1. Can leverage technological know-how not currently in the public sector.
PPP Concern 1	1. Allows public officials to avoid responsibility for increasing taxes or otherwise raising revenue for public purposes.
PPP Concern Mitigation 1	No deals over thirty years; greater transparency.
PPP Concern 2	2. Relinquishes public control over management and planning of vital government functions.
PPP Concern Mitigation 2	No deal should last for more than 30 years since even the most detailed concession agreement can not adequately anticipate future public needs, technological advances, demographic changes, or the appropriate value of a contract. Road operators should not be able to require compensation for measures that would be the normal course of transportation policy or for establishing state-of-the-art safety standards. Road operators should compensate the public for legal fees in the future enforcement of contracts.
PPP Concern 3	3. Concession or lease payments will not meet the long-term value of the tolls paid by the public.
PPP Concern Mitigation 3	It must be clearly established that the same upfront borrowing could not be done more cheaply by public entities. The public should not pay a premium for higher private borrowing costs, oversight costs for monitoring private entities, and shareholder profits.
PPP Concern 4	4. Lack of transparency and accountability, especially from concession agreements that are not public before signing.
PPP Concern Mitigation 4	All concession bids and subcontracts by private vendors should be open public record on-line from the moment they are introduced. Proposed agreements should be divulged at least six months before being put to vote. Legislatures must approve of final concession agreements, not simply empower the administration to enter an agreement. Most importantly, no agreement should last more than 30 years.
PPP Concern 5	5. Non-compete clauses
PPP Concern Mitigation 5	Should be prohibited.
Factors to consider by decision-makers	What value is the private entity actually bringing to the table that the public could not subcontract for in a shorter deal or accomplish with their own toll hikes.
Contract structures/techniques to protect public interests	Availability contracts; Prohibition of non-compete clauses; Sunshine laws disclosing details of concession agreements
Other perspectives	See [link]

Respondent #9

Type of Organization	i. Interest Groups Public interest organization
Top benefits of PPP	1. Motorists internalizing costs of road use; 2. When done right, ensuring money from roads for public transportation; 3. Potentially faster construction/operational changes
PPP Concern 1	Public entities might strike economically harmful deals
PPP Concern Mitigation 1	Ensure sufficient public input and governmental oversight, along with expert independent advice, to prevent such situations. Protections probably need to be in state authorizing statutes.
PPP Concern 2	Private sector's interest is not always consistent with the public interest; e.g., toll increases could put more vehicles on non-toll roads and thus increase public costs.
PPP Concern Mitigation 2	Increase public interest protections in P3 contracts
PPP Concern 3	Greenhouse gas emissions typically are not addressed, since more vehicles mean more profit for the private sector.
PPP Concern Mitigation 3	
PPP Concern 4	Concession lengths are too long to address technological changes, accountability of decision makers, etc.
PPP Concern Mitigation 4	Limit concession lengths to approximately 30–35 years, or roughly one generation.
PPP Concern 5	
PPP Concern Mitigation 5	
Factors to consider by decision-makers	1. Economic advantage over the long term; 2. Effects on related transportation systems; 3. Public involvement and buy-in.
Contract structures/techniques to protect public interests	
Other perspectives	The [state] P3 statute does not include any public involvement requirements or legislative voting on the contract, does not have a concession length limitation, and does not require high-level state DOT involvement. This could lead to a very poorly written P3 contract (for one of the "bridges to nowhere") that costs the state lots of money and gives P3 agreements a bad name.

Respondent #10

Type of Organization	Other; Chair Neighborhood Board Transportation
Top benefits of PPP	HOT
PPP Concern 1	Fixed rail costs
PPP Concern Mitigation 1	BUS and HOT
PPP Concern 2	
PPP Concern Mitigation 2	
PPP Concern 3	
PPP Concern Mitigation 3	
PPP Concern 4	
PPP Concern Mitigation 4	
PPP Concern 5	
PPP Concern Mitigation 5	
Factors to consider by decision makers	Tax reduction
Contract structures/techniques to protect public interests	
Other perspectives	See my [newspaper] Letters to the Editor 23 JAN.

Respondent #11

Type of Organization	Other; University
Top benefits of PPP	1. Ability to attract private capital to invest in transportation, 2. Ability to price transportation services at market rates rather than political prices
PPP Concern 1	PPP may seek to avoid compliance with local, state, and national land use and environmental policies
PPP Concern Mitigation 1	State and federal laws that require compliance with all land use and environmental laws
PPP Concern 2	PPP may seek to avoid innovations such as congestion pricing
PPP Concern Mitigation 2	Require congestion pricing for all new PPP or toll facilities
PPP Concern 3	PPP may oppose investments in transit and other alternatives to highways
PPP Concern Mitigation 3	Strict ethics and disclosure rules
PPP Concern 4	PPP may undermine comprehensive transportation planning and work of MPOs
PPP Concern Mitigation 4	Require PPP projects to be consistent with state, local and MPO transportation plans. PPP projects need to be part of plans not separate from them.
PPP Concern 5	
PPP Concern Mitigation 5	
Factors to consider by decision-makers	1. Financial viability; 2. Comparison of all transportation alternatives; 3. Cost-benefit analysis; 4. Environmental assessment, including air quality and greenhouse gas emissions
Contract structures/techniques to protect public interests	
Other perspectives	PPP should be thoroughly reviewed on a periodic basis.

Respondent #12

Type of Organization	i. Interest Groups (Please specify in question 3a) Nonprofit, grassroots advocacy organization based in [city, state]
Top benefits of PPP	I can't think of even a single true public benefit of PPP agreements. They merely facilitate private gain at public expense by reducing proper oversight.
PPP Concern 1	Undermines full, fair, and open planning processes for transportation projects.
PPP Concern Mitigation 1	1. Enact statutes and/or administrative regulations that prohibit all PPP agreements prior to the completion of the NEPA process, including the issuance of a Record of Decision.
PPP Concern 2	Failure to adequately accommodate all alternatives to private motor vehicle travel in PPP transportation projects.
PPP Concern Mitigation 2	1. Enact statutes and/or administrative regulations that prohibit all PPP agreements prior to the completion of the NEPA process, including the issuance of a Record of Decision; 2. Require full transparency in PPP negotiations; 3. Explicitly require all PPP projects to adequately accommodate all alternative transportation modes, especially bicycling, walking, and public transportation, by stipulating adherence to specific performance measures.
PPP Concern 3	Unrealistic forecasts of toll and fare revenue, leading to financial insolvency.
PPP Concern Mitigation 3	1. Enact statutes and/or administrative regulations that prohibit all PPP agreements prior to the completion of the NEPA process, including the issuance of a Record of Decision; 2. Require PPP awardees to purchase adequate insurance coverage (performance bonds) for the financial solvency of their projects; 3. Require PPP awardees to cover all financial shortfalls.
PPP Concern 4	Biased analyses of viable project alternatives and environmental impacts.
PPP Concern Mitigation 4	1. Enact statutes and/or administrative regulations that prohibit all PPP agreements prior to the completion of the NEPA process, including the issuance of a Record of Decision; 2. Prohibit PPP vendors from participating in all project planning activities, such as alternatives analyses and environmental impact studies; 3. Require all urban transportation projects to meet a set of performance measures that includes reduced VMT per capita, reduced global warming emissions, and enhanced travel by all alternative modes.
PPP Concern 5	Bias and corruption in the award of PPP agreements.
PPP Concern Mitigation 5	1. Enact statutes and/or administrative regulations that prohibit all PPP agreements prior to the completion of the NEPA process, including the issuance of a Record of Decision; 2. Require full transparency in all PPP negotiations; 3. Require independent audits of proposed PPP agreements.

Factors to consider by decision-makers	1. Biased planning not in the public's best interest; 2. Lack of transparency (secrecy, bias, and corruption; 3. Lack of financial and/or technical capacity; 4. Excessive adverse environmental impacts; 5. Social and economic injustice.
Contract structures/techniques to protect public interests	1. Enact statutes and/or administrative regulations that prohibit all PPP agreements prior to the completion of the NEPA process, including the issuance of a Record of Decision; 2. Prohibit PPP vendors from participating in all project planning activities, such as alternatives analyses and environmental impact studies; 3. Require all urban transportation projects to meet a set of performance measures that includes reduced VMT per capita, reduced global warming emissions, and enhanced travel by all alternative modes; 4. Require full transparency in PPP negotiations; 5. Explicitly require all PPP projects to adequately accommodate all alternative transportation modes, especially bicycling, walking, and public transportation, by stipulating adherence to specific performance measures; 6. Require PPP awardees to purchase adequate insurance coverage (performance bonds) for the financial solvency of their projects; 7. Require PPP awardees to cover all financial shortfalls; 8. Require independent audits of proposed PPP agreements.
Other perspectives	PPP transportation projects have no redeeming benefits.

Respondent #13

Type of Organization	Other Citizen
Top benefits of PPP	Help finance necessary infrastructure
PPP Concern 1	It is not clear to me that the private sector can build and maintain infrastructure more cheaply than state and local governments. In the specific example of which I am aware, the private entity will offer a small amount of its own funds and leverage that with low-cost government funds like TIFFIA and activity bonds. The private entity will take its equity out at the front end, leaving government to cover any deficits.
PPP Concern Mitigation 1	Prohibit private entities from accessing government financing for these projects, or insist on a minimum percentage of private funds
PPP Concern 2	Government loses control over the asset. Decisions about what to build, when to build and what to charge are left to private entities. Private entities make decisions solely based on profit motives, which may be in direct conflict with the public interest.
PPP Concern Mitigation 2	I don't know.
PPP Concern 3	
PPP Concern Mitigation 3	
PPP Concern 4	
PPP Concern Mitigation 4	
PPP Concern 5	
PPP Concern Mitigation 5	
Factors to consider by decision-makers	Maintain government control and oversight of all aspects of the project
Contract structures/techniques to protect public interests	Don't know
Other perspectives	

Respondent #14

Type of Organization	l. Transportation Consulting
Top benefits of PPP	Better project selection (based on ROI); Greater accountability; Reduced life-cycle cost; More timely additions of needed capacity
PPP Concern 1	Transparency; Concern over how decisions to award concessions get made, raising suspicions of sweetheart deals.
PPP Concern Mitigation 1	Balance needs for temporary confidentiality with full disclosure of selection criteria, scoring, and concession agreement details.
PPP Concern 2	Politicization of process, especially to unfairly favor public-sector toll agencies.
PPP Concern Mitigation 2	Need to adopt level-playing-field competition procedures, to permit fair competitions that don't tilt toward either public-sector or private-sector bidders.
PPP Concern 3	One-size-fits-all rules and regulations for PPPs
PPP Concern Mitigation 3	Educate public officials on the differences among projects (e.g., robustness of potential traffic demand, extent of capital investment needed, role of pricing, etc.) to explain the need to tailor concession agreements to the specifics of each project, resisting standard lengths of term, toll rate formulas, etc.
PPP Concern 4	
PPP Concern Mitigation 4	
PPP Concern 5	
PPP Concern Mitigation 5	
Factors to consider by decision-makers	Competitive procurements; Tailoring the deal structure to the specifics of each project; Full disclosure/transparency; Prudent limits on "non-compete" provisions
Contract structures/techniques to protect public interests	Long-term concessions offer the greatest set of benefits. But to take maximum advantage, it's important to include availability payments as well as real tolls—and in some cases, combinations of these [e.g., (project) in (state)].
Other perspectives	

Respondent #15

Type of Organization	Other Non-profit environmental group
Top benefits of PPP	1. Potential to harness private sector creativity and efficiency; 2. Potential to leverage public sector transportation funding by attracting private sector capital.
PPP Concern 1	1. Tend to circumvent normal planning processes
PPP Concern Mitigation 1	Limit or prohibit unsolicited bids; require bids go through normal planning process
PPP Concern 2	Circumvent and/or undermine environmental reviews
PPP Concern Mitigation 2	As condition of signing agreement, require NEPA process completed or substantially complete; provide clarity what can be negotiated with proponent before NEPA process complete
PPP Concern 3	Has not tended to attract private risk sector capital proponents promised.
PPP Concern Mitigation 3	Require proposer invest a certain amount of equity
PPP Concern 4	Non-compete clauses limit investments that are in public interest
PPP Concern Mitigation 4	Prohibit non-compete clauses
PPP Concern 5	Failure to adequately account for public costs and potential taxpayer liability, and environmental costs (including sprawl promote).
PPP Concern Mitigation 5	Require full, independent accounting of these items.
Factors to consider by decision makers	1. full cost and potential taxpayer liability; 2. consistency with planning process; 3. impact on funding and function of other projects; 4. full environmental costs, including secondary impacts promoting sprawl; 5. full alternatives analysis
Contract structures/techniques to protect public interests	See above for various provisions and requirements.
Other perspectives	Our experience with PPPs is that they are far more complex than initially advertised, and often the public interest is not well-protected.

Respondent #16

Type of Organization	a. State Department of Transportation
Top benefits of PPP	1. Accelerated project delivery; 2. Access to private capital markets; 3. Reduced project costs
PPP Concern 1	Public accountability
PPP Concern Mitigation 1	The private entity needs to be held to the same standard of access to documents and information as a state DOT would be and implement full, effective public engagement methods
PPP Concern 2	Stewardship of public assets
PPP Concern Mitigation 2	Public assets, like highway right of way, are held for the benefit of the citizens of the state. The public interest in those public assets must be protected—citizens must be confident that private entities aren't "profiting" on public resources
PPP Concern 3	Risk allocation—what is the proper allocation of risk for project's moving forward? How can risk be allocated in the contracting?
PPP Concern Mitigation 3	It is imperative to work with sophisticated legal counsel to address these issues and for state DOTs to work hard to understand and analyze the risks in advance.
PPP Concern 4	Loss of DOT staff or inability to attract and retain top staff
PPP Concern Mitigation 4	If all the big interesting projects are contracted out, it will become increasingly difficult to attract and retain top engineers at DOTs
PPP Concern 5	
PPP Concern Mitigation 5	
Factors to consider by decision makers	1. Risk Allocation; 2. Ownership of assets—who ultimately owns and controls the facility?; 3. Capitalization and financial responsibility—does the private party have the assets to stand behind the work?; 4. Public accountability—does the private company share the values of the DOT and will they assure public accountability—on the environmental performance, labor, etc.
Contract structures/techniques to protect public interests	A key structure is phasing a contract so that there are "off ramps" at key points. Another key contract term is to assure public access to all information. Public rights of way must be retained by the public-private ownership of roads or other facilities leads to distrust.
Other perspectives	PPP's range from concessions to construction contracting methods. It is very important to differentiate between the various types of PPPs in use rather than lumping them all together. The public accountability varies significantly from type to type.

Respondent #17

Type of Organization	a. State Department of Transportation
Top benefits of PPP	Cost. Ability to deliver projects sooner.
PPP Concern 1	Lack of ability of state DOTs to competently administer and provide oversight to P3s.
PPP Concern Mitigation 1	
PPP Concern 2	Cost factor and the use of public funds for services providing essential public services to the private sector.
PPP Concern Mitigation 2	
PPP Concern 3	What entity will have final oversight and decision-making authority on these PPP, particularly as it may involve public safety, homeland security, and other interest of national priorities.
PPP Concern Mitigation 3	
PPP Concern 4	
PPP Concern Mitigation 4	
PPP Concern 5	
PPP Concern Mitigation 5	
Factors to consider by decision makers	Level of authority/oversight. Cost Ownership—National/International Interests
Contract structures/techniques to protect public interests	
Other perspectives	

Respondent #18

Type of Organization	i. Interest Groups (Please specify in question 3a) Labor union representing professional employees in state government including transportation workers.
Top benefits of PPP	I see none in its present form. Having lived through [project] which used this dangerous and wasteful construction scheme and having witnessed the dismissal of our struggles to ensure greater oversight by enough workers who represent the taxpayer's interests, there is little to like about this practice.
PPP Concern 1	Public Safety: The lack of proper oversight with full authority by state DOT engineers, resulting in a "fox watching the chicken house" scenario and public safety concerns.
PPP Concern Mitigation 1	Any such contract must have strict language as to who is in charge, who has authorization to stop projects and who is responsible for failures of the process and who represents the public's interest. Unfettered private interest with profit motives will cut corners every time.
PPP Concern 2	Too cozy relationship between the public entity, which should be there for enforcement and oversight, and the private sector.
PPP Concern Mitigation 2	Need strong demarcation between private and public interest responsibilities. This concept of one big happy family, and we are all in this together mindset has had dire consequences as we all now realize. Public employees in their role should not be reporting to private contractors. Causes huge oversight problems. This should be prohibited. [(previously referenced project) scenario].
PPP Concern 3	Lack of cost benefit analysis to ensure there are any cost savings or benefits using these practices.
PPP Concern Mitigation 3	Federal decision makers should require a cost-benefit analysis particularly in areas of survey, design, materials and construction inspections, and maintenance to ascertain if practice is saving any tax dollars compared to DOT engineers performing these services. Many states have established criteria for such analysis with huge cost savings being realized.
PPP Concern 4	Public Access to Private Company documents.
PPP Concern Mitigation 4	Contract must clearly state that any and all documents relating to a particular project are accessible to the "public" under FOIA or other state regulations.
PPP Concern 5	Conflicts of interests
PPP Concern Mitigation 5	Open door policies that allowed state engineers and private sector employees to move from one entity to the other unfettered on the same project [(previously referenced project)]. Need checks and balances possibly outright prohibition. (Who is my master conflict?)

Factors to consider by decision-makers	How to Ensure Public Safety. Are there actual Cost Savings? Is there enough oversight by state engineers? Are there strict rules for line of Command? Who has Responsibilities and Authority over project aspects including failures? Are the penalties enough to deter? Are their sufficient policies in place to prevent conflicts of interest? What are the consequences of finances if contractor files bankruptcy?
Contract structures/techniques to protect public interests	A return to old, well-established construction techniques with the right checks and balances that existed and worked well before the profiteers and the smaller government crowd dismantled a proven process in order to increase their profits. Government entities, particularly decision makers, were sold a bill of goods. No tunnels or bridges were collapsing with the proven methods we once used. Now everyone feels unsafe.
Other perspectives	I would strongly suggest for insightful reading on this subject the numerous documents prepared by the [state's] and U.S. Inspectors General and the [state] State Auditor's Office on the [previously referenced project] for lessons learned on the biggest PPI boondoggle, known to man.

Respondent #19

Type of Organization	m. Financial Advisor
Top benefits of PPP	up front cash faster design/build
PPP Concern 1	Underpricing
PPP Concern Mitigation 1	Regulate investment returns when met return road to public
PPP Concern 2	excessive toll regime
PPP Concern Mitigation 2	limit to cpi
PPP Concern 3	term beyond 30 years
PPP Concern Mitigation 3	limit term
PPP Concern 4	protection of public interest
PPP Concern Mitigation 4	Full transparency of procurement process, no shields regarding vendor proposals before award
PPP Concern 5	
PPP Concern Mitigation 5	
Factors to consider by decision-makers	Will they actually achieve economic benefit, could the same result be achieved by a public entity, why pay for 12%+ in equity returns?
Contract structures/techniques to protect public interests	
Other perspectives	

Respondent #20

Type of Organization	a. State Department of Transportation
Top benefits of PPP	1. Ability to provide resources, and leverage of resources, unavailable to public entity. 2. Knowledge of things that public personnel don't have. 3. Transfer of certain risks to private entity. 4. Relinquishment of public service/democratic responsibilities—private entities are not subject to the same freedom of information, accountability, and oversight requirements as the public entity is. So less hassles and you can hide things. Good for plausible deniability.
PPP Concern 1	Lack of private entity transparency and accountability in regard to records and information.
PPP Concern Mitigation 1	Build transparency into the contract. Delineate what is proprietary and what is not in the contract. Require records and information as a deliverable.
PPP Concern 2	Private entity won't tell you what risks public is assuming, even if they know. Public entity often doesn't know what risks they are transferring to private entity—sometimes they do but are only serving upper class interests. As a result, underclass sections of society are often impacted unfairly or their needs are discounted.
PPP Concern Mitigation 2	How can distribution of transportation benefits/burdens and risks be decided in a strategically equitable manner? Government deal making in transportation infrastructure development may only include stakeholders and interests of upper class membership. However, it is the role of government to assure that these deals benefit society as a whole, including the underclasses. If the spectrum of public interests is not represented, inequitable distributions of benefits, burdens, and risks may occur. There must be an approach to uncovering hidden and indeterminate public risk. In PPP, the paradigm for business interests where the business interest short term gain means the long-term public loss, must be changed. The public interest must be of paramount benefit.
PPP Concern 3	There is often limited state oversight during design and construction management.
PPP Concern Mitigation 3	The state should do oversight and quality measurements at all stages of the project.
PPP Concern 4	Selling off our transportation system requires everyone to play by the rules of business rather than the U.S. Constitution and/or the rule of law. Constitutional rights may not apply to the privately owned road. This is a serious concern.
PPP Concern Mitigation 4	The public should not relinquish control of public assets and services. PPPs are helpers, not a way to sell off the democracy or the "commons."
PPP Concern 5	
PPP Concern Mitigation 5	

Factors to consider by decision makers	1. The rules of the business game when negotiating a PPP contract—transfer of risk, short term gain, costing, etc. 2. The consequences of long-term social dangers when ignoring underclass needs and impacts to the environment. 3. How will decision makers assure functional accountability of the private partner. 4. How will the PPP contribute to equitable distribution of economic benefits. 5. Long-term developmental impacts both in terms of the value of money and assets and in risks.
Contract structures/techniques to protect public interests	In the contract, deliverables should include freedom of information requirements, breach of contract definitions, liquidated damage provisions, and special oversight provisions that require audits and quality control actions by public entity on the documents, products, and actions of the private entity.
Other perspectives	PPPs for transportation seem to be moving toward the privatization of all transportation services and assets. This has happened with many public lands, with communications, and with the air ways. We can see the results—it is not in the public interest and dismantles the democracy while profiting only a few.

Respondent #21

Type of Organization	i. Interest Groups (Please specify in question 3a) Environmental
Top benefits of PPP	If a government has reached a debt limit, it may be a way to finance a public works project.
PPP Concern 1	The private corporation negotiating a project desires to keep the information confidential, thereby denying the public (and even elected officials) of many financial details of what they are paying for.
PPP Concern Mitigation 1	Limit what can be kept secret.
PPP Concern 2	Because a private corporation is most interested in the most profitable project, and not the one that is most needed, they may force the public agency to entertain construction of projects that are not a priority for the public—but of course the public will pay.
PPP Concern Mitigation 2	Only allow projects that are the top priority for consideration.
PPP Concern 3	Even for projects that are a priority, there is a limited opportunity to seek competitive bidding. The agency has a tendency, or even a requirement, to accept the first proposal with only a narrow and insufficient window for other bidders to participate.
PPP Concern Mitigation 3	Require a much longer window for additional parties to bid.
PPP Concern 4	There may be a limit on public involvement in the design and final acceptance of a proposed project. As noted in Concern #1, the same goes for financial viability. Corporations are resistant to accepting public opinion, and I believe that is true generally, but a characteristic that can vary greatly.
PPP Concern Mitigation 4	The public agency has to take control of the project and insist that the public be involved. This requires political will that may be lacking if the public agency has (or perceives) a financial need. It may not be possible to overcome this issue.
PPP Concern 5	The public is inherently the guarantor of last resort. If for any of a multitude of reasons, a PPP project (and the private partner) fails, the public picks up the tab. In a proposed local project, the bonds are to be paid back from tolls for 75 years. Nobody can predict anything for 75 years, and is there a bond big enough to cover it that won't depreciate in 75 years? I doubt it.
PPP Concern Mitigation 5	Require that the bonds be paid in 30 years. If it can't be done, it's not appropriate for a PPP.
Factors to consider by decision-makers	Rank the above? They are all important. Transparency Risk Track record of the private firm Is it in the public interest (have alternatives been considered)
Contract structures/techniques to protect public interests	I am not familiar with any.
Other perspectives	The public has a hard time paying attention to the dry details for the PPP trend, and public officials cannot resist the easy money. The ability to have something built during their term of office without raising taxes is sooo good. So the corporations are having a field day, there is little protection for the public.

Respondent #22

Type of Organization	Other University
Top benefits of PPP	1. More efficient delivery of transportation services. 2. Service improvements since there would be greater incentives to increase quality of service. 3. Reduce the impact of politics on transportation service delivery. 4. Potential for greater innovation and service experimentation. 5. Ability to raise capital for transportation enhancements over public sector only financing.
PPP Concern 1	1. Public interest can be secondary to private interest.
PPP Concern Mitigation 1	Make sure that they have competition, not just trade a private monopoly for a state run monopoly. If a monopoly is created, then public regulation may be required.
PPP Concern 2	Public sector workers need to be treated fairly.
PPP Concern Mitigation 2	Early retirement; Buyouts; Private sector hiring public sector workers; Worker retraining.
PPP Concern 3	
PPP Concern Mitigation 3	
PPP Concern 4	
PPP Concern Mitigation 4	
PPP Concern 5	
PPP Concern Mitigation 5	
Factors to consider by decision-makers	1. Are you creating a private monopoly? 2. Will this result in increased capital for infrastructure needs? 3. Will prices be regulated? 4. How will externalities be dealt with? 5. Will money from a brownfields PPP be used to enhance the transportation system, or be used for general government?
Contract structures/techniques to protect public interests	
Other perspectives	

Respondent #23

Type of Organization	d. Other State Agency
Top benefits of PPP	Transfer of risk (construction, toll revenue, etc.); Longer horizon on debt repayment; Less political "response"; Deeper talent pool to manage project.
PPP Concern 1	May ignore important public concerns (social equity, etc.)
PPP Concern Mitigation 1	Agreement might provide for public subsidy to meet public policy objectives
PPP Concern 2	Default by "private entity"
PPP Concern Mitigation 2	Could be complex if it involves critical public facility. Financially surety or insurance could be costly but might deal with this possibility. Suggest stiff qualifications for "private partner."
PPP Concern 3	Long-term higher cost is major political issue
PPP Concern Mitigation 3	Hard to deal with—even if some good technical arguments. Explaining risk transfer and net present value of $$ is a nonstarter with most of the public.
PPP Concern 4	
PPP Concern Mitigation 4	
PPP Concern 5	
PPP Concern Mitigation 5	
Factors to consider by decision-makers	What are the risks: Is the private partner qualified? Is there value in removing the project from direct political control? What is the political cost of the partnership? Does the deal pencil out—reasonably?
Contract structures/techniques to protect public interests	Probably some form of franchise or easement. You would want to avoid too many areas of continuing negotiation with conditions and cancellation provisions (at a reasonable cost).
Other perspectives	No—except without some political acceptance it is DOA

Respondent #24

Type of Organization	i. Interest Groups (Please specify in question 3a) Represent state DOT employees
Top benefits of PPP	
PPP Concern 1	Private financing is up to 35% higher than tax exempt financing—greatly increasing the cost of the project, making them financially unstable and subject to taxpayer bailout. Also greatly increases toll levels.
PPP Concern Mitigation 1	Public agencies should utilize tax exempt public financing. Not sure you can mitigate paying 35% more than you need to... both financing types—private and public—are secured with the tolls—why would we choose the far more expensive option
PPP Concern 2	Use of design-build, best value eliminates competitive bidding and increase project costs. Lack of oversight and public agency involvement encourages cost overruns and projects built on the cheap on public right-of-way
PPP Concern Mitigation 2	Prohibit no-bid design-build and require public oversight, design, and inspection to ensure road safety and cost controls.
PPP Concern 3	Toll roads take money out of our transportation system by moving revenues/profits
PPP Concern Mitigation 3	Toll revenues should be reinvested into our transportation system and not siphoned off to multi-national companies that don't remove the revenue from the system but often take it out of the country
PPP Concern 4	Non-compete clauses and cash payments prevent improvements to competing public roads and actually increase congestion
PPP Concern Mitigation 4	Prohibit non-compete clauses and cash payoffs—they just confirm the notion that toll roads aren't about reducing congestion—they are about increasing it to the point toll roads are viable profit centers.
PPP Concern 5	
PPP Concern Mitigation 5	
Factors to consider by decision-makers	See above
Contract structures/techniques to protect public interests	Require competitive bidding, public oversight, design, and inspection
Other perspectives	The only differences in a traditional toll road and a 3P, is that under the 3P model you pay up to 35% more for financing and another 20% or so must be paid out (by contract) in profit to private investors instead of being reinvested into the system to benefit the public.

APPENDIX E
Case Studies

CALIFORNIA

SR-91 Express Lanes

- Innovative Finance for Surface Transportation (AASHTO), http://www.innovativefinance.org/projects/highways/91.asp
- Reason Foundation, "Orange County's 91 Express Lanes: A Transportation and Financial Success, Despite Political Problems," Policy Brief No. 39, http://www.reason.org/pb39.pdf

South Bay Expressway, SR-125

- FHWA PPP web page, http://www.fhwa.dot.gov/ ppp/sr125.htm
- FHWA Case Studies of Transportation Public-Private Partnerships in the United States, http://www.fhwa.dot.gov/ppp/us_ppp_case_studies_final_report_7-7-07.pdf
- FHWA Innovative Finance Primer, http://www.fhwa.dot.gov/innovativefinance/ifp/index.htm
- FHWA TIFIA web page, http://tifia.fhwa.dot.gov/
- Innovative Finance for Surface Transportation (AASHTO), http://www.innovativefinance.org/projects/highways/125.asp

CANADA

British Columbia, Golden Ears Bridge

- Partnerships British Columbia website, http://www.partnershipsbc.ca/files/project-goldenears.html
- TransLink British Columbia website, http://translink.bc.ca/goldenearsbridge/

Ontario, Highway 407 ETR

- U.S. Government Accountability Office, Highway Public-Private Partnerships: More Rigorous Up-Front Analysis Could Better Secure Potential Benefits and Protect the Public Interest, Report No. GAO-08-44, http://www.gao.gov/new.items/d0844.pdf
- Reason Foundation, "Building for the Future: Easing California's Transportation Crisis with Tolls and Public-Private Partnerships," Policy Study No. 324, http:// www.reason.org/ps324.pdf

COLORADO

Northwest Parkway

- Colorado State University and the American University in Cairo, "Build-Operate-Transfer (BOT) as a Delivery Method for Construction Projects in Egypt and the United States of America," http://cmarc.colostate.edu/ep06/Project%20documents/BOT.doc
- TollRoadsNews, "Northwest Parkway in Colorado Concessioned to Brisa for $603 m—lease signed today, closing by October," Aug. 29, 2007, http://www.tollroadsnews.com/node/3110
- TollRoadsNews, "Northwest Parkway Colorado Toll Concession Finalized with Financial Close," Nov. 11, 2007, http://www.tollroadsnews.com/node/3263

FLORIDA

Port of Miami Tunnel

- Port of Miami Tunnel website, http://www.portofmiamitunnel.com/
- FHWA Case Studies of Transportation Public-Private Partnerships in the United States, http://www.fhwa.dot.gov/ppp/us_ppp_case_studies_final_report_7-7-07.pdf

ILLINOIS

Chicago Skyway

- FHWA PPP web page, http://www.fhwa.dot.gov/ppp/chicago_skyway.htm
- FHWA Case Studies of Transportation Public-Private Partnerships in the United States, http://www.fhwa.dot.gov/ppp/us_ppp_case_studies_final_report_7-7-07.pdf
- U.S. Government Accountability Office, Highway Public-Private Partnerships: More Rigorous Up-Front Analysis Could Better Secure Potential Benefits and Protect the Public Interest, Report No. GAO-08-44, http://www.gao.gov/new.items/d0844.pdf
- USC Keston Institute for Public Finance and Infrastructure Policy, "Protecting the Public Interest: The Role of Long-Term Concession Agreements for Providing Transportation Infrastructure," http://www.usc.edu/schools/sppd/keston/research/index.html
- NW Financial Group, "The Chicago Skyway Sale: An Analytical Review," http://www.nwfinancial.com/newsroom/newsroom.html

INDIANA

Indiana Toll Road

- FHWA PPP web page, http://www.fhwa.dot.gov/ppp/indiana_tollway.htm
- U.S. Government Accountability Office, Highway Public-Private Partnerships: More Rigorous Up-Front

Analysis Could Better Secure Potential Benefits and Protect the Public Interest, Report No. GAO-08-44, http://www.gao.gov/new.items/d0844.pdf
- Reason Foundation, "Indiana Policy Review: Bottom Line on Indiana Toll Road Deal," Commentary by Geoffrey Segal, http://www.reason.org/commentaries/segal_20060710.shtml
- USC Keston Institute for Public Finance and Infrastructure Policy, "Protecting the Public Interest: The Role of Long-Term Concession Agreements for Providing Transportation Infrastructure," http://www.usc.edu/schools/sppd/keston/research/index.html
- NW Financial Group, "Indiana Toll Road vs. Chicago Skyway: An Analytical Review of Two Public-Private Partnerships," http://www.nwfinancial.com/newsroom/newsroom.html

MASSACHUSETTS

Massachusetts Route 3 North

- FHWA PPP web page, http://www.fhwa.dot.gov/ppp/route3.htm
- Innovative Finance for Surface Transportation (AASHTO), http://www.innovativefinance.org/news_innovations/03022001_innovation_paves.asp
- The National Council for Public Private Partnerships (NCPPP), http://www.ncppp.org/cases/route3.shtml

NEW MEXICO

US 550 (former SR-44)

- FHWA PPP web page, http://www.fhwa.dot.gov/ppp/sr44.htm
- Innovative Finance for Surface Transportation (AASHTO), http://www.innovativefinance.org/projects/highways/44.asp
- National Council for Public-Private Partnerships, http://www.ncppp.org/cases/santafe.shtml

PENNSYLVANIA

Pennsylvania Turnpike

- Democratic Caucus of the Pennsylvania House of Representatives, "For Whom the Road Tolls: Corporate Asset of Public Good, an Analysis of Financial and Strategic Alternatives for the Pennsylvania Turnpike," by John Foote, Gary J. Gray, and Patrick J. Cusatis, http://www.pahouse.com/docs/For%20Whom%20the%20Road%20Tolls%20Final%202-23-081_FINAL.pdf
- Reason Foundation, "Pennsylvania Turnpike Alternatives: A Review and Critique of the Democratic Caucus Study," Policy Brief No. 70, http://www.reason.org/pb70.pdf
- Commonwealth Foundation for Public Policy Alternatives and the Reason Foundation, "Pennsylvania Turnpike: Frequently Asked Questions and Answers," Policy Brief Vol. 20, No. 02, http://www.reason.org/faq_paturnpikelease.pdf

SOUTH CAROLINA

Southern Connector

- Innovative Finance for Surface Transportation (AASHTO), http://www.innovativefinance.org/projects/highways/grnville.asp

TEXAS

TransTexas Corridor 35 (TTC-35)

- FHWA Case Studies of Transportation Public-Private Partnerships in the United States, http://www.fhwa.dot.gov/ppp/us_ppp_case_studies_final_report_7-7-07.pdf

SH-130, Segments 5 and 6

- USC Keston Institute for Public Finance and Infrastructure Policy, "Protecting the Public Interest: The Role of Long-Term Concession Agreements for Providing Transportation Infrastructure," http://www.usc.edu/schools/sppd/keston/research/index.html

VIRGINIA

Dulles Greenway

- FHWA PPP web page, http://www.fhwa.dot.gov/ppp/dulles.htm
- Innovative Finance for Surface Transportation (AASHTO), http://www.innovativefinance.org/projects/highways/dulles.asp
- USC Keston Institute for Public Finance and Infrastructure Policy, "Protecting the Public Interest: The Role of Long-Term Concession Agreements for Providing Transportation Infrastructure," http://www.usc.edu/ schools/sppd/keston/research/index.html

Pocahontas Parkway

- National Council for Public-Private Partnerships, http://www.ncppp.org/cases/pocahontas.shtml
- Innovative Finance for Surface Transportation (AASHTO), http://www.innovativefinance.org/projects/highways/895.asp
- FHWA PPP web page, http://www.fhwa.dot.gov/ppp/pocahontas.htm
- USC Keston Institute for Public Finance and Infrastructure Policy, "Protecting the Public Interest: The Role of

Long-Term Concession Agreements for Providing Transportation Infrastructure," http://www.usc.edu/schools/sppd/keston/research/index.html
- Roads to the Future, Highway and Transportation History website, http://www.roadstothefuture.com/Route_895_Connector.html

I-495 Capital Beltway HOT Lanes

- Virginia HOT Lanes website, http://www.virginiahotlanes.com/beltway-project-info.asp

Abbreviations used without definitions in TRB publications:

AAAE	American Association of Airport Executives
AASHO	American Association of State Highway Officials
AASHTO	American Association of State Highway and Transportation Officials
ACI–NA	Airports Council International–North America
ACRP	Airport Cooperative Research Program
ADA	Americans with Disabilities Act
APTA	American Public Transportation Association
ASCE	American Society of Civil Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
ATA	Air Transport Association
ATA	American Trucking Associations
CTAA	Community Transportation Association of America
CTBSSP	Commercial Truck and Bus Safety Synthesis Program
DHS	Department of Homeland Security
DOE	Department of Energy
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration
FHWA	Federal Highway Administration
FMCSA	Federal Motor Carrier Safety Administration
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
IEEE	Institute of Electrical and Electronics Engineers
ISTEA	Intermodal Surface Transportation Efficiency Act of 1991
ITE	Institute of Transportation Engineers
NASA	National Aeronautics and Space Administration
NASAO	National Association of State Aviation Officials
NCFRP	National Cooperative Freight Research Program
NCHRP	National Cooperative Highway Research Program
NHTSA	National Highway Traffic Safety Administration
NTSB	National Transportation Safety Board
SAE	Society of Automotive Engineers
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (2005)
TCRP	Transit Cooperative Research Program
TEA-21	Transportation Equity Act for the 21st Century (1998)
TRB	Transportation Research Board
TSA	Transportation Security Administration
U.S.DOT	United States Department of Transportation