1

CHALLENGES AND OPPORTUNITIES
SERIES: PUBLIC PRIVATE
PARTNERSHIPS IN TRANSPORTATION DELIVERY

May 11, 2012
Table of Contents

INTRODUCTION .................................................................................................................................................. 3
1. LEGAL AND STATUTORY ISSUES ..................................................................................................................... 12
2. DECISIONMAKING PROCESSES AND TOOLS ............................................................................................... 24
3. FINANCIAL CONSIDERATIONS .......................................................................................................................... 46
4. PERFORMANCE MANAGEMENT ......................................................................................................................... 68
5. ORGANIZATIONAL CAPACITY .......................................................................................................................... 80
GLOSSARY ............................................................................................................................................................... 96
ACKNOWLEDGEMENTS ......................................................................................................................................... 100
BIBLIOGRAPHY ...................................................................................................................................................... 101
INTRODUCTION
**INTRODUCTION**

State and local governments provide more than two thirds of U.S. highway funding and are responsible for developing and delivering most of our transportation infrastructure. But many of these agencies do not have enough funds to maintain the existing transportation system, let alone expand it. In response, many agencies are looking to public private partnerships (P3s) to allow them to get more done with less. FHWA prepared this series of papers to enable transportation agencies to make informed decisions with respect to P3s by exploring the myths and realities of this complex—but often effective—project finance and delivery approach.

P3s are contractual agreements between a public agency and a private entity that allow for greater private sector participation in the delivery and financing of transportation projects than with traditional approaches. With P3s, private firms take on the risks of some or all of the financing, constructing, operating, and/or maintaining a transportation facility in exchange for a future revenue stream. This is a departure from the traditional model where private contractors construct projects based on a public design using public funding, after which public agencies take responsibility for long-term operations, maintenance, and rehabilitation. While the term public private partnerships be applied to a range of contract types, from design-build contracts to the lease of existing assets, these issue papers focus on P3s that involve private partners financing, constructing and long-term (10+ years) operation and maintenance of new highway capacity.

When all goes well, the agency gets a transportation asset built and taken care of for decades for a guaranteed price and the private firm has a chance to make money. However, P3s are complicated transactions. Successful P3s take special expertise, a stable political environment, and diligence.

This series of issue papers explores five key issues involved with taking a potential P3 from conception to long term oversight:

- **Legal and Statutory Issues;**
- **Decisionmaking Processes and Tools;**
- **Financial Considerations;**
- **Performance Management; and**
- **Organizational Capacity.**

The papers describe the policies, processes, and decisions required to evaluate, implement, and manage P3s in the United States in a way that serves the public interest. The intended audience is transportation agency staff with responsibility for carrying out P3 project development, as well as legislative staff and policy makers tasked with creating the policy environment conducive to successful P3s.

**USE OF P3S IN THE UNITED STATES TO DATE**

P3s are used extensively around the world to encourage private investment in public infrastructure, limit public debt, and deliver infrastructure more efficiently. In the United States, P3s, as defined in this paper, are relatively rare with only a dozen transactions completed and four projects open to traffic (Table I-1) over the last 20 years.¹ Projects range in size from $126 million for the SR 91 project in California to $2.6

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¹ Notably absent from this list are the Indiana Toll Road, Chicago Skyway, Northwest Parkway in Colorado, and PR-22 and PR-5 in Puerto Rico asset leases—P3s that netted hundreds of millions of dollars for their project sponsors. These projects do not meet the criteria for inclusion in this series of papers—in that they were “brownfield” transactions where public agencies monetized the value of an existing asset, but no new highway capacity was built.
billion for the I-635 managed lanes project in Texas. Some use tolling as a revenue source, while others do not. Sometimes the private partner takes on the risk of project revenues achieving expectations by accepting compensation based on tolls charged to users of the facility. Other times the public agency retains this risk by compensating the private partner through annual “availability payments” that are based on keeping the facility “available” at agreed-upon service levels rather than toll revenues or traffic levels.

P3 projects have been less prevalent in the United States than in many other countries in part due to historic public policies that have led to large Federal investments in highways and have discouraged the construction of toll roads. Policies in many States have also limited the ability of public agencies to apply tolls to roads or utilize private capital to finance public infrastructure. The lack of a legal framework to utilize tolls or private capital combined with the establishment of a large network of non-tolled public roads whose construction has been largely federally funded, has limited opportunities for private investment in transportation infrastructure. In addition, federal tax policy that allows for tax-exempt municipal bonds has tended to make private financing of public infrastructure less attractive than in countries without such policies. Since the 1980s, however, traditional sources of public funding for transportation infrastructure construction have not grown in proportion to inflation in highway maintenance and construction costs. This has put pressure on State and local governments to look for new sources of revenue and investment and more efficient ways to deliver infrastructure. In the late 1980’s both Virginia and California passed legislation enabling private investment in and operation and maintenance of publicly owned roads. Since that time, some 30 States and Puerto Rico have passed various forms of P3 enabling legislation.

A recent report by the Congressional Budget Office, “Using Public Private Partnerships to Carry Out Highway Projects,” estimates that less than one half of one percent of investment in transportation infrastructure was delivered through P3s over the past twenty years. However, P3s are becoming an increasingly common way of delivering new capacity, and many States are giving them serious consideration. Major projects are underway in Florida, Virginia, and Texas, totaling nearly $10 billion and many other States are passing P3 enabling legislation, establishing P3 offices or agencies, and exploring P3 options. As more public agencies consider P3s, so does the demand for clear and objective information on the opportunities and challenges that P3s present.
**Table I-1. P3 Projects* in the United States**

<table>
<thead>
<tr>
<th>Facility</th>
<th>Lease Term (years)</th>
<th>Total Cost ($ millions)</th>
<th>Public Investment Grant/TIFIA</th>
<th>Private Investment Equity/Debt</th>
<th>Year of Financial Close**</th>
<th>Compensatio n Model</th>
<th>Project Website</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presidio Parkway (CA)</td>
<td>33.5</td>
<td>$368</td>
<td>$0/$152‡</td>
<td>$46/$170‡</td>
<td>N/A</td>
<td>Availability Payment</td>
<td><a href="http://www.presidioparkway.org">www.presidioparkway.org</a></td>
<td>Pending final approval</td>
</tr>
<tr>
<td>IH 635 Managed Lanes (TX)</td>
<td>52</td>
<td>$2,615</td>
<td>$490/$850</td>
<td>$672/$606</td>
<td>2010</td>
<td>Toll revenue</td>
<td>newlbj.com</td>
<td>Under construction</td>
</tr>
<tr>
<td>Port of Miami Tunnel (FL)</td>
<td>35</td>
<td>$1,073</td>
<td>$100/$341</td>
<td>$80/$342</td>
<td>2009</td>
<td>Availability Payment</td>
<td><a href="http://www.portofmiamitunnel.com">www.portofmiamitunnel.com</a></td>
<td>Under construction</td>
</tr>
<tr>
<td>I-595 Managed Lanes (FL)</td>
<td>35</td>
<td>$1,834</td>
<td>$686/$603</td>
<td>$208/$781</td>
<td>2009</td>
<td>Availability Payment</td>
<td><a href="http://www.i-595.com">www.i-595.com</a></td>
<td>Under construction</td>
</tr>
<tr>
<td>North Tarrant Express (TX)</td>
<td>52</td>
<td>$2,047</td>
<td>$573/$650</td>
<td>$426/$398</td>
<td>2009</td>
<td>Toll revenue</td>
<td>northtarrantexpress.com</td>
<td>Under construction</td>
</tr>
<tr>
<td>SH 130 (Segments 5-6) (TX)</td>
<td>53</td>
<td>$1,328</td>
<td>$0/$430</td>
<td>$210/$686</td>
<td>2008</td>
<td>Toll revenue</td>
<td>mysh130.com</td>
<td>Under construction</td>
</tr>
<tr>
<td>South Bay Expressway (CA)</td>
<td>35</td>
<td>$774</td>
<td>$0/$165</td>
<td>$209/$400</td>
<td>2003</td>
<td>Toll revenue</td>
<td>southbayexpressway.com</td>
<td></td>
</tr>
<tr>
<td>Pocahontas Parkway (VA)</td>
<td>99</td>
<td>$655</td>
<td>$0</td>
<td>$0/655$</td>
<td>1997</td>
<td>Toll revenue</td>
<td><a href="http://www.pocahontas895.com">www.pocahontas895.com</a></td>
<td>Open. Concessionaire defaulted in 2011. The concession was acquired by San Diego Association of Governments for $341.5M.</td>
</tr>
<tr>
<td>State Route 91 (CA)</td>
<td>35</td>
<td>$184</td>
<td>$0</td>
<td>$31/$153</td>
<td>1993</td>
<td>Toll revenue</td>
<td><a href="http://www.dot.ca.gov/hq/paffairs/about/toll/rt91.htm">www.dot.ca.gov/hq/paffairs/about/toll/rt91.htm</a></td>
<td>Open. Acquired by Orange County Transportation Authority in 2003 for $207.5M.</td>
</tr>
</tbody>
</table>

* P3s are defined as those projects that involve a private partner financing, constructing, operating and maintaining new highway capacity.

**“Financial close” means the signing of financial commitments by lenders, project sponsors, and project funders to assemble the funds needed to construct the project.

† Tentative pending financial close. Includes only initial construction costs.

Sources: CBO, Public Works Financing, AASHTO Center for Excellence in Project Finance

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**Introduction**
Why Do P3s?

P3s can be controversial. They are complicated, and they shake up the status quo. There are misconceptions about how they work and who benefits. P3 critics question whether promised benefits will be realized. P3 advocates are not always eager to discuss the potential pitfalls of P3s.

Each P3 is different and presents unique challenges and opportunities. This paper series attempts to shed light on both the potential benefits and pitfalls of P3s -- dispelling some of the myths and identifying important practical issues for policymakers to think about when considering P3s.

Whatever you believe, P3s are not a panacea to the transportation funding shortage. P3s are not a source of free money. The private partner gets involved because they want to make a profit. If they contribute money to help get a project funded, they do so with the expectation of being repaid – with a healthy, market-appropriate profit. If that were not the case, they would invest their money elsewhere. When P3s are successful, the private sector is able to make a profit while creating benefits that the public sector could not otherwise have achieved. Ultimately, however, just like with publicly financed projects, the revenue to pay for the project will come from the public's pocket—via tolls, taxes, or other fees.

P3s are not “privatization.” While the private sector plays a larger role in delivering P3s, the public sector retains ownership and directs what the private partner can and cannot do through statute and contract. P3s do not sell public assets to corporations, domestic or foreign. The reason P3s have drawn the interest of policymakers is that they offer an opportunity for cash-strapped public agencies to accelerate the delivery of much needed projects and to do so more efficiently.

Done right, P3s can harness the desire of private firms to make money to create a valuable long-lived asset that will be maintained in good repair for decades.

How can profit-seeking private firms save the government money and deliver projects they may not be able to afford? By aligning incentives and accessing financial resources in ways that government just cannot do. P3s can create public benefits through more optimal allocation of risks, responsibilities and incentives between the public and the private sector and integrating design, construction, operations and maintenance phases of a project. Fixed price contracts to design, build, operate, and maintain an asset over a long period of time incentivize private partner to innovate, cut costs and deliver projects on-time to increase their profit margin. The private partner takes on the risk that long-term project costs may be greater than expected or that there will be unanticipated delays, but when those risks are well-managed, they are in a position to turn those risks into opportunities.

P3s can also help public agencies access financial resources that allow them to accelerate project delivery. P3s allow public agencies to leverage future revenue streams for up-front capital in the form of private investment. These arrangements do not eliminate the need for additional revenue. But they do overcome a significant barrier to project delivery: the lack of a financial strategy that can take advantage of future streams of revenue without requiring governments to take on additional financial risk.

Table I-2 provides a brief overview of the potential benefits for a public agency in undertaking a P3.
Table 1-2. Primary Public Benefits of P3s

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Projects open to traffic sooner</td>
<td>May provide public agencies with access to up-front capital needed to complete major projects that is not subject to annual budget constraints or public debt caps.</td>
</tr>
<tr>
<td>More reliable project delivery</td>
<td>Many P3s create incentives for the private sector to design and construct a project more efficiently. Several studies have found that P3 projects are more likely to be completed on-time and on-budget than projects using traditional procurement methods. P3s also provide greater cost certainty for public agencies.</td>
</tr>
<tr>
<td>Contractually-obligated life-cycle project delivery reduces costs</td>
<td>In P3s where the private sector is responsible for operating and maintaining the asset, the private sector has a strong incentive to minimize life cycle costs which often means building to higher standard initially and timely maintenance through the life of a project. Public agencies may be unable to do this simply because of fiscal challenges.</td>
</tr>
<tr>
<td>Transfer some risks to private partner</td>
<td>Risks such as construction and financial risks can be fully or partially transferred to the private sector in a cost effective way.</td>
</tr>
</tbody>
</table>

CHALLENGES

There are also pitfalls to P3s. P3 projects are a potentially effective way to transfer long-term project risks to the private sector, but they are not guaranteed to succeed. P3s do not eliminate the risks that come with financing, constructing and operating large infrastructure. There is always the potential that the public sector will still experience losses, financial and otherwise.

Furthermore, although construction and long term preservation can cost less, the transaction costs are usually much higher due to legal fees, financing costs, and procurement expenses.

Finally, an important element of P3s is the transfer of risk to the private partner, which the private partner builds into their price. As a result, the higher transaction costs of P3s mean that the use of P3s is generally limited to large and complex projects.

P3s are limited in that they are only appropriate for a small segment of potential transportation projects - typically large, complex projects with stable revenue streams. Only large and complex projects make the substantial transaction cost of a P3 worthwhile, so it is unlikely that P3s will have such broad application that they can solve the transportation funding gap that many States and local governments currently face.

Table I-3 summarizes some of the challenges of P3s for transportation agencies.
Introduction

<table>
<thead>
<tr>
<th>Challenge</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higher transaction costs</td>
<td>Delivering a P3 project involves the development and procurement of complex long-term contracts which takes special technical expertise and extensive due diligence to get right.</td>
</tr>
<tr>
<td>Higher finance costs</td>
<td>Because the costs of financing a P3 are typically greater than comparable projects financed with debt issued by public agencies, the private sector requires a competitive rate of return on capital investments that factors in the cost of risk, while public agencies can often issue tax-free bonds. But, it can be difficult to make a comparison because the public agency may be unwilling or unable to borrow for a project.</td>
</tr>
<tr>
<td>Difficulty estimating long-term value of transferred costs and risks</td>
<td>Given the complexity and uncertainty involved in the design, construction, financing, and long-term operations and maintenance of major transportation facilities, it can be difficult for the parties involved to estimate the appropriate value of an agreement.</td>
</tr>
</tbody>
</table>

**ALLOCATING RISKS**

Risks associated with P3s include construction, geotechnical, financial, demand/revenue, political, operations and maintenance cost, and liability. Most of these risks are inherent in traditionally procured projects as well; a P3 arrangement, however allows the public sector to transfer some of these risks to the private sector.

With a P3, a public agency can transfer, allocate or retain specific risk depending on how well it believes it can manage the risk weighed against the expected cost of the risk transfer. When an agency transfers all or part of a risk to the private partner, the private partner has to conduct the due-diligence necessary to price and mitigate them. Many uncertainties associated with a project have a potential upside, or reward, as well (see Table I-4.) When transferring certain risks, the public agency may forgo certain rewards if revenues are greater than expected or costs are lower than expected. Oftentimes, a P3 contract will stipulate that excess revenue be shared between the public and private partner; but this is factored into the private partner’s risk and reward calculation as well.

*Table I-4. Typical Risks and Rewards of P3s*
Introduction

<table>
<thead>
<tr>
<th>Risk Type</th>
<th>Downside/Potential Costs</th>
<th>Upside/Potential Reward</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial</td>
<td>Higher financing costs</td>
<td>Lower financing costs</td>
</tr>
<tr>
<td>Design</td>
<td>Design-related cost increases</td>
<td>Cost-saving design innovations</td>
</tr>
<tr>
<td>Construction</td>
<td>Construction costs overruns</td>
<td>Construction cost savings</td>
</tr>
<tr>
<td>O&amp;M</td>
<td>O&amp;M cost increases</td>
<td>O&amp;M cost efficiencies</td>
</tr>
<tr>
<td>Revenue</td>
<td>Revenue shortfalls</td>
<td>Higher revenues</td>
</tr>
<tr>
<td>Environmental</td>
<td>Unanticipated environmental costs</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>or delays</td>
<td></td>
</tr>
<tr>
<td>Force Majeure</td>
<td>Catastrophic failure</td>
<td>None</td>
</tr>
<tr>
<td>Performance</td>
<td>Performance lapses (Fines)</td>
<td>None</td>
</tr>
</tbody>
</table>

THE LIFE CYCLE OF A P3

These papers address P3 development issues from enabling legislation through identification, evaluation, negotiation, and management of P3 agreements. The aim is to help public agencies anticipate the challenges and develop the needed capabilities to be successful. While some of these capabilities can be acquired through contracts with private advisors, many will need to be developed in house. Agencies will need:

- A legal framework to enter into and enforce long term P3 agreements;
- Policies, processes, and tools to guide policy decisions;
- Technical skills to develop, evaluate, and negotiate agreements; and
- Skilled staff to manage and oversee projects over the long-term.

Developing projects as P3s will require organizational and cultural change. The public sector will need to gain a better understanding of private sector interests and perspectives and become comfortable transferring a greater degree of responsibility to the private sector—a cultural shift. Managing the organizational changes needed to develop an effective P3 program will take committed leadership at multiple levels that can champion P3 policies and projects.

Public and private sector organizations have different interests, values, cultures, competencies and processes. In effective P3 arrangements, these differences are leveraged to create value for both parties. However, these differences can also be barriers to negotiating agreements that create value. Differences between the two parties can create distrust that can undermine perceptions of value and raise perceptions of risk. Surmounting these differences and implementing an effective P3 program requires leadership commitment to developing new processes and capabilities on the part of public agencies.

Just as the public sector wants a private partner that can meet its commitments and create public value, the private sector wants a public sector client it can trust to see a deal through. Public agencies will need sufficient commercial knowledge and experience to understand the perspectives of the private sector, develop attractive P3s, and select and manage qualified
advisors and concessionaires. Significant differences in the way the public and the private sector perceive project development are summarized in Table I-5.

Table I-5. Public and Private Sector Cultural Perspectives

<table>
<thead>
<tr>
<th>Public Sector</th>
<th>Private Sector</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Projects</strong></td>
<td>Deals - Sees the process in terms of negotiated transactions.</td>
</tr>
<tr>
<td><strong>Stakeholders</strong></td>
<td>Stockholders – Seeks to generate dividends for its stakeholders.</td>
</tr>
<tr>
<td><strong>Process</strong></td>
<td>Outcome – Demands greater flexibility and expediency to arrive at final objective.</td>
</tr>
<tr>
<td><strong>Policy Goals</strong></td>
<td>Profits – Interested in a competitive return on investment</td>
</tr>
<tr>
<td><strong>Transparency</strong></td>
<td>Confidentiality – Protects intellectual property and the competitive advantages derived from innovations.</td>
</tr>
</tbody>
</table>

OVERVIEW OF THE CHAPTERS

Together, these chapters address policymaker concerns and identify research questions that can support public decisionmaking:

1. **Legal and Statutory Issues** describes how State legislation can be structured to provide public agencies with the legal authority to reach P3 agreements while ensuring that there are safeguards in place to protect the public.

2. **Decisionmaking Processes and Tools** discusses the ways in which public agencies structure decisionmaking processes to effectively evaluate and negotiate P3 agreements.

3. **Financial Considerations** explains how P3s can be financially structured to leverage the interests and capabilities of private financial investors.

4. **Performance Management** describes how public agencies can design and manage contracts that enable them to ensure private partners meet their obligations and P3 projects help achieve public goals.

5. **Organizational Capacity** discusses how public agencies can develop the capabilities needed to evaluate, negotiate and implement P3s in the ways discussed in the previous papers.
1. LEGAL AND STATUTORY ISSUES

KEY FINDINGS

• A growing number of States have or are considering P3 enabling legislation, but enabling
testification differs significantly from State to State. It is up to each State to determine the
appropriate approach to legislation, starting with an understanding of the goals they are
trying to achieve.

• Enabling legislation can determine which agencies have the authority to enter P3s, the types
of P3 agreements those agencies can enter into, the procurement methods used to arrive at P3
agreements, and the types of funding and financing arrangements that can be applied to those
agreements.

• While some issues can only be addressed through statutes, it can be difficult to determine if
some issues, such as how a P3 project is funded or procured, should be addressed through
statute as opposed to through policy or contract provisions.

• There are tradeoffs associated with some legal decisions, particularly where public and
private concerns can conflict, such as the degree of transparency and competition to require
in the procurement process and the level of public and legislative input to allow in the
decisionmaking process.
1. LEGAL AND STATUTORY ISSUES

INTRODUCTION

Before implementing a public-private partnership (P3), States need to create a legal framework. P3 enabling legislation varies widely among States, but the basic goal is the same: to allow public entities to take advantage of the benefits of P3 project delivery while protecting the public interest. Some States provide broad authority for public entities to enter into and manage P3 agreements, while others strictly limit P3s to specific projects or project types and define the type of provisions that must or must not be included.

It is up to each State to determine the appropriate approach to legislation, starting with an understanding of the goals they are trying to achieve. Enabling legislation varies from State to State because policymakers consider the needs and goals of their constituencies and the unique political and institutional environment of their State. Policymakers often include language in legislation that reassures specific constituencies – such as tax payers, road users, or road builders – that their interests are protected. There is a fine line, however, between prescribing processes or provisions intended to protect the public interest, and those that create inefficiencies or deter private sector interest. Each State’s goals can guide the decisions on legal issues.

The FHWA Office of Innovative Program Delivery’s website provides examples of the 23 U.S. States and one U.S. territory that have enacted statues that enable the use of various P3 approaches (see Figure 1-1).

Figure 1-1. States That Currently Have P3 Enabling Legislation

From www.fhwa.dot.gov/ipd/p3/state_legislation/
This chapter discusses how legal issues may be addressed through enabling legislation, or other statutes. State P3 legislation provides a legal framework that identifies permissible parties, agreements, and procurement processes. Once a statutory framework is established, other issues may be determined by policies set by the public sector agency that is given power under the enabling legislation. Those that are not addressed with legislation or programmatic policy are handled in the specific project contracts, either as determined in the procurement process or via negotiation.

There is no one correct way to address legal issues. The legislature can decide whether to treat an issue as statutory or leave it to the discretion of the authorized project sponsor to address through programmatic policy or through project-specific agreements. The legislature may decide, for example, to set a maximum limit on concession term lengths, allowing the public agency to establish its own policies for determining term length, or leaving specific concession terms to contract negotiations for each project. Table 1-1 summarizes the kinds of legal issues encountered in P3s and the way these issues are often handled—through statute, policy, or agreement.

This chapter describes the factors State policy makers consider in creating a legal framework for P3s that may be used to authorize or restrict who may enter into P3 agreements, how partners and proposals may be selected, and what types of agreements may be entered into.

Table 1-1. Legal Issues Commonly Addressed Through Statute, Policy or Contract

<table>
<thead>
<tr>
<th>Description</th>
<th>Primarily Statutory Issues</th>
<th>Issues typically addressed through Policy and/or Statute</th>
<th>Issues typically addressed through Contract and/or Statute</th>
</tr>
</thead>
<tbody>
<tr>
<td>These issues are typically addressed through State legislation.</td>
<td>• Types of P3 agreements allowed</td>
<td>• Types of financing/subsidies allowed</td>
<td>• Length of contract term</td>
</tr>
<tr>
<td></td>
<td>• Authority to enter P3 agreements</td>
<td>• Public uses of proceeds</td>
<td>• Toll rates and toll rate setting mechanisms</td>
</tr>
<tr>
<td></td>
<td>• Authority to approve or review P3 agreements</td>
<td>• Ability to hire external advisors</td>
<td>• Allocation of risks</td>
</tr>
<tr>
<td></td>
<td>• Types of facilities allowed.</td>
<td>• Types of procurement allowed</td>
<td>• Revenue sharing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Whether unsolicited proposals are allowed</td>
<td>• Dispute resolution</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Whether stipends are allowed</td>
<td>• Buy back provisions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Whether administrative fees are allowed</td>
<td>• Refinancing provisions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Whether to require performance security</td>
<td>• Ongoing performance audits or reports</td>
</tr>
</tbody>
</table>

1. Legal and Statutory Issues
1. Legal and Statutory Issues

State legislation typically addresses several key issues that affect the power and scope of an agency’s P3 program. These issues are summarized in Table 1-2.

**Table 1-2. Potential Statutory Provisions Impacting P3 Program Development**

<table>
<thead>
<tr>
<th>Provision Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authority to Enter into P3s</td>
<td>Defines which agencies have the authority to enter into P3s</td>
</tr>
<tr>
<td>Types of P3 Projects Allowed</td>
<td>Restricts the types of projects allowed to specified modes, geographic areas, projects, etc.</td>
</tr>
<tr>
<td>Types of Revenue and Finance Agreements Allowed</td>
<td>Defines the type of revenues and finance instruments that can be applied to projects and the ways project revenues can be generated and used.</td>
</tr>
<tr>
<td>Use of Advisors</td>
<td>Provides authority to use private advisors.</td>
</tr>
<tr>
<td>Other Legal Restrictions</td>
<td>Overrides certain existing legal restrictions, such as those governing procurement.</td>
</tr>
</tbody>
</table>

**Authority to Enter P3 Agreements**

In the United States, State law establishes the primary legal framework for P3s. In general, State law determines what kinds of P3s may be enabled, which levels of government will be authorized to do them, and how the process will be implemented. Federal laws and regulations may affect the implementation of P3s for projects constructed with Federal-aid funds (e.g., the process for environmental analysis, permits that are required, available tolling authority, etc.) but they do not provide authority for a State to enter into a P3, nor determine whether or how P3s will be implemented. Local laws may determine how a P3 will be implemented on the local level, but generally a State will have to specifically provide authority to a local government to engage in most P3s.

P3 enabling legislation generally defines which entities have the authority to enter into P3 agreements. Authority may be given broadly to a range of State, regional and local public agencies or limited to a specific agency or department. Sometimes, P3 authority is given to a special public body or commission formed by the legislation, with provisions for instances where jurisdictions overlap, if applicable. For example:

- Florida allows any expressway authority, transportation authority, bridge authority, or toll authority to enter into a P3 agreement for facilities that increase transportation capacity within their jurisdiction.
- California law authorizes the State DOT and regional transportation agencies to enter into an unlimited number and various forms of P3 agreements for “transportation projects,” which is defined in the P3 statute.
- Puerto Rico has designated a new public entity, the Public-Private Partnerships Authority, with broad authority to identify, evaluate and implement P3 projects.
1. Legal and Statutory Issues

Allowable P3 Projects

Enabling legislation typically defines the term “public-private partnership” and that definition may limit the types of P3s that are allowed. P3 legislation may allow for many types of projects, or be more limited in scope. Depending on policy and program objectives, States may choose to restrict the allowable project types in a variety of ways, such as:

- Type of facility (e.g., highway infrastructure only)
- Geographic area (e.g., within a specified county)
- Projects that increase highway capacity (as opposed to leasing of existing facilities)
- Projects specified in legislation
- Projects that impose new tolls on existing facilities.

Several States have strictly limited P3s to specific, named projects. This project-by-project approach may help to assure the public (and interest groups) that the State will take an incremental approach to P3s; however, the lack of broader authority may raise government costs. Limited allowable P3 projects may also reduce interest of concessionaires by signaling a lack of long-term political and institutional commitment to seeing P3 procurements through to agreement.

Allowable Revenue Sources and Financial Instruments

Enabling legislation may define the allowable and prohibited revenue sources, financial instruments, and payment structures for P3s. Some P3 statutes, for example, include broad language authorizing the DOT or other sponsoring agency to exercise “any powers it possesses” under other applicable law in order to facilitate the delivery of P3 projects. Without express treatment in statute, such language may be construed to permit agencies responsible for the expenditure of transportation revenues to devote such revenues to the delivery of P3 projects.

Revenue Sources. Revenue sources may include taxes, tolls, or fees, as well as tax increments, special assessments, and impact fees. Legislation may prohibit the use of tolls on a facility once its debt has been repaid or it may limit the way revenues generated by the project may be applied. For example, States have used differing approaches to ensure that P3 legislation does not create ambiguities or conflict with other State laws governing the permissible uses of funds. Some State enabling legislation specifically requires that revenues generated from P3 agreements be reinvested in the State’s transportation system or in the project facility or corridor. Other States allow public revenues from P3 agreements to be directed to the general fund or to pay off State bonds.

Enabling legislation commonly includes provisions to require sharing of excess revenues. Revenue sharing provisions require the private sector to split revenues above a certain rate of return with the public sector. Revenue sharing agreements guard against the private sector reaping “windfall” profits and allow the public to share the benefits from higher than expected gross revenues.

Revenue sources are discussed in more detail in the Chapter 3, Financial Considerations.

Financial Instruments. Financial instruments used in P3s may include revenue bonds, TIFIA loans, and other forms of public financing. Enabling legislation may explicitly allow the use of any combination of Federal, State, or local tools to finance projects. If such language is not included in
enabling legislation, it may create uncertainty as to whether public sponsors can put together the kind of financing package typically required to fund a P3 project.

Issues related to financial instruments are discussed further in Chapter 3, Financial Considerations.

Payment Structures. Authority to compensate a private partner with revenues other than tolls or user fees, such as availability payments or shadow tolls, may be expressed or implied. Enabling legislation may permit agreements that pay the private partner with availability payments funded by project revenues such as tolls or user fees—whether collected by the concessionaire or the government—or paid from other sources of public funds, such as gas or sales taxes.

Use of Technical, Legal and Financial Advisors

P3 programs often rely on external legal, financial, and technical advisors to assist in the assessment, selection, and negotiation of P3 agreements. Enabling legislation often specifically authorizes and provides funding for public sponsors to contract with external advisors. The use of external advisors raises important legal concerns over conflicts of interest. Since the market for P3 advisors is highly specialized, the number of potential contracting parties is small, and the risk of conflicts of interest is higher than in traditional procurement models. However, existing State statutes prohibiting State workers from benefiting from conflict of interest and established public agency policies on hiring are usually adequate. P3 programs typically deal with this issue through defined policies and guidelines that are established before any specific procurement, rather than in legislation.

Other Applicable State Laws and Constitutional Provisions

P3 enabling legislation is rarely the sole body of law governing P3 agreements. State constitutional law, tax laws, procurement laws, labor laws, and other laws will apply. Generally, State legislatures do not overturn long-established principles of law by enacting P3 enabling legislation. To avoid conflicts, P3 statutes can be crafted in a way that achieves consistency with other bodies of law that may apply.

P3 enabling legislation may exempt P3s from certain State laws. For example, enabling legislation frequently exempts P3 transportation facilities from property or ad valorem taxes. If concessionaires have to pay property or sales taxes, it would raise their costs, which would be passed along to the public in their bids. However, this extra cost would be offset by the fact that the tax is going to a government agency, although it may not be the same agency involved in the P3 transaction. Enabling legislation may also allow for different procurement processes than are traditionally allowed under State law, such as the selection of bids based on “best value.”

Constitutional provisions are more difficult to amend than statutes and may limit the ability of States to develop certain projects or include certain terms in contracts. For example, constitutional rules may limit the ability of a public sponsor to make guarantees to private partners concerning future payments that are subject to the appropriations process. This may limit a State’s ability to use an availability payments model.
While conventional procurements often require uniform bid packages, preclude the consideration of nonmonetary values, or forbid negotiation of a final contract limit, P3 contracting opens the way for these and other features. Table 1-3 provides an overview of statutory provisions that may be included in enabling legislation which permit nonconventional procurement processes.

**Table 1-3. Procurement and Statutory Provisions**

<table>
<thead>
<tr>
<th>Provision Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permissible types of procurement methods</td>
<td>• May allow for the use of less conventional procurement processes or exempt P3s from existing procurement statutes.</td>
</tr>
<tr>
<td>Allowable types of payments and fees</td>
<td>• May allow for the use of stipends or administrative fees to encourage competition or offset transaction costs.</td>
</tr>
<tr>
<td>Proposal evaluation criteria</td>
<td>• May allow for selection of proposals based on “best value” and broadly define the criteria by which proposals may be judged.</td>
</tr>
<tr>
<td>Confidentiality and transparency</td>
<td>• May set restrictions on how intellectual property disclosed in proposals is treated.</td>
</tr>
</tbody>
</table>

**Permissible Types of Procurement Methods**

Since P3 agreements are generally larger, more complex, and for longer terms than traditional contracts, public agencies often use less conventional procurement processes. For example, because of the complexity of P3s and the need for the private partner to arrange financing, negotiations of final contract terms are often necessary. P3 enabling legislation can expressly permit specific procurement methods that may facilitate the selection of P3 proposals including:

- Calls for projects,
- Unsolicited proposals,
- Competitive Request for Qualifications (RFQs) and Requests for Proposal (RFPs),
- Negotiations with the winning bidder, and
- Best and final offers.

**Unsolicited Proposals.** Some States allow unsolicited proposals for potential P3 projects. Unsolicited proposals allow private entities to propose solutions to transportation problems that the public sector might not have otherwise considered. However, unsolicited proposals can be perceived as competing with resources for projects that have gone through the usual project selection process in regional and State transportation plans. Furthermore, some observers have expressed concerns that the private sector may “cherry pick” those projects that generate the most financial return rather than address a State’s more pressing mobility and connectivity needs.

In States that allow unsolicited proposals, enabling legislation typically prescribes that such proposals be subject to a competitive procurement process. For example, a State may require at least one competing proposal before an agreement can be awarded in response to an unsolicited proposal. To ensure States are reviewing only feasible proposals, States may require application fees or security deposits, or screen projects eligible for unsolicited proposals in advance.
Allowable Types of Payments and Fees

Some States require bidders to pay fees to offset the costs of proposal review or provide performance security, while other States provide stipends to bidders.

Application Fees. If unsolicited proposals are allowed, application fees can be a useful tool to help defray the costs incurred by public sponsors in reviewing the unsolicited proposals.

Performance Security. State law may require a contract performance security, which is a financial guarantee made by a contractor to a State that the contractor will faithfully perform the contract. Some observers believe that requiring a performance security for P3 agreements may present a prohibitive and unnecessary requirement because concessionaires typically put their own equity at risk, which should be enough of an incentive for them to perform. In addition, lenders will apply due diligence and impose their own insurance requirements on the contractor to limit their exposure to financial risk.

Stipends. Due to the complexity of most P3 projects – involving design, finance, construction, and long-term operation – it can cost bidders millions of dollars to develop a bid. As a result, some States allow stipends for qualified bidders to increase competition by encouraging more bidders. Stipends can also be used to compensate losing bidders for specific concepts proposed in their bid that may be incorporated into the final design of the project. However, some observers believe that the use of stipends may provide an unnecessary public subsidy to a private firm for providing little more than a proposal.

Proposal Evaluation Criteria

In some States, legislation may explicitly describe criteria by which proposals are evaluated. Generally, these criteria are further elaborated in P3 program policy and guidelines. Other States may direct public sponsors to develop evaluation criteria and that the criteria be provided in the RFP or RFQ. For example, Texas statute provides, “the department shall evaluate each proposal based on the criteria described in the request.” Prescribing detailed evaluation criteria in legislation may limit the ability of public sponsors to solicit and select innovative proposals. For example, a public agency may wish to adjust its criteria to ensure the best match for a particular project by acquiring a partner with specific expertise to overcome a difficult technical challenge.

P3 statutes may permit the selection of a proposal on the basis of best value rather than low bid. Value considerations may include: the experience and qualifications of the bidder and key staff; the quality of the proposed technical solutions; the quality of the operations and maintenance plan; and the overall lifecycle costs of the bid.

Confidentiality and Transparency

While public disclosure of proposal details can help improve the transparency and public legitimacy of the bidding process, full transparency may deter private sector bids. Legislation may establish a process whereby private bidders identify confidential and proprietary information that should be excluded from disclosure.

AGREEMENT PROVISIONS

State enabling legislation may define the permissible or mandatory provisions in a P3 agreement. Enabling legislation may also prescribe specific parameters for contract provisions such as the
Challenges and Opportunities Series: Public Private Partnerships in Transportation Delivery
DRAFT May 11, 2012

maximum length of contract terms, mechanisms for raising tolls, and the use of funds. A summary of the ways that enabling legislation may address the agreement provisions is provided in Table 1-4, with details provided below.

**Table 1-4. Potential Statutory Restrictions on Agreement Provisions**

<table>
<thead>
<tr>
<th>Provision Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk Allocation</td>
<td>• Require defined process for assessing and allocating risk.</td>
</tr>
<tr>
<td>Payment/Revenue</td>
<td>• Limit toll rate increases.</td>
</tr>
<tr>
<td></td>
<td>• Designate a public agency to determine/approve rate increases.</td>
</tr>
<tr>
<td></td>
<td>• Require revenue sharing provisions.</td>
</tr>
<tr>
<td>Term length</td>
<td>• Limit contract term length to specified number of years.</td>
</tr>
<tr>
<td>Non-compete clauses</td>
<td>• Forbid broad non-compete clauses.</td>
</tr>
<tr>
<td>Review of final agreement</td>
<td>• Require legislative review/approval of final P3 agreements.</td>
</tr>
<tr>
<td></td>
<td>• Designate committee or commission responsible for final approval.</td>
</tr>
</tbody>
</table>

**Risk Allocation**

The primary value proposition of P3 agreements is that they allow for the transfer of risks to the party that is most capable of handling those risks. Enabling legislation may define a process for assessing and allocating risks. Public sponsors may be prohibited from transferring specific risks, such as archaeological or environmental risks, to the private sector.

**Payment/Revenue Provisions**

The ability of the concessionaire to charge tolls or fees may be defined in the State enabling legislation. More restrictive legislation may stipulate where tolls may be applied, how tolls are set, and how toll revenues may be used. Broader legislation allows the public sponsor to negotiate tolling provisions with the private sponsor. Enabling legislation may designate a public agency to set toll rates or include restrictions on private sector profit by capping the rate return or requiring revenue sharing above a specified rate or return.

P3 agreements that authorize the private partner to impose tolls and set toll rates will typically detail when and by how much tolls can be modified. The authority to impose tolls or user fees may be subject to certain statutory or contractual conditions, including approval by State, local, and Federal agencies. State legislation may require, for example, that toll or user fee revenue be applied to the payment of construction and financing costs, including a reasonable return on investment.

Enabling legislation may specifically need to permit the use of availability payments where the public sponsor provides regular payments to the private partner on the condition that the facility meets defined performance specifications.

**Length of Contract Terms**

State legislation may stipulate the maximum length of P3 agreements. Some State legislators have raised concerns about ceding public control over an asset to the private sector for decades and...
have sought to address these concerns through legislation. Private partners may seek longer contract terms in order to gain long-term tax advantages, which may translate into benefits for the public sector in terms of stronger bids. For example, the Chicago Skyway concession is for a 99-year term. Longer-term agreements, however, may be more difficult to accurately value, and, due to discount rates, the benefits in the more distant years may have marginal value. In Florida, for example, statute limits P3s to terms of up to 50 years. Beyond 50 years requires written justification and explicit approval of the secretary of the department; beyond 75 years requires legislative approval.

**Non-Compete Clauses**

A non-compete clause in a contract limits the ability of the public sponsor to construct or enhance competing facilities that would compete for travel demand with a P3 that has tolls. Non-compete clauses can take a variety of forms. In California, the 91 Express Lanes agreement contained a non-compete clause that precluded the State from building unplanned facilities along thirty miles of the Riverside Freeway. When Caltrans, the California DOT, sought to expand a facility due to congestion, the concessionaire filed a lawsuit to stop the expansion. Before the case was resolved, the Orange County Transportation Authority bought the toll road so that the desired improvements could go ahead.

Several States have prohibited non-compete clauses in P3 agreements. For example, Texas statute States that an agreement “may not contain a provision that limits or prohibits the construction, reconstruction, expansion, rehabilitation, operation or maintenance of a highway or other transportation project.” In other cases, non-compete provisions may take the form of compensation clauses, which require the public partner to compensate the private partner for revenue lost due to the development of unplanned competing facilities. Compensation clauses can be made to cut both ways, by counting induced as well as lost traffic on a concessionaire operated facility. For example, in the SH-121 comprehensive development agreement there is an unplanned revenue clause that requires the developer to prove that the construction of competing facilities has had a cumulative negative effect on project revenues in order to receive compensation. This clause allows TxDOT to offset any claims of lost revenues by demonstrating how other TxDOT actions have served to increase revenue on the SH-121.

**Authority to Review and/or Approve Final P3 Agreements**

Legislation may designate entities—other than the public sponsor—with the power to review, approve, or veto P3 agreements. Such entities may include the Governor, the legislative body, a State agency, or a special commission. Delaware, for example, requires that the relevant Metropolitan Planning Organization approve the project. These provisions are intended to protect the public interest; however, if approval occurs late in the project development process, they can result in significantly increased costs for both public and private partners due to the uncertainty generated by the provision. This can make it less likely that private entities are willing to incur proposal development costs.

Some States address issues of legislative review or local approval by requiring approval prior to the issuance of a RFP. Florida’s enabling legislation, for example, requires "legislative approval as
1. Legal and Statutory Issues

In this section, the text discusses legal and statutory issues related to public private partnerships in transportation delivery. It highlights the importance of ensuring that arrangements are in the public interest and provides examples of how legislative bodies in different states may play an oversight role. The text also mentions the role of legislative bodies in enabling legislation, such as in California and Georgia, and the involvement of other State agencies in the P3 project development and procurement process.

Dispute Resolution, Renegotiation, Hand back and Other Changes

P3 agreements often last for decades, so there is a need for provisions that manage change in the public-private relationship over time. Enabling legislation may explicitly allow for alternative dispute resolution mechanisms, renegotiation, refinancing or facility buy back. Legislation may also include language explicitly forbidding private ownership arrangements and requiring agreement provisions that deal with handback of the facility to the public sponsor at the end of the agreement’s terms.

SUMMARY

State legislation enabling the use of public private partnerships can take a variety of forms, but it generally addresses a core set of issues. It is up to each State to determine the appropriate approach to legislation, starting with an understanding of the goals they are trying to achieve. A clear sense of purpose will help to guide the decisions States make on specific issues. Furthermore, as States gain experience in public private partnerships, there is a growing body of literature, cases, and models that can serve as a reference in developing appropriate legislation. Drawing from these resources, the Federal Highway Administration and the law firm Nossaman LLP have both created model legislation to serve as guide. In addition, the National Conference

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of State Legislatures has developed a “Public-Private Partnerships Toolkit” that lays out a set of recommended principles for legislators to follow in making policy decisions.³

**RESEARCH NEEDS**

Since relatively few P3s have been implemented in the U.S., more research is needed to determine how well enabling legislation has provided a framework for protecting the public interest while allowing States to benefit from P3 arrangements. Possible research questions include:

- What lessons have been learned from legislative provisions for program development, such as allowable projects, revenue sources, and financial interests?
- What lessons have been learned from legislative provisions for procurement?
- How have legislative provisions helped or hindered development of P3 project agreements that protect the public interest? For example, have restrictions on contract length diminished private interest, or bolstered public support, or both?
- How have legislative provisions affected States’ ability to attract private investment? What provisions have helped to protect industry interest in States, and what provisions have reduced industry interest?
- What legislative provisions have successfully protected the public interest, avoiding financial loss and ensuring that the public sector shares in financial returns?

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1. Legal and Statutory Issues
2. DECISIONMAKING PROCESSES AND TOOLS

KEY FINDINGS

- States vary in their approach to identifying and evaluating potential P3 projects. Some States use a programmatic approach, where an agency screens a set of projects for feasibility as a P3. Other States evaluate P3s on a project by project basis.

- State use different tools to evaluate potential P3 projects, such as Value for Money analysis, which allows public agencies to compare the risk adjusted net present value of different procurement options.

- One of the primary ways P3s generate value is by optimally allocating risks, but project risks are not always well understood and this can hamper risk allocation decisions.

- P3 agreements can vary significantly from project to project depending on the goals of the project sponsor, the nature of the facility, the legal and political environment, and the capabilities and interests of potential private partners. Significant differences can include the type of compensation model used, the length of the agreement, and the allocation of specific risks and responsibilities.

- Because of the size, complexity, and length of term of P3 agreements, special procurement processes are needed to ensure there is sufficient and qualified competition.
2. DECISIONMAKING PROCESSES AND TOOLS

INTRODUCTION
Public agencies have to make important and complicated decisions to develop effective P3 programs and projects—often under intense public scrutiny. P3s tend to be large and complex projects that present unique challenges to decisionmakers. As a result, policymakers must make difficult decisions with limited information and few points of reference.

Once a public sector agency has decided to enter into a P3 program or project, as enabled by State legislation, policymakers must consider:

1) Whether to set up a P3 program or develop P3 projects on a project-by-project basis;
2) Establish a criteria and process for the selection of projects for evaluation as a potential P3;
3) How to structure a commercially valuable P3 agreement that achieves policy goals, optimally allocates project risks, and brings value to the investment;
4) How to conduct a fair and competitive procurement to select the best partner and negotiate a final agreement that is transparent and protects the public interest while addressing the private partner’s concerns.

While the types of decisions and the tools and processes used to make these decisions are similar for all States, approaches to P3s and types of projects vary significantly by State. Many States evaluate P3s on a project-by-project basis. These States sometimes rely on the private sector to help identify opportunities to develop projects as P3s or developing a project as a P3 once other approaches to financing and delivering a project prove insufficient. However, some States are now starting to apply a more programmatic approach that identifies P3 opportunities early in the planning process. States have used different methods to evaluate the value of the P3 approach. Some States have allowed public toll authorities to compete with private bidders. Other States have developed value for money analyses that use financial models and risk assessments to compare different models of project delivery.

While the structures of individual P3 agreements have evolved as the P3 market has developed over the past 25 years, they vary greatly depending on State’s internal financial and legal structure, appetite for risk, market conditions, and other factors. States have employed different lengths of term, methods of compensation, risk allocation, and performance management processes in P3 agreements to create public value and incentivize performance. There are also variations in how States have procured P3 projects to select the best partner and negotiate the best final agreement. These differences provide a rich pool of experience and lessons learned on which policymakers can draw when considering future P3 projects.

The first section of this chapter discusses decisions associated with initiating a P3 project or program. The second section discusses methods public agencies can use to identify potential P3 projects. The final two sections discuss the issues that policymakers face in developing P3 project agreements and selecting an appropriate private partner.
Challenges and Opportunities Series: Public Private Partnerships in Transportation Delivery
DRAFT May 11, 2012

2. Decisionmaking Processes and Tools

**AUTHORIZING LEGISLATION: THE FRAMEWORK**

States generally require enabling legislation to begin using a P3 procurement model. P3 authorizing legislation sets out the legislative mandate and legal framework for P3s (see Chapter 1). The P3 legal framework may preclude or constrain potential agency decisions regarding P3s, although executive agencies may benefit by coordinating with the legislature on the initial legal framework to allow flexibility in the procurement model due to the unique nature of the proposed projects. Decisions that are typically addressed in the legal framework include:

- The agencies that have the authority to enter into P3s;
- The types of eligible projects; and
- The types of agreements that are allowed.

Decisions regarding the identification, development, and implementation of specific P3 projects are often left to the implementing agencies.

Table 2-1 describes how three States have set different parameters on public agency’s authority to enter into P3s through legislation.

**Table 2-1. Statutory Decisionmaking Frameworks**

<table>
<thead>
<tr>
<th>Entities with authority to enter into P3s</th>
<th>Virginia</th>
<th>Texas</th>
<th>Florida</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commonwealth of Virginia, local governments, and specified transportation agencies and authorities.</td>
<td>Texas DOT, the Texas Turnpike Authority, Regional Mobility Authorities, and Regional Tollway Authorities.</td>
<td>Any expressway authority, transportation authority, bridge authority, or toll authority.</td>
<td></td>
</tr>
<tr>
<td>Eligible P3 projects</td>
<td>Any road, bridge, tunnel, overpass, ferry, airport, mass transit facility, vehicle parking facility, port facility, or similar commercial facility used for the transportation of persons or goods.</td>
<td>Twelve highway projects specifically named in legislation.</td>
<td>Projects programmed in the DOT’s adopted 5-year work program or projects in the 10-year Strategic Intermodal Plan that increase transportation capacity and are greater than $500 million.</td>
</tr>
<tr>
<td>Allowable Agreements</td>
<td>Any lease, license, franchise, easement, or other binding agreement transferring rights for the use or control of a transportation facility by a responsible public entity to a private entity for a definite term during which the private entity will manage the facility in return for the right to receive all or a portion of</td>
<td>Agreements that provide for the financing, design, acquisition, construction, maintenance, or operation of a designated transportation facility.</td>
<td>Agreements that allow the lease of existing facilities as well as financing, design, construction, operation, and maintenance of new or expanded tolled facilities using either annual availability payments or toll-based payments.</td>
</tr>
</tbody>
</table>
2. Decisionmaking Processes and Tools

ESTABLISHING A P3 PROGRAM

Once P3 authorizing legislation is in place, public agencies can take different approaches to identifying and evaluating potential P3 projects, conducting procurements, and managing contracts. A public agency’s approach to P3s may depend on the enabling legislation in the State, an agency’s commitment to and expectations for P3 projects, and an agency’s existing traditional processes for developing and delivering projects, the use of internal and external resources, among other things. An important initial decision is whether to pursue P3 opportunities on a project-by-project basis or to establish a P3 program.

Some public agencies have pursued P3 projects on a project-by-project basis as opportunities arise. For example, Florida and Texas have each been very active in using P3 procurements but do not have established centralized P3 programs. Project champions in Division Offices (Florida) or regional mobility authorities (Texas) initiate P3 projects in these States, with some oversight and technical support from the State DOT. A project-by-project approach to P3s can allow a public agency to be responsive to local demands and to allocate resources as needed to support project opportunities as they arise. In some cases, the approach to P3s may evolve. Virginia DOT (VDOT), for example, started developing P3 projects on a case-by-case basis. In 2010, Virginia’s governor created the Office of Transportation Public-Private Partnerships, which is now responsible for developing and implementing a multi-modal Statewide program for P3 project delivery.

If a steady stream of projects is expected, a permanent P3 program can improve identification of P3 opportunities, reduce transaction costs, and educate stakeholders. An established P3 program could potentially instill private sector confidence. If the private sector sees public agencies investing in a P3 program, then potential bidders may have added confidence that the agency is serious about carrying P3s from inception to deal-close and beyond. This can improve the number, quality and competitiveness of interested bidders on a proposed project. In addition, a permanent P3 program or agency may allow staff to accumulate institutional knowledge and to proactively identify future opportunities where P3s may be beneficial. However, setting up a program office in an existing or new agency is a significant undertaking that may not be worthwhile unless there is an expectation of a significant pipeline of P3 deals to evaluate and manage.

States may establish P3 programs within an existing public agency, such as a DOT, or, through legislation, in a new independent agency or authority. Institutionalized P3 programs establish policies and processes for identifying, analyzing, and implementing projects and dedicate resources and staff to carry out those processes. States and territories with institutionalized P3 programs include Virginia, Georgia, Arizona, and Puerto Rico.

In some countries with well-established P3 programs, such as Canada, Australia, and the United Kingdom (UK), specialized P3 agencies have broad authority over a wide range of social infrastructure including highways, schools, water and sewage treatment facilities, and energy plants. Having broad authority to implement P3s across an array of social infrastructure expands the set of potential P3 projects and may lead to lower transaction costs and faster procurement processes. P3 programs in these countries are often located within a treasury agency or within an agency exclusively dedicated to the evaluation and implementation of P3 projects. In Canada and
Challenges and Opportunities Series: Public Private Partnerships in Transportation Delivery
DRAFT May 11, 2012

In the UK, some P3 agencies are set up as P3s themselves and work on a fee-for-service model, with implementing agencies paying for the P3 expertise of the centralized P3 agency. Such a centralized program might limit the ability to respond to regional or local issues, and be more difficult to implement in countries such as the U.S., which has a long tradition of State and local governments retaining broad authority over project implementation.

PROGRAM GOALS AND STRUCTURE

States with ongoing P3 programs typically establish goals, policies, and standard processes that guide and facilitate the development and implementation of P3 projects. Clear program goals can guide agencies in establishing policies and making decisions related to identifying projects, structuring agreements, and selecting partners. In general, public sector agencies enter into P3 arrangements when they believe there can be added value for the public sector as compared to more traditional development options. Specific program goals may include:

- Encourage competition and innovation;
- Realize long-term cost savings;
- Transfer cost and schedule risks;
- Accelerate major projects;
- Communicate the benefits and risks of P3s to stakeholders;
- Coordinate agency processes and build public capacity to undertake P3s; and
- Promote economic growth.

Decisions regarding the specific mechanisms to achieve the goals of a program are made at the implementation level. P3 programs need sufficient human resources to identify and develop projects and monitor contract performance. P3 programs often draw from political, technical, financial, legal, and managerial skills from throughout a transportation agency and sometimes within other public agencies. P3 programs sometimes establish working committees and steering committees to assist in the identification of P3 opportunities and to coordinate the resources necessary to develop P3 projects. In addition, P3 programs typically engage private advisors as needed to provide specialized technical, financial, and legal skills. Figure 2-1 shows how Virginia’s Office of Transportation Public-Private Partnerships is structured to use cross-agency committees and private advisors.

Georgia P3 Program Goal Statement

“The goal of the P3 program is to create a fair, transparent and reliable process to support a climate for private sector innovation and investment in a manner that provides value and benefit to the State’s transportation system.”
PROJECT IDENTIFICATION AND SCREENING

Not all projects are suited to P3 project delivery, so agencies need a way to identify which projects have the best potential to succeed as P3s. Agencies may identify projects with the help of the private sector through unsolicited proposals or a call for nominations, or projects may be selected through programmatic project screening. In some States, such as Texas, potential P3 projects are limited to those that are specifically identified in State enabling legislation. In States where public agencies have broader authority to enter into P3 agreements, public agencies may choose to identify and solicit projects themselves or they can permit the private sector to submit unsolicited proposals. Several States, including Virginia and Florida, consider both solicited and unsolicited proposals. Public agencies can also issue a call for proposals that meet specific criteria (e.g., toll projects or projects that increase capacity) or that meet specific policy goals or needs as identified in transportation plans. Other public agencies have defined project screening processes that lead to the development and solicitation of specific P3 projects. The process for screening projects is discussed further below.

Unsolicited Proposals

The typical unsolicited proposal process allows a private party to submit a conceptual proposal. The public agency evaluates the proposal as to whether it is legally permissible, technically feasible, and, most importantly, meets the agency’s policy goals. If the public agency decides to go forward with the unsolicited proposal, it typically publishes the conceptual outlines of the proposal and provides a time period for other private parties to submit competing proposals. This time period varies by State but may range from 60 to 135 days. Public agencies typically charge a fee for reviewing an initial unsolicited proposal ranging from $10,000 to $50,000.

Table 2-2 provides State examples of requirements for accepting unsolicited proposals for P3s.
Agencies may allow unsolicited proposals to inject private sector innovation into project selection and implementation. For example, in 2003, VDOT received an unsolicited proposal for the design of the I-495 Capital Beltway HOT lanes in Virginia that reduced right-of-way takings from several hundred homes to less than ten. The redesign was estimated to reduce the project cost from $3.2 billion to $846 million, in part by reducing the number of breakdown lanes from eight to four and deferring improvements to several interchanges. The design innovations in the unsolicited proposal made the project financially and politically feasible. However, by the time the project was under construction, the estimated cost had risen to about $2 billion, as a result of inflation and design enhancements, and the concessionaire needed about $400 million in State grants to make the financial plan work.

### Unsolicited Proposals: Georgia DOT

Georgia DOT initially accepted unsolicited proposals. Several unsolicited proposals were submitted but only one project was advanced to project development. Ultimately, that project was terminated due to public opposition. In 2009, the State passed new legislation that established a framework for Georgia DOT to identify projects and solicit proposals through a P3 program. The program has subsequently identified a network of interconnected managed lanes around Atlanta.

<table>
<thead>
<tr>
<th></th>
<th>Virginia</th>
<th>Texas</th>
<th>Florida</th>
<th>Puerto Rico</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review Fee</td>
<td>$50,000 ($10,000 for concept; $40,000 for detail)</td>
<td>$25,000 ($5,000 for concept; $20,000 for detail)</td>
<td>$50,000</td>
<td>$50,000</td>
</tr>
<tr>
<td>Period to submit competing proposals</td>
<td>120 days</td>
<td>90 days</td>
<td>120 days</td>
<td>90 days</td>
</tr>
</tbody>
</table>

Unsolicited proposals can be problematic in several ways. They can be perceived as uncompetitive and non-transparent, although most public agencies that accept unsolicited proposals require a period of competition to allow competitors to offer alternative bids. Unsolicited proposals often derive from planned projects that for whatever reason the public sector has not seen through to implementation. Some observers have questioned whether projects that do not fit into existing public agency transportation plans or priorities should be pursued as P3s, even if it can be demonstrated that those projects are commercially viable and create benefits for the public. Others have expressed concerns that unsolicited proposals allow concessionaires to “cherry-pick” profitable projects that might otherwise generate revenue for a public agency. In addition, unsolicited proposals may face significant delays and scope changes in the environmental review and preliminary design process. These delays and scope changes may make a project less commercially attractive and suitable as a P3. Finally, unsolicited proposals commit the public agency to staff resources to review the proposals, and depending on the result of that review, to conduct a competition with competing proposals. The resources needed to respond to unsolicited proposals can be substantial. For example, between 1995 and 2011, VDOT received more than 50 project proposals but is only moving forward with a small portion of them. As a result, VDOT charges a $50,000 fee to review a proposal—intending that only the most serious of concessionaires will propose.
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DRAFT May 11, 2012

2. Decisionmaking Processes and Tools

**Calls for Nominations**

A call for nominations is a more controlled form of getting creative proposals from potential concessionaires. In a call for nominations, a public agency requests proposals from the private sector for a specified number or set of projects. For example, in 1989, California passed AB 680, which allowed up to four private concessions in the State. The first P3 projects in California—91 Express (Orange County) and South Bay Expressway (San Diego)—were two of the four projects identified through that process. The other two nominated projects did not proceed to implementation.

**Programmatic Project Screening**

Public agencies can manage the flow of P3 proposals if they take a programmatic approach to identifying potential P3 opportunities. A programmatic approach may allow policymakers and agency staff to coordinate and streamline decisionmaking processes across the agency. Several State DOTs now conduct programmatic project screenings to identify potential P3 projects, including Georgia and Virginia.

When planners can identify projects with P3 potential during the development of long range planning documents such as the Statewide Transportation Improvement Program (STIP) and Transportation Improvement Programs (TIPs), it puts transportation agencies in a better position to facilitate project development and consider the financial implications of using a P3 approach.

To identify potential P3 projects, transportation projects in the STIP or TIP can be evaluated across established criteria to determine the feasibility of advancing a project as a P3. This process can be repeated on a regular basis as projects enter the planning process and can also be used to prioritize and schedule potential P3 procurements. Project screening criteria may include:

- Size and cost (often over $250 million);
- Revenue potential;
- Transferrable risks that may be better managed by the private sector;
- Completed or near-complete environmental studies (NEPA); and
- Political support and consistency with existing transportation plans.

Virginia uses a process to identify potential P3s through the normal project development pipeline or through unsolicited proposals (see Figure 2-2). To identify planned projects that may be appropriate to deliver as a P3, Virginia has established a Public-Private Transportation Act (PPTA) Program Steering Committee that includes representatives from each transportation agency and is chaired by the VDOT Commissioner. The Committee works with the P3 Office to apply established evaluation criteria to systematically screen and prioritize potential projects. Once the Committee has prioritized a project, the P3 Office coordinates project development activities, develops the scope and design concept, prepares cost, traffic, and revenue estimates, and conducts an initial value for money analysis. If, after further project development and evaluation, the project is still judged to be appropriate as a P3, the P3 Office begins a procurement process through which a proposal is ultimately selected and a final contract negotiated.

When an unsolicited proposal is received, the P3 Office reviews the proposal to ensure that it satisfies a public need, is identified in a current transportation plan, and is consistent with Commonwealth transportation goals. The Committee ultimately makes a determination whether to advance the project to detailed screening. The proposal is then considered for prioritization, development, and procurement alongside planned projects.
2. Decisionmaking Processes and Tools

Figure 2-2. Virginia’s Process to Identify and Evaluate Potential P3s

Source: Virginia’s PPTA Implementation Manual and Guidelines

USING P3 EVALUATION TOOLS

Once public agencies have identified a project as having the potential to be a P3, they typically conduct a series of progressively more rigorous evaluations to determine the best approach to delivering the project. These evaluations help decisionmakers choose how best to structure and procure a potential P3 project. There are several analytical studies and tools used by public agencies to conduct these evaluations:

- Traffic and revenue (T&R) studies;
- Preliminary design and cost estimates;
- Risk matrices / registers;
- Financial cash flow and valuation models; and
- Public Sector Comparators (PSC) / Value for Money Analyses (VfM).

These tools are often used in combination to assess potential procurement approaches, agreement structures, and private sector bids. T&R studies and cost estimates serve as inputs to a financial model. Risks identified in a risk matrix inform any sensitivity analysis conducted with the financial model as well as with the VfM analysis. A thorough VfM typically incorporates material from a financial model as well as a risk matrix. Figure 2-3 shows how these tools interrelate. The following sections provide additional details on each of these tools.

Figure 2-3. P3 Evaluation Tools
Traffic and Revenue (T&R) Studies

T&R studies are used to forecast traffic on toll roads under various toll rate structures and macroeconomic scenarios. Agencies typically hire consultants to prepare T&R studies, which are important in determining how to structure toll rates, deciding whether to transfer, retain, or share revenue risk, and understanding what to expect from private sector bids. T&R studies are critical inputs into financial models, but their limitations need to be clearly understood. T&R forecasting involves subjective estimates of the future behavior of millions of people with respect to housing and business location decisions and choices of transportation. There is tremendous uncertainty associated with these forecasts, and a good study will be transparent about pointing out the uncertainties.

Preliminary Design and Cost Estimates

Agencies need to have a reasonable understanding of the costs to design, build, operate, and maintain a facility in order to make a meaningful comparison of anticipated revenues and costs. Preliminary designs will also identify the risk factors in a project (e.g., geotechnical, right-of-way acquisition, hazardous materials).

Risk Matrices

Agencies use risk matrices in evaluating a P3 to identify project risks, risk mitigation strategies, and the appropriate allocation of risk. The risk matrix provides a format for capturing information on risks, the probability of risks occurring, the consequences if an event accounted for in the risk matrix does occur, and strategies to reduce the probability of negative events occurring or to mitigate the consequences if a negative event were to occur. For example on the
2. Decisionmaking Processes and Tools

Downtown/Midtown/Martin Luther King project VDOT conducted several pre-procurement risk assessments and then conducted a risk assessment with the private sector partners so it could identify and mitigate identified risks. While many risk matrices include only qualitative information, agencies can take the risk matrix a step further by quantifying the probability of risks and assessing the potential consequences in monetary terms. Agencies can then use the risk matrix to perform a sensitivity analysis on the project’s financial model to assign an equivalent monetary value to each risk. A risk matrix can help a public agency decide which risks to transfer to the private sector, which to retain, and which to share. Figure 2-4 is an example of a simple risk matrix used for the Florida I-595 Express Lanes project that does not try to quantify the risks.

**Figure 2-4. Florida I-595 Express Lanes Risk Allocation**

<table>
<thead>
<tr>
<th>Risk Category</th>
<th>Risk Allocation</th>
<th>FDOT</th>
<th>Concessionaire</th>
<th>Shared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Political</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Traffic &amp; Revenue</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Right-of-Way</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Permits/Government Approvals</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Utilities</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Procurement</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Operations &amp; Maintenance</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Hand-Back</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Force Majeure</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change in Law</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contamination</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Geotechnical</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Florida Department of Transportation

**Financial Models/Cash Flow Analysis**

Agencies use financial models to understand potential project value and cash flow requirements under different agreement structures and macroeconomic scenarios. Financial models include assumptions about revenue, project costs, financing costs, tax and inflation rates, and discount rates to estimate potential concession fees and/or project subsidies and estimate appropriate toll rates, if the facility is tolled. Public agencies use financial models primarily to gain a better understanding of cash flow requirements, but they can also use these models to better understand private sector’s perspectives and incentives. The private sector is primarily concerned with net revenues and the internal rate of return on invested capital (for more detail, see Chapter 3, Financial Considerations.

A financial model will typically rely on these factors:

- Estimated design and construction costs;
- Estimated annual operations and maintenance costs;
- Estimated long term repair and rehabilitation costs;
- Estimated long-term stream of revenue;
- Forecast future inflation and interest rates; and
- Assumed discount rates for future cash flows.
2. Decisionmaking Processes and Tools

These factors will usually have a range, and the financial model will allow the agency to conduct a sensitivity analysis based on uncertainties regarding critical inputs. Establishing accurate levels for these inputs can be extremely difficult. The discount rate for future cash flows, for example, can have a major effect on the net present value of the project. Unfortunately, there is no industry consensus as to the appropriate discount rate for infrastructure projects. It can also be difficult for public agencies to estimate long term project costs because public agencies often lack historical data or benchmarks. Finally, it is difficult to estimate the probabilities of uncertain events or risks that may affect revenues and costs.

**Public Sector Comparator/Value for Money (VfM) Analysis**

A VfM analysis compares the projected risk-adjusted life cycle costs of a project delivered through a P3 to a public sector comparator (PSC). A PSC is an independent, objective assessment of project costs if delivered solely by the public sector, against which potential and actual private sector contract bids and evaluations may be judged. It is important to recognize that there are inherent limitations with developing a PSC, including the difficulties of evaluating taxable vs. generally cheaper (but potentially unavailable) tax-exempt financing and the lack of reliable information about private sector efficiencies.

VfM analysis generally follows these basic steps:

1. **Develop a PSC.** Using a financial model, estimate the base costs of the project under consideration if it were to be delivered using the project delivery alternative (typically Design-Bid-Build or Design-Build) that might otherwise be used.

2. **Adjust for competitive advantages and disadvantages.** Adjust the base costs to account for the inherent advantages and disadvantages of the project delivery alternative, such as relevant tax exemptions.

3. **Identify, assess, and allocate risks.** Identify and determine the value of project risks by estimating the probability that each risk will occur and the consequences if it does.

4. **Assess the value of the risks transferred to the private sector through P3 procurement model(s) and develop a risk-adjusted PSC.**

5. **Compare the risk-adjusted net present value cost of the PSC to the net present value of the P3 procurement model(s).**

VfM is used to guide decisions regarding potential P3 projects, including which procurement approach to take, which risks to allocate to the private sector, and which private sector bid to accept. Agencies employ VfM to compare the costs of different project delivery options by assessing the value of transferring risks to the private sector, as well as the value of any efficiency gains that may be obtained through P3s. Agencies can also use VfM to evaluate the extent to which higher financial costs and risk premiums associated with P3 delivery are offset by efficiency gains from the transfer of project risks and costs to the private sector. When comparing procurement options, the procurement approach which has the lowest cost—after lifecycle cost, risks, competitive neutrality, and other items are considered—would have the best “value for money.”

While VfM analysis seeks to quantify the value of risk transfer and any efficiency gains under different procurement methods, a comprehensive VfM also considers factors that can influence procurement decisions but may be difficult or impossible to quantify. Such factors may include:
2. Decisionmaking Processes and Tools

- Speed of delivery;
- Quality of facility and service;
- Differences in scope;
- Ability of public sector to enforce performance standards;
- Value to the public sector of cost and schedule certainty;
- Effects on public sector debt capacity and cash flow; and
- Degree of market interest.

Alternative methods for valuation exist, including comparative market analysis, discounted cash flow analysis, shadow bidding, and auction. Texas, for example, has used shadow bidding, whereby public agency engineers and consultants make detailed estimates of long term projects and those estimates are compared to private sector proposals. However, in countries with well-established P3 programs, including the UK, Canada and Australia, VfM is considered a best practice and in some cases, legally required. In the United States, Virginia DOT (VDOT) and Florida DOT (FDOT) regularly conduct VfM analyses of potential P3 projects.

**STRUCTURING P3 PROJECT AGREEMENTS**

Once policymakers have identified a project as having the potential to be delivered as a P3, they can prepare a project for procurement, which typically involves scoping and designing the project and specifying elements of the agreement.

**Project Scoping and Design**

As with any transportation project, scoping and design considerations will involve evaluating:

- Estimated long-term costs of design, construction, operations, maintenance, repair, and rehabilitation;
- Forecasted facility use;
- Risks and potential risk mitigation strategies;
- Potential funding, revenue sources, and/or toll rate structures; and
- Expected impact on network performance, environment, and local populations.

With a P3 project, agencies will have additional factors to consider such as the timing of facility expansion, setting toll rates (if applicable), and identifying other non-toll revenue opportunities such as air rights or rest stops. With these special considerations in mind, a public agency may wish to structure agreements to retain flexibility in the definition of key project characteristics to allow for private sector innovation.

**Agreement Definition**

Agencies typically develop the conceptual structure of an agreement before procurement. The optimal structure of an agreement depends on the characteristics of a project, the goals and capabilities of the public agency, and the incentives and capabilities of potential private partners. Key elements include:

**Examples of VfM Analysis**


Presidio Parkway: [www.presidioparkway.org/project_docs/files/presidio_prkwy_prjct_bsnss_case.pdf](http://www.presidioparkway.org/project_docs/files/presidio_prkwy_prjct_bsnss_case.pdf)

2. Decisionmaking Processes and Tools

- Allocation of responsibilities and risks;
- Compensation mechanisms;
- Concession term; and
- Performance standards and performance management processes.

Building, operating, and maintaining a major transportation project involves risk. P3s derive much of their value by structuring contract agreements that transfer many of the long-term risks that are traditionally retained by the public sector to the private sector. To ensure the best value for the public, the procuring agency needs to perform a thorough risk analysis to determine which risks it should manage internally and which the private sector should handle.

Table 2-3 describes typical risks associated with P3 transportation projects. Risks tend to be highest at the beginning of a project, at the time of major investments, since there is greater uncertainty about long-term costs and revenues. Once construction is completed, risks tend to ebb, and, after an initial ramp up period, costs and revenues tend to stabilize. The change in risk over time has important implications for how agencies value P3 projects and structure and manage their contracts.

Table 2-3. Common P3 Project Risks

<table>
<thead>
<tr>
<th>Project Phase</th>
<th>Risk Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Development and</td>
<td>Site Risk</td>
<td>Acquiring land required for infrastructure development can result in delays or cost overruns; geological, hydrological, environmental or archaeological, cultural resource discoveries can cause delays.</td>
</tr>
<tr>
<td>Construction</td>
<td>Design Risk</td>
<td>The design can have flaws that are not identified or realized until after construction gets underway.</td>
</tr>
<tr>
<td></td>
<td>Construction Risk</td>
<td>Unanticipated construction delays or obstacles can add time and cost.</td>
</tr>
<tr>
<td></td>
<td>Financial/Economic</td>
<td>Cost inflation and/or interest rates can be greater than anticipated.</td>
</tr>
<tr>
<td></td>
<td>Revenue Risk</td>
<td>Revenues can be less than expected.</td>
</tr>
<tr>
<td></td>
<td>Performance Risk</td>
<td>Operations and maintenance costs can be greater than anticipated.</td>
</tr>
<tr>
<td>Operations and Maintenance</td>
<td>Appropriations Risk</td>
<td>Expected funds may not be appropriated.</td>
</tr>
<tr>
<td></td>
<td>Regulatory Risk</td>
<td>Regulations can be changed in a way that affects project costs or revenues.</td>
</tr>
<tr>
<td></td>
<td>Contract Risk</td>
<td>Contract can be interpreted differently than expected by either party.</td>
</tr>
<tr>
<td>All Phases</td>
<td>Force Majeure</td>
<td>A catastrophic event such as a natural disaster or terrorist attack can occur.</td>
</tr>
</tbody>
</table>

The goal of a P3 is not to transfer all project risks—rather, it is to transfer the risks that the private sector can manage most efficiently. The private sector does not take on risk unless it expects to benefit. For each risk transferred, there is a cost that the project owner must pay. Higher perceived risks for a project will result in higher costs being attributed to those risks—called risk premiums. A risk may be priced differently by the public and the private sector, depending on...
Challenges and Opportunities Series: Public Private Partnerships in Transportation Delivery  
DRAFT May 11, 2012

To determine the optimal allocation of risk, an agency should compare the public sector’s ability to manage each risk to the ability of a potential private partner to do the same. Risks that the private sector is more capable of managing should be transferred; risks that the public agency is more capable of managing should be retained. Where possible, the party with responsibility for managing the risk will seek to mitigate or avoid that risk. If a risk is difficult to assess or manage, it may be appropriate that it should be shared between the public and private sectors. An effective risk allocation should create incentives for the private sector to supply quality and cost-effective services.

While the concept behind optimal risk allocation is clear, the practice of how agencies allocate risks is more of an art than a science. There are methods for assessing the probabilities and costs of risks as well as various rules of thumb that may be applied. Typically, the public sector will be expected to take on site risks and regulatory risks. The private sector will be expected to take on risks arising from the building, operation, finance, and management of the project. The concessionaire may choose to further delegate risks to other private parties by selling equity stakes, holding subcontractors responsible for performance, and/or insuring against certain risks.

**Risk Allocation: Port of Miami Tunnel**

The Port of Miami Tunnel and Access Improvement Project is a $900 million P3 project that will connect the Port of Miami with I-395 via a tunnel. Building the tunnel involves significant geotechnical risks. Unforeseen ground conditions could cause significant delays and increased costs. To manage this risk in a way that preserved performance incentives without scaring off investors, FDOT negotiated the following risk sharing provisions:

- The first $10 million in additional costs due to geological conditions are borne by the concessionaire.
- The next $150 million is borne by FDOT;
- The next $20 million is the concessionaire’s responsibility
- If additional costs are over $180 million, either party may choose to terminate the agreement.

FDOT also agreed to extend construction deadlines in case the boring equipment required to dig the tunnel was damaged in transit.

**COMPENSATION MECHANISMS**

Different compensation mechanisms put different risks on the government and private partners, with significant implications for the cost and structure of a P3 deal. P3 compensation mechanisms include:

- **Tolls.** A P3 may be structured so that the concessionaire keeps the toll revenue it collects. The toll rate structure and future toll rate increases are typically set in the concession...
agreement to provide greater predictability to the concessionaire and assurance to the public that the concessionaire will not charge excessive tolls. If facility demand is less than expected, the private concessionaire may face losses, while it could reap windfall profits if demand is higher than expected. Most recent P3s that involve the private sector taking on toll revenue risk have revenue sharing provisions that mitigate the risks and share the rewards. Toll revenue risk is typically greater in a project where there is no history of traffic on which to base an estimate of demand.

- **Shadow tolling.** With shadow tolling, a public agency compensates the concessionaire based on the amount of traffic using the facility, but the drivers do not pay the tolls themselves. This allows the agency to mitigate the technical risks associated with a tolled road while transferring most or all of the traffic risk to the concessionaire. This method of compensation has been used in P3s in the UK and Spain, but it has not been applied to P3s in the United States. Internationally, there is a trend away from shadow tolling because it may not effectively align private sector incentives with the public sector goal of managing mobility across the transportation network. For example, if a concessionaire’s compensation is purely based on the amount of traffic, the concessionaire has less incentive to reduce congestion. Also, the public sector ends up paying a premium for the concessionaire to take on traffic risk, but the concessionaire may have little ability to influence the amount of traffic that is drawn to the facility. Instead, traffic levels are more likely to be affected by external, macroeconomic factors, such as job and housing trends and resulting regional traffic flows.

- **Availability payments.** With availability payments, the agency retains traffic risk. The concessionaire is compensated based on its ability to operate and maintain the road to standards specified in the contract. This allows the agency to choose whether or not to use tolls to finance the project and to keep more control over toll setting if it does use tolls. It also avoids the perception that the concessionaire is setting excessive tolls. Availability payments are described in greater detail in Chapter 3, Financial Considerations.

- **Flexible-term concession.** A flexible-term concession is a form of revenue guarantee whereby once specified gross revenue has been reached (in present value terms), the contract is terminated. Firms can bid the level of present value of project revenues at which the contract would terminate. This arrangement limits downside revenue risks to the concessionaire while continuing to provide strong performance incentives. This model has not been used in the United States, but it has been used in Portugal, the UK, and Chile.

**Table 2-4. Revenue Sharing Provisions**

2. Decisionmaking Processes and Tools
Challenges and Opportunities Series: Public Private Partnerships in Transportation Delivery

DRAFT May 11, 2012

P3 Agreement | Revenue Sharing Agreement
---|---
I-495 Capital Beltway HOT Lanes | Gross revenue sharing of 5 to 30 percent if traffic and revenue exceeds projections and when project is refinanced.

LBJ I-635 | Gross revenue sharing of up to 75 percent of revenue exceeding projections and when project is refinanced.

North Tarrant Expressway | Gross revenue sharing of up to 75 percent of revenue exceeding projections and when project is refinanced.

State Highway 130 | Gross revenue sharing of up to 50 percent of revenue exceeding projections and when project is refinanced.

Midtown Downtown MLK Tunnel | Gross revenue sharing of up to 60 percent of revenue exceeding projections and when project is refinanced.

Determining which compensation model to use depends on the agency’s goals for the project, the capacity of the project to generate revenues, the financial structure within the State, and the willingness of the private sector to take on revenue risk. In deciding which model to use, a public agency should determine:

- Is tolling the facility technically and legally feasible?
- Is there political support for tolling?
- How certain is the demand/revenue estimate?
- Are facility revenues sufficient to support design, construction, finance, operations, and maintenance of the facility?
- How efficiently can the agency monitor facility performance?

In P3 models that involve the concessionaire taking revenue risk, the government may choose to ease that risk by including revenue sharing provisions and/or revenue guarantees. These are described in greater detail in Chapter 3, Financial Considerations.

CONCESSION TERM

Concession terms (i.e. period of performance) vary widely depending on the economics of the project and requirements of the contract. A typical length for a P3 contract is 35 to 40 years, but some contracts have terms of as long as 99 years. In the United States, private firms tend to prefer terms of 50 years or more because they can then capture the potential tax benefits as the asset depreciates. If the concession term is equal to or exceeds the facility’s remaining design life, then the concessionaire can be treated as the facility owner for tax purposes and can write off the annual depreciation. Longer concessions can provide the public sector greater certainty regarding asset life-cycle costs and standards of service but can also reduce the public sector’s flexibility to allocate resources to other projects, adjust performance standards, or change the delivery model.

Concessions of less than 50 years are more likely to correspond to the design-life of a transportation facility, the term of financial instruments, and the time over which an agency can reasonably assess risk. No matter how long concession contracts are, however, there are always provisions to modify the contract over time as needs change, but these modifications may come at a cost.

There are ways of incentivizing concession lengths that better align with public sector policy goals. Where a shorter concession length is preferable, procurements can be structured so that shorter concession length is one of the proposal factors. The length of a concession can be used as

2. Decisionmaking Processes and Tools
2. Decisionmaking Processes and Tools

Challenges and Opportunities Series: Public Private Partnerships in Transportation Delivery
DRAFT May 11, 2012

A way to manage revenue risks as well. Agencies can use flexible-term contracts to manage revenue risks while maintaining incentives to manage long-term costs.

Some factors that should be considered in setting concession length include:

- What is the design-life of the facility, and when will major asset upgrades or repairs be needed during the term of the contract?
- Can revenues or costs be accurately forecasted over the term of the contract?
- How will the contract manage potential technological advances affecting the facility over the contract life?
- How will the agency manage resources dedicated to the project over time? What is the value to the public agency to have flexibility in allocating those resources?

PERFORMANCE STANDARDS AND PERFORMANCE MANAGEMENT PROCESSES

In setting performance standards for a P3, agencies need to consider:

- The types of performance standards that should be used. Are these standards critical to the performance of the project? Does the agency have the staff and resources to monitor the performance?
- The level at which the performance standards should be set. High standards are desirable, but standards that are set too high will raise the cost of a project and will result in a project that is at a higher standard than others in the State, or possibly a project with higher standards than are needed for user benefit. For example, requiring that roads be litter-free may lead to a better driving experience for road users: but requiring that litter be removed hourly may not produce enough benefit to offset the additional cost.

Details relating to performance standards are covered in Chapter 4, Performance Management.

CONDUCTING PROCUREMENTS

Given the risks and complexity involved in using non-traditional methods of transportation project delivery, choosing the best partner(s) requires due diligence on the part of the public sector. Because of the size, complexity, and length of term of P3 agreements, special procurement processes are needed to ensure there is sufficient and qualified competition. Some of the methods used to identify, qualify, and attract private partners are discussed below.

Bid Stipends

A well-structured procurement should generate competition and allow the public agency to select the partner that will best help the agency meet the project goals. Bidding firms may spend more than 1 percent of the bid value to develop bids. They are more likely to place a bid if they have confidence that the procurement process will be fair, competitive and that it will be seen through to completion. In addition, most bidding processes are structured so that the public agency can use ideas contained in one proposal while selecting a different bidder. To encourage competition, defray bidding costs, and compensate proposers for the value of ideas that might be used, some public agencies offer stipends to pre-qualified bidders. Bid stipends rarely, if ever, cover the entire cost of a proposal, and the value of an idea that is used in another proposal may be well in excess of the stipend amount.

Unsolicited Proposals

As described above, public agencies may use unsolicited proposals as a way of accessing private sector ideas about potential projects that could be commercially viable. Agencies that allow
unsolicited proposals have developed various processes to introduce competitiveness and transparency into the procurement process.

**Industry Outreach**

A public agency may conduct industry outreach to gain a better understanding of private sector capabilities and interests with regards to a particular project. This process may occur prior to the procurement process or once an agency has selected a short list of qualified bidders. This can help an agency understand how to structure a commercially viable project that will generate competitive bids. Agencies may hold information-sharing meetings or workshops with industry representatives in order to describe the basic attributes of the project and potential agreement and asks for participant feedback. Agencies may also issue a formal “Request for Information” as a precursor to procurement.

**Multi-Phase Procurement Process**

To create a competitive and fair procurement environment, agencies often use a multi-stage, “best value” procurement process that includes a request for qualifications (RFQ), followed by a request for proposals (RFP), followed by negotiations with the preferred bidder. Figure 2-5 illustrates how this process could occur.

**Figure 2-5. Example of a Multi-Phase Procurement Process**

- **Request for Qualifications (RFQ)**
  - The agency can use an initial procurement period to prequalify bidders by issuing a request for a letter of interest or a request for qualification from prospective bidders. The RFQ typically asks prospective bidders to provide information demonstrating:
    - Technical capacity to meet project performance specifications;
    - Past performance on similar projects; and
    - Financial capacity to complete the project.
  - In addition, the RFQ may ask for a conceptual project development plan and/or a conceptual project financial plan.

- **Request for Proposals (RFP)**
  - After selecting a response from qualified bidders through the RFQ process, the agency then invites those short-listed qualified bidders to submit a second binding bid through a request for
2. Decisionmaking Processes and Tools

Proposal. Bidders are typically required to submit a proposal that includes both technical plans for how the project will meet the design, construction, maintenance, and operational requirements as well as a financial plan demonstrating the financial feasibility of the proposal.

Public agencies can structure bidding so that bidders bid on different aspects of the project. Bidding can be based on different criteria, such as: the dollar value of the offer, the lowest subsidy or availability payment required, the lowest length of the concession term, or the lowest net present value of gross revenues required. The decision to select an appropriate partner often comes down to whether to choose the qualified bidder with the lowest dollar value (“low bid”), or whether to consider bid price in conjunction with other factors (“best value”). To determine the best value bid, the public agency may conduct a VfM analysis. Sometimes, the decision to choose the lowest bid or the best value bid is mandated by State or local law.

Negotiation with the Preferred Bidder

In the U.S., the negotiation stage generally does not include negotiations on key commercial issues or scope, which should be identified during the bidding process, so that all bidders have the opportunity to provide a bid on similar terms. Yet negotiations with the preferred bidder can allow both parties to establish a mutually-agreeable, project-specific solution to issues identified after the procurement process. This requires skilled legal counsel, ideally with expertise in developing long-term, enforceable agreements between the public and private sectors.

For example, the public and private sector may negotiate methods for verifying gross revenues as part of ensuring that the public sector receives appropriate toll revenue shares. The negotiation process can help to ensure mutual understanding on the part of both parties regarding the details of an agreement and the smooth implementation and oversight of a project. However, there are potential disadvantages to addressing items in negotiations with the preferred bidder. For one, the bargaining position of the public sector may be diminished at this point in the process (after substantial sunk costs in procurement). Secondly, there may be a perception of unfairness if the items negotiated are basic elements of the concession that could have changed the outcome of the selection process. For example, if provisions regarding revenue share or concession length are left to negotiation after selection of a successful bidder, other bidders who might have been willing to offer higher levels of revenue sharing or shorter concession terms than the preferred bidder offered might feel that they were unable to offer their best value in the competition. Thus, the basic elements of the concession are usually either established earlier in the procurement process, and are the same for all bidders, or bidders are allowed to use them to differentiate themselves in the bidding process. Provisions that may be left to negotiation generally relate to the implementation, oversight, and monitoring details of the concession – for example, the payout schedule for a revenue share, or how the revenue share will be calculated.

While the basic elements of an agreement are typically established early in the procurement process and, for reasons of fairness, bidders will expect provisions related to the core value of the agreement to remain unchanged, many of the details of agreement provisions may be subject to negotiation with the preferred bidder. Negotiating issues may include:

1. **Compensation structure (payout schedule, revenue sharing provisions, and subsidies)**. Issues that may be negotiated regarding the compensation structure include: when, how, and under what circumstances the concessionaire will receive payments; what portion of revenues will be shared at what revenue levels; and the degree to which the public sector will contribute to the project with grants, in-kind donations, tax breaks, or public financing.
2. Risk sharing and mitigation measures. While the risk allocation is generally
specified by the public agency in the procurement process, the precise performance
measures and mitigation processes for specific risks may be subject to negotiation.

3. Toll rate setting mechanism. Toll rate setting mechanisms may include defined toll
rate schedules, maximum annual percentage increases (often tied to inflation or GDP
increases), or regulatory review and approval of proposed rate increases.

4. Performance standards and measures. P3 agreements typically set output- and
outcome-based performance standards and management regimes for enforcing standards
(See Chapter 4, Performance Management). These standards may be subject to
negotiation.

5. Termination/buyback provisions. The rights to terminate the contract and the
conditions under which those rights may be invoked (for example, if the private party
defaults), are typically negotiated in the final contract. In the event of early termination,
mechanisms are usually described in the contract to ensure that the harmed party is
compensated for any losses or for the residual value of the asset.

6. Refinancing provisions. The concessionaires of a P3 may refinance a project once the
project is well established and uncertainty diminishes or operational efficiencies are
established. Changing macroeconomic conditions such as declining interest rates can
make refinancing attractive as well. Refinancing can result in greater returns to equity
from interest rate reductions, extensions of debt maturity, and increases in the amount of
debt. Contract provisions related to refinancing may include a negotiated share between
the public and private partner in the gains made from refinancing.

7. Non-compete provisions. The private sector may request some protection against the
public sector’s ability to reduce facility demand by building or improving competing
parallel facilities in the vicinity of the project. Strict non-compete provisions barring the
public sector from improving competing facilities are rare and are often forbidden in
legislation. More commonly found are non-compete provisions that allow the
concessionaire to be compensated if they can prove a net harm to project revenues from
public agency activities.

RESEARCH NEEDS
To date, there have been few long-term P3s procured in the United States, so policymakers have
few examples from which to draw. As more P3 agreements are made, researchers will have an
opportunity to observe short- and long-term performance of the project with respect to the public
and private sector’s goals.

The following is a list of research questions to be answered:

- How do compensation structures perform over the long term? Do they provide adequate
  incentive for the private sector while protecting the interests of the public sector?
- What items tend to be negotiated in P3 agreements? How well is the public sector
  prepared to negotiate? Given the available information at the time of making the
  agreement, would public agencies make different choices, in hindsight, with regards to
  risk transfer? What issues were not anticipated at the time of making initial P3
2. Decisionmaking Processes and Tools

agreements that turned out to be important? What issues were of great concern and turned out not to be as problematic as anticipated?

- How accurately do evaluation tools such as T&R studies, valuation models, and VfM analyses predict eventual project outcomes? Are there ways to improve the evaluation tools?

- What characteristics of P3 projects and programs lead to greater chance for “success” as defined by the public agency? How should public agencies define success with respect to P3s?
3. FINANCIAL CONSIDERATIONS

KEY FINDINGS

- Private financing of transportation projects can also help to facilitate the financing of projects that cross multiple jurisdictions, reduce cost and schedule uncertainties, better allocate risk, and create incentives to better manage the life cycle costs of a project.

- P3s are not a source of revenue; in fact, to be financially feasible they require a stable revenue source. However, they can be used to free up existing revenue, increase the certainty of project lifecycle costs, and protect general revenue from revenue shortfalls.

- In recent experience, most P3s in the U.S. have not been exclusively privately financed. Most P3s have required public sector financial support in the form of up-front capital contributions or credit assistance to attract private investment.

- Availability payments, where the public sector retains demand risk, represent one way public agencies have structured P3 contracts to attract more bids that are competitive and keep financing costs down.
3. FINANCIAL CONSIDERATIONS

INTRODUCTION

Public private partnerships (P3s) allow public agencies to access private equity capital to finance projects. This can help public agencies achieve their goals in a number of ways. P3s can accelerate the delivery of necessary projects by helping public agencies raise the upfront capital necessary to construct a major infrastructure project all at once, rather than in stages. In some cases, private capital can mean the difference between developing a project and having no project at all. Private financing of transportation projects can also help to facilitate the financing of projects that cross multiple jurisdictions, reduce cost and schedule uncertainties, better allocate risk, and create incentives to better manage the life cycle costs of a project.

While accessing private capital to finance transportation projects may help a public agency deliver needed transportation projects, it does not come without cost. As with any financing, the capital generated from private finance must be paid back with future revenue. P3 agreements often involve the commitment of a long-term revenue stream to pay back lenders and private investors. Private lenders and investors typically demand a higher rate of return than investors in tax-exempt municipal bonds; so, the cost of private financing is generally greater than that of public financing. Public agencies must carefully analyze these and other tradeoffs when deciding whether to pursue private financing of transportation projects.

This chapter explains why public agencies may choose to use private sector capital to deliver projects and the requirements that private financial markets may impose on such projects. It explains the basic concepts of project finance and explores the incentives and capabilities of various sources of private capital. Since P3s require revenue to pay back investors, this chapter describes the various types of revenue that can be used to support P3s. It then describes how private investors and public agencies may determine the value of public private partnership opportunities and come to an agreement regarding the price of transferred risks. Finally it discusses the advantages and disadvantages of private finance and how P3 deals can be structured to incentivize private investment and optimize risk transfer.

ADVANTAGES AND DISADVANTAGES OF PUBLIC FINANCING OF PROJECTS

Traditionally, public agencies have funded transportation infrastructure through State and local taxes, Federal aid grants, and municipal bonds. In some States, transportation projects are funded primarily on a “pay-as-you-go” basis, while other States issue bonds to raise the capital needed to pay for planned projects. Both approaches have advantages and disadvantages.

The pay-as-you-go approach has the benefit of simplicity and allows public agencies to avoid costs associated with borrowing. However, with pay-as-you-go, large projects often have to wait until sufficient funds are accumulated, or be completed in smaller sections, meaning that the benefits of improved mobility and economic development that come from many transportation projects may be postponed. Building a project in sections can be less efficient than building a project all at once. Furthermore, in times of high inflation, delays in project delivery can lead to higher costs when the project is eventually built.

Many public agencies issue bonds to raise the capital needed to pay for projects. Bonding can help to accelerate the delivery of needed projects. The interest on most bonds issued by public agencies is tax-exempt, keeping interest rates low. However, bonds must be paid back with future revenue.

3. Financial Considerations
Excessive bonding can constrain future infrastructure investment by obligating future funding streams to past projects to the point where it is difficult to undertake new projects. In addition, public agencies may be limited in the amount of bonds they can issue for various legal, political, and financial reasons.

**STRUCTURING EQUITY-FINANCED P3S**

In a P3 project, the responsibilities for designing, building, financing, and operating are bundled together and transferred to private sector partners. P3 projects are either partly or wholly financed by debt that leverages revenue streams dedicated to the project. Structuring effective partnerships requires an understanding of the advantages, disadvantages, interests, and capabilities of various sources of financing such as public agency bond issuances, private activity bonds (PABs), special governmental credit issuers (such as the Federal TIFIA Program), private equity investors, and commercial loans. Each source of financing varies in both cost and capacity to assemble sufficient amounts of capital. Equity-financed P3s may use each of these sources to assemble the capital necessary to meet the terms of the agreement.

A public agency undertaking a P3 can leverage anticipated future revenues by issuing bonds or attracting private investors that provide funds for capital and project development costs in return for a stake in profits derived from the project. Direct user fees (tolls) are the most common revenue source, but other revenue options are available, ranging from lease payments to shadow tolls and vehicle registration fees. These revenues may be supplemented by public sector grants in the form of money or contributions in kind, such as right of way. Figure 3-1 shows a basic P3 financing structure under a P3 arrangement.

The critical private investor is the concessionaire, the partner who bids for the project and is responsible for delivering it. To facilitate financing, the concessionaire typically establishes a special purpose vehicle (SPV), a legal entity organized to limit the liability of investors. Typically, the SPV has no assets or liabilities other than those related to the project. Investors in an SPV are sheltered from claims on their revenues or assets outside of those directly related to the project.

Revenue from the transportation project is channeled through the SPV. The cash flow is structured so that accounts for project costs and reserve funds, as well as accounts to repay lenders and investors are sequentially funded. This is commonly referred to as a cash flow waterfall (Figure 3-2). The cash flow waterfall defines the order of priority for project cash flows as established under the loan and financing documents. In a typical cash flow waterfall, dedicated revenues are used to pay for project costs and debt repayments before other parties derive benefits from the project. This ensures that project debt and maintenance are covered before surplus revenues are used to pay back investors or shared with the public sector.
SOURCES OF PRIVATE FUNDS IN A P3 FINANCE TRANSACTION

Private project sponsors usually seek investment partners to optimize the capital structure of P3 project financing and maximize their return on investment. The partners to a project include public project sponsor(s), equity investors, subcontractors, private lenders, and, oftentimes, public lenders. Each partner has distinct interests and capabilities. Public project sponsors may make upfront capital contributions, ongoing payments, or credit assistance to a P3 project. Equity investors assume the highest risks but may also receive the highest returns. Subcontractors, who sign contracts with the private project sponsor to perform specific services such as the construction, operation, and maintenance of the project, may or may not contribute an equity stake as well. Lenders to a project make loans to the SPV that will be reimbursed through future cash flows. Lenders may provide senior debt, which has the first claim on the SPV’s net cash flows, or subordinate debt. Lenders may come from the private or the public sector.

Equity Investors

Equity investors provide upfront capital, which can be repaid with dividends if the project is financially successful. Equity typically accounts for less than 30 percent of the investment in a project and may be provided by project sponsors or by third party investors. Equity plays an important role in strengthening incentives for the private sector to perform efficiently and effectively and can be vital in attracting private lenders to a project.

Equity investors are typically willing to take on greater financial risks than private lenders or public agencies in return for a competitive risk-adjusted return on investment. Equity investors are exposed to greater financial risk because project revenues typically must be used to pay operational costs and repay lenders before equity. If a project does not generate sufficient...
Challenges and Opportunities Series: Public Private Partnerships in Transportation Delivery
DRAFT May 11, 2012

3. Financial Considerations

anticipated revenues, equity investors may lose some or all of their investment. Equity investment also has a potential upside, as surplus net revenue from higher than expected revenues or efficient management of costs is captured in dividends to investors (though they may be subject to revenue sharing provisions with the public sector). As a result of the risks that equity investors take, the expected rate of return on equity may be significantly higher than the expected rate of return on debt.

Equity investors have an interest in maximizing the return on their investment by borrowing funds from private lenders. Because of its place in the cash flow waterfall, equity investment provides a cushion for lenders to the project and helps to attract private finance. The greater the ratio of debt to equity, the higher the potential return on equity will be (see Table 1). However, lenders will typically expect larger equity contributions for riskier projects. If equity investors are able to achieve higher lender participation, they may be able to accept lower revenues and still make similar returns on a percentage basis.

Table 3-1 illustrates the effect of higher leverage on equity return. For a $1 billion project that achieves $75 million in revenue over the life of an investment, greater leverage – that is, higher levels of debt – lowers the amount of equity that investors must contribute to the project up front. If the investors only have to contribute $100 million, with $900 million covered by debt, they will realize $12 million in profit once the revenue has been realized and interest is paid. That represents a 12 percent return on their investment. By contrast, if the equity investors have to contribute $400 million, they will have lower interest costs due to more robust debt service coverage, but the profit of $39 million will only represent a 10 percent return on their investment.

Table 3-1. Illustrative Example of Effect of Leverage on Returns on Equity

<table>
<thead>
<tr>
<th></th>
<th>High Leverage</th>
<th>Low Leverage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Debt (in millions)</strong></td>
<td>$900</td>
<td>$600</td>
</tr>
<tr>
<td><strong>Equity (in millions)</strong></td>
<td>$100</td>
<td>$400</td>
</tr>
<tr>
<td><strong>Revenue (in millions)</strong></td>
<td>$75</td>
<td>$75</td>
</tr>
<tr>
<td><strong>Interest Rate on Debt</strong></td>
<td>7%</td>
<td>6%</td>
</tr>
<tr>
<td><strong>Interest Payable (in millions)</strong></td>
<td>$63</td>
<td>$36</td>
</tr>
<tr>
<td><strong>Interest Coverage</strong></td>
<td>1.19</td>
<td>2.08</td>
</tr>
<tr>
<td><strong>Profit (in millions)</strong></td>
<td>$12</td>
<td>$39</td>
</tr>
<tr>
<td><strong>Return on Equity</strong></td>
<td>12%</td>
<td>10%</td>
</tr>
</tbody>
</table>

Adapted from E.R. Yescombe, Public-Private Partnerships: Principles of Policy and Finance

Equity investors may also receive tax benefits from their investment. The tax benefits of equity investment (depreciation and amortization deductions shielding other taxable income) may account for 10 percent or more of the project’s value to the investor. These tax benefits vary over the period of the agreement and can be factored into the bids of project sponsors.

There are different types of equity investors. Each has different preferences for projects based on their capacity to manage different types of risk:
3. Financial Considerations

- **International toll road companies.** As a result of their technical skills and experience with other projects, these companies are well positioned to evaluate and manage construction and operations and maintenance risks. They typically serve as the concessionaire on a project. By investing their own funds in a project, they may create business opportunities, attract other private capital, and participate in any upside gains from higher than expected net revenues. They are also more exposed to risk, should a project fail. As a result, they have a strong incentive to conduct due diligence before investing in a project and managing a project so that it is positioned for success.

- **Major infrastructure construction firms.** These companies specialize in construction, project management, and operations and maintenance of infrastructure projects. They may participate in a concession as a concessionaire or as a subcontractor to the concessionaire.

- **Financial equity funds.** These financial institutions have access to large amounts of capital and are skilled at assessing financial risks. They tend to act as shareholders to a project and may bring specific sector expertise.

- **Public pension funds** are interested in investments that may offer stable long-term returns.

**Private Lenders**

Private lenders are often investment or commercial banks that specialize in project finance. They tend to be more conservative and have a lower risk tolerance than equity investors. They require lower rates of return than equity investors, but they seek to structure deals that minimize their risk by ensuring that they have first call on the net cash flows of a project.

Lenders assess the risks of a project to determine if it is a good credit risk. They want to see that there is a reasonable expectation that the project can be completed on time and on budget; that the revenues and expenditures are relatively predictable; and that projected net cash flows are adequate to cover interest payments. If lenders perceive that a project is less risky, they may be willing to lend more. If lenders perceive more risk, they will demand greater investment of equity, thereby raising the overall cost of the project.

Lenders maintain oversight responsibilities throughout the term of their loan and may retain “step-in” rights that allow them to take over a project that is not meeting expectations. Private lenders have an interest in being paid back as quickly as possible and often structure loans to encourage refinancing after an initial period of project ramp up. As a result, equity investors often seek to refinance their loans after seven to 10 years. Prior to the 2007/2008 financial crisis, refinancing of loans at lower rates and shorter terms often led to substantial increases in rates of return for equity investors. Today, due to uncertainty in the financial markets, refinancing represents more of a downside risk to equity investors.

**Bondholders**

The proceeds from bonds sold to investors in the capital markets may also be used to fund a project. Bond buyers are typically institutional investors such as insurance companies and pension funds looking for a predictable long-term return on investment. Bonds offer advantages over commercial loans such as greater capacity, lower costs, and longer terms; however, they can be less flexible instruments.
3. Financial Considerations

**Municipal Bonds**

Bonds issued by the State or local governments are termed “municipal bonds.” Bond investors are often willing to accept lower interest rates on municipal bonds than other types because they are generally exempt from Federal income tax and most State and local taxes. There are many different kinds of municipal bonds that can be issued to help finance transportation projects including general obligation bonds, revenue bonds, and grant anticipation notes. In addition to project revenues, municipal bonds can be repaid from revenue sources including State gas taxes and other transportation-related revenues; Federal-aid funds; tolls; and State and local sales taxes.

The interest rates that must be paid on bonds are determined by market demand. That demand is heavily influenced by the project’s credit ratings as determined by rating agencies (if the bond will be repaid through project revenues) or by the issuing government’s credit history and financial circumstances. Rating agencies evaluate a wide variety of potential risks associated with the bond issuer and the project’s projected costs and revenues before applying a credit rating. Figure 3-3 shows an example of how different credit ratings may influence the interest rates, or yields, demanded by the market. Typically, the longer the term of the bond and the lower the credit rating of the project, the higher the interest rate demanded by the market.

**Project Finance Bonds and Private Activity Bonds**

An SPV may issue taxable project bonds or seek to use private activity bonds (PABs) issued by a public sector conduit issuer. Because project finance bonds issued by the private sector are taxable and financially riskier, buyers typically demand a higher rate of return. Project finance bonds typically receive much lower ratings from ratings agencies than general obligation municipal bonds do. This is because project finance bonds offer no recourse beyond project cash flows. If a project fails to produce sufficient revenues, bond holders may not get paid. Project finance bonds often struggle to achieve investment grade ratings from ratings agencies and private project sponsors often must adjust a project’s capital structure to reach investment grade. Prior to the 2007/2008 financial crisis, default insurance could be purchased to make the issuance of project finance bonds more attractive to buyers. The collapse of the bond insurance market has made it more difficult to finance projects through project finance bonds.

Figure 3-3. Illustrative Tax-Exempt Yield Curves (Interest Costs)
Federal Assistance

In recent years, most P3s in the United States involving private financing have been supported by Federal government programs such as credit assistance from the Transportation Infrastructure Finance and Investment Act (TIFIA) and allocation of Private Activity Bonds. The TIFIA program can issue long-term subordinate debt to revenue-financed projects of national significance. TIFIA credit assistance can lower the amount of private sector financing needed and the costs of that financing by assuming a subordinate position in the cash flow waterfall of a project. This means that TIFIA interest costs are paid only after the interest on private debt is paid. Private Activity Bond allocations allow State and local governments to issue tax-exempt bonds on behalf of infrastructure projects with significant private involvement.

POTENTIAL REVENUE SOURCES FOR P3S

Project revenues for P3s can come from various sources. The most common source of revenue for a P3 project is project tolls. In many P3 projects, the revenues for a project come exclusively from tolls. Toll-based P3 projects may be undertaken with minimal financial contributions from the public sector. The private sector may agree to design, build, operate and maintain a project in exchange for the future revenues derived exclusively from the project itself. Future toll levels are typically established in the P3 agreement. The public sector effectively transfers demand risk -- the risk that facility demand will be less than expected -- to the private sector. If demand for a facility does not materialize private investors stand to lose their investment.

In recent years, potential project investors have been more reluctant to accept a high degree of demand risk. Many P3 agreements in the United States now include revenue sharing agreements and a mix of public and private financing. Some P3 agreements use availability payments, where the public sector pays the private sector an agreed upon annual or monthly fee for meeting performance standards set in the agreement.

Public agency contributions to a P3 agreement can be derived from various revenue sources. Typical revenue sources include State and local gas and sales taxes, as well as Federal aid funds. P3s may also be structured to take advantage of non-traditional revenue sources such as local option taxes, parking and other fees, tax increment financing, and tax assessment districts.
3. Financial Considerations

However, nontraditional revenues may be viewed by potential investors as less stable sources of revenue and, as a result, may be more difficult to leverage. As a rule of thumb, the broader the base from which a revenue source is derived, the more stable the revenue source. For example, Statewide sales taxes and gas taxes are generally considered more stable than local property taxes.

See Table 3-2, for a more detailed explanation of typical P3 revenue sources.

Table 3-2. Typical P3 Revenue Sources

<table>
<thead>
<tr>
<th>Revenue Source</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tolls</td>
<td>Direct user fee, may create stronger performance incentives for a facility operator. Revenue risk can be transferred to the private sector. Tolling structure may include market pricing mechanisms that create economic benefits.</td>
<td>Traffic and revenue forecasts can fall short of actual revenues. Use of additional toll revenues may be constrained within pre-defined limits of the corridor to address geographic equity concerns. Few facilities can be fully financed on toll revenues alone; recent experience shows that most projects will require a combination of revenue sources to work. Costs of collection may be higher than other revenue sources.</td>
</tr>
<tr>
<td>State fuel taxes</td>
<td>Indirect user fee. Revenues are not directly associated with the use of a specific project, but related to general use of highway network, therefor they may be relatively stable. Low cost of collection.</td>
<td>Yield declining over time since they typically do not increase in line with inflation and improved fuel efficiency and introduction/growth of alternative fuels lead to lower fuel usage. Significant demand from competing priorities/interests.</td>
</tr>
<tr>
<td>Federal-aid highway funds and discretionary funds</td>
<td>Derived from federal fuel taxes—a relatively stable revenue source and an indirect user fee.</td>
<td>Yield declining over time, see above. Federal funds are generally linked to regulations and contracting requirements (e.g., NEPA, Davis-Bacon, etc.) that may be more demanding than the requirements of other revenue sources. Once obligated or awarded, Federal funds, grants and earmarks must be used within a specific timeframe (generally three years).</td>
</tr>
<tr>
<td>Sales taxes</td>
<td>Relatively stable revenue source, though subject to influence of economic growth and recession.</td>
<td>May create market distortions because it is not aligned with the “user pays” concept. Some of the local option taxes or those dedicated for specific uses may have a “sunset” date that may or may not be aligned with the length of the P3 agreement.</td>
</tr>
<tr>
<td>Value capture</td>
<td>May capture economic value created through infrastructure improvements that is not captured by other</td>
<td>Subject to the volatility of the real estate market. Rated low by bond rating agencies. Yield may be low for major projects;</td>
</tr>
</tbody>
</table>
### Revenue Source

<table>
<thead>
<tr>
<th>Revenue Source</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development contributions</td>
<td>sources. Value capture options can be chosen based on regional/local conditions and project needs.</td>
<td>likelihood of requiring other revenue sources is higher. There can be concerns about the public sector being a “landlord.” Policy issues related to eminent domain takings (if any required for the project) being turned over to the private sector for profit.</td>
</tr>
<tr>
<td>Joint development /development rights</td>
<td>Encourage private sector to optimize potential revenue options, reducing the need for limited public resources</td>
<td>Yield is relatively low; cannot be considered as standalone funding sources, but as part of the “revenue portfolio.”</td>
</tr>
</tbody>
</table>

None of these revenue sources is exclusive to P3s, but the information regarding the advantages and disadvantages is presented from that perspective. It is also important to note that this list represents some of the revenue sources available today, and it may change over time. For example, fuel taxes are the main revenue source for highway and transportation investments, yet given their declining yield due to the introduction of more fuel efficient and alternative fuels, some practitioners are exploring revenue options, such as mileage-based user fees to replace fuel taxes over the long term.

Notice that the table above does not include two items that are sometimes counted as revenue in public discourse: debt and equity. Oftentimes, debt is used to help fund a project or program of projects, and when looking at the project financial pro forma, debt shows up in the “revenue” category. This is true from the perspective of the project’s upfront funding, but debt cannot be considered a long term revenue stream that supports the repayment of lenders and bondholders. Similarly, investors may put up equity at the front end of a project, thereby providing the funds needed to build the project earlier. That equity, however, is offered in anticipation of earning a return on investment over time.

**KEY CONSIDERATIONS ASSOCIATED WITH P3S AND REVENUES**

**Revenue from Programmed Toll Increases**

Toll facilities typically require periodic toll increases to cover operations and maintenance costs which tend to increase over time. Toll increases for publicly operated toll facilities often get caught up in political debate, so it can be difficult for public toll operators to raise tolls when they need to. In a P3 concession (where toll collection is transferred to the private sector), toll increases are typically defined in the contract and are often tied to inflation. Publicly financed toll facilities may also commit to future toll increases through bond indentures or other means, however, ratings agency typically have more confidence in the ability of privately operated toll facilities to raise tolls as needed. This is because privately operated facilities have stronger incentives to raise tolls and may be more insulated from political influence than publicly operated facilities.
Periodic increases in toll rates for a P3 project do not necessarily mean that there are additional revenues to invest in transportation. In a toll-based P3 agreement, toll revenues are used to pay for debt service, return on investment (ROI) to equity investors, and operating and maintenance expenditures on the facility. If a P3 agreement includes a revenue sharing agreement than a public agency may share in the remaining net revenues once the payments identified above have been made. Only then can additional revenues be realized by the public. In the availability payment model, toll revenues derived from a project are retained by the public agency and the public agency pays the private partner an agreed upon periodic fee. If toll revenues are in excess of the required availability payment than the public agency may choose to reinvest that income in the transportation system or lower tolls on the facility.

**Freening up Revenue for Other Projects**

If private equity or debt is used as part of a project funding plan, it could mean that less money is needed from public sources in the short term. This means that the unused money could be used on other projects that may not be attractive for P3 delivery, but that are considered important to meet the transportation demands of the public. As noted before, however, ultimately, the private contribution will need to be paid back by the public, either from tax or toll sources, so what may appear to be increased revenue is really just a matter of adjusting the timing of the revenue.

**Obligating Future Revenue on a Specific Project**

A P3 that uses availability payments may dedicate public funds for decades on an individual project. The availability payment model obligates the private partner to maintain certain performance standards, which will encourage them to make timely investments in the facility’s upkeep. This kind of asset management should reduce the life cycle cost of the project, and ensure that the facility remains in acceptable operating condition.

The implication of an availability payment agreement, however, is that the projects that are subject to these agreements will receive top-notch care (if the performance measures are written in that manner), while others may suffer from neglect. With contractual obligations to make availability payments, government loses the flexibility to allocate revenue where it may be most needed. This can impact the overall revenue picture for the entire highway program in a region.

**Stability of P3 Revenue Sources and Need for Multiple Revenue Sources**

Revenue sources must be stable and have an adequate yield over the long term to repay P3 debt and equity. Tolls and taxes are usually stable revenue sources, and tend to be rated higher by credit rating agencies. Ancillary revenues, such as revenue generated from right of way leases, rest stop concessions, or the sale of advertising or air rights.
3. Financial Considerations

339 tend to have relatively low yields, and value capture revenues are typically volatile, thus are best
340 when combined with other revenue sources as part of the P3 debt/equity repayment plan. Therefore, not all revenue sources are equal, and some are of higher quality than others.

342 In most cases, several financing and funding sources are combined to provide capital for the
343 initial construction of a project, and several revenue sources are bundled to repay debt and equity
344 in a P3. It is rare that a project can be “self-financed” through tolls, without requiring any form of
345 up-front contribution from the public sector. In many cases, more than one revenue source (e.g.,
346 ancillary revenues in addition to tolls) is required repay all of the investment over time. However,
347 this is not unique to P3s. On both P3 and traditional project development models, project
348 sponsors have to use a mix of approaches to develop a plan that meets all the needs of a project.

349 Restrictions on Uses of Revenue

350 P3 legislation in most States allow public and private sector funds to be combined, although
351 legislation in some States does not include explicit provisions that allow it (e.g., Alabama,
352 Maryland, Minnesota, Missouri and South Carolina).

353 Some revenue sources have a shelf-life. Grants and discretionary funds may have time limitations,
354 and some State/local revenue sources (such as sales taxes) may expire after a certain date,
355 requiring voter approval to be extended beyond that period. For a P3 project using availability
356 payments, the revenues dedicated to make the annual payments must have a life span that
357 extends through the concession period. Those revenue sources with a shorter shelf-life can be
358 used to make payments in the early stages or be used as backstop during period of high risk (e.g.,
359 construction, and ramp up period for toll roads).

360 Another concern with availability payments is whether these payments are contingent upon
361 annual appropriation. For instance, the Florida statutes on P3s allow FDOT to use availability
362 payments⁴ but include the following two provisions:

363 • “The annual payments under such agreement shall be included in the department’s tentative
364  work program... and the long-range transportation plan for the applicable metropolitan
365  planning organization... The department shall ensure that annual payments on multiyear
366  public-private partnership agreements are prioritized ahead of new capacity projects in the
367  development and updating of the tentative work program”

368 • “The annual payments are subject to annual appropriation by the Legislature as provided in
369  the General Appropriations Act in support of the first year of the tentative work program.”

370 Although availability payments are prioritized in the agency’s work program, there is a risk to the
371 concessionaire associated with the State’s annual budgeting process.

372 Restrictions on the Use of Federal Funds Related to P3

373 Federal funds come with some restrictions that may affect their applicability for P3s, such as
374 specific criteria for the types of eligible projects and activities that can be funded with Federal-aid
375 highway programs. For example, Interstate Maintenance funds are for capital investments
376 associated with resurfacing, restoring, rehabilitating, and reconstructing Interstate highways.
377 Projects eligible for Congestion Mitigation and Air Quality (CMAQ) funds must demonstrate air
378 quality benefits and be located within nonattainment areas, among other factors. There are
379 similar restrictions with other Federal-aid highway programs. In some cases, even after flexing of
380 Federal-aid highway funds is considered, States may find it difficult to align the available funds

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⁴ Florida Statutes, Title XXVI, Chapter 334, Section 9.
Challenges and Opportunities Series: Public Private Partnerships in Transportation Delivery
DRAFT May 11, 2012

3. Financial Considerations

Federal funds also have matching requirements. Title 23 regulates what can be used as match, including flexible match (i.e., other Federal funds, or third party donations). In addition, any project funded with Federal money must meet specific requirements (e.g., NEPA, Davis-Bacon, DBE, Buy America, etc.) that can add to the complexity of administering a project or otherwise increase project costs.

Lastly, Federal funds can only be used on capital expenditures; States are responsible of operating and maintenance (O&M) expenses of any Federally-funded project, including P3s. Therefore, for a project delivered under the availability payment model of P3s, Federal funds cannot be dedicated to make the annual payments to the concessionaire, unless it pays for 4R expenses, or a clear distinction is made that the Federal funds are being used to pay debt associated with the initial capital investment.

**PRICING FINANCIAL RISK**

Whether revenues are derived from tolls or other sources, public agencies seek to structure a P3 agreement that achieves public benefits and can attract private financial resources. Potential private project sponsors determine whether and how much to invest or lend to a project based on an evaluation of projected project cash flows and associated risks. Both equity investors and lenders assess the extent and likelihood of project risks and price those risks. To the extent that investors and lenders perceive risks to projected net revenues, investors will demand a higher rate of return and lenders will demand a higher interest rate.

To determine the value of a P3 agreement, the public agency and private investors each develop a financial model that forecasts cash flows and project costs and assesses project risks. The financial model may include projections and assumptions related to constructions costs; operations and maintenance costs; capital expenditures; debt schedules and financing costs; tariff schedules, usage rates and toll and non-toll revenues; and inflation and tax rates. The results of the model illustrate project cash flow under different assumptions.

Investors are interested in the project’s internal rate of return or return on equity. If investors decide that there is a good chance that they can meet a defined internal rate of return (IRR) or “hurdle rate” then they will make a bid. The IRR calculation is a measure of how well an investment pays off over time, and allows investors to compare different types of investments to decide where to invest their capital. Different investors have different hurdle rates. Lenders are primarily concerned with the projected debt service coverage ratio, or the amount of annual cash flow available to meet debt service payments in a given year, and the quality of the analysis that led to the project. Lenders generally expect a minimum of debt service coverage ratio of 1.2 or higher.

The financial model reflects assumptions made about risks, the allocation of risks, and the value of money over time. It enables decisionmakers to make informed choices about how to structure the agreement, set tariff and subsidy levels, and allocate and mitigate risks. Investors factor risk into their valuation of an agreement by identifying risks, estimating the extent of each risk, the timing of each risk, and the probability of each risk occurring. Since risks to a project vary over time, these risks may be applied to projected project cash flows at different levels over the period of the project. The value of a P3 is ultimately arranged along a probabilistic curve that States the estimated probability of achieving a certain value.

Since risks have costs associated with them, the private sector will not take on risk unless it expects to benefit. Therefore, the private sector will attach a risk premium, or higher cost, in order
for it to take on and manage a particular risk. The private sector does not decide upon risk allocation and risk premiums lightly and relies on extensive analysis. It is up to the public sector to decide whether to pay that risk premium or retain the risk. The amount of risk premium may be an indicator to the public sector of the magnitude of the risk, which will help them make a more informed decision. However, it can be difficult for the public sector to determine which project elements have led to a higher risk premium on a project. It is also important to note that the public sponsor cannot know the risk premium in advance with any certainty. It can be difficult to design a procurement process that allows them to choose which risks to transfer—a so-called “cafeteria plan.”

How an investor values future cash flows is reflected in the discount rate applied to future cash flows. Variation in the discount rate can have a major effect on an investor's valuation of a project. Despite the discounting of revenues in the later years of an agreement, longer-term agreements may be more attractive to investors due to potential tax benefits of anticipated depreciation, amortization, and interest rate deductions. In addition, equity investors may anticipate refinancing a project on more favorable terms once construction is complete and the project has been fully operational for several years, when the uncertainties associated with the project are significantly less. Often, however, the concession agreement will stipulate that any savings from refinancing need to be shared with the public sponsor.

The public sector will develop its own financial model and apply its own evaluation process to help shape appropriate agreement structures and determine acceptable bids (for a detailed discussion of public sector project evaluation processes see Chapter 2, Decisionmaking.) The public sector may use cost benefit analysis or Value for Money (VfM) tests to determine whether to go ahead with a P3 approach, evaluate bids, and set an acceptable level of subsidy. VfM tests use a public sector comparator to determine whether a P3 would be better than more traditional public sector delivery methods. Using a public sector comparator, the public agency models the net present value of a project using traditional project delivery methods versus a P3 delivery. Qualitative factors are also considered in conducting the analysis. Procurements based on VfM tests help achieve a best value selection of a bidder, rather than the traditional low-bid selection. VfM analysis can help a public agency better understand project risks and determine the optimal allocation of those risks.

This subsection contrasts the advantages and disadvantages of the P3 approach from the perspective of financial considerations. Table 3-3 provides a summary of the considerations.

Table 3-3. Financial Advantages and Disadvantages of Traditional and P3 Financing
### Challenges and Opportunities Series: Public Private Partnerships in Transportation Delivery

DRAFT May 11, 2012

#### 3. Financial Considerations

<table>
<thead>
<tr>
<th>Financing Approach</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
</table>
| **Traditional**    | - Generally cheaper  
 |                    | - Smaller or no “learning curve”  
 |                    | - Quicker, less complex transactions | - Funding may be inadequate or permit only a piecemeal approach  
 |                    |                                         | - Government retains all financial risk  
 |                    |                                         | - Short-term budget process limits resources and options for life-cycle cost management  
 |                    |                                         | - Debt capacity is limited by law and policy |
| **P3**             | - Leverages more up-front capital resources  
 |                    | - Transfers financial risk from public sector (for a price)  
 |                    | - Provides incentives for early, on-budget completion and better life-cycle cost management  
 |                    | - Debt owed by private parties does not count against the government’s debt limit  
 |                    | - Standalone project financing can insulate government from bad investments (though non-recourse municipal debt can do the same). | - Typically higher cost of capital, although the additional cost may be offset by the risk transfer  
 |                    |                                         | - Complex and lengthy transaction  
 |                    |                                         | - Potential for greater public controversy  
 |                    |                                         | - Higher management and oversight costs  
 |                    |                                         | - Potential for lost residual revenues (unless adequately dealt with in contracts)  
 |                    |                                         | - Availability payments obligate government to future payments, thereby limiting its flexibility in allocating revenue to projects. |

#### Potential Financial Advantages of P3s

Equity-financed P3s have the potential to generate benefits for a project or program of projects by:

1. Providing an alternative to public sector debt capacity for legal, political or other reasons;
2. Leveraging greater amounts of upfront capital for the same revenue stream as comparable public sector financing;
3. Facilitating the financing of projects that cross multiple public jurisdictions;
4. Allowing the public sector to transfer financial risks, thereby creating stronger incentives for at-risk private partners to conduct due diligence; and
5. Creating incentives to reduce the long-term life cycle costs of maintaining the asset.

#### Florida’s Limitations on P3 Obligations

When Florida authorized the use of P3s, it explicitly limited the amount of funding that can be obligated for future payments to 15 percent of its five-year work program. This is one potential mechanism to prevent public agencies from over-committing future resources to P3 projects.

#### Providing an Alternative to Public Sector Debt Capacity

Legislative, constitutional or policy restrictions on a State’s or agency’s ability to borrow in the public finance market are often the primary reason why a public agency decides to seek out private financing for a project. In some cases, legal covenants restrict how much of a revenue source can be pledged to debt, the term of the debt that can be assumed, or the overall amount of debt a government can take on. In cases where a public agency is unable to issue sufficient debt through the municipal bond market to raise the capital needed to fund a transportation project, private financing may provide a viable alternative.
It is important to recognize that whereas some P3s transfer future financial risk away from governments, others (particularly those featuring availability payment or shadow toll structures) retain such risks over time. These techniques may still provide benefits, but governments will need to consider the level of future payments that are obligated to such projects as a part of their broader work program.

**Leveraging Upfront Capital**

Private entities may be willing to take on more financial risk than public agencies by borrowing more against a given revenue stream. Some public agencies may be less willing and less able to issue debt as aggressively as the private sector. A public jurisdiction has numerous demands on its debt issuance capacity. In addition to transportation projects, other capital projects that may require debt financing include schools, hospitals, and water and sewer facilities, as well as other government buildings. Since a default could affect all government operations, not just the single project, governments may be less willing to take on financial risks than private investors.

The private sector may be able to achieve greater financial leverage on a project by being more willing to accept projections of higher revenues or lower costs, or financing projects at lower coverage levels than the public sector. In general, public sector debt issuances have to have a higher ratio of forecast pledged revenues to the debt service requirement. Typical coverage levels for public debt are 1.5 times forecast revenue, while commercial loans can be in the range of 1.2 times. Thus, a given revenue stream will yield less upfront money for the public sector than the private sector. Despite these differences, private investors have become considerably more cautious in recent years as traffic (and revenue) flows have leveled due to the recession of 2007/2008. Their appetite for taking on higher risks may have cooled, and it remains to be seen if that caution is maintained into the future.

**Catalyzing Project Debt Issuance for Projects that Involve Multiple Jurisdictions**

Many P3 projects involve multiple government jurisdictions, such as counties, cities, States, and toll authorities. For a project that crosses multiple jurisdictions, it may be difficult for one jurisdiction to bear the responsibility of issuing all the debt. At the same time, it is difficult for the other jurisdictions to provide guarantees and pledges to back up the debt of an issuing jurisdiction. Sometimes, this problem can be solved by creation of a special authority that crosses the relevant jurisdictions – but that may just create another level of government solely to carry out a single project.

Private equity finance, by contrast, can allow multiple public jurisdictions to pledge either upfront or ongoing revenues, without taking on the debt issuance risks on behalf of the other jurisdictions. In an equity-financed P3, public and private financing for a project goes to a special purpose vehicle (SPV) set up solely for the purpose of administering the project, which limits exposure to financial risk.

**Providing a Financial Incentive for More Robust Due Diligence**

In many P3s, private sector participants—both investors and lenders—have capital at risk, so they have financial incentives to ensure that the contracted services are provided. Private sector lenders want to be sure that the project to which they are lending is financially sound throughout the term of the loan. Therefore, they can be expected to conduct due diligence before issuing a loan and independent oversight of a project throughout the period of their involvement. The additional due diligence imposed on privately financed P3s means that risks may be more likely to be identified, assessed, and mitigated than when using traditional delivery methods. Evaluations
3. Financial Considerations

Challenges and Opportunities Series: Public Private Partnerships in Transportation Delivery
DRAFT May 11, 2012

of projects financed through public bond issuances tend to be done tend to be based more on the credit rating of the issuer than the project.

3. Financial Considerations

**Protecting General Revenue from Project Revenue Shortfalls**

P3s can be one way for governments to make sure that general tax revenues, or the toll revenues from pre-existing toll projects, are not at risk in the event project revenues do not materialize as expected. Non-recourse revenue bonds have been used for decades to achieve this purpose. P3s provide yet another mechanism but one for which governments need to be wary of either contractual or implied promises that weaken this protection. This has not generally been an issue in U.S. public finance, but there are situations abroad where revenue risk was not adequately transferred in the P3 transaction. In fact, there are several cases in the United States of P3 projects where lower than expected revenues led to private sector losses, but, because of the P3 contract the public sector was shielded from losses. For example, the original investors in the Dulles Greenway, a P3 project completed in 1995 in northern Virginia, took substantial losses when initial traffic was less than half of what investors had anticipated. While the private partner was forced to lower its tolls to attract traffic and restructure its debt, the public sector had no funding at risk and lost nothing.

**Improving Performance and Life Cycle Cost Management**

A well-designed P3 agreement can align the incentives of public and private partners in such a way that the private partner has a strong incentive to complete a project on time and to make cost-efficient investments throughout the life of the project. P3 agreements are typically structured so that the public sector pays the private partner only when the facility is complete and performing to agreed-upon standards. P3 agreements typically involve a commitment on the part of the private project sponsor to operate and maintain a facility at a specified standard for the duration of the agreement. In bidding for a contract that includes long-term O&M private firms factor in the projected long term costs of achieving the stated O&M standards into their bids. Project revenues are dedicated to maintaining the facilities at the stated standards prior to reimbursing creditors or investors. This gives the private participant a strong incentive to minimize long-term maintenance costs by applying the most cost-effective treatments at the appropriate time so that it can maximize its long-term net revenues. This is in contrast to traditional means of project maintenance by public agencies where funding constraints can thwart efforts to apply both routine maintenance and rehabilitation treatments required on aging roadways, even when such treatments would be the more cost-effective over the long-term. As a result, they end up applying short term treatments that end up costing the public more in the long-term.

**Potential Financial Disadvantages of P3**

The costs of private financing of transportation projects must be taken into account and weighed against the benefits when considering a P3 (see Figure 1). The costs and complexities of private financing such as higher transaction costs, higher capital costs, lost revenue opportunities, and hidden risks make using such an approach appropriate only for certain projects.

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Spanish Concession Program: Unintentionally Retained Risks

Under the Spanish concession program, the private sector was supposed to take the financial risk. However, the contracts were written such that the government owed the concessionaire compensation if the concession terminated early for any reason—including bankruptcy. This meant that the government...
3. Financial Considerations

More Lengthy and Costly Transactions

Private financing can add complexities and costs to the project delivery process and can be difficult to explain to the public. P3 contracts can be lengthy and complex and require more time and resources to develop and monitor than traditional contracts. Due to the complexities of P3 agreements, it is important to acquire or develop the appropriate legal, financial, and technical expertise to execute an efficient agreement. Implementing a P3 procurement process can take several years from the beginning of P3 investigations to financial close. Due to the length and complexities of such transactions, private financing will only be appropriate for large projects, although Canada’s experience indicates that as P3 transactions become routine, the costs and timelines should decrease.

Higher Cost of Capital

Private capital tends to be more expensive than public capital because the public sector has the advantage of tax-free municipal bonds. Private debt is not tax-exempt and the private sector also requires greater returns for assuming the greater risks associated with P3 agreements. This “risk premium” is reflected in the higher financing costs of private finance compared to public financing. The interest costs on public bonds may range from 4 to 7 percent, while private financing costs may be 8 percent or higher.

Lost Revenue Opportunities

P3s may commit a dedicated revenue source, typically tolls, to a private project participant for periods typically ranging from 30 to 99 years. These dedicated revenues allow the private firms to cover initial capital and ongoing O&M and financing costs and to profit. Anticipated project revenues as well as costs are reflected in the competitive bids made by private firms. But if actual revenues are much higher than anticipated, a private firm can receive a windfall. Using traditional public financing, any revenues above and beyond project costs would belong to the public sector. Most recent P3s have revenue sharing arrangements in the event of “excess” revenue to eliminate the potential for windfall profits.

Poorly Transferred or Unintentionally Retained Risks

The value of a P3 can hinge on the extent to which certain risks are transferred and on the costs of transferring or retaining those risks. If revenue risk is not adequately transferred to the private sector in a P3 and future revenues do not materialize, the public sector may have to cover the shortfall. That is, the public sector may end up bailing out a failed concession in order to maintain an operational road. Although there are no examples of this in the United State, the concession

SR-91 Express Lanes

Completed in 1995, the 10-mile, four-lane section of California State Route 91 (SR-91) known as the SR-91 Express Lanes was constructed with $135 million of private funds under a 35 year concession agreement. It was the first fully automated electronically tolled road in the world. The project was a financial success; however, a clause in the contract that limited improvements to parallel, “competing” infrastructure within the SR-91 Express Lanes corridor proved untenable for the public sector and led to litigation. To alleviate the issue, Orange County Transportation Authority (OCTA) purchased the concession for $207 million in 2003. OCTA now has more control over toll levels and operates the road under a private contractor. The SR-91 Express Lanes remains financially
program in Spain did not adequately insulate the government from the need to step in when
concessionaires went bankrupt.

**STRUCTURING AGREEMENTS TO OPTIMIZE RISK TRANSFER**

The primary value proposition of the P3 project delivery approach is that it allows for the optimal
allocation of project risk. Project risks include, but are not limited to, financial, design,
construction, maintenance, operations, demand, regulatory, and asset ownership risks. In
structuring a potential P3 agreement the public agency decides which risks to retain, which risks
to transfer, and which risks to share. The private partner may in turn transfer risks to
subcontractors, insurers, and other parties.

Different types of project delivery agreements transfer different risks. However, risks are not
always apparent and the true allocation of risk to various parties may not be known until a
negative event occurs. In practice, many project risks are not, or cannot, be wholly transferred to
the private sector, and the public partner inevitably retains significant risks.

Risks should be transferred to the party best able to control them at the lowest cost. Where the
private partner has limited control over a risk, it may be optimal for the public agency to retain
that risk. Risks that private investors may be able to effectively control include: design and
construction risks, finance risks, operations risks, and maintenance risks.

Potential project bidders are also concerned with risks associated with the bidding process itself.
It can cost millions of dollars to develop a competitive bid for P3 procurement. As a result,
bidders will have a strong interest in a procurement process that they believe is fair, open, and
transparent and that has a reasonable likelihood of the agreement being completed. Once a
project is underway, private investors anticipate the greatest uncertainties in design and
construction costs and demand, or facility usage. Operations and maintenance costs are perceived
as less of a risk because they are a smaller portion of the overall costs and they occur in later
periods of the agreement and are therefore discounted. Facility usage, or demand risk, is often the
greatest risk that private investors are asked to take on, but it is a risk over which they have
limited control.

For toll projects the projection of toll revenues is central to the evaluation of cash flows. In
projects where the primary revenue stream is tolls, how private investors assess the value of a toll-
financed project will depend on their projections of potential toll revenues. Forecasting demand
on new toll roads and lanes, however, is not a simple task. The uncertainty associated with toll
forecasts will be factored into a potential investor’s assessment of project risks and their
willingness to invest in a project. Investors that are more speculative may be attracted to the
potential upside gained from assuming demand risk. If demand for a facility is higher than
anticipated, they will be positioned to capture residual revenues, subject to revenue sharing
contract provisions.

**Availability Payments: A Different Risk Transfer Approach**

In recent years, there has been a trend away from P3 projects where private partners assume
demand risks. The 2007/2008 financial crisis continues to impact financial markets, making it
more difficult and more expensive to assemble private capital. The loss of the bond insurance
markets and a newfound conservatism among senior debt lenders has led public agencies to find
new ways to structure P3s to mitigate or retain risks that private investors no longer find
acceptable. Given the limited capacity of private capital markets to take on risk, publicly
subsidized debt mechanisms and credit assistance are more likely to be required to ensure that
sufficient capital can be raised to complete P3 agreements. Most recently closed P3 agreements include a mix of public and private capital invest as well as the use of various contract mechanisms that limit the private sector’s exposure to risk.

Rather than ask the private sector to rely on tolls for project revenues, public agencies have offered fixed availability payments to the private partners based on performance of the facility to standards. In the availability payment structure, private partner revenues are not dependent on tolls. The public partner commits an annual payment to the private partner for maintaining and operating the facility to a specified standard. If the project is a tolled facility, the public partner retains the revenues from the tolls. To determine the amount of the availability payment, private sector bidders submit bids based on the maximum annual payment they would require. Table 3-4 provides a comparison between availability payments and toll-based revenue for P3s.

Table 3-4. Characteristics of Availability Payments vs. Toll-based Revenue Risk P3s

<table>
<thead>
<tr>
<th>Availability Payments</th>
<th>Toll-based Revenue Risk P3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Payments are made for a fixed amount on a periodic basis</td>
<td>Revenues are generated from tolls</td>
</tr>
<tr>
<td>Potential concessionaires bid on required payment amount</td>
<td>Potential concessionaires may bid on amount paid to public agency for revenue stream or required payment amount</td>
</tr>
<tr>
<td>Bid amounts depend on the concessionaire’s expected project costs, likelihood of achieving performance standards, and desired return on investment</td>
<td>Bid amount depends on estimates of likely costs and revenues and desired return on investment</td>
</tr>
<tr>
<td>Payments begin when facility is open to traffic (although progress payments can also be included)</td>
<td>Payments depend on toll rate schedule (usually set in the agreement) and facility demand</td>
</tr>
<tr>
<td>For toll-based projects, public sector sets toll rates and receives toll revenues</td>
<td>Concessionaire captures residual revenues, usually subject to maximums</td>
</tr>
<tr>
<td>Public sector imposes financial penalties for failure to meet performance standards, such as lane availability, exist</td>
<td>Legal and financial recourse is established for failure to meet performance standards</td>
</tr>
<tr>
<td>Private investors may perceive less risk and be more willing to invest</td>
<td></td>
</tr>
</tbody>
</table>

There are a number of reasons why a public agency may choose to use availability payments instead of toll-based payments. Availability payments may be used in cases where tolling is infeasible long-term project costs. If this is the case, the public sector will have to identify an alternative source of revenue to make the payments. Availability payments may also be used if the public sector wishes to retain traffic risk because the private sector demands too high of a risk premium. In the case of Florida I-595, one of the reasons Florida DOT chose to use availability payments was to retain the ability to dynamically manage toll rates to optimize mobility along the corridor. Availability payments may be more attractive to potential private sector investors that are averse to taking on risks outside of their control. This can help to lower project financing costs and overall costs to the public agency.

With the availability payment model, potential private partners no longer assume demand risk. This may make it easier to attract capital and allows the project sponsor to focus on managing risks associated with construction, maintenance and operation of the facility. Whereas the ratio of debt to equity in a demand risk deal may be 80/20; in an availability payment deal the ratio could be 90/10. Whereas a private operator of a toll facility may adopt practices to maximize

3. Financial Considerations
throughput, there is little the private operator can do to manage demand risk that is largely dependent on exogenous factors such as economic development and the performance of other transportation facilities in the network. With availability payments, private sector bids are more likely to be based on the bidder’s ability to manage risks associated with construction costs and operations and maintenance of the facility rather than divergences in traffic modeling assumptions.

It should be noted that the use of availability payments results in the public sector retaining greater risks than in P3 agreements where demand risk is transferred. If project revenues are less than expected it is the public agency that must make up for the shortfall. Alternatively, if demand is greater than expected, the public agency is positioned to capture any windfall. The I-595 Express Toll Lanes is an availability payment project where the public sector is responsible for collecting toll revenue, but relies on other sources as the basis for its long-term responsibility to pay the concessionaire. Availability payments may be paid from the State transportation trust fund and Florida Turnpike Enterprise. Toll revenues offset the obligations from these sources.

Availability payments represent one way to structure P3 contracts where the public sector retains demand risk, the risk that demand for the facility is lower than expected leading to lower than anticipated revenues. This structure may allow the public sector to attract more bids that are competitive and keep financing costs down. In addition, availability payments eliminate the public relations risk of a private firm potentially reaping windfall profits if facility demand is higher than anticipated. Other alternative approaches to P3 contracting, such as dynamic concession terms, can also be used to ease the risks of future revenue for both the public and private partners.

Like public debt, availability payments represent a significant long-term commitment of funds for the maintenance of infrastructure at specified standards that may limit the public agency’s financial flexibility in the future. Furthermore, while the public agency may demand, and be willing to pay for, the operations and maintenance of facilities to high standards in an availability payment concession, it may be unable to maintain the rest of the transportation system to such standards due to financial constraints.

**Other Ways to Share Risks**

If the public agency is uncomfortable retaining all of the demand risk, there are alternative contract mechanisms that can allow it to transfer some portion of the demand risk. For example, the public agency can guarantee an agreed-upon amount of annual revenue to the concessionaire and require sharing profits if the project revenues are greater than expected.

Another alternative contract mechanism allows for a flexible agreement term. The terms can be set so that the concession terminates at a pre-determined level of gross revenue (in present value terms). If projects yield more revenue than expected, the term is shorter; conversely, if there is less revenue, the term is extended. This allows the public agency to offer fair compensation for the equity contribution without affecting general government revenue. In the case of toll projects, however, it will be toll payers carrying the burden for a longer period.

**SUMMARY**

P3s include a potentially powerful suite of financial tools that allow governments to accelerate the delivery of projects and to do so more efficiently. However, P3s are not a financial panacea. Private participation in project finance may allow greater leveraging of future revenue streams than traditional public sector financing, but such participation does not create revenue. Private
participation in project financing can create significant benefits for appropriate projects, but private financing can do nothing without the promise of future revenues, whether taxes or tolls.

**RESEARCH NEEDS**

Additional research may help clarify some of the additional opportunities and challenges associated with P3 financing for long-term concessions. Among the research needs are:

- What are the realistic public alternatives to compare to P3 concession financing rather than traditional public financing?
- How much in financial loss has been avoided by the public sector in past domestic P3s?
- How much future revenue has the public sector foregone?
- What financial models can be used to estimate financial risks in a P3 transaction (in order to allocate it between public and private parties)? How successful have the models been at predicting outcomes?
- How can a State compare a “system pledge” with a standalone P3 financing?
- How has lender behavior changed since the downturn of 2008? How has this affected the current P3 lending market?
- How have rating agency criteria changed since the downturn of 2008? How has this affected the current P3 lending market? Do criteria differ for public and private borrowers?
- How do private financial structures differ from those available to public agencies (e.g., greater capacity, higher cost, greater or lesser flexibility, shorter or longer tenure, etc.)? What are the advantages and limitations of each?
- What is the actual financial advantage of depreciation in a transaction?
- How does discount rate affect the analysis?
- How does the market view appropriations risk for availability payment financings? How are future availability payments counted against debt ceilings under statute and by rating agencies? What are some lessons learned from past availability payment financings?
4. PERFORMANCE MANAGEMENT

PERFORMANCE MANAGEMENT KEY FINDINGS

- Public agencies managing P3 contracts need to find ways to monitor and manage contract performance without reclaiming transferred risks or reducing the efficiencies gained from allowing the concessionaire to choose the best way to meet performance specifications.

- Effective P3 contracts must be comprehensive enough to align the concessionaire’s interest with those of the public sector across all phases of a project from design and construction through operation. Yet, they also must be flexible enough to adapt to changing public and private interests over decades.

- Performance standards on a P3 project should match those on the rest of the system. If performance levels are set too high, which can be a temptation, the agency may drive up costs and reduce its ability to maintain the rest of the transportation system at comparable levels.

- Performance management approaches should facilitate the resolution of issues in an expeditious manner.

- The sponsoring agency should assign a competent, long-term team responsible for making sure the contract terms are followed and communicating regularly with the private partner.
4. PERFORMANCE MANAGEMENT

INTRODUCTION

P3 agreements can create efficiencies through establishing long-term design-build-finance-operate-maintain (DBFOM) contracts that include outcome-based performance specifications. Outcome-based performance specifications focus on what a facility is intended to achieve rather than prescribing methods and materials for achieving facility goals. The goal of using outcome-based performance specifications is to make service delivery more efficient by allowing the concessionaire to decide how best to achieve the intended results. Defining, measuring, and monitoring outcome-based performance specifications can be challenging and costly, so outcome-based performance measures may be more appropriate for long-term contracts that span multiple phases of a facility’s lifecycle (e.g., design, construction, operations and maintenance) or for large, complex projects where there are potential efficiencies to be gained from innovation. P3 projects typically meet both of these conditions. As a result, public agencies using P3 agreements normally employ performance-based contracts. This shifts the public agency’s primary role in the project from oversight of design and construction to management of a performance-based contract. In this role, the challenge for the public agency is to find ways to monitor and manage contract performance without reclaiming transferred risks or impinging on the efficiencies gained from allowing the concessionaire to choose the best way to meet performance specifications.

Effective performance-based P3 contracts align the concessionaire’s interest with those of the public sector throughout the duration of the agreement. Over the period of a P3 agreement, economic conditions will fluctuate, technology will evolve, policy needs will shift, and the contracted parties are likely to change. Changing economic conditions may lead to unexpected changes in facility demand or financial terms. New technologies may require increased capital investment in a facility. Changes to the contracted parties, through elections on the public side or sale on the private side, may bring new understandings and capabilities to an agreement, but may also lead to financial and technical underperformance. Performance management is a way to maximize project efficiency while at the same time ensuring that the contractor not only meets performance standards at the time of construction, but manages the dynamic risks to performance over the period of the agreement.

This chapter describes the elements of effective P3 performance management. The first section discusses public sector performance management responsibilities and challenges. The second section identifies factors that contribute to effective performance management.

PERFORMANCE MANAGEMENT RESPONSIBILITIES

Public sector responsibilities for managing the performance of P3 agreements begin prior to the close of the agreement and last for the duration of the agreement. These responsibilities include:

- Defining performance measures;
- Setting performance standards;
- Monitoring performance;
- Assessing payments and penalties for performance;
- Designing and managing dispute resolution processes;
- Managing capacity expansion of the facility; and
- Managing handback of the facility.

4. Performance Management
Defining Performance Measures

Outcome-based performance measures can be used to specify standards across three phases of a P3 project: design and construction; operation and maintenance; and handback. Outcome-based performance specifications define indicators of quality and functionality that can be measured over time, such as ride smoothness, material durability, lane availability, incident response times, and work zone safety. These measures are typically specified in the contract, but they are rarely set in stone once the contract is completed. Many P3 agreements include provisions for reviewing and updating performance requirements to meet evolving industry standards.

Design and Construction

During the design and construction phase, specifications in P3 contracts are generally drawn from agreed-upon designs, and typically include some prescriptive design standards. These standards should be made clear to proposers in the procurement process. Similar to traditional design-bid-build contracts, the public agency may choose to include procedural specifications in a P3 contract to ensure, for example, that a concessionaire conforms to safety and environmental standards. Additional performance specifications, either procedural or outcome-based, may be drawn from project management and quality assurance plans that the concessionaire may be required to develop. Performance measures may also be used to monitor aspects of construction performance such as work zone safety, minimization of service disruption, and the provision of timely and accurate communication with the public. Finally, public agency may set outcome-based goals, such as congestion-relief and allow private partners to propose alternative designs to help achieve those goals.

Operations and Maintenance

During the operations phase, performance measures are typically used for managing capital assets, as well as daily operations and maintenance (these are summarized in Table 4-1). Performance measures related to facility maintenance and operations can be specified as processes in detailed maintenance plans (e.g. daily graffiti patrols) or as outcomes to be achieved (e.g. graffiti cleaned within one hour). For some concessions, the concessionaire may be asked to manage a facility so as to meet mobility goals, which may be specified with measures such as average vehicle speed. Often an agreement will require that the concessionaire develop management plans and systems for meeting outcome-based specifications. The role of the public agency or independent auditor in such cases is to verify that the concessionaire is complying with the specified performance requirements.

Handback

Performance measures must also be defined for measuring the condition of the facility at the end of an agreement when it reverts to public control (handback). To assess asset conditions prior to handback, the government can require the concessionaire to develop and follow an asset management plan that describes planned capital investments and systems for monitoring asset condition. Relevant performance measures for asset conditions at handback include residual asset value and remaining design life. In an availability payment P3 project, the agreement may allow the public agency to hold back payments in the latter years of the concession if the facility is judged to be in poor condition. In a toll-based P3 project, the public agency can protect against handback risk by requiring that the concessionaire set aside a portion of facility revenue in a special account that can be used once the contract ends for unanticipated capital expenditures resulting from the conditions of the facility.
4. Performance Management

**Table 4-1. Common Operations and Maintenance Measurement Categories**

<table>
<thead>
<tr>
<th>Measure Type</th>
<th>Elements Measured</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asset Management</td>
<td>Pavement conditions, Bridge conditions, Guardrails,</td>
</tr>
<tr>
<td></td>
<td>Signs, Lighting, Toll Systems, Drainage and ventilation</td>
</tr>
<tr>
<td></td>
<td>systems, Intelligent transportation systems, Buildings</td>
</tr>
<tr>
<td>Operations</td>
<td>Incident response, Lane availability, Vehicle speeds,</td>
</tr>
<tr>
<td></td>
<td>Facility throughput, Customer service</td>
</tr>
<tr>
<td>Maintenance</td>
<td>Mowing, Litter pick-up, Graffiti removal, Environment</td>
</tr>
<tr>
<td></td>
<td>al compliance, Winter maintenance</td>
</tr>
</tbody>
</table>

**SETTING PERFORMANCE STANDARDS**

Public agencies may set performance standards at different phases of project development. The parameters of a project’s design will be set during the environmental review process. Functional specifications will be further set during preliminary design and the development of a procurement package. Specific construction or operations standards should be clearly stated in the procurement documents for bidders to accurately price their bids.

Setting performance standards that are representative of a public agency’s desired levels of service requires careful deliberation during the development of the project. In procuring a P3 agreement, a public agency can set high standards for a facility, but it may have to pay more to the concessionaire to achieve higher standards. If the standard is too high, the project may become financially infeasible. Furthermore, by committing to higher standards for P3 facilities, the public agency may have less funding available in the future to invest in other infrastructure. In setting performance standards, public agencies may want to carefully consider the tradeoffs associated with committing to certain standards and levels of funding. In this regard, P3 agreements are less flexible than traditional methods of publicly maintaining and operating infrastructure, where the public agency retains year-to-year flexibility in the allowable performance standards. Public sector agencies sometimes relax these standards by delaying or reducing investments, or by lowering maintenance standards, in order to conform to financial realities. By specifying performance standards contractually, a P3 agreement lessens the flexibility of public agencies to make such compromises, including those that save money in the short term but are more costly from a life-cycle perspective. On the other hand, during periods when agency budgets are strained, the loss of flexibility to relax performance standards on a P3 facility will increase the pressure on public agencies to reduce spending on non-P3 facilities.

Early private sector involvement in the development of P3 projects, through the use of unsolicited proposals or pre-development agreements, can help to ensure that design elements that may determine the financial feasibility from a private sector perspective are considered. For example,
early private sector involvement in the development of the I-35W north of Fort Worth (NTE 3A3B project) allowed the private sector to suggest connectivity improvements that, while they required additional up-front private investment, resulted in much higher revenues over the term of the contract, helping the project achieve greater financial feasibility. Private sector input on performance standards may also be sought at the onset of a procurement process by soliciting alternative technical concepts (ATCs) or changes to project scope, design, or construction criteria. However, in considering ATCs, the public agency must balance the benefits of private sector innovations, with the benefits of maintaining a fair and competitive procurement process.

In setting performance standards, public agencies may look to benchmarks set in other P3 agreements or equivalent facilities. Public agencies that are already applying performance management to State-operated transportation facilities may set goals and measures for P3 projects that are consistent with, or contribute to, the goals and measures the agency has set for the rest of the system. Public agencies may also set policy goals for specific facilities and set performance standards based on those explicit policy goals, such as mobility, safety, environmental stewardship, or economic development. In the case of Florida’s I-595 project, for example, Florida chose to retain control over tolling policy and demand risk by using an availability payment compensation model. This control allows Florida to modify tolling levels to help achieve a policy goal of corridor mobility optimization. Mobility improvements may also be achieved in toll-based compensation agreements by benchmarking toll escalation to traffic flows, or through contract mechanisms that allow for the public agency to modify toll policies as long as the private partner is financially compensated for lost revenues.

Public agencies must also consider that desired performance standards are likely to change over time. As a public agency’s own standards change due to changing conditions or policy goals, they will likely expect the concessionaire to conform to those changes. For example, future land development may necessitate changes in environmental standards. The concessionaire is typically willing to take on the risks associated with non-discriminatory changes in law to a certain degree, and such an agreement can be written into the contract. However, the concessionaire will typically ask for some assurance that the standards won’t be changed so quickly or completely that it becomes financially onerous to meet new standards. As a result, some P3 contracts specify a limit to the number or percentage of changes to standards that can be made on an annual basis or include procedures for the private partner to be compensated for unexpected costs or lost revenues resulting from changes.

There is a natural tension between flexibility and accountability in performance management. If a standard is too flexible, the public sector risks not obtaining the highest possible level of performance from a concession. If a standard is inflexible, it may not adapt to changing technology needs. For example, in one agreement, the concessionaire’s performance was based on the operations of its call center for its toll payment accounts. However, most users preferred to use a web interface to communicate with the concessionaire. The contract performance standard failed to anticipate technology changes or to use a more flexible measure of success, such as customer satisfaction.

**MONITORING PERFORMANCE**

The government is responsible for monitoring the performance of the concessionaire. P3 contracts will typically establish roles and responsibilities (see Table 4-2) and monitoring procedures. Performance monitoring procedures can include self-reporting procedures,
independent audits, regular meetings and reports, and the use of intelligent transportation systems that automate data collection and reporting processes.

### Table 4-2. Potential Performance Monitoring Responsibilities

<table>
<thead>
<tr>
<th>Party</th>
<th>Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concessionaire</td>
<td>Develop management plans and procedures</td>
</tr>
<tr>
<td></td>
<td>Collect monitoring data</td>
</tr>
<tr>
<td></td>
<td>Develop status reports</td>
</tr>
<tr>
<td></td>
<td>Self-report violations</td>
</tr>
<tr>
<td>Government</td>
<td>Set performance standards</td>
</tr>
<tr>
<td></td>
<td>Review plans, procedures, and status reports</td>
</tr>
<tr>
<td></td>
<td>Perform audits and inspections</td>
</tr>
<tr>
<td></td>
<td>Assess penalties and awards</td>
</tr>
<tr>
<td>3rd Party</td>
<td>Perform independent audits and inspections</td>
</tr>
<tr>
<td></td>
<td>Data collection</td>
</tr>
<tr>
<td></td>
<td>Resolve disputes</td>
</tr>
<tr>
<td>Shared</td>
<td>Perform daily communication and problem solving</td>
</tr>
<tr>
<td></td>
<td>Conduct regular face to face meetings</td>
</tr>
<tr>
<td></td>
<td>Complete annual performance reviews</td>
</tr>
</tbody>
</table>

**Self Reporting**

Many P3 contracts require the concessionaire to develop project plans that explain how the concessionaire will monitor and report the project’s performance. Project plans may include: asset management plans, operations and maintenance manuals, quality and performance management plans, and communications and customer care plans. The concessionaire then assumes responsibility for quality management and performance reporting. The government approves the concessionaire’s project plans and validates performance reports. While this model can conserve public resources, there must be significant consequences if the concessionaire falsifies or fails to provide the required information.

**Independent Engineers**

P3 contracts may also establish processes whereby an independent engineer or certified auditor is responsible for spot checks and audits of the facility. The independent engineer is generally used to assure the design and construction complies with the concession agreement technical requirements, but they can be used through all phases of project. As a rule of thumb, independent engineers are typically employed to monitor high risk areas, whereas self-reporting is used for areas of lower risk. The cost of the independent engineer’s services may be borne by the concessionaire or it may be split between the public agency and the concessionaire. By sharing the cost of the independent engineer’s services, the public agency may reduce the risk that conflicts of interest arise. In Australia, some P3 agreements have followed a reimbursable payment structure for independent engineers where the costs are shared up to an established threshold; beyond the threshold, the costs are borne by the concessionaire. The logic of this payment model is that costs beyond a certain threshold are likely the result of the need for increased oversight due to poor compliance by concessionaire.

Additional oversight or monitoring of the facility conducted by the government can be coordinated with the independent engineer. An independent engineer may also be hired by the lenders as a technical adviser, to ensure that the concessionaire will be able to meet performance targets and comply with contract specifications, or in the case of availability payments, to receive payments accordingly. While this engineer will represent the lenders’ interests, in many cases the
Challenges and Opportunities Series: Public Private Partnerships in Transportation Delivery
DRAFT May 11, 2012

4. Performance Management

public agency’s interest and the lenders’ interest are aligned in terms of ensuring that the
concessionaire meets performance targets.

Regular Meetings and Reports
Most P3 monitoring regimes include regular monthly or quarterly meetings between the
government and the concessionaire for which performance reports are prepared and reviewed.
Such monthly performance reports typically are also required for the monthly payment from the
government to the concessionaire.

Intelligent Transportation Systems
P3 projects are increasingly using technology such as closed-circuit television and electronic
tolling systems to monitor and report operations performance. Intelligent transportation systems
(ITS) can be used to monitor toll operations, incident response and reporting, and traffic flows.
Florida DOT (FDOT), for example, uses video monitoring systems and other ITS features on I-595
to monitor traffic conditions, incidents, and toll operations in real-time and to generate monthly
performance reports.

ASSESSING PAYMENTS AND PENALTIES FOR PERFORMANCE
Most P3 agreements prescribe processes for penalizing noncompliance, but rewards for superior
performance are rarely used. The government is responsible for tracking concessionaire
contractual obligations that are not met. Before penalties
are assessed, P3 agreements typically prescribe a
series of actions that must be taken to notify the
concessionaire of the issue and a period of time to
correct the noncompliance issue after it is detected.
Penalties typically consist of payment reductions or
retentions or noncompliance or default points. Once
noncompliance or default points reach a specified
level, they can result in increased oversight, work by
the owner at the contractor’s expense, suspension of
work, or termination of the contract. For I-595, for
example, if the concessionaire compiles 100 non-
compliance points in a 3-year period, FDOT may
increase levels of oversight. If noncompliance issues
are not rectified in a timely manner, FDOT may
reduce payments or even step in to fix the problem
itself at the concessionaire’s expense. Capital
Beltway (I-495) employs a similar system of
performance points (see Table 4-3).

Contractors may prefer default points to financial
penalties because they may fear the public agency
will abuse financial penalties to meet short-term financial objectives. Furthermore, if the cause of
underperformance is lack of finances, fines may inhibit the concessionaire’s ability to correct the
problem. On the other hand, if financial penalties are set too low, the concessionaire may lack
sufficient incentive to take corrective action or may perceive fines are simply part of the cost of
doing business. Default points incentivize performance without money changing hands by raising

Setting Penalty Provisions
Penalty provisions must be carefully crafted to achieve desired performance. For the London
transit operations and maintenance concession, a provision penalized the concessionaire for the first 48
hours of a service interruption. The provision was intended to encourage the concessionaire to fix
all service problems within 48 hours, but it had the opposite of the intended effect. Once a problem
had gone unfixed for more than 48 hours, resolving it was no longer as high a priority, because the fines
would not increase over time.
the risk of default. This in turn may raise the concerns to private lenders, who may then pressure the concessionaire to correct the issue.

### Table 4-3. Capital Beltway Performance Point Examples

<table>
<thead>
<tr>
<th>Heading</th>
<th>Subheading</th>
<th>Breach or Failure</th>
<th>Cure Period</th>
<th>Max Default Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication</td>
<td>Public information</td>
<td>Issues factually incorrect information to the public</td>
<td>None</td>
<td>5</td>
</tr>
<tr>
<td>Operation</td>
<td>Work zone management</td>
<td>Fails to meet work zone safety requirements</td>
<td>60 minutes</td>
<td>5</td>
</tr>
<tr>
<td>Inspection</td>
<td>Quality of inspection</td>
<td>Fails to identify material defects in inspection reports, maintenance plans, or current work</td>
<td>None</td>
<td>5</td>
</tr>
</tbody>
</table>

*From: Key Performance Indicators in Public-Private Partnerships, 2011, FHWA*

## RESOLVING DISPUTES

P3 contracts typically specify dispute resolution processes to reduce the risk of legal conflict over technical issues or differences in contract interpretation. Alternative dispute resolution processes may include mediation and third party arbitration following a period of time allowed for both parties to make good faith efforts to resolve the dispute themselves. Arbitration may be conducted by an agreed-upon expert or by a designated board with members selected by both the government and the concessionaire. In particularly large projects, a permanent, independent dispute resolution office may be established to quickly resolve any contract dispute.

Prior to mediation or arbitration, dispute resolution processes often define tiered systems of problem identification and resolution through negotiation to encourage problems to be resolved at the lowest levels. For example, on the Capital Beltway project, the contract specifies a process whereby the parties to the agreement are given a set time period to seek ways to resolve their dispute before it is elevated to their respective managers. In elevating the dispute, the parties must write a memo to their supervisor, summarizing the nature of the dispute and the steps they attempted to take to resolve the issue. This can serve as an incentive for parties to seek a speedy resolution to disputes.

In the worst case scenario, underperformance can lead to contract failure. Contract failure occurs when one party is unable or refuses to comply with a contract or the parties to an agreement are unable to resolve disputes concerning the meaning of contract specifications. Contract failure can result in the need to amend or renegotiate a contract, resolve disputes in courts, replace parties to an agreement, or terminate an agreement. These events may ultimately lead to higher costs for the public sector.

## MANAGING CAPACITY EXPANSION

4. Performance Management
4. Performance Management

RENegotiation AND DEFAULT

In some cases, contract terms have to be renegotiated to ensure that incentives remain aligned, performance standards remain achievable, or contract disputes are resolved. In the United States, several P3 agreements have been renegotiated, including: Dulles Greenway, Orange County SR91 Express Lanes, South Bay Expressway, and Pocahontas Parkway. Many of these renegotiations took place under the threat of default and resulted in refinancing with losses to equity partners and private lenders and bondholders. In several cases, ownership eventually reverted to the public sector. Renegotiations occurred because of lower than expected demand or because of disagreements over specific contract provisions. The Dulles Greenway project, for example, went into default in 1999, four years after it opened, after traffic levels did not meet expectations. The concession was refinanced, resulting in losses to the original equity lenders and bondholders, and the duration of the agreement was extended to 60 years to allow the sale of the concession to new owners. In the case of SR91, disagreements arose between the concessionaire and Caltrans over a clause in the agreement that prohibited expansion improvements of competing facilities within 1.5 miles of the SR91 right of way without the concessionaire’s consent. To resolve the dispute and address congestion issues in the area, the Orange County Transportation Authority eventually purchased the concession from the concessionaire.
establish a handback reserve account that begins to accrue toward the end of an agreement and may be used for unplanned repairs required prior to or shortly after handback of a facility to the public owner. This handback reserve or replacement letters of credit typically serve to alleviate uncertainties and unforeseen costs at the end of the concession, covering those repairs that may be required prior to reversion of the project.

SUCCESS FACTORS
Performance management can address the risks of underperformance by:
- Designing a contract that aligns private sector incentives with public sector goals and clearly defines performance standards and performance management systems;
- Assigning a competent, long-term team to govern the contract; and
- Establishing communication processes that facilitate an engaged and adaptive relationship between the public and private parties.

These elements allow parties to a P3 agreement to effectively manage the risks that occur throughout the term of the contract, allowing the private party to find the best way to meet its contractual obligations while the public agency effectively safeguards the public interest (see Figure 4-1).

Figure 4-1. Elements of Effective Performance Management

Defined Management Systems and Incentives
A critical factor in successful performance management is an agreement that aligns the interests of the public agency and concessionaire over time by defining effective performance management systems and compensation structures. Flexible, outcome-based performance management systems are essential for P3 agreements because they allow the public agency to ensure that a facility continues to meet policy goals over time. In designing and managing P3 contracts, however, policymakers must consider the tradeoffs associated with designing a performance-based contract. An effective performance-based contract is one that is sufficiently detailed to ensure that potential bidders understand what their responsibilities will be over the term and compete on their capability to meet those responsibilities efficiently, yet flexible enough to allow for changing conditions and needs over time. Contracts can allow for flexibility by accounting for contingencies that can be anticipated, such as the need for expanded capacity when usage reaches a projected level. However, some changes may be more difficult to predict, such as the emergence
4. Performance Management

The compensation structure of an agreement typically provides the primary incentive for the private partner to meet performance standards. Incentives may vary depending on whether a concessionaire’s compensation is based on user fees or availability payments. Each arrangement has pros and cons. Compensating the concessionaire with revenues from highway user fees reinforces this incentive because retaining and attracting customers to the facility depends partly on customer satisfaction with levels of service (particularly when many actual and potential customers have viable travel alternatives). Users will make choices to use the facility based on the convenience of the route and the quality of the ride, although the user may have few alternatives. When contractor payments are not tied directly to facility usage, as in availability payments, the incentive to provide quality service may not be tied directly to the choices of potential facility users. Concessionaire incentives in an availability payment structure are instead tied to provisions in the agreement that allow the public agency to withhold payments or apply default points if performance standards are not met.

Longer contract terms can also be used to strengthen the incentives of the private partner to perform, at least early on in the contract, because a failure to perform could lead to a loss in long-term revenue. However, with longer terms, it is more likely that conditions and needs will change and the contract will require amendment or renegotiation. Spanish P3s use a “rebalancing” model that tries to reframe the economic balance of the concession over time. This model has not been used in the United States or the United Kingdom, partially because such a rebalancing would likely become a legal dispute.

**Effective Contract Governance**

The duration, size, and complexity of P3 agreements make them unlike most contracts public agencies must manage. Public agencies often establish contract management teams to manage P3 contracts. Contract management teams need to have the skills, experience, and authority to understand contract provisions, monitor performance, and manage changes and disputes. Public agencies can promote effective contract governance by facilitating knowledge sharing between the procurement teams and the contract management team, planning for skill and knowledge retention over the period of the contract, and balancing the use of internal capacity and external advisors in developing and retaining that knowledge and skill. Some public agencies have found that the best way for the contract management team to understand and manage contract provisions is for team members to have played a role in the development and negotiation of the contract. Public agencies can also improve the sustainability of effective contract governance practices by ensuring that decisions and processes are documented and that succession planning takes place. These skills are discussed in Chapter 5, Organizational Capacity.

**Engaged Parties**

An adaptive contractual arrangement requires active cooperation between the government and the concessionaire throughout the agreement. The hallmarks of active cooperation are a mutual recognition of shared goals, clear lines of communication at both the strategic and the tactical level, and open information sharing. The relationship between the two parties can be expected to evolve over time and the learning curve may be steep for both parties. Mechanisms such as regularly scheduled face-to-face meetings can facilitate the development of an effective relationship. To maintain this relationship, enforcement mechanisms should be used consistently and proportionally.
In a P3 agreement, the public agency’s role shifts from that of facility operator and overseer to that of performance-based contract manager. Public agencies must be deliberative and judicious in negotiating and managing this new role. The establishment of a well-defined performance management regime, a strong contract management team, and an open and engaged relationship with the concessionaire can be key to the long-term success of a P3 project. While external risks, such as economic downturns, can always threaten the performance of a P3, performance management systems help agencies and concessionaires manage the risks that they can control and understand and adapt quickly when conditions change. This can help to ensure contract performance while avoiding the potentially costly consequences of contract refinancing, renegotiation, or default.

**RESEARCH QUESTIONS**

- How do P3s perform differently over the long-term than traditionally managed projects?
  What innovations in lifecycle cost, operations, maintenance, etc., have concessionaires identified, if any?
- What are typical performance metrics used in highway P3s?
- What are some lessons learned from performance metrics over time? Have some metrics been too flexible or too rigid?
- What penalties and default provisions are most effective at ensuring performance over time?
- Why don't P3 contracts feature rewards for superior performance, instead of penalties?
- What are typical handback provisions?
- What are lessons learned in establishing handback provisions?
- What impacts have contract renegotiations had on performance measures? How were these changes made and for what reasons?
ORGANIZATIONAL CAPACITY

KEY FINDINGS

- Developing, negotiating and managing P3 agreements is resource intensive and requires specialized skills not traditionally retained in public agencies. Public agencies face challenges acquiring or developing the political, legal, technical, financial, and managerial skills needed to reach P3 agreements that protect the public interest.

- Leadership at all levels is required to facilitate overcoming organizational challenges to efficient P3 project delivery. Potential challenges include a public sector culture uncomfortable with transferring a greater degree of control of projects to the private sector and project development processes that are not conducive to the multidisciplinary approach required to identify, evaluate, procure and manage P3 agreements.

- Strategies public agencies have used to address organizational capacity needs include hiring private advisors, developing capacity internally, and creating specialized offices or agencies to address P3 opportunities and challenges programmatically.
5. ORGANIZATIONAL CAPACITY

INTRODUCTION

This chapter examines the organizational capacity challenges that State and local governments face in considering and implementing public-private partnerships (P3s). The first part of this chapter describes the capabilities that a public agency needs to implement P3s at each stage of project delivery, followed by a discussion of the organizational challenges of P3s. The last section explores strategies for developing organizational capacity.

Building the organizational capacity needed to develop P3s while protecting the public interest presents a major challenge to transportation agencies. To identify, develop, negotiate, and manage agreements with private partners, transportation agencies will need capabilities they have not traditionally possessed. Agencies will need to acquire or develop new policy, legal, technical, financial and managerial skills and establish processes and structures, such as specialized P3 units, that allow them to apply those skills in a multidisciplinary way.

Changing the way some projects are delivered will require public actors to approach project delivery from a different perspective. To design partnerships that are both in the public interest and attractive to private investors, public agencies will need to gain a better understanding of private sector interests as well as public demands. In many agencies, this will require a cultural shift as responsibilities and risks that are traditionally retained by the public sector are transferred to the private sector. Managing the organizational changes needed to develop, implement, and monitor P3s will require agencies to involve and educate agency staff and external project stakeholders to build committed leadership at multiple levels.

WHAT ARE P3 ORGANIZATIONAL CAPACITY NEEDS?

To deliver P3 projects, a public agency will need to acquire or develop new knowledge, skills, and abilities that vary by phase of project development:

Phase 1: Establish a Statutory and Policy Framework;
Phase 2: Identify and Evaluate Potential P3 Projects;
Phase 3: Prepare and Conduct Procurement; and
Phase 4: Monitor Outcomes.

For each phase, agencies need a mix of five capability types:

- policy,
- legal,
- technical,
- financial, and
- managerial (see Figure 5-1).

Figure 5-1. Agency Organizational Capacity Needs
5. Organizational Capacity

These are explored below by phase.

**Establish a Statutory and Policy Framework**

A State’s statutory framework, as described in Chapter 3, typically determines the types of P3 arrangements that are allowed and may define project selection, funding, management and other policies. Beyond the enabling legislation, agencies may establish specific policies that guide P3 project development. The skills required to establish and implement a statutory and policy framework are summarized in Table 5-1.

**Table 5-1: Skills to Establish and Implement Statutory and Policy Framework**

<table>
<thead>
<tr>
<th>Skill Type</th>
<th>Description</th>
</tr>
</thead>
</table>
| Policy     | • Develop and seek authorization for legislation.  
             • Serve as program champion and serve as liaison with the public.  
             • Establish goals, policy and legal framework for the overall P3 program.  
             • Align P3 program goals with overall agency goals and mission.  
             • Align P3 program with Federal requirements.  
             • Provide policy guidance.  
             • Develop regulations and rules. |
| Legal      | • Draft legislation.  
             • Draft legal framework for the P3 program. |
| Financial  | • Provide financial guidance to policy makers in developing the overall framework.  
             • Develop financial requirements for the evaluation of proposals.  
             • Determine financial capacity for P3 program and overall transportation program.  
             • Identify financial tools available to public agency. |
| Technical  | • Aid in developing technical requirements for the program framework.  
             • Develop matrix of technical risks. |
Identify and Evaluate Potential P3 Projects

Identifying projects that have the potential to be delivered as P3s early on in the planning process allows agencies to more carefully consider how P3s fit into their long term performance objectives and fiscal constraints. Early identification can help to position P3 projects for success by ensuring that the P3 delivery model is considered in the scoping, preliminary design, and environmental review of the project. To effectively identify projects with the potential for P3 delivery, agencies need to build the capacity of transportation planners and project engineers to evaluate proposed projects for their potential to be delivered as a P3 and compare P3 delivery to other delivery methods.

Evaluating the feasibility of a P3 project requires estimating the potential life cycle costs of the project, the value of long term revenue streams, and the value of transferring specific risks to the private sector. Similarly, tax expertise is needed to assess tax benefits and obligations that may accrue to the private partner in a long term agreement. Public agencies can evaluate the potential feasibility and value of a P3 agreement through technical planning and engineering studies, including:

- **Traffic and revenue studies** – estimate future traffic levels and revenues based on various scenarios. The traffic and revenue study is essential for estimating the value of potential user-based fees as well as the overall public benefit of a project.
- **Preliminary engineering studies** – help to establish cost estimates for construction as well as for long term maintenance and operations of a facility.
- **Financial models** – used to understand project cash flow requirements and rates of returns under different conditions.
- **Value for money analyses** – compare the life cycle costs and benefits of different procurement approaches.

The primary skills required to identify and evaluate potential P3 projects are summarized in Table 5-2.

### Table 5-2: Skills to Identify and Evaluate Potential P3 Projects

<table>
<thead>
<tr>
<th>Skill Type</th>
<th>Description</th>
</tr>
</thead>
</table>
| Policy     | - Determine the extent to which a potential project may address public agency goals or achieve public benefits  
- Make decision on whether or not to proceed with P3 procurement. |
| Legal      | - Interpret implications of laws on project liabilities, cash flows, and revenues. |
| Financial  | - Develop a finance plan, including identification of Federal aid, joint development and other innovative finance techniques. |
5. Organizational Capacity

**Conduct Procurement**

P3 procurement requires greater flexibility than traditional procurement to allow for innovation on the part of bidders and for more room to negotiate with multiple stakeholders. Flexibility is needed in negotiating a final agreement to ensure that it is deemed creditworthy by commercial lenders and provides an adequate return on investment to attract private equity investors. A public agency may want to have experienced legal and technical advisors to help negotiate with the private partner.

During procurement, agencies need financial expertise to assess the financial quality of the bids and technical expertise to assess the qualifications of the bidder. The decision to go ahead with a P3 project often rests on a value for money analysis of a potential agreement. Conducting a value for money analysis requires the public agency to have the capability to evaluate the value of a project and compare the costs and benefits of the potential P3 arrangement to those of a traditionally delivered project.

The key skills required to conduct a P3 procurement are summarized in Table 5-3.

**Table 5-3: Skills to Conduct Procurement**

<table>
<thead>
<tr>
<th>Skill Type</th>
<th>Description</th>
</tr>
</thead>
</table>
| Policy     | - Review allocation of risk between public agency and private sector.  
- Make decision on whether to proceed with P3 procurement.  
- Negotiate P3 procurement.  
- Sign and justify final agreement. |
| Legal      | - Identify legal risks and liabilities.  
- Draft agreement.  
- Prepare requests for qualifications (RFQ) and proposals (RFP).  
- Negotiate P3 procurement and prepare final agreement.  
- Assist in managing and overseeing outside legal advisers and
5. Organizational Capacity

### Financial
- Develop plans for sharing of financial risk.
- Identify revenue sources.
- Develop a finance plan.
- Conduct a value for money analysis.
- Assist in managing and overseeing outside financial advisers. And coordination and consultation with control agencies.

### Technical
- Define technical specifications, performance standards and evaluation criteria.
- Develop plans for sharing of technical risks.
- Conduct preliminary technical studies.
- Prepare project cost estimates.
- Propose allocation of technical risks.

### Managerial
- Recommend whether to proceed with P3 procurement for specific proposals.
- Serve as project lead and coordinate overall effort.
- Review and evaluate work of internal and outside experts.

---

**Monitor and Oversee a P3**

After the agreement is signed, the public agency must manage the contract to ensure that it achieves the performance standards established in the agreement. Contract management responsibilities include:

- Monitoring of technical and financial performance;
- Authorization of payments;
- Review and preparation of required records and reports;
- Change management; and
- Dispute resolution.

Contract management is inherently an in-house responsibility for the public agency. While private advisors are typically retained through financial close, the need for additional technical, legal, and financial capabilities often continues throughout the agreement. In addition, when conflicts arise or, in the extreme case, when an agreement must be terminated, legal expertise is needed to mediate and resolve disputes.

The performance monitoring and oversight phase will require building a strong set of skills within the public agency due to the need to maintain these oversight responsibilities in-house. This includes the need for contract management skills to monitor the established performance standards and manage accordingly. In addition, the capacity to monitor technical performance during construction and operations can be critical to ensuring efficient service delivery.

Throughout the agreement, the public agency may be overseeing different private parties. In addition to the initial project concessionaire, the public agency will likely have a role in monitoring the activities of separate subcontractors responsible for construction and operations and maintenance. Also, concessions may change hands once the initial ramp up risks have diminished, in which case the public agency may perform oversight of different parties.

Specific skills needed for performance monitoring and oversight are shown in Table 5-4.
Challenges and Opportunities Series: Public Private Partnerships in Transportation Delivery
DRAFT May 11, 2012

Table 5-4: Performing Monitoring and Oversight

<table>
<thead>
<tr>
<th>Skill Type</th>
<th>Description</th>
</tr>
</thead>
</table>
| Policy     | • Provide policy guidance and dissemination of public information.  
            • Evaluate project within context of overall P3 program. |
| Legal      | • Oversee contract interpretation, dispute resolution and related legal issues. |
| Financial  | • Review and approve updated finance plans.  
            • Monitor financial risks.  
            • Monitor cash flow and debt streams. |
| Technical  | • Collect and analyze data.  
            • Monitor construction and operations.  
            • Provide technical advice on performance standards. |
| Managerial | • Serve as project lead and coordinate overall effort.  
            • Monitor whether performance standards are achieved.  
            • Review and evaluate work of outside experts. |

OVERVIEW OF ORGANIZATIONAL CHALLENGES

Transportation agencies seeking to explore and develop P3s face a number of organizational capacity challenges. Table 5-5 summarizes the primary challenges, some of which are discussed further in this section.

Table 5-5: Organizational Capacity Challenges

<table>
<thead>
<tr>
<th>Challenge</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acquiring/Developing New Skills</td>
<td>Specialized technical, legal, financial and managerial capabilities will need to be developed in-house.</td>
</tr>
<tr>
<td>Managing Organizational and Cultural Changes</td>
<td>Public employees will need to become accustomed to transferring certain responsibilities and risks to private partners as part of the project development process.</td>
</tr>
<tr>
<td>Coordinating With and Educating Others</td>
<td>Agencies will need to communicate effectively with more project stakeholders than in traditional procurements. In addition, agencies will need to communicate about P3 models and other topics for which they may never have developed information or outreach materials.</td>
</tr>
<tr>
<td>Conserving Institutional Knowledge</td>
<td>Agencies will need to develop capabilities to monitor projects over the long-term – terms that may extend well beyond the career tenure of current employees and leadership.</td>
</tr>
</tbody>
</table>

**Acquiring/Developing New Skills**

Public agency project managers will need to consider numerous factors they may never have had to consider previously to ensure that P3 projects uphold safety, design, environmental and fiscal standards and meet public agency goals. In many P3 arrangements, the agency’s responsibility for design and construction engineering is reduced, since these are done by the private partner. Instead, the agencies become responsible for contract management and oversight of the private partner.

5. Organizational Capacity
Agencies will need to learn how to establish performance standards rather than construction specifications. This may involve a culture change for public agency engineers, who are used to, for example, specifying standards based on use of certain materials rather than performance. While this role can be outsourced, the development of the goals themselves — whether safety, congestion management, aesthetics, or other project characteristics — should probably remain with the agency. This change in roles may lead to a shift in the types of technical skills within an agency as there may be less need for hands-on design, and more need for broader performance setting and project management and oversight.

Managing Organizational and Cultural Changes

Transportation agencies may need to examine current structures in order to be able to successfully identify, develop and implement P3s. Most transportation agencies do not have a dedicated “owner” of the P3 development process. Only a few State DOTs currently have an established P3 Program with a dedicated P3 staff. States with existing design-build programs or toll facilities may be more likely to have at least some of the skills and structures in place to facilitate P3 project development than States without design-build programs or toll facilities, who may be effectively starting from scratch.

A major institutional barrier to effective P3 project development is the traditional division of project development responsibilities and authorities into multiple offices and, sometimes, agencies. Financial, procurement, and engineering expertise and authority generally are housed in different offices. For example, the authority and expertise to issue debt and understand and manage complex financial agreements may often be in a different agency from the one that identifies, develops and delivers transportation projects. This organizational structure may make sense for traditional project development processes steps that are often sequential, so that environmental, planning, engineering and financial experts may not have to coordinate closely in order to deliver a project. However, in developing a P3, many of these steps need to happen on an iterative basis, requiring more frequent interactions and internal coordination. For example, a public agency may need to consider how the alignment selected for the project affects both the financial and environmental aspects prior to the RFP, and then reevaluate how any changes proposed to the alignment in the winning proposal may change the outcome of that evaluation. In addition, by considering project funding and procurement issues early in the project development process, rather than at the end of the process, decisionmakers may be in a better position to take advantage of potential P3 opportunities. Developing projects iteratively, rather than sequentially, may require forming and managing multidisciplinary teams that understand the interactions of various technical, financial and legal factors and can facilitate an iterative project development process.

To manage organizational and culture changes, champions at all levels are needed. In some cases, the champion may be the governor; in others it may be a legislator, agency director, or community or business leader. A P3 champion can communicate the business case and public good for P3s (both within public agencies and among stakeholders), gather support for the concept, facilitate the streamlining of processes and organizational change, set and manage expectations, and provide assurance to the private sector of the public sector’s commitment to the P3 model. Beyond the champion at the top, champions within the transportation organization need to lead the organizational changes demanded by P3s.

While champions are needed, it is important for the champions to understand the risks and rewards of pursuing a P3 within the context of the overall transportation program. P3s are not the
answer to every infrastructure problem, and champions need to be careful about not overstating the benefits of P3s or understating the costs.

**Coordinating With and Educating Others**

P3s are generally large projects with significant impacts on local populations and economies. In many ways, they may generate controversy, much as any other major project will. However, in accelerating project delivery, the P3 approach accelerates and condenses the political negotiation and consensus building process. Furthermore, certain features of P3s may make them more vulnerable to public controversy: they are often toll-financed; they may require allocations of public funds or tolls to private firms over long time periods; and they involve private firms that are typically large and often foreign and that stand to profit from those public funds or tolls. Finally, P3s also have complex structures that involve a large number of diverse stakeholders with a range of responsibilities and interests, as described in Table 5-6. For a P3 approach to be successful, the interests and capabilities of these diverse stakeholders need to be taken into account.

**Conserving Institutional Knowledge**

To conduct oversight of long-term concessions, agencies need to develop their internal capabilities with the understanding that staff may retire or leave and that the demand for specific capabilities may fluctuate over time. Building robust capabilities and documenting institutional knowledge, processes and guidelines is important for maintaining those capabilities over time. Currently, most States lack a steady flow of P3 projects, making it difficult to predict staffing and resource needs. But, as projects are identified, developed, procured and implemented, capacity needs, particularly for performance monitoring, will need to be identified and filled.

<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Role/Interest</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Public Agencies</strong></td>
<td></td>
</tr>
<tr>
<td>Project Development Agency</td>
<td>Manages project development and procurement; may sign the P3 contract.</td>
</tr>
<tr>
<td>Permitting Agencies</td>
<td>Issue permits to enable projects to proceed.</td>
</tr>
<tr>
<td>Bonding Agency</td>
<td>Issues publicly sponsored debt; may be the same as or different from the project development agency.</td>
</tr>
<tr>
<td>Private Advisors</td>
<td>Provide technical, financial and legal advice; contracted by the project development agency.</td>
</tr>
<tr>
<td>Other Funding Agencies</td>
<td>May contribute funding to the project.</td>
</tr>
<tr>
<td><strong>Elected Officials</strong></td>
<td></td>
</tr>
<tr>
<td>State Legislators</td>
<td>Develop enabling legislation for P3s and may play a role in project identification (through legislation) and approval.</td>
</tr>
<tr>
<td>Other local and State Officials</td>
<td>May play a role in project identification, selection, approval and funding.</td>
</tr>
<tr>
<td><strong>Private Partners</strong></td>
<td></td>
</tr>
<tr>
<td>Equity Participants</td>
<td>Invest money in the project in exchange for long term returns.</td>
</tr>
<tr>
<td>Concession Company (individual company or consortium of companies)</td>
<td>Contracts with the project development agency to provide services such as design, construction, operations, maintenance, and financing.</td>
</tr>
</tbody>
</table>
5. Organizational Capacity

<table>
<thead>
<tr>
<th>General Public</th>
<th>Interest groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local subcontractors</td>
<td>May contract with project development agency to provide services.</td>
</tr>
<tr>
<td>Lenders (private &amp; public)</td>
<td>May finance the project.</td>
</tr>
<tr>
<td>Voters/Taxpayers</td>
<td>Help identify transportation needs, fund the project through tax revenues, and/or approve public financing.</td>
</tr>
<tr>
<td>Facility Users</td>
<td>Benefit from the use of the facility and may contribute funding through tolls or other means.</td>
</tr>
<tr>
<td>Abutters</td>
<td>Concerned about property values and takings.</td>
</tr>
<tr>
<td>Interest groups (environmental, business, and other)</td>
<td>Provide input on issues that may or may not be directly linked to the P3 procurement method.</td>
</tr>
</tbody>
</table>

Adapted from [http://www.ncsl.org/documents/transportation/PPPTOOLKIT.pdf](http://www.ncsl.org/documents/transportation/PPPTOOLKIT.pdf)

**STRATEGIES FOR ADDRESSING ORGANIZATIONAL CAPACITY**

Public agencies have acquired new capabilities through outsourcing, training or hiring to develop internal capacity, or establishing new P3 units. While not mutually exclusive, each approach has its strengths and limitations (see Table 5-7).

The public agency is responsible for protecting the public’s interest, setting policy goals and objectives, administering the procurement process, and overseeing the agreement. Other capabilities can be outsourced or handled in-house, depending on the anticipated volume of work to be done. It may not be worthwhile for an agency to hire in-house experts or create a P3 unit for a single transaction.
Table 5-7: Strengths and Cautions/Constraints of P3 Capacity Building Models

<table>
<thead>
<tr>
<th>Capacity Building Model</th>
<th>Strengths</th>
<th>Cautions/Constraints</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hire Consultant Advisors</td>
<td>Quick to acquire as needed.</td>
<td>Need to select effective advisors. Services may be perceived as expensive. Risk of real or perceived conflicts of interest. Use of consultants is often regulated by statutes/rules outside the P3 statute.</td>
</tr>
<tr>
<td>Train Internally and/or Hire New Staff</td>
<td>Builds bottom-up capacity to identify P3 projects as well as capacity to manage external advisors.</td>
<td>Takes time and resources to train staff. Staff may lack incentives or background to learn new material. Still likely to require outside advisors to start.</td>
</tr>
<tr>
<td>Establish State P3 Unit</td>
<td>Can address P3 needs programmatically. Enhances private sector confidence that the public sector will be a strong client/partner.</td>
<td>P3 opportunities may be sporadic and may not justify a dedicated unit. Even with a specialized unit, additional experts may be needed from other government agencies or consultants. May be politically complicated where public agency ownership or governance is fragmented.</td>
</tr>
</tbody>
</table>

Potential Roles for Consultant Advisors

Especially when a public agency is just beginning a P3 program, the needed skills, knowledge and perspectives will not be easy to cultivate in-house, so the agency will likely bring on consultant advisors for legal, technical, and financial advice. While qualified consultant advisors in the P3 arena may be more costly on a per hour basis than public agency employees, they usually bring specialized skills that it may not be cost-efficient for the agency to maintain in-house on a permanent basis. This is because opportunities to work on a P3 project may be sporadic, making it difficult for public agencies to develop and maintain the specialized skills necessary to develop and negotiate a P3. Consultant advisors can bring expertise from other engagements and do not need to find continuing roles in the agency organization once their work is complete.

Agencies need to understand how to select competent advisors whom they can trust. There is no certification process for P3 consultants. Many private firms do not have expertise in implementing a full range of financial tools and arrangements; as a result, they may recommend only the approach they know best, ignoring potentially better opportunities. Furthermore, while many advisors in the P3 arena may have international experience, not all international experience is relevant. International firms may lack an understanding of the U.S. market and potential financial tools.

5. Organizational Capacity
When hiring external advisors, it is important to consider which roles are appropriate for the consultants and which are more appropriate for a public agency to keep in-house (see Table 5-8).

Some roles are inherently a public sector responsibility. A public agency should drive and manage the process, set the program’s direction, identify potential projects, select bidders, and manage contracts. Private sector expertise is more often used for well-defined tasks, such as developing a financial model, advising as to the optimal financial structure and contract provisions, and assisting with the negotiation of the final agreement.

Public agencies also need to be aware of potential conflicts of interest with any outside advisors it hires. In order to ensure independent advice and analysis, public agencies need to ensure that the advisors do not have any conflicts with advising private sector partners either engaged in or bidding on a potential P3 project. As one State DOT official noted, “it is important to worry about both the substance and the optics of whom an agency hires.”

### Table 5-8: Typical Public and Private Roles

<table>
<thead>
<tr>
<th>Role</th>
<th>Public Agency</th>
<th>Consultants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program Direction</td>
<td>Sets overall program direction and program and project goals.</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Project Selection</td>
<td>Screens and selects projects</td>
<td>Technically evaluates potential projects.</td>
</tr>
<tr>
<td>Project Evaluation</td>
<td>Makes decisions regarding the structure of the agreement based on evaluation.</td>
<td>Prepares traffic and revenue studies. Conducts value for money analysis and provides financial advice.</td>
</tr>
</tbody>
</table>

**Training and Peer Exchanges to Build Capacity**

Whether or not public agencies use external advisors, they will need to train or hire internal staff to be capable of understanding and managing the project development process and managing the agreement once it is signed. Developing the skills to manage the P3 process can be done through training existing staff as well as hiring new staff. In some cases, external advisors hired for their

**Resources for case studies and other educational resources, such as guides and manuals, dealing with P3s:**

- National Conference of State Legislatures. [www.ncsl.org](http://www.ncsl.org)
technical, legal or financial expertise can also be used to conduct training of internal staff.

In 2008, FHWA and AASHTO surveyed State DOTs regarding their experience in P3s and their training needs. State DOTs varied in their experience with P3s and their self-assessed readiness to implement P3s. State DOTs with more experience implementing P3s were more likely to indicate an interest in training. A majority of the State DOT representatives indicated a need for advanced training in topics of contracting, management, finance, and risk management. Specifically, State DOT representatives believed their organizations would benefit the most from training in:

- Common failures of P3 contracts and how they are addressed;
- Techniques for monitoring technical and financial performance;
- How to assess the economic costs and benefits of projects; and
- Assessing risks to both partners at each phase of a project.

As the P3 market matures in the United States, agencies can learn from their peers in other organizations. Peer exchanges are one way public agencies can develop internal capacity. Closely reviewing case studies is another way.

**Specialized P3 Units**

In the United States, the authority to develop transportation P3 agreements typically rests with State DOTs, but is sometimes extended to municipalities or regional authorities (such as the City of Chicago, Regional Mobility Authorities in Texas, or Regional Transportation Agencies in California), or with another department within the State with the power to issue debt—typically Administration and Finance or Treasury Departments. A model increasingly used by States and other countries to address P3 organizational capacity is the specialized P3 unit. A P3 unit can be any institution, office, or team set up to support the development, implementation and evaluation of P3s. P3 units are typically staffed with sector-specific experts as well as experts in economics and finance, regulation, procurement, communications and training. Many of the countries that are the most active users of P3s for project delivery have P3 units.

The roles and responsibilities of a P3 unit may include:

- **Providing technical assistance and training on P3 project development and procurement.** This centralization of knowledge can save money and allow for a more consistent approach.
- **Helping to identify a pipeline of potential P3 projects and prioritize those opportunities.** P3 units can help to promote a standardized programmatic approach to the development of P3s.
- **Providing regulatory oversight and screening of P3 projects.** P3 units often act as gatekeepers to ensure that risks are accounted for and value for money is achieved.
- **Promoting the P3 program by soliciting projects, attracting potential partners and investors, and educating the public.** P3 units may raise private sector interest and confidence in P3 investments as potential partners may feel they have a more experienced and capable client team with whom to negotiate agreements.

5. Organizational Capacity
technical, legal and financial tasks. The P3 unit typically reports to a board or committee charged
with oversight responsibilities. Authority to sign P3 agreements may rest with the director of the
P3 unit, the commissioner of the board, or the director of the agency where the P3 unit is housed.
P3 units can facilitate a programmatic approach to project identification and assessment.
Programmatic evaluation has the advantage of allowing P3 projects to be identified earlier in the
planning and scoping process, allowing the public sector to better manage its limited resources.

In recent years, several U.S. States and territories (e.g., Georgia, Virginia, and Puerto Rico) have
established P3 units, but their experience thus far has been limited. Georgia passed renewed P3
legislation in 2009 that established a P3 program team within Georgia DOT. With the support of
external advisors, the team developed a policy framework and guidelines for developing P3s,
identified potential P3 projects, and began the procurement process for several projects. Puerto
Rico established the Public Private Partnerships Authority (P3A) with the goal of promoting
private investment in public infrastructure ranging from schools to airports and highways. In
October 2010, P3A began the procurement process for the long term lease of one of its primary
toll roads, PR-22, currently operated by the Puerto Rico Highways and Transportation Authority.

INTERNATIONAL EXPERIENCE WITH P3 UNITS

The experiences of the development of the P3 market in the United Kingdom, Canada and
Australia provide several well-established models for P3 units.

National P3 Units - Partnerships UK
Partnerships UK is perhaps the most prominent example of a national P3 entity that provides
advice, technical assistance, and guidelines for other units of government. Partnerships UK was
established in 1999 as part of an effort to reform and bring order to privatization efforts. Earlier
privatization efforts were criticized for not generating enough public value, raising prices, and
reducing services. The goal of Partnerships UK is to increase investment in public services and
increase the efficiency of public service delivery. Partnerships UK does not focus exclusively on
transportation projects but rather supports a broad range of publicly delivered services including
utilities, hospitals, prisons and schools.

Establishing Partnerships UK was the recommendation of the Bates Review, a 1997 review of
government efforts to privately finance public services. The Bates Review recommended that a
national task force be established to support the use of P3s. The task force was made up of staff
recruited from the private sector with specialized project management and financial experience.
Its role was to evaluate potential P3 projects before procurement commenced and advise on
contractual terms and conditions. The task force was widely considered a success and, following a
subsequent review in 1999, was made permanent in the form of Partnerships UK.

A second Bates report found that P3s required a range of skills that would be difficult to develop
in the civil service. Therefore, Partnerships UK was itself established as a P3 and managed on
private sector principles, rather than as part of the civil service, to better enable it to recruit and
retain the private sector skill base required to support the public sector.

Partnerships UK has operational independence from Her Majesty’s Treasury and 51 percent
private equity ownership. It operates primarily on a fee-for-service business model. The chief role
of Partnerships UK is to provide technical assistance and financial tools to support the public
sector’s development of specific P3 projects. Partnerships UK has a staff of over 80 employees and

5. Organizational Capacity
has been involved in over 900 projects worth well over US$100 billion since it was launched. A separate, smaller P3 policy team housed within the Treasury is responsible for approval of projects and the development of nationwide policy guidance.

**Partnerships British Columbia (Canada)**

Partnerships British Columbia (Partnerships BC) is one of three provincial P3 units in Canada (Infrastructure Ontario and Public-Private Partnerships Quebec are the other two and there is also a Federal P3 unit, Partnerships Canada). Partnerships BC was established in 2002 as a public corporation governed by a Board of Directors and reporting to its sole shareholder: the Minister of Finance. It has a full-time staff of approximately 40 and is based on a fee-for-service business model. To date, Partnerships BC has been involved in over 35 P3 projects with a combined value of over US$12 billion. The role of Partnerships BC is to act as a center of procurement expertise to assist with the evaluation, structure and implementation of P3s for public infrastructure in transportation, health, education, water and sewage, and other sectors. Partnerships BC provides a variety of services including:

- Research and dissemination of best practices;
- Evaluation of risks, value for money and procurement options;
- Development and evaluation of standardized procurement processes; and
- Project management and construction oversight.

**Partnerships Victoria (Australia)**

Partnerships Victoria, established in 2000, is the P3 unit within the State Government of Victoria and is also the name of the overall policy framework established for P3 by the State. There are currently 21 Partnerships Victoria projects in place, valued at approximately US$10 billion. Partnerships Victoria is a unit with the Commercial, Infrastructure and Risk Management Group – a part of the Commercial Division of Victoria’s Department of Treasury and Finance. Partnerships Victoria has a staff of 12 full-time employees with backgrounds in banking, law, economics, finance and engineering. The role of Partnerships Victoria is to work with the Treasury to facilitate the P3 approval process, develop policy, and to provide expert commercial advice, training and materials to procuring ministries. Partnerships Victoria offers a number of courses and conferences to build public sector capacity to develop and manage P3s, including courses in:

- P3 basics;
- P3 business case development;
- P3 evaluation and approval processes;
- P3 procurement; and
- P3 contract management.

**SUMMARY**

To identify, develop, and procure P3 projects requires a multidisciplinary approach that combines policy, financial, technical, legal and managerial skills. Most agencies have traditionally approached these aspects of project development separately. Not only will agencies need to acquire or develop new skills that they have not traditionally utilized; they will need to change their structures, processes and mindsets to be able to apply these skills in combination.

Public agencies have employed a variety of strategies for building organizational capacity including the development of specialized P3 units, the use of external advisors, and the training
and hiring of staff. Each approach has strengths and weaknesses and they are not mutually exclusive. Most public agencies rely on external advisors to varying degrees to develop program policies and processes, evaluate projects and agreements, and provide training to agency staff. Internal training of agency staff can provide long term benefits that hiring external advisors may not, such as enhanced project identification and stronger contract management. Developing the capacity to implement a P3 program can help to catalyze private infrastructure investment, but without a pipeline of potential P3 projects, investment in permanent staff positions may not be warranted. Finally, capacity building efforts should not solely focus on the agency responsible for delivering the project. Varying degrees of understanding and capacity are needed across agencies at all levels of government to effectively implement P3s.

RESEARCH NEEDS

Additional research can help determine what skills, structures, and resources can best prepare agencies for evaluation and implementation of P3s, as well as how these needs can be met most effectively. Research questions include:

- What lessons have been learned about organizational capacity in the implementation of past P3s? What skills/resources/organizational structures have contributed most to success, or have been regarded as impeding success?
- What are lessons learned from agencies that have attempted to build capacity for P3s? What specific examples exist of how organizational capacity has affected P3 implementation (positively or negatively?). What common organizational capacity elements exist in projects deemed as successful (and ones that are not?).
- What capacity needs exist in the private sector, and in levels of government other than the implementing agency for a P3s, such as local governments, other State agencies, and State legislatures?
GLOSSARY

Availability payment – Under this P3 financing arrangement, the public entity agrees to make
regular payments to the private entity based on the facility’s availability and level of service
achieved for operations and maintenance. Unlike shadow tolls, availability payments do not
depend on traffic volume (see “shadow toll”). In the United States, availability payments are more
common for transit projects. Florida’s I-595 Managed Lanes project is the first U.S. highway
project to use this approach.

Bid stipend – a payment made by a public agency to a bidder on a particular contract to
encourage competition or offset transaction costs. Stipends can also be used to compensate losing
bidders for specific concepts proposed in their bid that may be incorporated into the final design
of the project.

Bond – refers to a negotiable note or certificate which evidences indebtedness. It is a legal
contract sold by one party, the issuer, to another, the investor, promising to repay the holder the
face value of the bond plus interest at future dates.

Bondholder – the owner or keeper of a bond, to whom repayment is issued.

Cash flow waterfall – defines the order of priority for project cash flows as established under
the loan and financing documents. In a typical cash flow waterfall, dedicated revenues are used to
pay for project costs and debt repayments before other parties derive benefits from the project.
This ensures that project debt and maintenance are covered before surplus revenues are used to
pay back investors or shared with the public sector.

Concession – A P3 project delivery structure involving a lease of an existing public asset to a
private concessionaire for a specified period of time. Generally, the concessionaire agrees to pay
an up-front lump sum fee to the public agency in exchange for the right to collect availability
payments or direct revenue generated by the asset over the life of the contract (typically 25 years
to 99 years). The concessionaire agrees to operate, maintain and/or improve the facility during
the term of the lease.

Concessionaire – the private-sector party to a concession agreement.

Debt Service Coverage Ratio (DSCR) – the ratio of cash available for debt servicing to
interest, principal and lease payments. A DSCR of 1.0 suggests that there is exactly enough
revenue to cover debt payments, while a ratio above 1.0 (e.g., 1.2) reflects the fact that revenues
exceed debt payments and a ratio below 1.0 (e.g., 0.95) reflects the fact that revenues are not
sufficient to cover debt payments.

Design-Bid-Build (DBB) – the traditional procurement approach for transportation projects
in the United States, in which the design and construction of a facility are sequential steps in the
project development process and each activity is bid separately. This is not a P3.

Design-Build (DB) – a procurement or project delivery arrangement whereby a single entity (a
contractor or team of contractors) is entrusted with both design and construction of a project.
This contrasts with traditional procurement where one contract is bid for the design phase and
then a second contract is bid for the construction phase of the project. Potential benefits can
include time savings, cost savings, risk sharing and quality improvement.
Design-Build-Operate-Maintain (DBOM) – a project delivery structure that includes not only design and construction into a single contract, but also the operations and maintenance of a facility.

Design-Build-Finance-Operate-Maintain (DBFOM) – a project delivery structure that includes some private financing of the design, construction, operation and/or maintenance of a facility. Under a DBFOM, the public sponsor retains ownership of the facility and uses revenues generated from operation of the facility (such as tolls) to repay the private and other financing used to construct it. Potential benefits include transfer of financial risk to the private contractor.

Discount rate – a percentage representing the rate at which the value of equivalent benefits and costs decrease in the future compared to the present. The discount rate is used to determine the present value of future benefit and cost streams.

Equity – commitment of money from public or private sources for project finance, with a designated rate of return target.

Equity investor – an investor that has contributed towards the financing of a P3.

Hand back provision – the terms, conditions, requirements and procedures governing the condition in which a private partner is to deliver an asset to the public sector upon expiration or earlier termination of the agreement, as set forth in the contract.

Innovative finance – alternative methods of financing construction, maintenance, or operation of transportation facilities. The term covers a broad variety of non-traditional financing, including the use of private funds or the use of public funds in a new way, such as in a P3 agreement.

Internal Rate of Return (IRR) – interest rate that equates the present value of the expected future cash flows net of on-going costs for operations, maintenance, repair, reserve funds, and taxes, to the initial capital cost outlay or investment. This is the rate at which the net present value of the project equals zero.

Junior debt – debt having a subordinate or secondary claim on an underlying security or source of payment for debt service, relative to another issue with a higher priority claim.

Lease – see “Concession.”

Lender – the issuer of debt.

Lifecycle cost – the total cost from a project’s inception to the end of its useful life.

Municipal bond – interest bearing obligations issued by state or local governments to finance operating or capital costs. The principal characteristic that has traditionally set municipal bonds apart from other capital market securities is the exemption of interest income from Federal income tax.

Net Present Value – the difference between the present value of the benefits and the present value of the costs of a project, including capital investment, maintenance and any other costs)

Non-compete clause – In P3 agreements, non-compete clauses prevent the public sponsor from building or improving highways or other transportation facilities that might provide a competing route for traffic on a privately leased toll road. Such clauses are used to help reduce revenue risk for the private toll road operator, but have been criticized for limiting the public sector’s ability to deliver needed transportation infrastructure.
Performance measure – outcome-based metrics used to specify standards in a P3 agreement. These measures are used throughout all phases of project, and enable the public sector to determine specifications that the private sector must meet in order to be in compliance with the terms of the contract. Failure to perform to these standards may result in a compensation event, whereby the private-sector party is penalized a sum of money. Adherence to these measures may result in a reward for the private-sector party.

Private capital – equity contributed to a P3 project by the private sector partner, with a designated rate of return target.

Privatization – the full transfer of public infrastructure to the private sector. This is distinct from a P3, in which ownership remains in the public sector.

Private Activity Bond (PAB) – a form of tax-exempt bond financing that can be issued by or on behalf of state or local governments for privately developed and operated projects, such as P3s. This gives private entities access to tax-exempt interest rates.

Public-Private Partnership (P3) – a contractual agreement formed between public and private sector partners, which includes private sector financing and allows for more private sector participation than is traditional. The agreements involve a government agency contracting with a private company to renovate, construct, operate, maintain, and/or manage a facility or system. The public sector retains ownership of the facility, however the private party may be given additional decision rights in determining how the project or task will be completed.

Public Sector Comparator (PSC) – an objective assessment of project costs if delivered by the public sector under traditional procurement processes, against which potential and actual private sector contract bids and evaluations may be judged.

Revenue – the proceeds generated by a P3 facility, usually in the form of tolls.

Revenue bond – instruments of indebtedness issued by the public sector to finance the construction or maintenance of a transportation facility. Revenue bonds, unlike general obligation bonds, are not backed by the full faith and credit of the government, but are instead dependent on revenues from the roadway they finance.

Risk – an uncertain event or condition that, if it occurs, has a positive or negative effect on a P3 project’s objectives.

Risk allocation – the process of attributing or transferring risk between the public and the private parties within a P3 contract, generally to the party best able to manage that particular risk.

Risk premium – an additional required rate of return that must be paid to investors who invest in risky investments to compensate for the risk.

Senior debt – debt obligations having a priority claim on the source of payment for debt service.

Shadow toll – also known as pass-through tolls. Under this P3 financing arrangement, the sponsoring public agency agrees to make payments to the private operator based on usage of a facility, which gives the private sector an incentive to maximize volume. Thus, shadow tolls are not paid by facility users. Shadow tolls are similar to availability payments, except that shadow tolls depend on traffic volume (see “availability payments”).
Special purpose vehicle (SPV) – a corporate body (usually a limited company of some type or, sometimes, a limited partnership) created specifically to implement a P3 project, primarily to isolate risks.

Subordinate debt – see “junior debt.”

Transportation Infrastructure Finance and Innovation Act (TIFIA) – this program provides federal credit assistance in the form of direct loans, loan guarantees or standby lines of credit to public or private sponsors of major surface transportation projects, including P3s. The program’s goal is to leverage federal funds by attracting substantial private and other non-federal co-investment in transportation infrastructure.

Unsolicited proposal – a proposal by the private sector that does not come as a result of a public sector solicitation. Unsolicited proposals may often result from the identification by the private sector of an infrastructure need and opportunity that may be met by a privately financed project. Such projects may also involve innovative proposals for infrastructure management and offer the potential for transfer of new technologies.

Value capture – arrangements in which the private sector contributes financial or other resources in exchange for benefits, such as increased property values, resulting from public investment in transportation improvements. Examples include development impact fees, joint development agreements (usually used for transit projects), tax increment financing, air rights development and assessment districts.

Value for Money (VfM) – the estimated project cost savings associated with using a P3 delivery approach, accounting for all project factors throughout the full lifecycle of the asset and length of the contract.
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This is a selected set of key documents used in the research for drafting this paper. It is not intended to be a comprehensive bibliography of P3 literature.

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ORGANIZATIONAL CAPACITY


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