Partnerships for New York

Innovative Transportation Financing and Contracting Strategies: Opportunities for New York State

– Briefing Papers –

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These papers represent the viewpoints of their respective authors, and do not necessarily reflect the views of the University Transportation Research Center, or the New York State Department of Transportation.

OVERVIEW

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NEW STRATEGIES FOR A NEW CENTURY OF INFRASTRUCTURE DEVELOPMENT AND MANAGEMENT

As we begin the 21st Century, New York State faces a pressing need to modernize and expand its transportation infrastructure in order to sustain its global economic leadership. The ever-growing need for personal mobility, the need to move increasingly greater amounts of freight, and the pressures of 21st Century economic competition all call for new and different types of capacity on our roads, our public transit systems, our rails, at our ports and the intermodal connections that link these together. Nothing is too daunting for New Yorkers; we have the capacity to grow, productively, into this exciting Century. But, and this is the but that drives this conference, these projects will require significant resources. The traditional ways of funding infrastructure projects – out of general revenues, or by the issuance of debt – are inadequate to meet these needs. The State that has provided the marvelous subway system of New York City, the magnificent George Washington Bridge, and the "pay for itself" New York Thruway must put its entrepreneurial skills to work as it builds a new generation of transportation and engineering marvels.

This conference addressing innovative transportation financing and contracting strategies is an ambitious start towards identifying methods of funding for our bold and needed projects. The conference and the reference papers will begin this dialogue by addressing the following questions:

- How did we get here? Why have the traditional sources of funding proved inadequate to meet today's infrastructure needs?
- What are the emerging remedies and tools, including legislative needs to address this problem?
- Are there some examples that can help us with understanding and adopting new approaches to innovative financing?
- What have been the lessons learned in these examples?
- And, the most pressing of the questions when adopting new tools and techniques – what are the risks, can they be measured and who bears them?

Five briefing papers have been assembled as introductory material for this conference. Each addresses one of these questions. The first[1] notes that the U.S. started with private roads. However, the rapid post-WWII expansion of the country placed most of our infrastructure in the public sector. But, as described in the now famous report *Fragile Foundations*,[2] the unceasing demands for capacity expansion have strained state and local budgets and the ability to maintain what has been built, let alone to add new capacity. The demands for local funds to match federal funds, or State and Authority debt limits have placed significant constraints on meeting modern needs for mobility. Recent transportation legislation, starting with ISTEA (1991) and leading up to SAFETEA-LU (2005) have laid some foundations for public-private initiatives, but the states must now respond.

The second paper[3] identifies a number of public-private partnerships (PPPs) in the U.S. and examines policy issues facing the states as they design legislation to enable the development of these partnerships. By examining local considerations shaping PPPs and policy and political considerations it identifies how such

[1] Allison L.C. de Cerreño, "Why Partnerships? Historical and Legislative Background on Public-Private Partnerships for Surface Transportation."

[2] The National Council on Public Works Improvement, Fragile Foundations, Washington, D.C., 1988

[3] Cameron Gordon, "What Are Other States Doing? Legislation Authorizing Partnerships Across the United States"

instruments might be considered by New York State.

The third paper[4] details prominent case studies, beginning with the New York City subways and examining new toll roads in operation in the U.S. As in all successful enterprises, these facilities must address long term cash flow, the scale of cash flow over the facility lifetime and, of course the risks to both the entrepreneurs and to the public.

The fourth paper[5] carries on the lessons learned from these and other case studies. The lessons include developing an understanding of the motivation to enter into PPPs by a public agency, the needs of the private sector, and how these needs can sometimes conflict, but can be resolved into viable agreements. One topic of discussion that should arise in this conference is how lessons learned can inform both the Public and Private partners to improve on negotiating project financing with each having a full and responsible understanding of both bottom lines.

The fifth paper[6] presents a general discussion of risk. It notes that there is a continuum along which the public and private sectors can share the inherent project risks. The objectives are to sustain the integrity of the private investor while minimizing the public costs. The paper further explains how risks can be allocated.

Clearly, taken together, these papers are a brief primer on current practice in innovative financing in the U.S. From the public perspective, transportation organizations are faced with the difficult dilemma of how to minimize the costs of transportation – after all, it is an intermediate good – while providing new transportation investments that will add to the economic viability of the state and all of its regions. This conference should move us a step closer to addressing that challenge.

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[4] Alexis Perrotta and Jonathan Peters, "Where Has This Been Implemented? Case Studies of Public-Private Partnerships."

[5] Jonathan Peters and Alexis Perrotta, "What Are the Best Practices? Well-Designed Legislation and Agreements Help Ensure Successful Projects."

[6] Joseph Berechman, "How Can Risk Be Managed? The Challenge of Risk Allocation in Public-Private Financing Partnerships."

WHY PARTNERSHIPS?

Historical and Legislative Background on Public-Private Partnerships for Surface Transportation

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INTRODUCTION

To understand the history of private investment in transportation in the United States is to recognize that it has come full circle in some ways, moving from primarily private capital during the 1700s and early 1800s, to state and local responsibility in the mid-1800s, to a recognized federal responsibility by the mid-20th Century. Indeed, after World War II, financing for roadways and then transit, became increasingly concentrated in the public sector. Now, as alternatives are sought for roadway financing, private sector initiatives are being encouraged once again.

Why Alternatives are Needed

Nearly all federal contributions to states for highway improvements, and roughly four-fifths of federal funding for transit, are derived from the Federal Highway Trust Fund (HTF). Since its inception in 1956, the HTF has relied on motor fuel excise taxes as its primary source of revenues. Indeed, in Fiscal Year 2001, 92% of the receipts to the HTF were derived from motor fuel taxes.[7] While motor fuel taxes have been a successful means for generating monies for transportation needs since their widespread adoption at the state level in the 1920s, they now face several fiscal and political challenges. Among them,

- An inability of motor fuel taxes to keep pace with transportation project costs and economic growth because of increases in vehicle fuel efficiency, and their inherent vulnerability to inflation.
- A lack of political will to increase motor fuel tax rates sufficiently to keep pace with inflation.
- An undermining of the revenue stream resulting from preferential tax status and diversion of portions of fuel taxes (most notably on gasohol).
- An uncertain future for gasoline as a revenue base in light of expected shifts in vehicle engine technologies.
- A contradiction between the reliance on motor fuel taxes for transportation and other national policy goals that seek to reduce reliance on petroleum and improve air quality by increasing fuel efficiency and reducing emissions, thus eroding overall tax revenues.

Concern over the ability of the HTF to continue meeting transportation funding needs is spurring many states to explore alternative financing sources and techniques for highways and transit, including innovative financing, user fees, and private investment. Furthermore, the continuing imbalance between the public's appetite for transportation improvements and the purchasing power of the resources available is spurring government agencies to seek new strategies for organizing their contracts with the private sector in order to improve project quality while minimizing public costs. Innovative financing and contracting strategies are being looked to not just as a new source of capital investment, but because it is believed that new models of partnering with the private sector can bring a degree of innovation, efficiency, collaborative problem solving, and cost savings, that cannot be achieved with traditional models of finance and project management.

[7] USDOT, Federal Highway Administration (FHWA), Office of Highway Policy Information (OHPI), Highway *Statistics 2001* (Washington, DC: FHWA, 2002), Tables FE-210 and FE-10.

Public-Private Partnerships

In the traditional approach to project delivery, known as Design-Bid-Build, a final contractor is hired only after the detailed specifications of a project are complete. While more administratively straightforward, this approach prevents the project's design phase from benefiting from insights and expertise that a private sector contractor can bring to the table. Many states are now adopting more flexible models of project delivery, known collectively as "public-private partnerships" (PPPs). According to the National Council for Public-Private Partnerships, at base a public-private partnership is a "contractual agreement between a public agency (federal, state or local) and a private sector entity. Through this agreement, the skills and assets of each sector (public and private) are shared in delivering a service or facility for the use of the general public. In addition to the sharing of resources, each party shares in the risks and rewards potential in the delivery of the service and/or facility."[8]

Within this definition are multiple forms of partnerships.[9] There are service contracts for operations, maintenance, and/or management in which the public entity contracts with the private entity to provide a specific service. There are also Design-Build (DB), Design-Build-Operate (DBO), or Design-Build-Operate-Maintain (DBOM) partnerships, in which the public sector entity utilizes a single contract to enter into agreement with a single private entity (rather than multiple entities for each step of the process) to perform the specified functions, while retaining ownership by the public sector. There are also Build-Own-Operate (BOO) and Build-Operate-Transfer (BOT) arrangements; in the former, the private entity constructs, operates, and maintains ownership of the facility while in the latter, the private entity constructs and operates the facility for some period of time, but eventually transfers ownership back to the public sector. Finally, there are developer financing arrangements in which the private entity provides financing for a facility in exchange for the rights to develop real estate at the site.

BACKGROUND ON FEDERAL AUTHORIZING LEGISLATION

Both public and private sector financing for highways date back to the earliest days of the Republic. The Constitution explicitly provides Congress with the power to establish post roads, but many of the earliest roads were turnpikes built as for-profit ventures. Some federal aid was provided for highways after the mid-1800s, but the roots of federal aid for highways are found in legislation passed in 1916 and 1921. The former began to provide funding uniformly to all states with the purpose of developing an integrated network of highways; the latter restricted financing to a set of principal roadways that eventually became the Federal-Aid Primary Highway System.[10] These were followed in 1944 by the first specific authorization of federal funds for urban extensions of the primary system as well as development of a Federal-Aid Highway Secondary System.

The key turning point, however, came in 1956 when President Eisenhower signed into law the Federal-Aid Highway Act and the related Highway Revenue Act, which created the HTF. With the passage of these two Acts, annual federal funding for highways increased significantly, from $175 million in 1956 to roughly $1.2 billion in 1957, with the goal of increasing to $2.2 billion by 1960.[11] Initially a means for financing an accelerated highway program, including construction of the Interstate system, these two Acts would also change the way the United States would think about federal (and state and local public) funding for major roadways for the next half century. Equally importantly, for the first

[8] The National Council for Public-Private Partnerships, "How Partnerships Work," http://ncppp.org/howpart/ppptypes.html, accessed 1/5/06.

[9] The following definitions are from US General Accounting Office (GAO), *Public-Private Partnerships: Terms Related to Building and Facility Partnerships*" (Washington, DC: USGAO, April 1999), GAO/GGD-99-71. See the report for additional types.

[10] USDOT, FHWA, OHPI, *Highway Statistics 1999*, Section 4: Finance, http://www.fhwa.dot.gov/ohim/hs99/finance.htm, accessed 1/5/06.

[11] U.S. Congress, House of Representatives, Committee on Transportation & Infrastructure, Subcommittee on Highways and Transit, *Hearing on Ensuring the Integrity of the Highway Trust Fund*, "Statement of Donna McLean, Assistant Secretary for Budgets and Programs and CFO, USDOT," 20 March 2002, http://www.house.gov/transportation/highway/03-20-02/03-20-02memo.html, accessed 1/5/06.

time, motor fuel and vehicle taxes were explicitly linked to roadway (and later, to transportation) financing at the federal level.

The first Highway Revenue Act expired in 1972, but legislation periodically extended and modified it to continue funding the HTF as a means for providing federal-aid monies for roadways. In the early 1980s came increased recognition of the importance of federal funding for mass transit. As a result, the Surface Transportation Assistance Act of 1982 and its companion Highway Revenue Act created a separate Mass Transit Account within the HTF. However, even as the federal government was broadening its reach in financing transportation projects, it was becoming clear that transportation maintenance, improvement, and expansion needs were outpacing public funds.

Laying the Foundation for Renewed Private Investment

In 1991, Congress passed the Intermodal Surface Transportation Efficiency Act (ISTEA). ISTEA is considered a landmark piece of legislation for several reasons. It revolutionized the role of the federal government in transportation, focusing on multiple modes, establishing new priorities and reorienting earlier policies, while raising funding levels to new highs. Recognizing that transportation does not exist in a vacuum, ISTEA also drew attention to environmental and community needs, establishing new sources of funding like the Congestion Mitigation and Air Quality Improvement Program (CMAQ) and encouraging stakeholder participation.[12] Finally, ISTEA recognized that different problems need different solutions, allowing for more flexibility in how funds could be spent, expanding the types of projects eligible for funding (most notably, new technologies), and relaxing restrictions on private investment.

With a commitment to long-term thinking, ISTEA began to set the stage for increased private investment in transportation. In particular, under Sections 1012(a) and 1044, new financing concepts were introduced into the Federal-Aid program. Section 1012(a) allowed for more flexibility in co-mingling Federal-aid funds with state and private funds to implement projects. For example, states could make Federal-aid reimbursable loans to private entities constructing eligible toll projects. Thus, ISTEA provided cost-sharing incentives to build projects.[13] Section 1044 removed a major disincentive for the creation of toll facilities by allowing states to earn credit from toll revenue expenditures (toll credits) and, more importantly, to apply this credit toward non-Federal matching share of programs authorized under ISTEA. Prior to this, tolls used to finance public highways were not allowed to be applied to the non-Federal match.[14]

ISTEA was followed by Executive Orders 12803 (April 1992) and 12893 (January 1994), both of which encouraged private sector investments in infrastructure, including transportation, and by the National Highway System Designation Act of 1995. This Act provided several additional tools for private sector investment. In particular, it piloted State Infrastructure Banks (SIBs) to "make project loans, enhance credit, subsidize interest rates, and provide other assistance for eligible highway and transit capital projects."[15] Section 350 noted that both public and private entities could be receive SIB assistance. However, according to Testimony before the House Committee on Government Reform, little additional private investment was forthcoming, primarily because state statutes continued to maintain traditional funding and procurement provisions.[16]

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[12] Ellen Schweppe, "Legacy of a Landmark: ISTEA After 10 Years," *Public Roads* 65, 3 (November/December 2001), http://www.tfhrc.gov/pubrds/novdec01/legacy.htm, accessed 1/15/06.

[13] USDOT, FHWA, *Toll Facilities in the United States: Bridges, Roads, Tunnels, Ferries (June 2005), p. viii,* http://www.fhwa.dot.gov/ohim/pdf/toll05.pdf, accessed 1/14/06.

[14] USDOT, FHWA, *Innovative Finance: Chapter 5 – Legislative and Regulatory Implications of TE-045*, http://www.fhwa.dot.gov/innovativefinance/evalch5.htm, accessed 1/14/06.

[15] Nancy Bennett, "The National Highway System Designation Act of 1995" (Washington, DC: FHWA, 1996), http://www.tfhrc.gov/pubrds/spring96/p96sp10.htm, accessed 1/5/06.

[16] US House of Representatives, Committee on Government Reform, Subcommittee on Energy Policy, Natural Resources, and Regulatory Affairs, "Private Sector Participation in Transportation – Testimony of Shirley Ybarra, President, The Ybarra Group," 30 September 2004, http://ncppp.org/councilinstitutes/ybarra-testimony.pdf, accessed 1/16/06.

Furthering Private Investment Possibilities

In 1998, the Transportation Equity Act for the 21st Century (TEA-21) further increased the flexibility in funding and added several new financing features that could encourage private investment in transportation. It continued and extended the SIB program, developed the Transportation Infrastructure Finance and Innovation Act (TIFIA) to provide credit assistance to major projects of national significance, and provided additional flexibility in the matching share requirements for Federal-Aid projects.

On this last point, TEA-21 made it possible to utilize private investment in several ways for the non-Federal match. Private funds, privately donated right-of-way, private materials, and private services could all now count toward the non-Federal match.[17] Section 1111(c) also added to the earlier toll credit provisions established by ISTEA by allowing the Federal obligation to be increased to 100% of the cost of the project to the extent that credits were available, and while toll facilities used to generate toll credits must be open to public travel, they could be operated by a private toll authority.[18]

New Legislation Stays the Course on Private Investment

The Safe, Accountable, Flexible, Efficient, Transportation Equity Act: A Legacy for Users (SAFETEA-LU) has continued this progression in the federal legislation toward more flexibility and allowance for more private sector involvement. According to Hedlund and Smith of Nossaman, Guthner, Knox & Elliott, LLP, there are five key provisions that help encourage PPPs[19]:

1. ***Private Activity Bonds.*** These are of particular interest for private sector investment since the interest on them is not subject to federal income tax, thus reducing overall project financing costs. However, their real value with respect to the SAFETEA-LU provisions lies in the option they provide for private investment in concessions and franchises. Previously, private investors could only access taxable financing sources for these, limiting the private sector to assisting in the development, designing, and building of projects, and to providing operations and/or maintenance services.[20]

2. ***Enhanced authority to use tolling to finance construction of Interstates.*** Sections 1604(b) and 1604(c) of SAFETEA-LU provide for an Express Lane Demonstration Program and an Interstate System Construction Toll Pilot Program, respectively. While the latter has a restriction that the State will not enter into a non-compete agreement with any private entity, both allow for toll revenues to be used for "reasonable return on investment of any private person financing the project."

3. ***Increased flexibility in using Design-Build contracting.*** Section 1503 of the bill eliminates the $50 million floor on the size of contracts that can use DB contracting without special approval. Further, the bill directs the Secretary to revise regulations so that they do not require compliance with certain NEPA provisions (Sec. 102, in particular) prior to an agency issuing requests for proposals, proceeding with DB contracts, or issuing notices to proceed with preliminary design work under DB contracts. The result will allow private entities to be involved in the project definition process.[21]

4. ***Streamlined environmental process.*** There are a number of procedures modified by SAFETEA-LU, but key for PPPs is the provision in Section 139(g) that:

> *Notwithstanding any other provision of law, a claim arising under Federal law seeking judicial review of a permit, license, or approval issued by a Federal agency for a highway or public*

[17] USDOT, FHWA, *Innovative Finance Primer*, FHWA-AD-02-004 (Washington, DC: FHWA, 2004), p. 10.

[18] Ibid., p. 12.

[19] Karen J. Hedlund and Nancy C. Smith, "SAFETEA-LU Promotes Private Investment in Transportation" (August 1, 2005), http://ncppp.org/resources/papers/nossaman_safetea.pdf, accessed 1/6/06.

[20] Pamela Bailey-Campbell, "Private Activity Bonds: A New Opportunity for Public-Private Transportation Projects," *Transportation Builder* (November/December 2005): 36-38.

[21] Hedlund and Smith, "SAFETEA-LU Promotes Private Investment in Transportation."

transportation capital project shall be barred unless it is filed within 180 days after publication of a notice in the Federal Register announcing that the permit, license, or approval is final pursuant to the law under which the agency action is taken, unless a shorter time is specified in the Federal law pursuant to which judicial review is allowed.

As Hedlund and Smith note, this reduces the risk of project opponents waiting to file an action that contests the environmental approvals until construction is well underway and the cost of stopping is high.[22]

5. ***Broadened access to innovative financing.*** The law now allows PPPs to apply directly for TIFIA funds, including "a private facility providing public benefit for highway users" and freight projects that include financing from both public and private sources.[23]

CONCLUSION

As demands for transportation investment continue to outpace revenues, there is growing interest in alternative mechanisms for funding transportation projects, and for managing the costs of projects that are built. Over the past fifteen years, federal legislation has increasingly facilitated and encouraged new roles for the private sector in transportation investment.

While federal legislation has played an important role setting the stage for innovation by removing or reducing barriers to contractual flexibility and private investment, state laws must also evolve to foster these strategies. So far, nearly half of the states (23) have authorized private sector investment in transportation projects.[24] Many other states are studying ways to turn this opportunity into reality in ways that serve their own public policy objectives.

[22] Ibid.

[23] Ibid.

[24] U.S. GAO, "Highways and Transit: Private Sector Sponsorship of and Investment in Major Projects Has Been Limited," Report to Congressional Requesters, GAO-04-419 (Washington, DC: USGAO, March 2004), p 5.

WHAT ARE OTHER STATES DOING?

Legislation Authorizing Partnerships Across the United States

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PUBLIC MONEY IN A FEDERAL CONTEXT

The history of transportation in the U.S. reveals definite pendulum swings between predominantly private and public investment. The private sector played a central role in financing much of the early transportation infrastructure development in the U.S. But through most of the Interstate era, highway infrastructure in the U.S. was almost entirely a public endeavor. Where Federal funding was involved, there were traditionally two general constraints put on the use of that money either explicitly or implicitly. First, the money had to be used primarily or solely for activities with a public purpose. Second, it had to be used primarily or solely for activities that have a national (as opposed to state or local) impact.

Conditions placed on federal transportation grants-in-aid limited private involvement in federally-funded projects and with federal-state-local cost sharing arrangements designed to discourage state and local overuse of public, national revenues when local source revenues would be more appropriate. The Tax Reform Act of 1986 tightened these policies with strong restrictions on private activity bonds, which Congress felt were being used improperly to subsidize private projects that often had little public and often no national purpose.

But over the last fifteen years, there has been a move back towards policies that encourage more private and public blending of funding, responsibility and control in transportation projects. While maintaining regulations intended to prevent abusive diversions of federal grants-in-aid for private purposes, the federal government has progressively relaxed restrictions on private participation in projects serving public objectives. This new openness in federal policy toward considering public-private partnerships has created an opportunity for the states to re-examine their own policies. Nearly half the states have enacted legislation to allow new models of cooperation with the private sector with the goal of maximizing the public's benefit for the dollars it invests in transportation facilities and services.

PARTNERSHIPS IN THE STATES

A public-private partnership (PPP) can be defined as a "contractual agreement between a public agency (federal, state or local) and a private sector entity….In addition to the sharing of resources, each party shares in the risks and rewards potential in the delivery of the service and/or facility."[25] This is obviously covers a wide range of arrangements.

The U.S. Department of Transportation Federal Highway Administration (FHWA) estimates that as of September 2005, 18 states and Puerto Rico had "enacted statutes that enable the use of various PPP approaches for the development of transportation infrastructure."[26] The U.S. Government Accountability Office (GAO) has a slightly larger count using a definition of "active private sector sponsorship," estimating that, as of March 2004, 23 states permitted such participation, with 20 of those allowing it just for highways.[27]

Within these states, several can be considered 'pioneers' in seeking direct private investments in

[25] The National Council for Public-Private Partnerships, "How Partnerships Work," http://ncppp.org/howpart/ppptypes.html, accessed 2/1/06.

[26] Federal Highway Administration, "PPP Legislation," http://www.fhwa.dot.gov/ppp/legislation.htm, accessed 2/1/06; FHWA, "What is a PPP?" http://www.fhwa.dot.gov/ppp/defined.htm#1, accessed 2/1/06. The FHWA definition is similar to the one cited above. Its exact wording reads: ""Public-private partnerships" (PPP) refer to contractual agreements formed between a public agency and private sector entity that allow for greater private sector participation in the delivery of transportation projects."

[27] U.S. GAO, "Highways and Transit: Private Sector Sponsorship of and Investment in Major Projects Has Been Limited," Report to Congressional Requesters, GAO-04-419 (March 2004), p 1.

transportation projects. GAO identifies four – Virginia, California, South Carolina and Nevada – that have put in place significantly privatized transportation investments. To date, these states have completed six major projects, including the Dulles Greenway in Virginia, the State Route 91 Express Lanes in California, and the Las Vegas Monorail. The total scale of investment remains small: the six projects cover 63 miles, and represent a total investment of approximately $2.2 billion. For comparison, in 2001 alone, approximately $66 billion was spent on highway capital projects by the states.[28]

There was also significant legislative activity during 2005 in Washington, Georgia, Colorado, Texas, and Maryland, as well as continued activity in Virginia and California to provide state agencies with new authority to pursue PPP's or conduct studies of potential PPP projects. Table 1 summarizes the major projects completed over the past decade, or currently in the pipeline.[29]

This snapshot provides just part of the picture: projects with significant private investment. In this regard, PPPs remain a small but growing phenomenon. Even where PPP's are allowed, only a very small portion of the total public sector transportation system has been opened to large-scale private investment. Although there are a lot of enthusiastic claims about the promise of private investment as a new source of capital for infrastructure projects, for the time being there remain many more proposals than completed projects. The story is somewhat different in other modes such as freight transportation, where there has been significant private investment and operating authority for some time; and in other parts of the world, such as Europe, where private financing of infrastructure is more commonplace. And while such partnerships may be a small piece of the total transportation finance picture in the U.S., it can be the deciding factor in determining whether individual projects can move forward.

Table 1: Significant Private Investments in U.S. Transportation Projects

Project	State/Date (of operation)	Mileage	Project Resources	Source
Dulles Greenway	Virginia/1995	14 miles	$328 M	GAO
State Route 91 Express	California/1995	10 miles	$125.6 M	GAO
State Route 125	California/2006 (est.)	10 miles	$721 M	GAO
Pocahontas Parkway	Virginia/2002	9 miles	$377 M	GAO
Southern Connector	South Carolina/2001	16 miles	$217.5 M	GAO
Las Vegas Monorail	Nevada/2004	4 miles	$730 M	GAO
TTC-35	Texas/planning contract awarded	Total 316 miles	$7,200 M (proposed)	Reason
2 HOT lanes on I-95 & Beltway	Virginia/ Negotiations Underway	56 miles	$913 M	VDOT

Source USGAO; Reason Foundation; Virginia DOT (see notes 27 and 29 for full citations) NOTES: This table does not include proposals, unsolicited or otherwise, which may or may not become actual projects, nor does it refer to changes in State authority which might result in future PPP's.

But interest in PPPs reaches far beyond the headline-grabbing issue of private investment in transportation projects. PPPs are also being established to enable transportation agencies greater flexibility in contracting with and managing their private sector contractors.

STATE LEGISLATIVE CONSIDERATIONS[30]

Because of the many different possible PPP arrangements, there are many different types of state authorizing legislation both on the books and proposed for addition to the books. The most common type of authority is that which allows state DOT's to enter into some kind of Design-

[28] Ibid., pp. 4-6, 11-14. Author's calculations of mileage and investment based on Tables 1 and 2. For the VA experience, see also U.S. House of Representatives, Committee on Government Reform, Subcom. on Energy Policy, Natural Resources, and Regulatory Affairs, "Private Sector Participation in Transportation – Testimony of Shirley Ybarra, President, The Ybarra Group," 30 Sept. 2004, http://ncppp.org/councilinstitutes/ybarra-testimony.pdf, accessed 2/1/06.

[29] The Reason Foundation, "Annual Privatization Report 2005: Surface Transportation." http://www.reason.org/apr2005/surface_transportation.shtml, accessed 2/1/06; Virginia DOT, "VDOT Enters Into Negotiations With Private Sector to Improve I-95/395 From Northern Virginia To The Fredericksburg Region," Press Release, 20 December 2005, http://www.virginiadot.org/infoservice/news/newsrelease.asp?ID=CO-0561, accessed 2/24/06.

[30] This section draws heavily upon Nossaman Guthner Knox & Elliott, LLP, "Overview of Key Elements and Sample Provisions State PPP Enabling Legislation for Highway Projects" (October 2005). This document has more detailed questions and sample legislative language.

Build arrangement (in which the public agency contracts with a single private entity to design and build a facility, with the public agency providing financing and retaining ownership). This arrangement is authorized in 32 states (New York State authorizes some of its public authorities to enter into Design-Build contracts, but neither its Department of Transportation nor its Thruway Authority). Broader authority for private sector operation or ownership of infrastructure, as noted earlier, exists in 23 states.[31]

A number of considerations enter into the design of state PPP legislation. (This is distinguished from policy and political complications, which are briefly considered in the concluding section of this paper). The major legislative issues include the following items:

- PROPOSALS – Does the law allow both solicited and unsolicited PPP proposals to be considered by the relevant public authority?
- COMMINGLING OF FUNDS – Can public funds from different governmental sources be mixed together and also be mixed with private funds?
- REGULATION – How are tolls and other prices set, adjusted and overseen?
- EXTENSIVENESS – Are PPP proposals and projects generally allowed or limited to pilot projects? Are there geographic or modal restrictions? Are they limited to construction, or may they include long-term contracts for operations and maintenance?
- CONVERSION – Can public untolled roads be converted into toll roads and under what conditions can this occur?
- PROCUREMENT – Are there restrictions on the types of procurement methods used? How does PPP procurement mesh with general state procurement laws?
- REVENUES AND EXPENDITURES – How can PPP revenues be raised and how may they be disbursed? For example, must tolls be removed after repayment of project debt? May the revenues be dedicated just for transportation purposes, or can they be used for general governmental purposes?
- CHECKS AND BALANCES – How much flexibility and authority do agencies have in using PPP's? Must there be prior legislative approval for each project, or is blanket authority granted? How is PPP performance monitored and who is held accountable? What role do MPOs and localities play?
- INSTITUTIONAL ARRANGEMENTS – What sorts of PPP arrangements are allowed (e.g., Design-Build, franchises, etc.)? What flexibility is there for designing new institutions if necessary (e.g. new for-profit or nonprofit project entitites)?
- FINANCING – What entities have bonding authority and what restrictions are there on that bonding authority and the use of monies raised through that authority?
- COMPETITION – Are there non-compete clauses to be allowed? If so, how are they to be overseen?
- TRANSPARENCY – What types of information must be publicly disclosed?
- LOCAL AUTHORITY – Does the law authorize counties and municipalities to undertake similar contracting arrangements?

How can PPP legislation be worded so as to allow maximum possible participation by private entities and yet protect the public interest by allowing flexibility for renegotiation by both parties if events warrant? There is, of course, no one answer to this question, but the issue is something that all states face. The key is to have language which is both general enough to allow public and private adaptation to events and yet specific enough to provide the certainty that will make private investors willing to take on the risk of engaging in a PPP.

For example, consider the very sensitive issue of rate-making authority. Who should have such authority and under what circumstances might rates be changed? If the public sector can change

[31] Nossaman Guthner Knox & Elliott, LLP, "50-State Survey Of Transportation Agency Design-Build Authority," 2004, http://www.ncppp.org/councilinstitutes/state_survey.pdf, accessed 2/1/06.

tolls at will, obviously private investors will have concerns that their investments will not ultimately be compensated appropriately. A sample provision offered by the FHWA which is meant to address this problem is worded as follows: "Each agreement may authorize the contracting party to impose tolls or user fees for use of the transportation system constructed and/or leased by it to allow a reasonable rate of return on investment." This language allows flexibility for both parties to the contract to negotiate and renegotiate terms but at the same time ensure that there will be a baseline standard of reasonable return on private capital.

Similarly, it can be counterproductive in many cases to rule out any particular source of funding, especially with large projects. Yet the law should allow private investment to be replaced with public money only as appropriate and within limits. Proposed language which states that "the responsible public entity, either directly or through a designated party, may apply for, receive and accept from any federal agency or any other governmental body grants or financial support of whatever nature for any purpose described in this chapter" addresses this issue by keeping such application for public money in the hands of the government. Additional language, such "the responsible public entity may transfer or lend the proceeds of any such grant, or utilize such proceeds available for credit enhancement, to public agencies or contracting parties, on terms and conditions complying with applicable federal and state law" provides flexibility for transferring such money to the private entity on a case-by-case basis.

What about non-compete clauses? These may help attract private capital in some cases, but constrain the government's ability to manage the remainder of the transportation system as it deems appropriate. The following clause attempts to strike the balance between public and private interest: "In a PPP agreement, the responsible public entity may include protection from competition provisions or agree to provide a traffic guarantee to the private entity, provided that it will not unreasonably prohibit the development of essential public transportation systems and facilities."

Of course a paper of this scope can offer only general thoughts on the drafting of enabling legislation. Although relatively limited use of PPP's has been achieved in the U.S., and many states still do not allow it all, nonetheless there are is a wide body of actual legislative language to draw upon. However, the ultimate legal ramifications of one provision or the other is still relatively untested in the sense that few states with authority for PPP's have actually used it to any great extent.

POLICY CONSIDERATIONS

In addition to the legislative considerations cited above, there are number of other policy and political issues to consider. In particular, there is a difference between an actual gain in resources and a mere transfer or resources from one account to another. Some research on transportation privatization indicates that what are often seen as efficiency gains are really budgetary gains to the public authority which are achieved through losses incurred by other groups.[32] Labor unions often oppose PPP's because of a perception that wages and benefits will be lost to public employees when activities are moved over to private contractors. Any effort to implement PPP legislation in New York State will need to address these concerns directly.

Another consideration that often arises at the state level is how a policy will affect the state's balance of payments to the federal government. Some states have grown adept at gaming their tax systems in order to keep tax revenues within the state and away from the federal government. These states are certainly aware that the use of federal funding, especially tax-exempt bond funding, may reap local revenue gains at the expense of the Federal taxpayer. As a donor state, New York has traditionally been on the short end of such gaming strategies; by pursuing these funding sources itself, New York will at least keep the playing field level.

[32] Gomez-Ibanez, Jose A. and John R. Meyer, Going Private: The International Experience with Transport Privatization. The Brookings Institution Washington, D.C., 1993.

Another sort of transfer occurs across time periods when a PPP might be utilized to capitalize future revenue streams from public facilities. The Chicago Skyway is a prime example of this, where the government sold rights to Skyway operations for an immediate lump-sum to a private entity which then was entitled to collect the future revenue streams from those operations. Governments have traditionally had a difficult time estimating and forecasting the true value of their assets, given complex and uncertain future population, economic growth, travel patterns, and cash flows. Selling a public asset below its true value may capture definite windfalls in the near term, but may be seen a regrettable decision over the long run. Such decisions must be made carefully.

Maintenance of the public interest is also a prime concern with any PPP. For any given project, the government must have a clear picture of its public objectives, and must devise contracts that ensure that these objectives will be achieved. This private sector should not be presumed to act in the public interest. Incentives and controls must be in place to align public and private interests in any given project.

Finally, it must be recognized that PPPs are not a cure-all for transportation infrastructure or policy challenges. They are seen as promising not because the private sector is inherently more competent or efficient than government, but because each has distinct strengths, and projects can be managed more effectively if the strengths of each can collaborate at the table. Indeed, successful PPPs – like large, successful transportation investments of any kind – *require* an engaged and strong public sector.

CONCLUSIONS

This brief review of PPP's at the state level can be summarized as follows:

- Federal law pertaining to the use of PPP's where federal monies are involved has loosened considerably and is less of a constraint to such usage than in prior decades. The primary constraints now exist at the state level.
- Nearly half the states now have explicit legislative authority to enter into transportation PPP's.
- Field experience with PPP's in the United States is still limited.
- If PPP's are to be authorized and utilized, there are many forms that they could take; a wide range of actual legislative language is available to draw upon, but relatively little that has been fully tested legally and operationally.
- For any given form of partnership, one should not assume success or failure, overall gain or overall loss. Each PPP is different and, to some degree, adoption of a PPP will involve a degree of uncertainty. That is not an argument for or against trying such an arrangement, merely a caveat to be kept in mind when considering one.

WHERE HAS THIS BEEN IMPLEMENTED?

Case Studies of Public-Private Partnerships

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SOME NOTEWORTHY EXAMPLES

Innovative public-private contracting and financing arrangements can take many forms. This paper will examine a number of projects that illustrate the wide variety of different partnership models currently being explored.

Interborough Rapid Transit: 1904

The original sections of the New York City Subway were constructed from 1899 to 1904 by a public-private partnership. Prior to the development of the subway, the elevated rail lines that ran along major thoroughfares dominated the mass transit system in New York City. While they provided tremendous traffic relief for the surface streets, the noise and filth created by steam locomotive power as well as the negative impact on street life and air quality made the El a mixed blessing in the community. While the El system was for the most part constructed using private capital, the cost of subway construction was prohibitive for the private sector.

To overcome this hurdle, the city devised an innovative financing scheme. The subway would be constructed with the city providing the right-of-way as well as $35,000,000 in construction money and an additional $2,750,000 for stations and property acquisition. In 1899, New York City bid out the first four contracts to construct segments of the initial subway system. The initial public investment was followed up by a 50-year private sector lease to operate and maintain the system. The private firm that had won the contract to build the first sections created a new operating arm called the Interborough Rapid Transit Company (IRT) in 1902. The IRT paid the city an annual lease payment "equal to the city's annual interest on its construction bonds, plus as much as one percent of the total value of the city's bonds."[33] The contact specified performance objectives for the system, including speed of trains, hours of service, station heating and lighting, station cleanliness and provision of toilets. It also allowed a premium fare for first class travel services. The basic fare was capped at 5 cents for the life of the contract (50 years).

The IRT program can be viewed as a great success. The project provided needed infrastructure quickly and ran effectively with a private lessee as the operator for 35 years. During the 1910s, 20s and 30s, a debate raged in as to whether municipal ownership or private lessee was the best arrangement for transit operation. This discussion continued as a planned expansion contract was issued in 1913. The new Dual Contracts allowed the IRT and its competitor, the Brooklyn-Manhattan Transit Company (BMT), to expand their networks under a public-private partnership with the City contributing $200 million dollars, the IRT contributing $105 million dollars and the BMT $61 million dollars.

The IRT contract was not without trouble. In the period after World War I, the United States experienced strong inflation that increased the costs of operations for the IRT, however, the fixed 5-cent fare contract restriction did not allow the IRT to increase its revenue. Local politicians were resistant to raise fares due to the political backlash expected, so the IRT's financial position continued to deteriorate through the 1930s.[34]

By 1932, the IRT's revenue/cost situation had driven it into receivership. The court-appointed

[33] William D. Middleton, *Metropolitan Railways – Rapid Transit in America*, Indiana University Press (January 2003), p. 64.

[34] Brian J. Cudahy, *A Century of Subways – Celebrating 100 Years of New York's Underground Railways*, Fordham University Press, (October 2003).

receiver entered into negotiations to sell the system back to the City of New York. In 1940, the city reached an agreement to buy out the IRT for $146 million and merged the former IRT with the BMT and the existing municipal subway (the IND) to form a single publicly owned system.[35]

The experience of the IRT offers some interesting lessons for the design of current PPP contracts. Profitability and revenue growth are key components of the value of a project receiving private financing. The IRT program, coupled with the city's land use policies, promoted the expansion of the urban region in New York City and provided the IRT with additional ridership that increased the revenue stream over time. But revenue and ridership growth was not enough to assure long-term success, as the lack of a fare adjustment mechanism left the contract's fiscal viability vulnerable to inflationary pressures and populist sentiment. There was no mechanism to determine when it was appropriate and justified to alter the 5 cent fare. Lacking this mechanism, the private entity was unable to shoulder the system's debt and operational costs and was eventually driven out of business due to extensive losses.

Spain's Toll Roads

Spain has a long history of road franchising. This history is based upon the Roman law that is the foundation of the Spanish legal system. In Roman law, there is a sharp distinction between the public sector and the private or household sector. The concept of a public authority is generally frowned upon in the Spanish courts. The result is that Spanish toll roads are built and operated by private firms under a franchise agreement.

These franchise agreements contain specific performance parameters. Their general rules of operation include requirements for financing of the project, toll rate approval and a process for contract termination.

The bidding terms set up in the contract also generally specify some financial requirements such us the minimum percentage of capital over total investment at the beginning of the concession.

The Spanish toll road concessions generally include a toll rate setting mechanism. The toll fixed by the contract is a maximum toll. In other words, the concessionaire cannot set tolls higher than this fixed toll, but it can set a lower price. In most cases, the contracts establish the way in which tolls may be changed each year.[36]

It is also important to note that Spanish law also limits the duration of concessions:

> 1) Concessions for construction and operation of public works may not exceed 40 years in general, with an absolute limit of 60 years.
>
> 2) Concessions to operate existing public works may not exceed 15 years in general, with an absolute limit of 25 years.[37]

The concession regulations also provide an expiration process and a requirement of the return of the facility in "a proper state of conservation and use, as well as the assets and installations required for its operation according to the terms established in the contract."[38]

It is interesting to note that Cintra Concessiones de Infraestructuras de Transporte, S.A, a major firm currently involved in toll road privatization in the United States, with part ownership in the Chicago Skyway, has its roots in the Spanish toll road system. Cintra currently operates 17 toll roads worldwide with 8 in Spain and 4 in Chile.

Route 91 in Orange County, California: 1995

This project expanded an existing freeway in Southern California, stretching from job centers in Los Angeles and Orange Counties to the rapidly growing suburbs in Riverside County. The route was congested during peak hours due to rapid growth in the number of long-distance commuters in the corridor. In 1995, a private firm won a contract to build four High Occupancy Toll (HOT) lanes along ten miles of the existing

[35] Ibid., p. 53.

[36] The formula that is generally used is:

$$(\text{Toll in year before})(1+ \text{Inflation} - X)$$

where X depends on the ratio between real and expected traffic.

[37] Ley reguladora del contrato de concesion de obras publicas (ley 13/2003, 23 de Mayo). - Madrid, Minist. de Fomento, 2003 p. 116.

[38] Ibid., p. 116.

freeway.[39] As part of the concession agreement, the firm transferred ownership of the facility to the state upon its completion, and then leased the HOT lanes back from the state for $126 million to operate and maintain it for a period of 35 years. The toll prices in the HOT lanes varied by time of day, and were adjusted periodically to ensure that the new lanes did not become routinely congested.

The contract included a controversial non-compete clause precluding the state DOT from making any improvements over a 30-mile stretch of State Route 91, or building or expanding any competing facilities. Public pressure forced the state to make improvements on other SR 91 lanes. To do so, the state had to buy back the HOT lane for $208 million in 2003. The HOT lane itself has been a success, with steadily increasing traffic volume and revenue, while reducing congestion on the parallel free lanes.

The Hudson Bergen Light Rail: 2000

The Hudson Bergen Light Rail is owned by New Jersey Transit and operated under a Design-Build-Operate-Maintain (DBOM) contract with Washington Group International. The 21st Century Rail Corporation (70% owned by Washington Group International and 30% owned by Kinkisharyo International) operates the system and provides all fleet maintenance. Under the terms of the DBOM agreement, the contracting consortium had to deliver a fleet of vehicles, build all of the system infrastructure, and provide vehicle maintenance and operations for a period of 15 years, for a fixed price of $1.1 billion.

The first 9.5 miles of this system opened in April 2000 (one month late) and the system will be expanded to 20.6 miles at project completion. It currently handles 21,050 passengers a day. At the end of the contract, in 2015, the system will be handed over to New Jersey Transit.

Under conventional approaches, contractors seek to build a system meeting a given set of design criteria at the lowest construction cost. DBOM contracts provide a different set of incentives: by linking design, construction, and operations, these contracts encourage a contractor to fully consider operating and maintenance costs in the initial design of a system, and to weigh the long-term value of potential technological innovations against their costs. But the specific structure of the contract is important in determining whether the vendor weighs capital and operating costs the same way that a public sector operator might. A system with a relatively short contracting period might free a contractor to disregard long-term maintenance costs, leading to a design that is unnecessarily capital intensive. There are concerns that this may have been the case in the design of the Hudson Bergen Light Rail project.

Bonus clauses and other performance incentives must also be designed carefully. 21st Century Rail's contract provides a bonus if more than 96% of trains arrive on schedule. This clause has resulted in some complaints that train operators skipping stops and discharging passengers to put the trains back on schedule to help earn the bonus.[40]

City Streets, Washington, DC: 2000 to 2005

In 2000, a five year, $70 million asset management contract was awarded to a private firm to maintain most of the major streets in Washington, DC. This was considered the first urban application of street maintenance outsourcing to the private sector. It was also a groundbreaking contract because it was performance-based. Instead of a list of tasks or resources to consume, the private firm was given a list of achievements to accomplish. The private firm was responsible for maintaining city streets and crossings, barriers, and signs, along with roadside features (curbs, gutters, retaining walls, vegetation, and guardrails, among others). In addition, the private firm was responsible for snow and ice control. The contract specified that the private firm should use innovative methods and procedures. It was also the first time that the Federal Highway Administration partnered directly with a city government to preserve its

[39] HOT lanes are like the more familiar High Occupancy Vehicle lanes (or "carpool lanes"), except that vehicles with a single occupant may use them if they pay a toll. This project was unique in that it provided drivers with a choice: they can continue to use the existing freeway for free, or carpool or pay a toll and access the new facility.

[40] See the story in the September 26, 2004 Newark Star Ledger on this point. http://www.phillyburbs.com/pb-dyn/news/104-09262004-372330.html

highway infrastructure. For all these reasons, the contact was considered "experimental."[41]

The contract appeared to work well. The performance measures were consistently met by the private firm, even during the first year of the contract. Public feedback was very good: there were fewer pothole complaints, and fewer negative phone calls to the DC Department of Transportation overall. The press also noted the speed with which infrastructure was repaired and maintained. The private firm lived up to its charge to use innovative technologies, most notably by using a mobile spray pothole patcher. Overall this project was an example of the importance of how work is measured. Rather than counting jobs or resources, the contract specified results such as smooth pavement and snow removal.[42]

S. Carolina's "27 in 7" Initiative: 2000-2007

Faced with limited revenues but rapid population and economic growth, South Carolina devised an innovative approach to accelerate and reduce the costs of its transportation infrastructure development. Its strategy, "27 in 7 Peak Performance," aims to complete in just seven years a backlog of nearly 200 projects that would ordinarily have taken 27 years to complete.

This initiative relies primarily on public financing. A new "State Infrastructure Bank" was capitalized by a one-time infusion from the General Fund, plus ongoing contributions from the state's gasoline tax and truck registration fees. The state is using revenue bonds backed by the infrastructure bank as well as other innovative financing strategies to generate $5.3 billion of investment capital for seven years of accelerated project development. The program includes several major projects, including the 2.5-mile Cooper River Bridge replacement, and the 16-mile Southern Connector.[43]

Ordinarily, a state would not have the administrative resources to nearly quadruple its project implementation capabilities. One innovative element of the "27 in 7" program has been the hiring of two private construction and resource management firms (Fluor Daniel in the western part of the state and Parsons Brinckerhoff in the eastern part). These firms are responsible for overseeing efficient and effective financial management and project design and construction activities. Their contracts include performance incentives related to innovation, schedule, cost control and customer satisfaction. The state DOT estimates that its resulting cost savings are enough to pay for cost of these private contracts. This initiative is the first construction and resource management partnership of this magnitude in the United States.[44]

Pocahontas Parkway / I-895 in Virginia: 2002

The Pocahontas Parkway project was in the Virginia state plan, as an un-tolled road, as early as 1983. Preliminary design and engineering was completed using federal funds by the time an innovative financing solution was found to get the road built. In the end, the Parkway was built with a partnership of a private construction firm, the state DOT, and a nonprofit corporation. The nonprofit firm issued toll revenue bonds to initially finance the project. The private firm entered into a design-build agreement with the state in 1997 and built the 8.8 mile, 4-lane new toll road. Construction was completed in 2002. Under the terms of its 30-year operating agreement, the nonprofit then began imposing and collecting tolls. The state is responsible for maintaining and providing law enforcement for the road. The agreement allowed for the state to assist the nonprofit with operating expenses until toll revenue became sufficient, with the nonprofit corporation reimbursing the state for those and

[41] James B. Sorenson and Edward A. Sheldahl. "Performance-Based Contract Brings Innovation and Revitalization to DC Streets." Pavement Preservation Compendium. http://www.fhwa.dot.gov/pavement/preservation/ppc0305.cfm

[42] Federal Highway Administration, "DC Streets: An Innovative Partnership for Better Roads" *Focus* newsletter, July/August 2000, http://www.tfhrc.gov/focus/julaug00/dcstreets.htm; and Tom Kuennen, "The Pothole Patching Playbook," *Better Roads*, Feb. 2004. http://www.betterroads.com/articles/feb04e.htm.

[43] Federal Highway Administration, *Innovative Finance Primer*, April 2002, p. 45, .http://www.fhwa.dot.gov/innovativefinance/ifp/index.htm.

[44] Federal Highway Administration, "PPP Case Studies: 27 in 7" Web document: http://www.fhwa.dot.gov/ppp/27_7.htm, accessed 27 Feb., 2006.

maintenance expenses from toll revenue in the future.[45]

To finance the road, the nonprofit corporation issued $354 million in tax exempt toll revenue bonds. The nonprofit corporation is known as a 63-20, a type of corporation specifically enabled, under IRS code, to issue tax-exempt debt on behalf of private project developers. The Pocahontas Parkway was the second transportation project in the U.S. to be financed using this mechanism. The regulations of 63-20 corporations allow for specific public private partnerships and include certain protections for the public sector. The public sector, for example, must own the asset outright after bonds are paid. The project was also innovative in that it was the first implemented under Virginia's 1995 Public-Private Transportation Act.

Once open for business, the road did not reach projected traffic levels. In 2002, bond ratings were lowered to negative and below investment grade. It appeared that toll revenue would be insufficient to pay off outstanding bonds. Since then, tolls have been increased from $1.50 to $2.25. The state is now negotiating to sell a long-term concession on the road to a private conglomerate. It had previously negotiated the exclusive right to investigate the feasibility of acquiring the Parkway from the nonprofit and the state.[46]

While this project has been a success in terms of its successful completion, it also illustrates the risks that may be encountered by projects that issue bonds backed by projected toll revenues. Even when there is a political consensus that a highway improvement should be a regional priority, projects may not always be self-financing though toll revenues. Traffic counts on new toll facilities often fall short of projected levels, either because economic forecasts turn out to be too optimistic, or because planners overestimate how much value drivers place on the time they could save by using the new facility. Because of the uncertainties of toll revenues (as opposed to more reliable sources of revenue, such as a dedicated regional gasoline tax), the bonding costs for these projects can be much higher.

Chicago Skyway, Illinois: 2005

The City of Chicago in January 2005 leased the operations and maintenance of the Chicago Skyway (part of I-90) to a joint venture of the Spanish toll road operator, Cintra Concessiones de Infraestructuras de Transporte, S.A and the Australian firm of Macquarie Infrastructure Group for 1.83 billion dollars.

The toll road operator is entitled to collect and retain all of the tolls on the facility for a period of 99 years. There is no expressed limit on the Concessionaire's rate of return. The operator is responsible for maintaining the road and meeting detailed operating standards established under its contract with the City of Chicago. The City also retained the right to investigate and audit the compliance of the concessionaire.

Toll rates were established in the contract with tolls through 2017 governed by a specific schedule (under which the auto will increase from $2.50 in 2005 to $5.00 in 2017).[47] After 2017, tolls increases are established each year based upon the greatest of the three following methods:

1) A minimum guaranteed 2% increase.

2) An increase is equal to the rate of increase in the Consumer Price Index (CPI).[48]

3) An increase equal to the rate of increase in the nominal Gross Domestic Product (GDP) per capita.[49]

[45] US GAO, "Highways and Transit: Private Sector Sponsorship of and Investment in Major Projects Has Been Limited," Report to Congressional Requesters, GAO-04-419 (Washington, DC: US GAO, March 2004), pp. 49-52.

[46] Margaret Edds. "A lesson in higher ed from New Zealand." *The Virginian-Pilot*. 11 February 2006. Sylvia A. Smith. "Privately built roads often fail to keep promises." *Journal Gazette* and fortwayne.com. 23 January 2006.

[47] If inflation during this period is in the range of 2.5-3.5%, then the real increase in toll rates will be 32-49%.

[48] Over the past 20 years, this has averaged 3.1%, and has ranged between 1.6% and 5.4% (authors' calculations, based on data from the U.S. Bureau of Labor Statistics).

[49] Over the past 20 years, this has averaged 4.5%, and has ranged between 2.0% and 6.7% (authors' calculations, based on data from the U.S. Bureau of the Census and the U.S. Bureau of Economic Analysis).

This contract gives very strong protection to the operator. Its methodology gives the toll authority a 2% increase no matter what, a CPI-based increase to cover any inflation costs, or a GDP per capita-based increase to take advantage of periods of strong growth. It potentially puts the public at risk of sharply increasing tolls, especially if high rates of economic growth are not matched by increasing wage rates among the middle and lower income groups.

The City of Chicago retains the right to improve parallel routes that compete with the Skyway. The City also retained the right to install billboards and utilities along the roadway.

Ten years prior to the end of the contract term, the Concessionaire must provide a letter of credit in an amount equal to the highest gross revenues received in the prior 10 years. This will help ensure that Concessionaire continues to maintain the Skyway in an appropriate manner prior to its return to the City at the end of the 99-year lease.

Indiana Toll Road: 2006

The State of Indiana is now negotiating the details of a lease of the Indiana Toll Road, which connects to the Chicago Skyway. Details are not yet public, but it seems to be the same type of long-term concession on an existing toll road. The Indiana Toll Road is 157 miles long and the winning bid for the lease was reportedly $3.85 billion for a 75-year lease.[50] The Indiana state legislature is now considering the lease.

State Route 125 in San Diego, California: 2006

On the southern section of S.R. 125, about 10 miles of toll road are being constructed by a private firm that will operate the road and collect tolls under a 35 year contract. Technically, the private consortium is under a franchise with the state while it builds and privately finances the highway. It then transfers ownership back to the state and leases it back under a concessionaire agreement. The agreement allows the private firm to earn a maximum of 18.5% on its total investment with incentives built in for improved levels of service. Essentially, the private firm is allowed to earn higher profits if it increases vehicle occupancy on the toll road. The road is expected to open in late 2006. Private involvement is being credited with moving the project to completion quickly.

[50] Patrick Guinane, "Lease bid is $3.85 billion," *The Times of Northwest Indiana*, (January 24, 2006).

WHAT ARE THE BEST PRACTICES?

Well-Designed Legislation and Agreements Help Ensure Successful Projects

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INTRODUCTION

As public private partnerships become more common, more self-supporting projects will be developed and users will more often directly pay for those facilities they use. In a sense, this is a return to the road financing methods that were the norm in the US from the 1650s until the 1920s. Many facilities were constructed based upon the desire of local users to fund needed infrastructure out of local tolls or user fees. Then and now, private financing focuses resources on the most profitable enterprises and avoids capital projects that have limited or no value to the user.

Public-private partnerships (PPPs) represent an alternative to traditional state financing and contracting arrangements, and they present an opportunity for the state to leverage its available capital dollars to produce a greater investment.

PPPs should be approached with a clear understanding of their potential problems as well as a firm commitment to apply the tools that have been developed over time to address these problems. The involvement of the private sector in traditionally public sector transportation projects should be done with a careful sense of purpose. The overriding goal of the state should continue to be to produce public transportation projects that have the highest social and economic benefit at the lowest possible costs. Well-designed strategies can help public-private partnerships to avoid these pitfalls and be successfully implemented.

Most of the following examples are most directly applicable to highway privatization, but many of their lessons are applicable to a variety of partnerships, including private participation in transit projects and more traditional contracting relationships. Where possible, examples other than highway privatization have been provided.

UNDERLYING POLICY CONCERNS[51]

Regardless of the type of partnership, there are two key underlying policy concerns that must be addressed when contemplating a PPP – how to ensure public goals are met and delineating who bears the risk. In terms of public goals, transportation is focused on gains for the public good – mobility, overall system efficiency, reliability, safety, and equitability – that may not always be addressed effectively by private interests seeking a return on investment. Indeed, a U.S. GAO report assessing several major PPPs around the country noted the following experiences by states:

- Relinquishment of state control over toll rates; and,
- Reduced ability by states to carry out infrastructure improvements on public roadways.[52]

Other key trade-offs included:

- Increased costs associated with acquiring right-of-way or with establishment of new public institutions to accommodate the private consortia;
- Increased risk exposure when states are liable for the cost if the private partners encounter financial difficulties or if revenue forecasts turn out to have been overestimated.[53]

This last point is of particular concern. Who bears the risk inherent with infrastructure investments is

[51] The text for this section was written by Allison L. C. de Cerreño.

[52] US GAO, "Highways and Transit: Private Sector Sponsorship of and Investment in Major Projects Has Been Limited," Report to Congressional Requesters, GAO-04-419 (Washington, DC: USGAO, March 2004), pp. 15-19.

[53] Ibid.

often a key determinant not only with respect to what type of partnership is agreed upon (since each accords different levels of risk to the public or private sector), but also in whether a project is pursued at all. It is here that certain legislation and/or innovative financing can be of particular help by helping to reduce risk for private sector in appropriate ways, while ensuring that the public gets a good value for its investment.

PARTNERSHIPS IN FINANCING: HOW MUCH REVENUE CAN BE GENERATED?

State and local governments are increasingly looking toward PPPs as a new opportunity for revenue generation. In these cases, it is important to understand what motivates the private sector's interest in these enterprises. In a panel discussion of road privatization at the 2006 Transportation Research Board Meeting,[54] five main factors that determine private sector interest as well as the amount to bid for a franchise were discussed:

1) *Asset Life Cycle* – What is the condition of the asset presently and what future investment will be required in the course of the lease?

2) *Toll Setting Mechanism* – Is the toll escalation system known and determined by the contract?

3) *Land Use Forecast* – What is the projected land use for the area served by the road and is the process of transformation already underway?

4) *Competition* – What is the existing competition and potential future competition for the road? Does that competition present a threat to the revenue from the road?

5) *Location of Road* – Is there a stable base of existing local road users? Is there strong fundamental local demand for road?

These factors in turn reduce to the following financial parameters that determine the majority of the value of the contract:

1) The flows of cash that are generated by the enterprise.

2) The length of these cash flows, as determined by the length of the contract.

3) Risk: the uncertainty of these cash flows.

Altering these parameters and/or specifying them in the contract increases or decreases the cash value of the franchise. These contract specifications determine the impact of the franchise on the community at large.

BEST PRACTICES

Since ISTEA began opening the door to an increased role for the private sector, states have learned about how to implement effective PPPs by observing one another's innovations, successes, and failures. Below is a list of some of the key policy and political pitfalls that can bedevil PPPs, along with the policy strategies that can be used to avoid them.

Toll increases may be unpopular, inefficient, or inequitable

Designing the contract for the private operation of transportation infrastructure can involve complex contract management issues. The conditions that produce the most viable PPP projects are limited competition from other forms of travel and strong demand. These same conditions also produce monopoly power. Left uncontrolled, it can be expected that the contractor will utilize its monopoly power to maximize profits. Without proper rate regulation or price control the private sector's potential monopoly power can compromise the social good.

At the same time, a private firm may not consider the network effects or full negative externalities of its road pricing. For example, its toll schedule may increase its profits while moving some traffic on to local roads. This may cost the public DOT and localities more in the long run because of congestion and damage done by trucks to local roads. Private firms may not be concerned with encouraging more efficient behavior, such as carpooling, or how tolling schemes affect

[54] Seeking Private Equity in Highway Projects: Are You Ready? TRB Annual Meeting Session 367. Monday, January 23, 2006

different geographic areas, but instead are focused on maximizing revenue.

Example: Toronto's Highway 407. In 1999, a private firm bought a 99-year lease that allows it to collect tolls on an existing 67-mile toll road called Highway 407. The private firm paid $3.1 billion for the lease. Since Toronto leased the road, the firm has raised tolls more than 250%, resulting in public complaints. In August 2005, complaints led to a panel of independent arbitrators ruling requiring a new performance standard: the private firm can raise the tolls as long as traffic doesn't fall below 2002 levels, which is considered 'base year' traffic.

Strategies:

- In cases where conditions naturally produce a monopoly, rate or profit regulation may be appropriate. The public sector must ensure the contract holder only obtains a normal profit. Profit control may be obtained by rate regulation (as is applied by State Public Utility Commissions to utility monopolies) or by profit regulation. To the extent that it is necessary, government agencies should account for added administrative costs involved with rate regulation.
- Alternatively, performance standards can be used to ensure that firms have an incentive to contain prices.
- Government agencies should account for added public relations costs in their project planning and in their negotiations with the private sector. The public is unlikely to embrace private control of toll rates without transparency, outreach, and accountability.

Privatize operations may not account for impacts on the environment and society

A private firm may have limited interest in managing a transportation facility to minimize social and environmental costs. As an example, a firm may choose a method of toll collection that minimizes loss due to violations while ignoring the significant traffic delay and pollution caused by its methods. Or a contract holder might choose to perform routine maintenance work during daytime hours to minimize the construction cost of the repairs. This may produce significant travel delays and consumer time costs.

Example: Spain. In Spain, the rule is that the state does not run toll roads but issues a concession to a private entity. The concessions are supervised by the government. One of the key specifications is a set of performance standards for road operation. Failure to maintain proper performance results in fines and possible loss of the concession.[55]

Strategies:

- Contracts should directly address hidden public costs that might be ignored by the private sector. Contracts can include performance targets for pollution output and operational efficiency.
- The public sector can also use the market to mitigate inherent risks with the private sector. To prevent private road operators from polluting during construction or regular operations, for example, contractors can be required to purchase pollution credits for the baseline output. If the contractor can modify its collection process and traffic delay to reduce these costs, then it can sell the credits back to the marketplace. The market incentive to sell the credits should motivate the contractor to improve its process.

Political factors can add to risks and costs

Because public-private partnerships can be a more flexible and efficient route to the completion of major infrastructure projects, some have attempted to use these projects as vehicles to enact policy changes that might otherwise not be possible. For example, some of the claimed benefits of using private firms come from their freedom from union agreements and the problems of large bureaucracies. However, a switch from union to non-union labor can prove more costly than staying in union agreements, and can lead to public protests. In addition, public agencies may be held responsible for accidents or other incidents that occur as a result of private firms making changes more quickly than would public

[55] This is in sharp contrast to the traditional toll authorities in the United States, which, in general, manage road performance with little public discussion and also without objective measures of success.

agencies, such as increasing the speed limits in an electronic toll lane. Mitigating bad press can have ongoing costs that are difficult to determine during contract negotiations.

Example: Boston/MBTA attempted bus privatization. The 1996 and 1997 attempts to privatize the Boston bus system proved to be too costly. Initial analysis made privatization appear to result in enormous savings, but avoidable cost analysis showed that pensions and benefits to displaced workers would have been so great as to surpass any savings realized by privatization.[56]

Example: Skye Bridge. To build a bridge to Skye Island in Scotland, the government entered into a build-operate-transfer contract with a consultant, amid considerable local controversy about whether the bridge was desirable in the first place. The existence of the private sector contract became the basis for public policy actions designed solely to benefit the project, including the elimination of a competing, profitable ferry service. Ultimately, public opposition to the terms of the concession agreement forced the government to repurchase the bridge, at a total public cost nearly four times the bridge's construction cost.[57]

Strategies:

- To avoid expensive delays or policy reversals, PPP projects should not be used as vehicles for controversial policy changes, such as circumventing prevailing labor practices or avoiding extensive public participation and consensus-building efforts around potentially controversial projects.
- To avoid unexpected risks and controversies late in the project development process the state's policies concerning labor practices and project approval procedures for PPPs should be spelled out in advance.
- Before proceeding with a major construction project, the state should work to identify and address potential sources of political risk. It can consult with local communities to identify and help mitigate adverse impacts of projects, and work with unions to develop project labor agreements.
- The terms of concession agreements should be publicly disclosed.

Public sector unduly restricted from investing in competing infrastructure

In some cases, partnership contracts have restricted public agencies from building 'competing' infrastructure. For example, a contract may include a non-compete clause preventing a government agency from building a road, train line, or bridge that might lure travelers away from the privately-operated facility. Likewise, a contract may restrict the public sector from raising speed limits or running more frequent bus or train service on infrastructure serving the same market. While some of these restrictions may seem reasonable in the near term, they may prove detrimental over the long run, as traffic and land use patterns change.

Example: S.R. 91 in Orange County, California. In 1995, a private firm built toll lanes on the existing 10-mile highway and agreed to operate those lanes and collect tolls. The firm paid $126 million for this concession. The firm's contract precluded the state DOT from building or improving competing freeway lanes until 2030. Nonetheless, public pressure forced California to make improvements on other SR 91 lanes. To do so, the state had to buy back the toll lanes for $208 million in 2003.

Strategy:

- Avoid noncompete agreements. To the extent they are necessary, they should be carefully analyzed and considered in light of growth the region may face 20 or 50 years from the time the contract is signed.

Private sector not responsible for returning the infrastructure in good condition

Public agencies generally do not need to account for depreciation, and this helps keep their tolls low. One exception is the Port Authority of New York and New Jersey, which makes extensive use

[56] Sclar, Elliott. "Privatization in Massachusetts: An Evaluation of the 1993 Privatization Law ("The Pacheco Law")." 18 May 2004. The Massachusetts privatization law requires a full cost benefit analysis showing potential losses.

[57] George Monbiot, "Why have we paid £93m for a £15m bridge?" The Guardian, December 28, 2004.

of depreciation deductions to justify some of the cost of toll collection. All private firms are required to account for depreciation, and such tax ownership keeps private firms' taxes low. However, if a private firm gains tax ownership and accounts for depreciation on a highway, it may need to increase tolls. If the private firm foregoes tax ownership, it is possible that the public sector will still be responsible for rebuilding the asset when it is needed (in 25 or 50 years), probably by issuing new debt.

Example: Chicago Skyway. This is a positive example of mitigating contract provisions. In 2005, a private firm bought a 99-year concession on the 8 mile toll road from the City of Chicago for $1.83 billion. The private firm has full tax ownership of the asset, so the city must be careful of toll increases. The contract also has specific maintenance and operating standards, as well as a provision to ensure the road is maintained toward the end of the contract. The provision requires that 10 years prior to the end of the contract term the firm must provide a letter of credit equal to the highest gross revenues of the prior 10 years.

Strategy:

- Contracts should explicitly allocate risk and responsibility. There should be no question of where the public or private party stands regarding the condition of the asset or anything that might occur on it, including at the end of the contract. The tax ownership of the asset should be explicit.

Public sector lacks sufficient expertise

Private firms may use complex, opaque contracts which require a high level of expertise from the public sector. Contracts that are not carefully negotiated can lead to very high or uneven toll increases, higher maintenance costs later on for the public sector to absorb, and other problems that can result in a loss of mobility and a loss of public trust. Bureaucracies not accustomed to handling complex financial investments may need to hire consultants at considerable cost to manage the arrangement. One of the main problems is how to assess the value of the asset. While the private sector generally values an asset as the present value of a predicted future stream of revenues, the public sector may look at the past public investment in that asset (from initial construction to decades of maintenance) or at its importance to the regional economy. In fact, valuation includes not only revenue projections but operational costs which depend on the age and condition of the road; competition for drivers in the corridor; time horizon (99 years is worth much more than 50 years); and the ability to increase price or the method of regulation, therefore changing the profit. The public sector may not have a firm understanding of the value of these elements. The matter is further complicated by starkly different accounting standards between the private and public sectors.

The lease price has been questioned in at least two recent highway concessions, indicating that perhaps the public sector may not have had the financial acumen to get the best price.

Example: Chicago Skyway: The $1.83 billion lease was twice as much as the second best price, indicating a scarcity of bidders or that bidders had very different assumptions about the price the public sector would be willing to accept. Also, the 99-year term of the lease is unprecedented in Europe and North America. It is possible that the price was not high enough.

Toronto Highway 407: An investment bank involved with the financing reported that Toronto should have received $6.3 billion, or $3 billion more than it got, for the road.[58]

Solution:

- Partnerships are a learning process, and require public sector expertise. They should not be seen as political shortcuts for complex projects. Adequate attention needs to be paid to staff training and development so that these complex contracts can be negotiated and managed effectively.

[58] Bank Values Highway 407 at Four Times the Sale Price. Globe & Mail, 9 Jan. 2002, p.A1; The Private Sector and the 'Public' Highways. Western Libraries at The University of Western Ontario. Updated January 2002. http://www.lib.uwo.ca/business/toll.html.

How Can Risks Be Shared?

The Challenge of Risk Allocation in Public-Private Financing Partnerships

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INTRODUCTION

Public-private partnerships (PPP) in the development of transportation infrastructure and the provision of services can take a diverse range of forms, including contracting for bus or road maintenance services, financing the development of infrastructure facilities and the actual construction and operation of toll roads. Whatever is the project, private participation in public projects has two key characteristics. It requires an agreement defining the form of the PPP, and arrangements governing the sharing of the project's overall risk between the parties. These risks include exceeding capital costs limits, failing to meet schedules for service delivery, difficulty in complying with environmental and other regulations, delays due to unforeseen site conditions, and the risk that revenues may be insufficient to cover capital, debt-service, maintenance and operating costs. A PPP contract, which defines the responsibilities of each side, is also expected to define the risk that each side will assume, along with judicial contingencies for failure to comply with the contract's terms.

Clearly risk can be divided between the public and private sectors along a continuum, ranging from full to zero risk sharing by the private enterprise, where the balance constitutes the risk borne by the public sector. Thus, if the public sector bears nearly all of the risk of a particular project, the private sector's role is essentially that of a sub-contractor or a money-lender, who faces a risk-free investment, as the public sector is unlikely to become insolvent. For example, in the case of Highway 407, a 70-mile express toll road in metropolitan Toronto, private partners refused to assume financial risks in addition to the construction and operating risks. As a result, the province of Ontario financed the project's capital costs, thereby effectively assuming all financial risks, while the private partner became a fixed-price construction subcontractor who assumed only construction and operation risks. A bona fide investment partnership requires a fair and efficient risk allocation scheme between the parties.

In the U.S. and other countries, the actual number of transportation projects that have been full financing partnerships between the private and public sectors has been quite small. Because such partnerships are a relatively new form there is no single standard for risk-sharing. While the public sector tries to shift risk to the contractor, the contractor tries to minimize its share of risk, so contract negotiations are commonly vigorous and laborious. Often, the terms that are negotiated are not explicit enough in specifying how risk will be shared and the contract sets up conditions that favor the private investors.

A key point is that the idea of risk sharing is not just about protecting the private investor. It is at least as much about minimizing public costs. In reality, however, risk sharing is negotiated individually and it seems to be different for different projects of same type. Most PPP contracts that have been developed have been ad-hoc and have resulted from political negotiations between public agencies and project proponents. At least some of these projects were subsequently canceled or substantially modified at high costs, when governments changed or when different political players gained control. In the majority of infrastructure investment projects, particularly the very large ones (the so called "mega-projects"), it was the state that has ultimately borne the significant portion of the overall investment's risk, with considerable direct and indirect costs to the public. This paper examines the nature of the risk allocation problem in PPP projects, highlights key risk-sharing issues and outlines some approaches for the development of efficient risk allocation schemes.

WHY RISK ALLOCATION MATTERS

As any investor knows, the risk level of a particular investment has a considerable impact on the true costs of this investment and, consequently, on its profitability. The same applies to public investments, including those carried out under PPP schemes. It has been argued though that once the risk level of a PPP investment has been properly assessed, we can safely disregard risk allocation between the parties since, for the economy as a whole, it would not matter. However, this argument would be true only if we could assume that the private and public sectors exhibit similar attitudes towards risk (e.g., same degree of risk aversion) *and* if both are equally efficient and productive in managing risks as well as in key aspects of the investment such as funding, construction and management. But all evidence suggests that this is an invalid assumption and the particular allocation of risk is consequential and carries a significant impact on the economic value of the PPP investment. Experience shows that when the public sector assumes a majority of the risk, especially risk associated with future demand, it increases the likelihood of cost overruns or reduced level of service or both, with direct implications for the true economic value of the investment. The higher the risk share that the private enterprise assumes, the higher the rate of return it would require to make the investment profitable. But if the private investor manages to reduce its risk share, the investment's overall risk would not disappear, as it would simply be shifted to the public sector, with significant impact on the project's overall costs.

The main reason why risk allocation matters is the asymmetry between the public and private sector in dealing with and managing different forms of risks. Whereas the private sector is better than the public sector at managing financial and construction risks, the public sector is more efficient in dealing with risks related to environmental and social externalities. When private investors take on risk, they take measures to estimate their vulnerability and their maximum exposure, and they take steps to mitigate these risks. Public partners do not necessarily take these measures since they have recourse to the public trough. For example, the private sector might drill more test holes during design phase of a tunnel, to reduce geologic risk during construction and, by and large, is more efficient in putting together financial packages. The public sector, on the other hand, can better deal with various environmental risks, or with risks associated with the acquiring of eminent domain, or with risks arising from the presence of historical sites and cultural-sensitive facilities. Hence, *risk specialization* makes the proper allocation of risks between the public and private sector highly significant with regard to the overall costs and real economic value of a project.

One high-profile example of failure to risk specialize is the European Channel Tunnel (Eurotunnel), which resulted in a colossal financial failure of about 80% of cost overruns and a suspension of debt service payments. In this case, the political risk of the project was left to the private investors to manage rather than to the specializing party, namely the state.

Efficient risk allocation in PPP projects has an additional economic benefit with regard to the true costs of the project. A common assumption is that the cost of government borrowing is the same as the weighted average cost of capital that the private sector incorporates into the annual lease fee that it charges the government. However, if the private sector would demand a higher fee, a transparent risk allocation arrangement will reveal the extra-expected costs. In fact, it would show the value of the risk transfer to the economy. More generally, it would show whether the private financing and building of a specific transportation facility is indeed justified.

KEY QUESTIONS

Against this background the key risk-allocation questions in PPP projects are:

First, how to properly assess the overall risk of a particular PPP project?

Second, how should risk be shared efficiently and equitably between the parties, in order to enhance the project's economic value and social welfare impacts, while providing a reasonable profitability level for the private sector?

Third, from the public-sector economy viewpoint, what are the implications of a specific risk allocation arrangement of a particular PPP project relative to its true economic value?

RISK ALLOCATION METHODS

The germane transportation-economic literature does not provide an agreed formula for the allocation of risk between the parties of PPP projects. Actual risk sharing schemes are often the result of ad-hoc agreements and political negotiations. However, the literature suggests several approaches to deriving balanced and efficient risk sharing arrangements for PPP projects.

A risk factors control based approach

Under this approach, the state assumes those risk factors over which the private investor has little or no control and that the state can deal with much more effectively than the private sector can. The other risk factors are then borne by the private enterprise. The state's controlled risk factors include:

1. Risk of extra costs from land appropriation, securing the rights of way and turning it over, free of claims, to the private enterprise
2. Risk of extra costs from taking care of various cultural and religious sites (e.g., archeological sites or old cemeteries)
3. Risk of extra costs due to citizens' objections and law suits relative to land appropriation and environmental nuisances
4. Risk of decline in demand from changes in public policy such as the construction of a competing project (e.g., a parallel road)
5. Political risks emanating from bad legislation and change of government

The private enterprise, on the other hand, normally is more efficient in managing risks of the following types:

1. Raising the necessary capital funds
2. Financial risks from changes in the rate of inflation, interest rates and foreign currency exchange rates
3. The actual collection of charges (e.g., road tolls) and enforcement
4. Planning and design
5. Construction
6. Operation
7. Technological changes (e.g., new tunneling technology)

This approach, which uses "degree of control" as the key risk allocation criterion, has left out a key risk factor, namely, the level of future demand, and hence revenues. As already mentioned, this risk type is often negotiated between the private and public partners on a case-by-case basis, with the state ending up bearing most of it. However, from public economic viewpoint this arrangement tends to induce misallocation of resources as the private sector is then shielded from normal economic fluctuations, which, in turn, causes large inefficiencies (e.g., the provision of inferior services) and can produce projects with undesirable benefits to costs ratio.

Since future demand is also affected by future infrastructure improvements, a guaranteed level of revenues can effectively hinder such improvements. For example, in the case of the widely publicized S.R. 91 private toll road in Orange County, California, the overseeing agency, Caltrans, has signed a contract in which they agreed not to build any new road capacity parallel to or competing with the privately financed toll road, except for road improvements that are necessary to assure safety. When Caltrans announced that they would widen some lanes nearby for safety purposes, the private contractors fervently objected. The toll road operators filed a suit against Caltrans for breach of contract, which settled out of court with an agreement not to widen the road. Later, in part so that it could make the improvements it believed were necessary, the state chose to buy out the contractor and bring the project back under public control. Formally, this may not appear to be

about risk sharing because the term "risk sharing" was not used, but in essence the issue was about guaranteed income.

Allocation of risk associated with future revenues

An alternative approach is to break down demand into its underlying market and non-market factors and let the private enterprise assume the market risk factors. For example, changes in demand from changes in the toll regime (e.g., toll rates by vehicle type, time of day or distance traveled) or financial risks can be considered as market related factors. Regulated transit fare or future highway layout patterns are non-market factors that affect demand. Assigning the market related risk factors to the private party would represent an efficient and reasonable risk-sharing scheme.

An example of this model is the European Bank for Reconstruction and Development financial scheme for road development in Eastern Europe, especially the M1-M15, a build-operate-transfer (BOT) toll motorway in Hungary. Non-commercial risks were assigned to the government while the lenders assumed responsibility for financial risks such as interest rate and currency exchange rates. Still in this case, actual traffic levels were way below the initial projections, resulting in reduced revenues and the project was technically bankrupt. One major reason is that travel demand is quite elastic with respect to the toll level, so that increased tolls resulted in revenue losses.

Risk allocation based contracts

Another approach to risk allocation in PPP projects is to adopt a PPP contract, in which the risk associated with the construction, operation and service delivery costs as well as with the revenues, are an integral part of the contract. Accordingly, we can distinguish between “full costs” and “net costs” type contracts and between “efficiency” and “performance” type contracts.

Under the “full costs” contract, potential private bidders tender for the lowest price (revenues) they demand for building the project or for providing the transportation services, irrespective of future demand (with the actual revenues going to the state). In “net costs” type contract, the private enterprise receives the full revenue from the project (e.g., tolls revenues) and bid for the payment that it will disburse to the state.

“Efficiency” type contracts require the private partner to compete for the lowest costs of building the project or of providing the services, but enable him to charge any price that it sees fit. “Performance” contracts, on the other hand, require the private partners to deliver a certain level of output (with matching compensation for enhanced performance), while bidding for the requested level of revenues.

Obviously under these different contract types the risk to the private enterprise varies, but in all cases it is an integral part of the contract to be assessed and taken into account. In this regard, the bidding process has two key functions. Competition among bidders acts to reduce the overall costs of the project, including the amount of risk borne by the public sector. Second, it is an effective mechanism, by which private investors reveal how much risk they are willing to take. This, in turn, is valuable information for the public sector in its contract negotiations. On the other hand, bidding processes are costly and time consuming and need, therefore, be designed and carried out prudently.

CONCLUSIONS

Key conclusions from this paper are:

1. Risk is an integral part of all public investments, including PPP type projects. Ignoring risk is likely to result in cost overruns, delays in service provision, reduced output and lower levels of service or the adoption of inferior projects. Hence there is a critical need to correctly define and measure the risks of a particular PPP type investment.

2. In assessing the economic value to the public of PPP projects, one must account for the particular risk allocation arrangements between the parties.

3. There are ways to measure the various risks associated with PPP investment

projects, and clearly allocate these risks between the parties.

4. When the exact allocation of risk between the public and private sectors in a given PPP contract is explicitly defined and made transparent, decision-makers can better understand the true economic value of the project, which helps them prioritizing projects efficiently.

5. Innovative risk sharing schemes that accounts for the relative advantage of the public and private sectors in dealing with risks can increase the economic efficiency and net social benefits of PPP investment projects.

6. Policy strategies are needed to operationalize such schemes and institutionalize them as an integral part of PPP contracts.

WHERE CAN I FIND MORE INFORMATION?

A. Web site that relate to this conference

University Transportation Research Center
http://www.utrc2.org/events/past.php?viewid=125

New York State Dept. of Transportation Partnerships Web Site
http://www.dot.state.ny.us/partnerships/

B. Websites with General Information

Federal Highway Administration: Public Private Partnerships
http://www.fhwa.dot.gov/ppp/

American Association of State Highway and Transportation Officials
http://www.innovativefinance.org/

National Council for Public-Private Partnerships
http://ncppp.org/

The Canadian Council for Public-Private Partnerships
http://www.pppcouncil.ca/

C. Manuals and Best Practices

FHWA Manual for Using Public-Private Partnerships on Highway Projects
http://www.fhwa.dot.gov/ppp/manual_0905.pdf

Maryland DOT, Current Practices in Public-Private Partnerships for Highway Projects
http://www.mdta.state.md.us/mdta/servlet/dispatchServlet?url=/About/currentpractise.pdf

NCHRP Synthesis 313: State DOT Outsourcing and Private Sector Utilization
http://trb.org/news/blurb_detail.asp?id=1495

D. Finance Perspectives

Fitch Ratings, "Public-Private Partnerships: The Next Generation of Infrastructure Finance"
http://www.fitchmexico.com/ReportesEspeciales/RW_34.pdf

Standard & Poor's, "Infrastructure & Public Finance Ratings: Public Private Partnerships - Global Credit Survey 2005"
http://www.ibtta.org/files/PDFs/PPP%20Credit%20Survey_2005.pdf

E. Other Conferences

Public/Private Partnerships: Implications for Innovation in Transportation (1998)
http://www.volpe.dot.gov/infosrc/strtplns/nstc/ppp/

Innovation in the Transportation Marketplace Through Effective Procurement: Findings from an Experts' Workshop (1999)
http://www.volpe.dot.gov/infosrc/strtplns/nstc/effproc/index.html

Public/Private Partnerships II: Engines for Innovation in Transportation (2000)
http://www.volpe.dot.gov/infosrc/strtplns/nstc/ppp2/

A Roundtable Discussion of California's Experience with Innovations in Public Finance (2000)
http://epw.senate.gov/107th/SeltzerAttachment2.pdf

Public/Private Partnerships III: Implementing Successful Public/Private Partnerships in Transportation (2002)
http://www.volpe.dot.gov/infosrc/strtplns/nstc/ppp3/

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