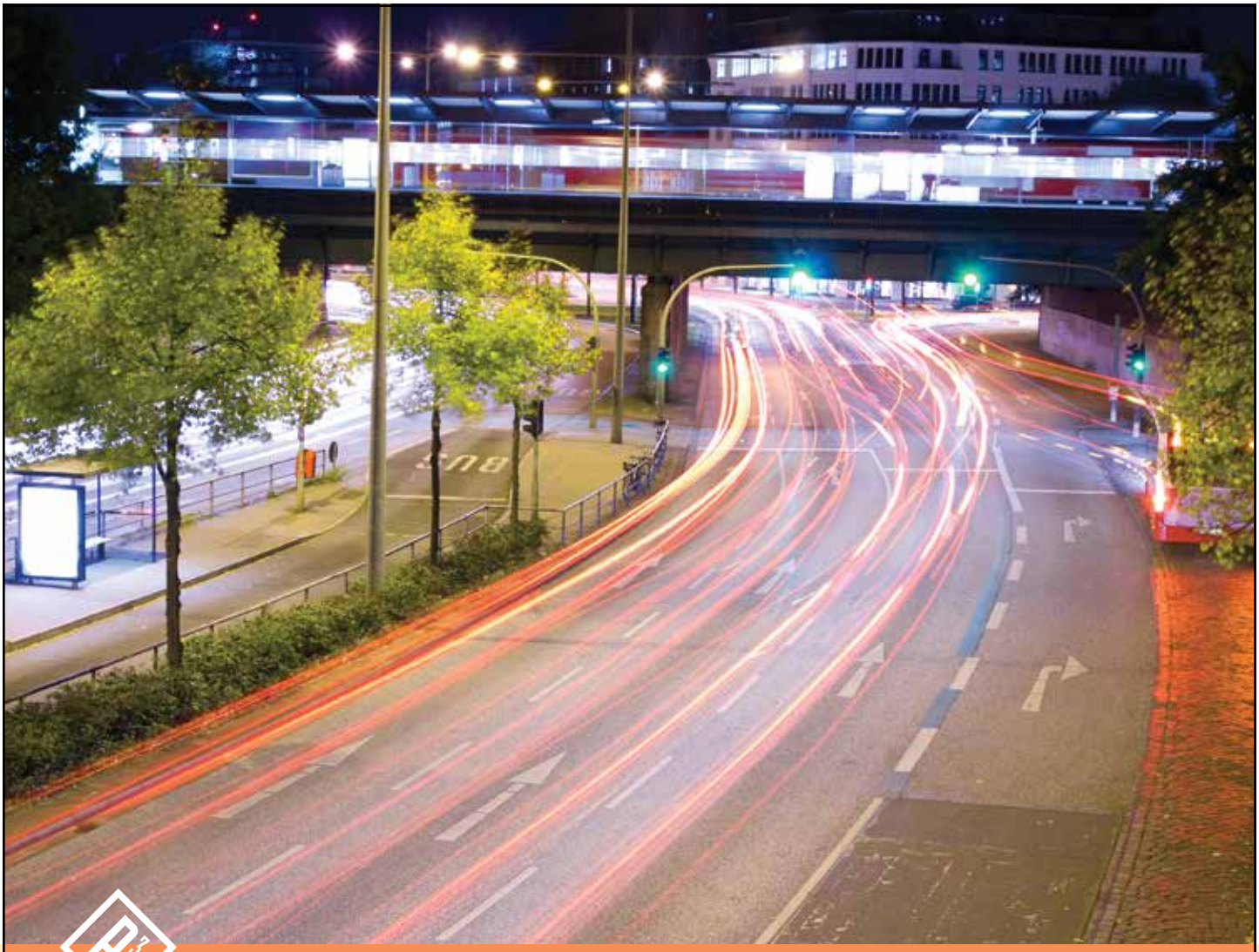

Public–Private Partnership Concessions for Highway Projects: A Primer

Innovative Program Delivery

U.S. Department of Transportation
Federal Highway Administration

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CHAPTER 1

Introduction

This primer provides a brief introduction to public–private partnership (P3) concessions for transportation project finance. P3 concessions are public–private agreements in which the private sector takes on some of the risks and rewards of financing, constructing (or leasing), and operating and maintaining a transportation facility in exchange for the right to future revenues or payments for a specified term.

Although many types of P3s exist, this primer will focus on P3s that involve assumption of financing risk by the private sector, as well as long-term (i.e., 10+ years) operations and maintenance. These types of long-term P3s are typically termed *Design-Build-Finance-Operate (DBFO) concessions*, because the private sector assumes the obligation to design, build, finance, operate, and maintain a facility for a specified term in exchange for the right to some form of compensation (please refer to table 1 for a summary of the different types of P3s and the respective risks and activities assumed by private partners). For example, a State Department of Transportation (DOT) might enter into a P3 arrangement in which a private party will agree to design, construct, finance, and operate a replacement bridge crossing in exchange for receiving a share of the tolls on the bridge for 35 years. By taking on the construction, design, and financing, as well as the long-term operation, the private sector also assumes many of the risks involved, including cost overruns due to design flaws, unexpected soil conditions, or certain catastrophic events. Each P3 arrangement will define which risks are assumed by the private partner and which remain with the public sector.

This primer will review the basic structure of a P3 project finance concession and introduce key public and private participants and their roles. It will also describe the motivations of public and private partners for entering into P3s, present some typical P3 concession characteristics, and clarify common misconceptions/misperceptions of what P3s can and cannot accomplish. Finally, the primer will outline typical P3 implementation steps and provide some examples of P3 concessions.

Table 1. Types of P3s by risks and activities assumed by private partners.

	Risks/Activities Assumed by Private Partner					
Project Type	**Design**	**Build**	**Finance**	**Operate**	**Maintain**	**Traffic**
Traditional Design-Bid-Build		X				
Design-Build	X	X				
Design-Build-Finance	X	X	X			
Design-Build-Finance-Operate (Availability Payment Concession)	X	X	X	X	X	
Design-Build-Finance-Operate (Toll Concession)	X	X	X	X	X	X

Note: Shaded areas represent the types of P3s covered in this primer.

CHAPTER 2

How Does a P3 Concession Work?

Under traditional project development, most public agencies design a project and then request sealed bids from private sector firms for construction. The public agency selects the lowest bidder, and that company constructs the project. Upon completion, the public agency is responsible for future operations and maintenance.

A P3 concession is an alternative way for a public agency to deliver a public-purpose project. A P3 concession has three primary elements: a concession goal, a compensation structure, and a term or length of time. Each element is established by the public agency that implements the P3 concession, sometimes in negotiation with the private partner.

Examples of Refinancing and Monetization

Broomfield County, CO, entered into a public–private agreement with the Portuguese firm BRISA in order to provide refinancing on the Northwest Parkway. The State of Indiana entered into a public–private agreement to lease the Indiana Toll Road for 75 years in exchange for an upfront payment of $3.8 billion, which the State used to fund other transportation projects.

Concession Goals—Public Perspective

Public agencies may use P3 project finance concessions to construct new facilities or to expand or rehabilitate existing facilities, such as highways, bridges, or tunnels, that a State DOT, local government, or other project sponsor would otherwise have undertaken through traditional project development. In some cases, public agencies that enter into P3s have goals that do not involve construction, expansion, or rehabilitation of a facility but rather involve refinancing of a facility in financial trouble or *monetization* (receiving compensation from the private sector for allowing a lease of a financially successful existing facility).

Concessions whose goal is to construct a new facility are often called *greenfields*, whereas concessions that involve existing facilities are often called *brownfields*.[1] The goal and nature of the P3 transaction can be very different for existing facilities, depending on their condition and future plans. A brownfield toll road that the public sector wishes to expand or reconstruct involves much greater up-front capital outlay and less certain returns than does an existing toll road in good condition. To avoid confusion, this primer will use the term *brownfield* only for those projects in which no substantial expansion or rehabilitation occurs and in which the primary goal is either restructuring the financing or allowing the public sector to receive monetary compensation for the value of an existing facility. All other P3 project finance concessions on existing facilities will be termed *hybrids*, because they involve construction and rehabilitation of a facility as well as financial goals.

Why Do Public Agencies Enter Into P3 Concessions?

Expanded financial capacity is one of the primary reasons public agencies consider P3 concessions for transportation facilities. Equity contributions, commercial loans, and other debt taken out by the private partner can substitute for

1. The use of the term *brownfields* in the P3 context is different from the term used by the Environmental Protection Agency to refer to reused, potentially contaminated property.

public debt when the public is unable or unwilling to borrow for the project. Although the financial capacity is often what initially motivates consideration of P3 concessions, the incentives created by concessions can also lead to greater overall value for the public sector through improved asset management and on-time and on-budget delivery. In addition, the risk-sharing enabled by the P3 model can provide some protection from the cost and consequences of negative events, from cost overruns to design flaws to catastrophic failures. These and other potential benefits of P3 concessions are discussed in the following sections.

Increase Up-Front Financing Through Private Equity

The private equity capital contribution can be an important tool to increase up-front financing for a project. For example, the public sector may wish to construct a project that may cost $1 billion, and toll revenues may be adequate to repay $800 million through conventional public financing. The public sector may have no source of additional funding or financing to meet the $200 million gap. In this case, an equity investment could provide the additional up-front funding required to construct the project. Although equity is invested with the expectation of a return, this return is not guaranteed. If the project does not perform financially, equity investors can lose their investments (just as stockholders can lose their investments if a company fails).

Make Greater Total Debt Capacity Available Through Private Structure

In some cases, private financing structures may allow for greater total debt capacity than can traditional project development. The public sector may be constrained by legal limits on the amount of debt that may be issued, by conservative debt-issuance policies that make it more difficult to issue public debt, or simply by an unwillingness to take on financial risk when there is another option. In addition, public sector borrowing policies may require higher "coverage levels" (the ratio between future anticipated revenues and debt service payments) than what private lenders would seek. Private lenders or equity partners may be more comfortable with longer term borrowings or may count on operational or construction cost savings that will increase the amount of value that can be delivered for a given level of revenue.[2]

Share Revenue and Risks with the Private Sector

Risk allocation is another primary motivation behind P3s. The public sector may be unable or unwilling to take on additional revenue risks, especially if shortfalls could affect other government operations. For example, under a traditional financial model, if the public sector borrows money to construct a new toll road, and toll revenues are not sufficient to repay the debt, then the public sector might have to use general government revenues to make up the difference.[3] A P3-concession-financing structure may allow this risk to be mitigated by allocating some or all of it to the private sector. The public sector is protected against the risk of shortfall but will forgo some or all of the potential for additional revenue if the project succeeds financially. In many cases, the public sector also negotiates to receive a share of additional revenues, if any, even when it transfers most of the downside revenue risk to the private sector.

In addition to financial risks, the public sector automatically assumes most of the project risks in traditional project development. When a design flaw causes construction costs to increase, or a change in environmental regulation increases operating costs, the public sector bears the full cost of these events. In a P3, by contrast, the public and private sectors can negotiate who will be responsible for managing each type of risk and paying the costs when unanticipated events increase costs.

The private sector will generally take on risk in exchange for some kind of compensation. In some cases, that compensation is the potential to increase profit if the risk is well-managed. For example, the private sector may accept the risk of construction cost overruns, because it will save money if construction costs are less than anticipated. In other cases, the private sector builds the acceptance of a risk into the rate of return expected for the project. This is known as the *risk premium*—the additional return expected by the private sector in exchange for accepting additional project risk.

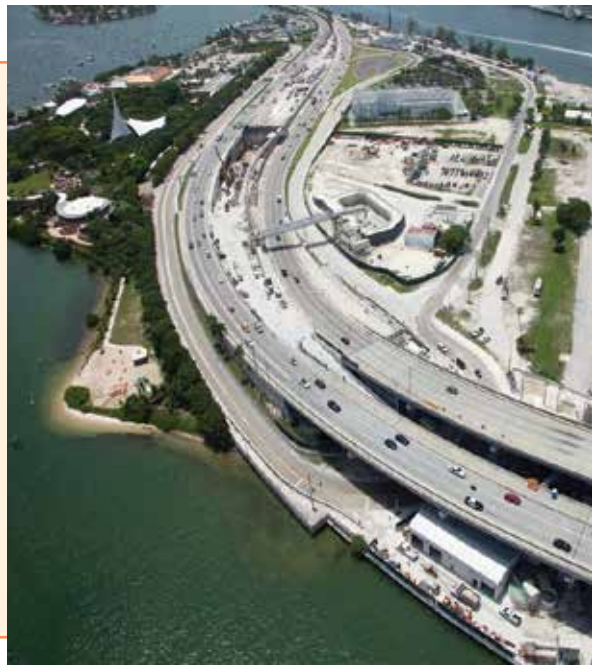
If the public sector believes it can manage a risk at a lower cost than the risk premium, it can choose to retain the risk.

2. In traditional project development, the public sector may be able to offer greater capacity through a "system pledge" that relies on revenues from existing facilities to cover any shortfalls that may occur on construction or rehabilitation projects. This system pledge has a real cost to the public agency, however, because if there is a shortfall on the new project, the costs will have to be paid by the users of the existing facilities.

3. Note that the public sector might also be able to finance a toll project on a "stand-alone" basis as an independent public authority, which is another option that can shield the public sector from financial risk.

Example of Risk Allocation: Port of Miami Tunnel

Undisclosed and unforseeable soil conditions in Biscayne Bay could lead to substantial delays and increased costs in the construction of the Port of Miami Tunnel. Under the public–private partnership agreement, the Florida Department of Transportation (FDOT) shares this risk with the concessionaire. The first $10 million of additional costs due to changed geotechnical conditions will be paid by the concessionaire, the next $150 million by FDOT, and the next $20 million by the concessionaire. If more costs are incurred, either party may terminate the agreement. This is not a transfer of risk to the private sector, but instead it is an allocation between the public and private sectors that ensures that the private sector will be motivated to minimize costs but will not be exposed to unlimited risks.[4]



MacArthur Causeway Bridge, Miami, FL

Provide Incentives for Better Asset Management and On-Time and On-Budget Delivery

When properly structured, a P3 concession may provide incentives for better asset management, as well as on-time and on-budget delivery. Under traditional procurement models, the private sector constructs a project based on public design specifications, and then the public sector becomes responsible for operations and maintenance. With a long-term concession model, the private partner has an incentive to consider making a greater investment in the initial construction of a facility in order to reduce future operations and maintenance costs—essentially, optimizing life-cycle costs.

Concession Goals—Private Perspective

Private concessionaires have a much simpler motivation for entering into a P3: the desire to earn a return on their investment. For equity investors, long-term concessions provide a particular type of long-term investment that offers the possibility of long-term returns. If a project is financially successful, it is likely to provide more stable returns for a number of years than can other investment alternatives, such as stocks or bonds. Other private participants, such as expert service providers, seek to earn a profit by performing services for the concessionaire.

Concession Compensation—Basic Options

Public agencies have many options for how to compensate the private sector for its project delivery activities. The basic compensation options are described in the following sections.

Toll and Project Revenues (from Project to Private Sector)

The public sector may permit the private sector to collect tolls or other project revenues from a facility as compensation for its role in a public–private concession. By accepting this form of compensation, the private sector also accepts the risk that toll revenues might be inadequate to repay debt or provide a return on equity, and thus the facility will not be constructed or continue to perform. This traffic-and-revenue risk can also be shared between the public and private sector. For example, the public sector might guarantee that equity investors will either receive a certain level of gross revenue or return on their investment or be entitled to a no-cost extension of the concession for

4. Harder, P. (2009, December 1). Port of Miami Tunnel: Digging Through Novel Risks. Nossaman Infra Insight Blog. Retrieved June 8, 2012 from http://www.infrainsightblog.com/2009/12/articles/ppps/port-of-miami-tunnel-digging-through-novel-risks/

a period that might vary depending on the extent of the shortfall. In exchange for sharing the downside risk, or simply being part of the transaction, the public sector may also negotiate a share of the "upside" profit, which requires the private sector to provide a share of future revenues if they exceed certain threshold levels.

Availability Payments and Performance Payments (from Public to Private Sector)

In an *availability payment concession*, the public sector will compensate the private sector for its activities with annual availability payments that depend on performance and availability of the facility. Frequently, the public sector first offers milestone payments when construction is complete and then offers annual payments for each period that the facility is available at the specified performance level. For example, the public sector might agree to pay the private sector $10 million a year for constructing, operating, and maintaining six lanes of a bridge at a specified performance level. Performance requirements could include pavement quality, cleanliness, speed of clearing up accidents, and other measures. If the performance requirements are not met, then the availability payment can be reduced or even eliminated, thereby helping to ensure a high level of performance.

The amount of the availability payment is determined in the procurement process. Different private bidders will offer to accept different levels of availability payment based on their analysis of the project's construction, financing, and other costs. The public agency will consider the level of availability payment as one factor in choosing the best value bid. Because availability payments are not based on user fees, the public sector will need a source of revenue to make them. In some cases, the public sector may choose to charge tolls on a facility but pay the private sector on the basis of performance and availability. Availability-payment-based concessions have been extensively used overseas but are relatively new in the United States; however, interest in this model is growing.

Shadow Tolls (from Public to Private Sector)

In a *shadow toll concession*, the public sector pays a fee to the private concessionaire for each vehicle that uses a facility. The shadow toll model provides incentives to the private sector for prompt, on-budget completion and quality performance. Some governments have reduced their use of shadow tolls, because the private sector is incentivized to increase traffic to the particular facility, whereas the public sector goal may be to reduce overall congestion. To address

Example of Retained Risk: Interstate 595, Florida

On the Interstate 595 project in Florida, the public sector decided to retain the toll revenue risk for a number of reasons. According to the project's value for money analysis, the primary goal of the project was to maximize throughput in the corridor, whereas the analysis showed that if the toll revenue risk were transferred, the concessionaire would focus on increasing toll revenues, not throughput. The State was also concerned that lenders would provide less favorable terms and require more equity investment if the private sector were allocated toll revenue risk. The State felt that the higher cost that this would incur would not be worth it, given that toll revenues were likely to provide only half of the funding over the life of the concession.[5]

Interstate 595 and Florida Turnpike interchange

5. Jeffrey Parker and Associates. (2009, June). I-595 Value for Money Analysis (pp. 11–12). Tallahassee, FL.


© MAT Concessionaire

Celebration of the arrival of the Tunnel Boring Machine at Port Miami, FL

this concern, shadow tolls may be capped at a certain number of vehicles, and payments may be reduced or increased on the basis of safety and speed performance thresholds achieved by the operator.

In general, shadow tolls are used when the public sector wishes to provide incentives to the private sector for timely completion and good management but does not wish to charge actual tolls. Because shadow tolls are not based on user fees, the public sector will need a source of revenue to pay them to the private sector. The public sector can choose to collect tolls on a facility but pay the private sector on the basis of traffic. The State of Texas has used a process similar to shadow tolls called *pass-through toll financing* in partnership with its local governments, but no domestic P3s have used shadow tolls to date.

Up-Front Payment (Private to Public Sector—for a Toll-Based Concession on an Existing Facility)

When a concession occurs on a toll facility that is generating or is expected to generate more revenue than what is required to repay debt, the private sector may pay the public sector in advance for the ability to collect future revenue. This is a variation on the toll-based concession that can only work on a brownfield facility that does not need more rehabilitation than what can be covered by projected revenues. The private sector assumes the obligation to operate and maintain the facility and future traffic-and-revenue risk. The public sector receives the up-front payment but in exchange has to forgo future revenues from the facility and avoid any future revenue shortfall or performance risks. Laws, regulation, or policy will determine how the up-front payment can be used. In some cases, the public agency will spend it on other transportation projects or for other governmental purposes.

Concession Term—Basic Options

The public sector determines how long a concession will be. In most cases, the public sector tries to establish a time period that is long enough to provide incentives for good asset management and that allows sufficient time for the private sector to repay debt and make a return on the investment to construct or reconstruct the facility. The private sector may be able to take advantage of depreciation and other tax benefits if the concession term exceeds the expected useful life of the facility. The public sector seeks to provide sufficient time to allow the private sector to recoup its investment while not forgoing revenues for more years than what is necessary to provide users with transportation service.

Fixed

The public sector may establish a specific period of time for a concession, such as 35, 45, or 50 years. The term may be specified in enabling legislation, determined by policy, or negotiated with the concessionaire. The term is usually, but not always, set to be greater than the life of the asset to facilitate use of depreciation and other tax benefits in a long-term lease. Fixed concession terms have historically been used in the United States.

Dynamic

Some P3 concessions do not last a fixed period of time but are slated to end when the concessionaire reaches an agreed present value of the revenue stream or rate of return, when

Example of Dynamic Concession Terms

The Dartford Crossing concession in Great Britain was completed when the underlying debt for the project was fully repaid. The concession was structured for a maximum of 20 years but ended as soon as the outstanding debt was repaid.

© Parsons Brinckerhoff

An aerial simulation of the Presidio Parkway, San Francisco, CA

debt is repaid, or when other milestones occur. The public sector may choose to establish minimum and maximum terms within this dynamic period. To date, no U.S. concession has used a dynamic term.

Extendable

The public sector may also offer a term that is fixed but with the possibility of extension under certain limited circumstances, such as an option to compensate the concessionaire for costs or delays that are considered the responsibility of the public sector. For example, an extension of the concession is one way that the California Department of Transportation (Caltrans) can compensate the Presidio Parkway concessionaire for delayed costs or extra work costs.

CHAPTER 3

Who Are the Primary Participants in a P3 Concession, and What Are Their Roles?

Primary Public Participants

P3 concessions may originate at the State or local level through legislative or executive initiatives. Although they generally originate at one level of government, eventually P3s involve multiple levels of government and require participation, and sometimes approval, at various stages by different public entities.

State Legislatures

In general, State legislatures establish the overarching rules or statutes for their State's P3 concessions. To enter into a P3 concession, most public agencies require specific enabling legislation that will permit a long-term concession, or lease, with the private sector. State-enabling legislation often specifies what kinds of projects will be considered as P3s, how the projects will be selected, concession terms, and other features. The enabling legislation will usually create the basic framework for the P3 concession, and in some cases, the legislation will require that each concession be specifically approved by a legislative majority.

Examples of Public Project Sponsors for Public–Private Partnerships

The Virginia Department of Transportation is the public project sponsor for the Capital Beltway public–private partnership, and the Texas Department of Transportation is the public project sponsor for the North Tarrant Expressway.

Examples of Public–Private Partnership Coordination Across Multiple Levels of Government

The Florida Department of Transportation coordinates with Miami-Dade County and the City of Miami on the Port of Miami Tunnel public–private partnership.

Governors

In some cases, P3 concessions originate from a gubernatorial initiative. In this case, the Governor must work with the State legislature and obtain the required legal authority to implement the project or program. The Governor may direct the State DOT to investigate P3s in general or for specific projects. The Governor may also work with other public agencies, including independent toll authorities, regional governments, cities, or counties to implement P3s.

Public Sector Project Sponsor

Assuming that State-enabling legislation allows it, P3 concessions can be sponsored by a State DOT authority or local government. Within the constraints defined by the enabling legislation, the public sponsor creates guidelines, defines goals, owns the project, procures, negotiates, and is responsible for oversight of the concession.

Local Governments (Non-Sponsors)

In some cases, P3 concessions occur on a State-controlled facility that lies within the jurisdiction of a city or county. In this case, the public agency sponsor of the P3 is often re-

Examples of Conduit Issuers

Private Activity Bonds (PABs) for the North Tarrant Expressway public–private partnership toll concession were issued by the Texas PAB Surface Transportation Corporation created by the Texas Transportation Commission. In Virginia, the nonprofit Capital Beltway Funding Corporation was established to issue $589 million in PABs for the project.

quired by the enabling legislation to consult with the applicable local government. For example, P3s usually have to be incorporated within the local metropolitan planning organization's Transportation Improvement Program.

Conduit Issuer

If Private Activity Bonds (PABs) are used in the financing, the public sector must have a "conduit issuer" that will issue bonds whose proceeds are loaned to the private partner. The conduit issuer may be an existing State or local agency that issues PABs for other governmental purposes, or the issuer may be created specifically for the purpose of issuing PABs for transportation.

Public Sector Contracted Advisors

The sponsoring agency may hire private sector consultants as advisors. They may assist in analyzing projects considered for P3s, in the initial plan for a P3 concession on a selected project, in negotiating the concession, and in some cases, on certain monitoring and oversight tasks.

U.S. Department of Transportation

Although State and local governments have the primary role in U.S. concessions, the U.S. Department of Transportation (USDOT) may get involved in various capacities, including providing credit assistance, allocating PAB authority, managing toll authority under Congressionally-authorized programs, and conducting stewardship on projects that receive Federal funds or Federal credit assistance.

USDOT may serve as a lender to a P3 project via the Transportation Infrastructure Finance and Innovation Act (TIFIA) credit assistance program. TIFIA provides long-term loans, lines of credit, and loan guarantees to eligible projects. The credit assistance may not exceed 49 percent of eligible project costs. Eligible projects must apply directly to USDOT and meet criteria specified in the enabling legislation of the TIFIA program. All TIFIA projects must conform to Federal requirements.

USDOT may also make an allocation of authority under the PAB program, which allows a P3 project to gain the benefits of less expensive tax-exempt financing. To obtain a PAB allocation, a project sponsor has to apply directly to USDOT with the support of the State DOT involved. The sponsor may also work with USDOT to obtain tolling authority under one of the six Congressionally-established tolling exemption programs that provide States with authority to toll on Federal-aid routes.

Finally, USDOT will carry out oversight and stewardship responsibilities under Title 23 for use of Federal-aid funds or credit assistance or for projects that occur on the Federal-aid system. This includes ensuring that project sponsors who receive the funds comply with Federal requirements, including construction standards, environmental impact analysis and reporting processes, and cost estimation, financial planning, and project management activities required for major projects.

Other Public Sector Sponsors

Public entities other than the primary project sponsor may provide public sector funds for a portion of the project. The project may receive Federal-aid or State-allocated funds through the State DOT or State legislature. The project may also receive funding from local public agencies or governments; an independent authority, such as a turnpike; or a transit agency. These sponsors may require input into the P3 process as part of their conditions for providing funds to the project.

Primary Private Participants

Concession Company or Concessionaire

The concession company or concessionaire has the right to implement the concession, assemble the financing, and ne-

Examples of Concessionaire Special Purpose Vehicles

The concessionaire for the Interstate 595 express lanes in Florida is I-595 Express LLC, a consortium created by ACS Infrastructure Development. The concessionaire for the Capital Beltway high-occupancy toll lanes is a special purpose vehicle owned by Fluor and Transurban.

gotiate agreements with the public sector. Most concession companies are established as Special Purpose Vehicles (SPVs) or Special Purpose Entities (SPEs), which are a combination of firms that create a joint venture for the purpose of bidding on a project.

Expert Service Providers

Expert service providers may be contracted by the concession company to design, build, operate, maintain, and perform other functions if the concession company does not provide these services itself. These expert service providers may include a construction firm that serves as a design builder; tolling experts who operate tolling technology; firms with expertise in administrative and back-office operations; operations and maintenance; consultant advisers, such as attorneys and financial advisers; and experts in other key aspects of the P3 concession.

Equity Investors

Various kinds of equity investors provide funds to the concession company. Strategic equity is capital from the concession company's partners and expert service providers (e.g., construction firms). The equity is considered "strategic" from a private perspective, because the firm has a vested interest in providing capital to ensure that it will be able to do the work that is part of its project role. The equity is also considered strategic because the equity investment gives the strategic equity partner substantial incentive to complete the project and meet performance targets, or it will otherwise risk the loss of its equity. The incentive is motivated by the fact that the company's own money is at risk.

Another kind of equity can be contributed from infrastructure sector investment funds. These funds may be assembled by investment banks or other entities that offer institutional and private investors the opportunity to invest in long-term infrastructure projects. Public and private pension funds may also contribute equity toward a P3 concession. Pensions invest in P3 concessions as a way to earn long-term, stable returns. In a few U.S. transactions, pension funds have invested directly in local transportation infrastructure projects.

Example of Equity Investors

North Tarrant Express Mobility Partners, the concessionaire constructing the North Tarrant express lanes in Texas, is a consortium of Cintra US, Meridiam Infrastructure Finance (a sector investment fund), and the Dallas Police and Fire Pension System.

Commercial Lenders

Banks can provide debt capital to the concessionaire via commercial loans. These loans typically have higher interest rates than do tax-exempt bonds and often require that the concessionaire refinance them during the life of the concession.

Bondholders

Concessionaires can also borrow funds from individual investors and institutions that purchase bonds in the capital markets. To borrow funds at the least expensive, tax-exempt rate, the concessionaire must apply for and receive a PAB allocation from USDOT. In addition, a public agency must serve as a conduit issuer that actually issues the bonds.

Examples of Expert Service Providers

For the construction of the Interstate 595 express lanes in Florida, Dragados, USA; GLF Construction Corporation; and Hubbard Construction Company serve as lead contractors. Earth Tech, Inc., serves as the lead engineering firm, and Iridium Concessiones de Infrastructuras S.A. serves as lead operations and maintenance provider.

Interstate 595 express lanes ramp, FL

CHAPTER 4

What Characteristics Are Associated with Viable P3 Projects?

P3 project sponsors have a variety of methods for selecting P3 projects. In some cases, the projects are designated by name in the enabling legislation. In other cases, the State DOT or other project sponsor establishes selection criteria and determines which projects align best to them. Projects selected for P3s tend to have the common characteristics described in the following sections.

Large Size

From the public perspective, large projects (typically $500 million or greater in cost) may make for good P3s because the public sector may lack the financial capacity to execute and complete such a large project. From the private perspective, large projects provide sufficient profit potential to merit the substantial investment required to participate in a procurement process.

Complexity

The public sector may consider a P3 on a complex project in order to take advantage of specialized expertise in the private sector, particularly for types of projects that may not have been previously implemented by the public agency. The private sector also has greater interest in projects that present opportunities for substantial innovation, which can lead to cost savings and higher return potential.

Strong Public Support

Because P3 projects can require longer consideration and greater scrutiny, the public sector generally prefers projects that already have achieved wide support. Broad public support gives the private sector confidence that the project will receive needed political approvals.

Reliable Revenue Source(s)

Projects that have already secured revenue commitments provide some measure of assurance to the private sector that the project can be viable as a P3 and has the capacity to generate returns on their investment.

Completed or Near-Completed Environmental Process

Projects with completed or nearly completed environmental work make better candidates for P3s, because the private sector will be less concerned about delays and unknown environmental costs.

CHAPTER 5

What Are Some Common P3 Misconceptions?

A number of misconceptions exist about what P3s are and what they can accomplish. The following section provides more detail about what P3s do not entail.

P3s Are a Source of Revenue

P3 concessions do not generate revenue, they require it. Although they may enable the use of future revenues by making financing available now, the public sector must identify and allow for the use of a viable revenue source or sources, such as a user fee (e.g., tolls); a dedicated sales, hotel, or other tax; or general appropriations. Although the private sector does provide equity investment in the project, concessionaires have the expectation of a return on their investment.

P3s Mean Privatization

The public sector almost always maintains ownership of facilities involved in highway P3s, generally through a lease to the private sector with many conditions, at the end of which full control will revert to the public sector. By contrast, full privatization would involve an outright sale of the right-of-way to the private sector, with no scheduled return to public control in the future.

P3s Are a Fit for Every Project

Some projects do not make suitable P3s. The private sector cannot make a bad project a good project. For example, a P3 cannot be used to deliver a project that does not have an adequate revenue source. It also may not be a suitable project if the public sector determines that it could implement it at a lower cost without a P3 model.

P3s Are Free to Implement

Although the P3 model can provide additional value to a project sponsor, it requires money, time, and resources to implement. The public sector will have to make investments of both time and money in order to take advantage of the potential benefits of a P3.

P3s Are Guaranteed to Succeed

Every project, whether undertaken as a P3 or as traditional project delivery, has risks. In traditional procurement, the public project sponsor automatically accepts certain risks, such as the risk of cost overrun, design errors, and catastrophic failures. In a P3, the public sector considers these risks explicitly and tries to allocate the risk to the party best able to manage it. Even where risk allocation is successful, however, the public sector may still experience losses, financial or otherwise. For example, if the public sector allocates part of the geotechnical risk that it normally holds in a traditional transaction to the private sector (as was done in the Port of Miami Tunnel transaction), it may still experience losses for the part of the risk that it retains. The losses may be less than what would have occurred without the P3, but the public sector can still lose money as a result of unforeseen geotechnical conditions.

CHAPTER 6

Why Aren't There More P3 Concessions?

In the past two decades, fewer than two dozen availability payment or toll highway P3 concessions have occurred in the United States. A variety of reasons caused the relatively low number of these kinds of projects, given the substantial number of project needs. Some States and local governments have chosen not to consider P3s or have considered and rejected the model for their jurisdiction for policy reasons. This is within the discretion of the State, just as most of the decisions about project development remain at State and local levels.

Lack of Suitable Projects

Some States have not identified projects for which a P3 concession would enhance value and thus have not sought legislation or built organizational capacity to consider P3s. In some cases, States lack projects of sufficient size or complexity.

Lack of Legal Ability to Enter into a P3

Some States lack the legal authority to enter into P3s, or the legal authority is too restrictive to be used effectively. Some States are in the process of seeking this authority or are considering doing so.

Lack of Revenue Sources

Some States lack revenue sources to provide compensation for either a public or private arrangement. This is a barrier to any kind of development, public or private.

Lack of Organizational Capacity

Some States have an interest in P3s but lack the in-house or consulting capacity to consider and develop P3 programs.

Examples of State Discretion

The Commonwealth of Kentucky and the State of Indiana both considered public–private partnerships as an option on the Ohio River Bridges Project. The project has been split into two parts: Kentucky will utilize a design–build-contracting approach for procurement of the Downtown Crossing, whereas Indiana will utilize an availability payment concession approach to deliver the East End Crossing.

CHAPTER 7

Basic Concepts: Project Finance

Understanding P3 project finance requires a basic understanding of transportation project finance. Project finance occurs when a project sponsor wants to build a project now but cannot pay the full costs up front and thus has to find a way to borrow funds to cover expenses.

A P3 concession is one type of project financing. The concession company puts some of its own money into the project and adds funds that it borrows (e.g., from commercial banks). If the facility is already constructed, the concessionaire uses the combination of equity and debt to pay the public sector for the right to operate for a set number of years. More commonly, if the project is not yet built or needs substantial rehabilitation, the concessionaire will use the money raised from debt and equity to pay for the construction cost.

Equity and Debt in P3 Concessions

Financing P3 concessions includes two basic elements: debt and equity. Concession companies and their investors provide equity funds, or capital, at the beginning of the project and borrow money to pay for remaining costs.

The concession company uses its future project income to repay lenders. Because projects cannot earn income until they are built, the concession company must estimate what it expects to earn, and the lender has to agree with the estimates. If the estimates (or revenue projections) are wrong, the concession company may have to use some of its own money to pay the loan payments. If the revenues are more than what is expected, the concession company will have money left over each year after making loan payments, and the revenues go back to their investors as dividends.

Example of Public–Private Partnership Project Finance

- A public–private partnership is used to finance construction of a toll bridge that will cost $1 billion.
- The concession company receives the right to collect tolls on the bridge for 45 years in exchange for constructing, operating, and maintaining the bridge during the specified time frame.
- The concession company might provide $200 million in equity and borrow $800 million for the remainder of the project.
- The concession company takes the risk that revenues will not be enough to pay the annual loan payments, leading to bankruptcy or loss of the concession. If the project is successful, the concession company also has the potential for revenues above and beyond its costs, allowing dividends to be paid to its investors.

Public Sector Project Finance

The public sector can also borrow for projects in a similar way, putting up public funds for part of the cost and pledging future repayment. If the public sector borrows for a project, it is accepting the risk that revenues will not be sufficient for repayment of costs, as well as the potential reward of receiving excess revenues that are more than what is necessary to cover project costs.

An aerial view of the Presidio Parkway, San Francisco, CA

CHAPTER 8

What Are the Typical Steps in Establishing a P3 Program?

Each State designs P3 programs differently. This section will provide an overview of the typical steps in the order that they frequently occur.

Establish a P3 Working Group

The first step in establishing a P3 program is usually dedicating the time of agency staff to analyze and consider the process. For example, State DOT staff may contact other States that have already established P3 programs to discover best practices and lessons learned. In some cases, the P3 team may initially be housed within the Governor's office, another State agency, or the legislature. Some agencies also can hire consultants to assist in the development of a program.

Using Consultants to Assist in Program Development: Virginia

In 2010, the Commonwealth of Virginia hired KPMG Infrastructure Advisory Group to evaluate its existing public–private partnership (P3) program and to recommend changes. The result was the establishment of a separate, multi-modal office for transportation P3s throughout Virginia, with standardized processes and a programmatic approach.

Establish Legal Authority or Develop a Program

Legislation may direct a project sponsor to develop a program, or a project sponsor interested in developing a program may seek enabling legislation. Depending on which comes first, the P3 team will generally work to either implement the enabling legislation or obtain enabling legislation.

Identify Potential Projects

The enabling legislation may (a) specify a process for identifying potential projects, (b) name certain projects, or (c) allow the agency to develop its own process. One key difference in project-selection methods is whether project proposals are solicited or unsolicited. When project proposals are solicited, the private sector is invited to compete on projects that are already part of the agency's plans. This permits open and fair competition and ensures that the projects are agency priorities; however, the agency may not be in a position to identify all of the projects for which the private sector could provide innovations. If an agency permits unsolicited proposals, the private sector can propose a P3 on a project for which the public sector may not have considered it. This can provide additional innovative concepts, but the private sector may choose projects that are lower public priorities or frame the P3 in such a way as to "cherry pick" profitable segments of a project while avoiding unprofitable segments. The public sector generally requires that an unsolicited proposal be opened to competition from firms other than the original proposer. Some agencies permit both solicited and unsolicited proposals but vary the process used for approval of each.

Quebec Street Bridge girder placement, Eagle P3 Project, Denver, CO

Unsolicited and Solicited Proposal Submission Process: Texas

In Texas, the Turnpike Authority Division of the Texas Department of Transportation (TxDOT) and the State's Regional Mobility Authorities are permitted to issue solicitations as well to accept unsolicited proposals. When TxDOT receives an unsolicited proposal, it evaluates its validity. If it is found to be a viable proposal, TxDOT issues a request for competing proposals (RFPs) and qualifications (RFQs) from all other interested parties. Proposers submit *qualification submittals*, which TxDOT evaluates to shortlist proposers. TxDOT then issues a draft RFP, conducts one-on-one meetings with the shortlisted proposers, and issues the final RFP. TxDOT again conducts one-one-one meetings with proposers before evaluating the responses to the final RFP. The primary difference in the solicited proposal process is that TxDOT originates the initial RFQ without having an unsolicited proposal in hand.

CHAPTER 9

What Are the Typical Steps in Evaluating a Potential P3?

Establish Project Goals

Once a project is selected for evaluation as a potential P3, the public sector will identify key goals, which includes what construction or reconstruction needs to occur, what risks should be considered for allocation, and what operational and performance measures may be important.

Hold Industry Meetings

Once a project has been identified, the public sector may choose to hold industry meetings to allow for private industry input into the P3 potential of the project. These industry meetings can also occur later in the P3 project development process in order to gather additional information about how the private sector views the project and potential innovations that may be enabled by a P3 model, as well as potential barriers to project delivery.

Examine Revenue Options

The public sponsor usually examines the possible revenue options associated with a project. This usually starts by identifying users and beneficiaries of the project. For example, an intermodal truck-to-rail facility might be used by trucking companies, freight rail companies, and shippers. All of these users might be willing to pay fees that could repay some of the cost of building the facility. A new high-occupancy toll (HOT) lane might benefit commuters, bus riders, and real-estate developers who own commercial property served by the lane. The users may be willing to pay tolls to reduce their commute time, whereas the property owners may be willing to dedicate a share of property taxes to improve the transportation accessibility of their property. The public sector may conduct additional analysis on the revenue options, including initial toll feasibility studies, revenue feasibility studies, and review of other applicable Federal and State grant programs and other potential sources.

Evaluate Financial and Other Risks

Once revenue sources have been identified, the public project sponsor can make an initial estimate of how much financing might be supported by the revenue sources. For example, if the public sector estimates that a project could collect $10 million in tolls annually, it might estimate that issuance of a 15-year bond could generate $90 million in financing. The exact amount depends on then current market conditions as well as the reliability of the revenue forecast. The public sector will also analyze the status of environmental and other permitting processes and archeological, geotechnical, and other conditions. Essentially, the project development steps for a potential P3 are similar to those undertaken for a traditional project, except that the public sector is gathering information for a risk-based analysis to determine whether private sector involvement could lead to added value.

Evaluate Public Sector Capacity for Project Development or Create a Public Sector Comparator

After examining the revenues and potential project risks, the public sector will evaluate its capacity to complete the project by using traditional methods. Often the agency creates a public sector comparator, which illustrates the cost and risks that would be assumed if the agency were to take on the delivery of the project. For example, for a $1-billion replacement of a bridge crossing, the public sector might examine cost overruns and schedule delays for similar projects performed under traditional development processes in the past and quantify the risk of similar overruns or delays occurring on the new project.

Consider Possible Benefits of P3 Models or Conduct Value for Money Analysis

The public sector usually reviews the possible benefits of a P3 procurement and considers which model to pursue based on analysis of the project. The public sector comparator developed would be compared with the anticipated risk-adjusted cost of implementing the project as a P3. This process is often called a *value for money* (VfM) *analysis*, estimating the added value, if any, that can be derived if the project is pursued through a P3 model.

Determine Whether and How to Implement a P3

The public sector will use the VfM analysis to determine whether to undertake a project as a P3, which compensation model to use, and the general framework for the concession. For example, the analysis conducted by the State of Florida for the Interstate 595 HOT lane project suggested that an availability payment compensation model would better fit the public sector's goals than would a toll concession.

The Downtown Tunnel and the Berkley Bridge east of the Southern Branch of the Elizabeth River, South Hampton Roads, VA

CHAPTER 10

What Are the Typical Steps in a P3 Procurement?

Develop a First-Stage Procurement Document: Request for Information or Request for Qualifications

If the results of the VfM analysis show that the public sector might gain additional value from executing a project as a P3, the public sponsor will develop an initial procurement document that provides information about the project and the public sector's goals and requests information or qualifications from interested concessionaires. This is usually the first step of a two-step procurement process. The request for qualification (RFQ) or request for information (RFI) stage allows the public sector to weed out concessionaire teams who do not have the qualifications to implement the concession successfully. For example, a consortium that does not include firms that have completed a project costing more than $100 million would probably not meet the qualifications necessary to be the primary concessionaire on a $500-million project.

Develop a Second-Stage Procurement Document: Request for Proposal

After responses have been received for the first stage of procurement, the public sector may choose a short list of potential bidders who will be invited to bid on the second stage. The request for proposal (RFP) will incorporate what the public sector has learned from the initial RFI or RFQ. For example, if the public sector proposed a concession on a bridge, conversations with the industry might have clarified how much of the land that surrounds the bridge approaches needs to be included in the project and what kinds of toll limitations will protect the public interest while making the project feasible.

Develop Draft Project Agreements

The public sector may develop a draft project agreement as part of the more detailed stage of procurement. This will provide the basic outline for the agreement. For example, the draft agreement might specify performance standards for the facility, the term of the concession, and how revenue sharing will be handled. Some details may be left to the bidder to propose (e.g., the level of revenue sharing), and some may be open to negotiation after a successful bidder is identified.

Conduct Bidding Process

The public sector will then conduct the procurement process. Interested companies will submit confidential bids on the same date and by the same time. In many cases, bidding is limited to the short list of bidders who were deemed qualified from the initial RFQ or RFI. Bidders may also have to demonstrate their financial and technical capabilities to complete the concession and may be required to submit deposits or guarantees or otherwise prove their creditworthiness.

Traffic flows in the Midtown Tunnel that connects Norfolk, VA, and Portsmouth, VA.

Interstate 595 raising ramp, FL

Select a Private Partner

By using criteria developed to match public goals, the agency will select one of the bidders. Unlike traditional project development, cost will be only one of a number of considerations in choosing the successful bidder. Experience and technical capabilities also will be weighed. For example, if a project involves construction of a tunnel, a key evaluation criterion might be the proposed bidder's experience with tunnel construction and managing the risks on a large project.

Negotiate with Chosen Partner

Once the partner has been selected, the public sector can negotiate a final project agreement based on the draft developed during the RFP process. The private partner may wish to negotiate details, such as how payments will be sent (e.g., revenue share payments from private to public or availability payments from public to private).

CHAPTER 11

What Are Typical P3 Implementation Steps?

Gather Debt and Equity Capital (Private Partner)

The private partner has to invest enough equity and borrow enough money to construct or reconstruct the facility involved in the concession. In most cases, the different lenders and bond issuers involved in the project prefer that the funds be assembled at the same time so that they will be assured that the concessionaire will be able to construct the project and begin the flow of monetary compensation (i.e., revenues) that will be used to repay the debt. The process of satisfying all lender requirements and obtaining legally binding commitments to provide sufficient equity and debt to construct the project is called *achieving financial close* or *financial closure*.

Begin and Complete Design Build (Private Partner)

The private partner will begin construction as soon as feasible after financial close. In many cases, the agreement provides for damages if the private partner experiences a delay that is considered to be under its control. Depending on the P3 model adopted, the P3 concessionaire may receive progress payments during construction.

Operate and Maintain (Private Partner)

Once the project is constructed, the private partner is obligated to operate and maintain the project to the performance levels specified in the project agreement. Performance standards might include keeping a certain number of lanes open to traffic during peak hours, responding to traffic incidents within a set period of time, and establishing time limits to clear roadside debris.

Monitor Performance (Public Partner)

The public sector monitors performance of the private partner with respect to the obligations in the contract. If the private partner fails to comply with the provisions, the public partner takes the steps that are specified in the agreement. Some agreements allow the public sector to assess financial penalties for noncompliance. Others provide for "default points" for serious violations of the agreement. Some agreements allow a concession to be canceled if a concessionaire receives too many default points, and the public sector can award it to another concessionaire or bring it back under public control.

Evaluate Success of P3 and Lessons Learned (Public Partner)

Throughout the P3 process, the public partner can evaluate the success of its efforts to achieve public goals. In the beginning stages, the public partner may review how well the agreement worked to achieve construction on a timely basis. In later stages, the public partner can review whether the performance standards established for the concession were adequate, whether the public sector will do anything different in its next concession, and whether the agreement needs to be modified.

CHAPTER 12

What Are Some Examples of P3 Concessions?

Capital Beltway (Virginia)

The Capital Beltway HOT Lane P3 is a $2.1-billion, 80-year toll concession to widen an 11-mile congested segment of Interstate 495 in Northern Virginia. The Virginia Department of Transportation's (VDOT's) earlier analysis estimated costs from $2.68 billion to $3.25 billion. The initial public design would have required displacement of nearly 300 residences as well as impacts of up to 32 commercial properties, and VDOT and the region did not have funding to complete the project. The concession was prompted by a 2002 unsolicited proposal from Fluor Daniel, Inc. Fluor later established a joint venture with Transurban, LLC, which serves as the concessionaire for the project.

Fluor's innovative design significantly reduced the displacements and impacts, as well as project costs. The project will also include the replacement of more than $260-million worth of aging infrastructure, including 50 bridges and overpasses outside of the HOT lanes. It will provide the first congestion-free, high-occupancy-vehicle (HOV) network for carpools, vanpools, transit, and toll-paying motorists on the Beltway. VDOT contributed $409 million of the cost (partially due to the substantial improvements to the general purpose lanes and structures). The P3 financing plan also included a $586-million TIFIA loan, $586 million in PABs, and $349 million in private equity. For more information about the Capital Beltway project, see the project Web site at http://virginiahotlanes.com/.

Port of Miami Tunnel (Florida)

The Port of Miami Tunnel P3 is a 35-year availability payment concession to add an additional access route to one of the busiest ports in the country. The port is located on an island in Biscayne Bay that is currently linked to the mainland by a single bridge. Freight and cruise ship traffic share the single point of entry, causing significant congestion, and by 2030, truck traffic is expected to double. The Port of Miami Tunnel

High-occupancy toll lanes and Capital Beltway panorama, Fairfax County, VA

View of the Port of Miami Tunnel entrance, Miami, FL

will provide access for cargo trucks, buses, and other traffic seeking an alternative route to the port.

Florida's Department of Transportation (FDOT) was particularly interested in a P3 model in order to obtain private sector expertise in tunneling, which FDOT did not have in-house, to share some of the risks of the large and complex project, to secure financing, and to provide incentives for long-term asset management. In 2009, FDOT entered into a concession agreement with Miami Access Tunnel LLC, a consortium of Meridiam Infrastructure and Bouygues Travaux Publics, S.A. The $1.1-billion project cost will be financed with a combination of $341.5 million in senior bank debt, a $341-million TIFIA loan, an equity contribution of $80.5 million, and $309.8 million in FDOT funds. For more information about the Port of Miami Tunnel Project, see the project Web site at http://www.portofmiamitunnel.com/.

Puerto Rico 22 (Puerto Rico)

The Puerto Rico 22 (PR-22) P3 is a 40-year hybrid toll concession developed to improve and extend a 52-mile toll highway along the northern coast of Puerto Rico. The closest free alternative to PR-22 requires 45 additional minutes of travel time. The Puerto Rico Highways and Transportation Authority (PRHTA) had been downgraded and lacked access to the capital markets to borrow funds for needed upgrades to the toll highways, including improvements to electronic toll collection. Thus, PRHTA sought private partners for a monetization of the existing asset that would provide funds for these capital upgrades, as well as for other roads in the territory. In June 2011, PRHTA selected Autopistas Metropolitanas de Puerto Rico, LLC, a special purpose vehicle of Goldman Sachs and Abertis Infrastructuras, as a concessionaire for a 40-year lease of both highways. The concession will provide sufficient funds to defease $902 million of the existing debt on the project, $356 million in safety and other capital improvements on the roadway (as well as on PR-5, a 2.5-mile eastward extension), and $178 million for other projects. In September 2011, the concession achieved financial close, with approximately 40 percent of the concession fee financed by equity contributions and 60 percent through long-term debt. For more information about the PR-22 and PR-5 concessions and other projects in Puerto Rico, see the Puerto Rico Public–Private Partnership Authority Web site at www.p3.gov.pr.

CHAPTER 13

What Are Some Resources for More P3 Information?

FHWA's Office of Innovative Program Delivery Web Site

FHWA's Office of Innovative Program Delivery maintains a Web site (www.fhwa.dot.gov/ipd) with information about all aspects of innovative program delivery, including publications, project profiles, and other information about P3s and innovative finance.

National Conference of State Legislatures P3 Partners Project on P3s

The National Conference of State Legislatures (NCSL) provides a toolkit, education, training, and publications on P3s. For more information about these resources, see the NCSL Web site at http://www.ncsl.org/issues-research/transport/partners-project-on-public-private-partnerships-p.aspx.

Bridge girder erection in the construction of Interstate 595, Ft. Lauderdale, FL

CHAPTER 14

Summary

This primer provides a brief high-level introduction to some of the key aspects of P3 concessions for highway projects and exhibits how P3s differ from traditional highway project development. Table 2 summarizes some of these distinctions between traditional highway project development and P3 concessions in terms of financing source, cost overrun and construction risk, term, and public agency role. More detailed and technical information can be found via the Office of Innovative Program Delivery's and NCSL's Web sites referenced in the previous section.

Table 2. Comparison of traditional transportation project development with public–private partnership concessions.

Characteristic	Traditional Project Development	Public–Private Partnership Concession
Source of Financing	Either pay-as-you-go (existing funding) or public agency borrowing (bonds or loans); credit assistance from the Transportation Infrastructure Finance and Innovation Act.	Equity, Private Activity Bonds, commercial loans, or credit assistance from the Transportation Infrastructure Finance and Innovation Act.
Risk of Cost Overruns or Delays	Held by public agency; cost overruns may affect public budget.	Fully or partially transferred to a private partner.
Risk of Construction Default or Problem	Assumed by private firm (usually under a low-bid procurement).	Assumed by private partner, but some risks may be shared.
Term of Agreement	Length of construction (usually fewer than 6 years).	Set by public agency: usually at least as long as asset life of facility (35+ years).
Public Agency Role	Design, construction oversight, and long-term operations and maintenance.	Oversight of public–private partnership agreement.

CHAPTER 15

Glossary

Availability payment—Under this P3 financing arrangement, a 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 was 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 to 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 that 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.

Brownfield project—Concession whose goal is to refinance or monetize an existing facility.

Concession—A P3 project delivery structure involving a lease of an existing or to-be-constructed public asset to a private concessionaire for a specified period of time. In general, the concessionaire will receive the right to collect availability payments or direct revenue generated by the asset over the life of the contract (typically 25–99 years) in exchange for agreeing to construct or operate and maintain or improve the facility during the term of the lease.

Concessionaire—The private sector party to a concession agreement. See Special Purpose Vehicle (SPV) or Special Purpose Entity (SPE).

Conduit issuer—A public sector agency that issues private activity bonds on behalf of a concessionaire.

Coverage ratio or debt service coverage ratio (DSCR)—The ratio of projected future net revenues that will be available to cover future debt service payments. These ratios are calculated by lenders and rating agencies on the basis of projected future revenues. A DSCR of 1.0 suggests that there would be exactly enough revenue to cover debt payments, whereas a ratio above 1.0 (e.g., 1.75) reflects the fact that anticipated revenues exceed debt payments. A ratio below 1.0 (e.g., 0.95) reflects the fact that anticipated revenues would not be 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 in a low-bid procurement process. 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 the design and construction of a project. This contrasts with traditional procurement in which 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 in 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, or maintenance of a facility. Under a DBFOM, the public sponsor retains ownership of the facility and uses revenues generated from the operation of the facility (e.g., tolls) to repay the private partner and other financing used to construct it. Potential benefits include transfer of financial risk to the private contractor.

Design–Build–Finance–Operate–Maintain (DBFOM)—A project delivery structure that includes some private financing of the design, construction, operation, 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 (e.g., tolls) to repay the private partner and other financing used to construct it. Potential benefits include transfer of financial risk to the private contractor and optimization of life-cycle costs.

Equity—Money contributed from private sources for project finance by project investors, with the expectation of future returns if the project is financially successful.

Greenfield project—Concession whose goal is to construct a new facility.

Handback 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.

Hybrid project—A P3 concession that involves substantial rehabilitation or expansion of an existing facility.

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.

Junior debt—Debt obligations that have a lower priority claim on the source of payment for debt service than does a senior lender. Junior debt is riskier because it is paid after the senior debt payment, and thus it typically carries a higher interest rate.

Lease—See *Concession*.

Life-cycle cost—The total cost from a project's inception to the end of its useful life. One potential advantage of P3s is optimizing life-cycle costs, either by building to a higher standard at the beginning of a project, minimizing operations and maintenance expenditures over time, or enhancing operations and maintenance such that rehabilitation is not required as often.

Monetization—A brownfield concession in which the public sector receives an up-front payment from the private sector for the right to future revenues from an existing facility. In essence, the public sector is "monetizing" (i.e., turning into cash) the asset it owns.

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 the Federal income tax.

Performance measure—Outcome-based metrics used to specify standards in a P3 agreement. These measures are used throughout all phases of a 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 or receives "cancellation points" that may ultimately lead to loss of the concession.

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.

Project revenue—Money generated from the operation of a facility, usually in the form of tolls.

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 what is traditional. The agreements involve a government agency contracting with a private company to renovate, construct, operate, maintain, 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 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 or other facility that is financed.

Revenue risk—The risk that a particular source of revenue will not provide the anticipated funds required to repay debt or project costs or deliver expected returns.

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 allocating risk between the public and private parties within a P3 contract. The principle is generally to allocate the majority of the risk to the party best able to manage that particular risk. For example, a concessionaire should usually bear the risk of operations and maintenance cost increases, because the company is most likely to be able to control these increases.

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 that have a priority claim on the source of payment for debt service.

Shadow toll—Under this P3 financing arrangement, the sponsoring public agency agrees to make payments to the private operator based on use 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) or Special Purpose Entity (SPE)—A corporate body (usually a limited company of some type or sometimes a limited partnership) of several companies created specifically to implement a P3 project.

Subordinate debt—See *junior debt*.

Traffic risk—The risk that adequate traffic will not use a facility and pay associated tolls, leading to lower revenues than anticipated.

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 for Money (VfM)—The estimated project cost savings associated with using a P3 delivery approach, accounting for all project factors throughout the full life cycle of the asset and length of the contract.

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October 2010

FHWA-OIPD-10-005