Public-Private Partnership Research and Policy Issues White Paper

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Transportation Public-Private Partnership Policy Program

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PREFACE

This White Paper addresses research and policy issues surrounding transportation public-private partnerships. It was prepared under the auspices of the Transportation Public Private Partnership (P3) Policy Program of the George Mason University School of Public Policy to assist in identifying key P3 policy issues for exploration under the Program.

The white paper was written by Dr. Porter Wheeler, who supports the program as a consultant and adviser. His extensive experience with P3 developments across the U.S. has been a great asset to the program's development. Input was also provided by doctoral students Nobuhiko Daito, Zhenhua Chen, John Gudgel, Chang Kwon and Kyung Min Lee.

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Further information about the program is available through the website http://p3policy.gmu.edu.

EXECUTIVE SUMMARY

Federal and state fiscal constraints are bringing P3s to the forefront for major projects and most new construction. There are several complementary factors that draw enhanced state and local consideration to the P3 approach and where proponents claim a P3 advantage over conventional approaches. As governmental sponsors ponder alternative delivery mechanisms including P3s for their priority infrastructure improvements, it is important to highlight research questions and policy issues that remain unclear or even in dispute, and direct their research resources into finding ways to explore these issues further. Further, a growing number of P3 projects are also maturing and becoming ripe for empirical analyses that could help practitioners resolve some of these issues.

A literature review indicated that there were numerous topics related to the application of P3s that have not been resolved and several key gaps in understanding yet to fill. Reasons for such gaps included diverse legal and policy institutions across the various states, the small number of US P3 concessions that have reached maturity and the proprietary nature of much of the underlying data associated with the private partners. Several key issue categories were identified as shown below.

Evaluating Risks and Benefits. A key aspect of P3s is the ability to re-allocate project risks. The challenge is to quantify and monetize these risks. Appropriate assignment of project uncertainties can create financial feasibility or lead to project failure (financially).

Financial Issues. Numerous financial issues arise in the consideration of public versus private project sponsors. The nominal cost of public, tax-exempt financing appears lower than private returns, but there may be offsetting advantages to private debt/equity involvement that need better explanation. Other factors such as project timing and consistent use of either Value for Money (VfM) or net present value (NPV) evaluations warrant detailed examination.

Project Delivery. P3 project delivery is often selected in order to improve on-time/on-budget development. The case study record needs close examination to verify these claims and identify and quantify other P3 delivery benefits (and risks). Procurement formats should be examined more closely to identify which can best capture the benefits of alternative project delivery.

Process and Administration. Enabling statutes serve as the foundation for the P3 process. Key components from various states should be identified that support successful P3s. The Canadian approach should be examined to identify elements that contribute to its apparent success. To what extent can those Canadian success elements be transferred to the US situation?

Other Issues. A host of other issues arise in implementing a P3 approach to project delivery. Many involve finding better ways of outreach to educate agency officials and the public at large about the benefits and risks of P3s, and direct outreach effort are

needed to dispel misconceptions and gain public acceptance. Further, researchers need to examine the extent to which P3s are appropriate for transit, rail, and other transport modes, since other modes are, if anything, even more challenged inn their need for capital development dollars. The Federal role continues to evolve on P3 projects. The recent expansion of Federal Transportation Infrastructure Finance and Innovation Act (TIFIA) assistance is likely to mark an enhanced Federal role that warrants substantial analysis.

Introduction

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Background

Federal and state fiscal constraints are bringing P3s to the forefront for major transportation infrastructure projects and most new construction. There are several complementary factors that draw consideration to the P3 approach and, based on which, proponents claim a P3 advantage over conventional approaches.

In addition to overcoming public funding shortages (by tapping into private sources of capital), these complementary P3 attributes include project cost, especially life-cycle costs, project delivery time, cost-efficient practices for construction and operation driven by the private sector, more efficient pricing of road transport, and more efficient risk allocation among the parties involved.

In response, more states are passing P3 enabling legislation and more governmental sponsors are considering implementation of these new approaches. However, since P3s are a relatively new and untested approach, at least in many states and project locales, there is a need for educational presentations to demystify P3s and to dispel numerous misperceptions. The recent popularity of P3s is primarily attributable to severe public budgetary and financial constraints, because P3s allow governments to tap the private sector for funding and financing through project equity and debt to address project needs.

As governmental sponsors ponder P3s and other alternative delivery mechanisms for their priority infrastructure improvements, it is important to highlight research questions and policy issues that remain unclear or even in dispute, and direct research efforts towards finding ways to explore these issues further.

Scholarly treatment of modern transportation P3s has developed primarily to understand their economic benefits and/or disadvantages as transportation projects. But P3 research horizons are expanding beyond traditional economics to other disciplines including mobility, urban development, environment, and social justice. Further, a growing number of P3 projects are maturing and becoming ripe for empirical analysis that could help resolve some of these issues.

Program and project experience continues to expand, albeit slowly, and there is a growing body of literature on the subject of P3s. The largest body of experience is not in the US, however, and the more extensive foreign experience may be informative, though care must be taken to distinguish the broad differences in underlying conditions across countries.

The following White Paper draws questions and issues from several sources including a literature review; a canvassing of practitioners (primarily carried out at the Fall 2012 American Road and Transportation Builders Association P3 Division meeting), and direct discussions with leading scholars, observers and practitioners in the P3 field.

KEY RESEARCH AND POLICY ISSUES

The following discussion identifies an array of research and policy issues that underlie the desirability of a P3 approach and need further exploration. Verification of P3 benefits and identification of hazards could greatly clarify P3 application. The issues have been categorized as: evaluating risks and benefits; financial issues; project delivery; process and administration; and other issues.

A. Evaluating Risks and Benefits of P3 Approach

P3s Re-Allocate Risks. Traditional design-bid-build (DBB) contracting approach leaves operations and maintenance (O&M) risks completely on the agency/public account. The design is provided by the agency or a separate contractor. Another contractor bids on and executes the design. Most change orders and overruns will be paid by the agency. Many traditional contractors want to keep the DBB model wherein virtually all risks, and specifically design, change order, and O&M risks stay with the public sponsor. A full privatization would transfer most or all of these risks to the private party, but raises a spectrum of public acceptance issues. A public-private partnership seeks to allocate the risks, and especially so when O&M is handed over to the private party (presuming adequate oversight to monitor the allocation). What are the key project risks and the pros and cons of allocating specific risk categories between the partners? What are the most common risk allocation practices that have evolved in P3 projects completed or underway?

Quantification of Risks. The challenge is to allocate the risks to the party best able to control them, hence structuring the incentives more effectively, and to quantify and monetize the risks allocated or transferred. This risk monetization issue is at the heart of negotiations surrounding a P3 contract, since the cost of assuming certain risks can be both poorly understood and substantial. How objective or subjective is the quantification of risks and risk transfer in the project evaluation models? When other countries enter a P3 agreement, do they quantify these risk factors or just agree on a negotiated *ex-ante* allocation?

Financial Feasibility. Structuring a project to be financially feasible is key to attracting private partners. The uncertainty of financial sustainability can cast a long shadow over P3 arrangements. If the private partner relies on toll or other project revenues, then the agency has transferred the revenue risk, but at what cost, and with what upward pressure on tolls? Again, risk assignment may bolster or undermine financial feasibility. If private parties assume all traffic risk, they will need to be rewarded (and that reward will

vary with market perception and actual conditions). Under what conditions might co-sharing of some risks be more appropriate? What risks are most appropriate to transfer to the respective parties? Can experience tell us which party can be expected to be most able to bear and control each category of risk?

Project Failure. P3 projects can fail either financially or politically. It is important to understand what happens when a toll concession project fails economically and the private partners are unable to meet their responsibilities. Researchers should compare and contrast Australian cases (where it is said that projects do go bankrupt, hence the revenue risk is actually transferred, that is, absorbed by the private partner and investors) versus what appears to be a much looser system in France and Spain where the sponsor agency picks up the pieces and often makes partners whole. Examine US cases of financial distress, such as Pocahontas Parkway, South Bay Expressway (SR-125) in Southern California, the Texas border project El Camino Real, and the Dulles Greenway in its initial structure. Identify the causes of financial distress. How have various forms of project succession worked? And what about SR-91 which seems to have been a financial success but a political failure leading to governmental re-purchase of the concession rights? Can political risk and public acceptance be quantified? And how does political risk seem to differ from jurisdiction to jurisdiction, or country to country?

> *Benefits. Clarifying these project risks and identifying those allocations that prove more and less workable should enable better risk allocation and more uniform provisions for dealing with both common and unanticipated financial and public opinion hurdles. Improper assignment of risks can lead to financial failure.*

B. Financial Issues

Sources of Funds. Should public or private sources fund infrastructure improvements, and what difference does the source of funds make? Bringing new private funds to a state's beleaguered transport budget is a key selling point for P3 arrangements. Public debt issuance is constrained. Private financial markets offer a wide variety of possible structures and combinations of debt and equity that can be tailored to project needs. Moreover, the presence of equity gives the private developer some "skin in the game," a strong incentive enhancer. Private sponsors can of course leverage their equity with debt, usually at their own risk. Public officials need a better understanding of debt/equity structures to properly evaluate P3 opportunities and the extent that public monies should be put at risk.

Cost of Financing. Most public agency financial officers seem convinced that the public financial instruments provide the lowest cost of financing and that reliance on private finance will be burdensome and costly. And, of course, the nominal cost of tax-exempt municipal debt is generally lower than the rates found for private alternatives. But project debt, even when tax exempt, whether public or private, will be risk-adjusted in the marketplace. That is, a risky project may pay a relatively high borrowing rate even if issuing municipal tax-exempt debt, and higher still if using taxable project finance.

System-backed debt, ranging from an agency's full faith and credit to multi-facility toll authority debt, will be less risky and carry a relatively lower rate, but adding risky projects to the portfolio will eventually ratchet up the "system" cost. Also, municipal tax-exempts are usually fixed rate, level-payment bond issues, limiting flexibility and raising effective debt costs, whereas private sponsors often have multiple sources of funds and can chose to refinance or restructure to lower financing costs.

Are Tax-exempt Bonds Low-cost? The nominal rate on tax-exempt securities is low. The issue is: under what circumstances are tax-exempt munis actually the lowest effective cost of capital for an infrastructure project? What are the pros and cons of using a municipality's tax-exempt debt for a project? What about tax-exempt hybrids such as 63-20 or private activity bond (PAB) issues? Are there persuasive arguments to counter CFO resistance to P3 financing models, and potentially offset the apparent built-in governmental favoritism for public versus private debt?

Is Net Present Value (NPV) the Primary Measure? In theory, if all relevant factors can be quantified and monetized, then public interest should be served by the project approach with the lowest NPV—is that true in practice? Identify the potential weaknesses, if any, of relying on NPV; what are the uncertainties in valuing and quantifying that might interfere with the efficacy of that approach? How can these uncertainties best be dealt with in evaluating real-world projects?

Project Timing. Even assuming that public funding cost compares favorably, there are budgetary constraints (and debt limits) that can significantly delay a project. What is the value of time to an infrastructure project and how should it enter the project evaluation? If public funding seems the better option, that is, lower cost, how does waiting five years for an uncertain build decision (yet to be made in the future) affect the "public interest?"

Much could be done to clarify transportation benefits foregone, congestion resolved, operating and maintenance savings, and project cost inflation. Researchers could examine more closely how these factors can enter into a "build" decision by an agency and how they can best be assessed. Improved knowledge about benefits foregone from delaying a project, and costs incurred as well, will support better decision making. Some practitioners (e.g., Lowell Clary, formerly with Florida DOT) have suggested that the cost of inflation over recent decades boosted project costs by more that the cost of incurring public and often private debt that could have been used to advance the project.

> *Benefits. Clarifying the cost of financing for private versus public sponsors could mitigate some of the more intransigent positions on P3 policy. Improving measurements that seek to quantify and monetize project components could make prioritization more credible and clarify financial benefits, if any. Clarifying the potential benefits from advancing a project in time could be crucial in evaluating P3 approaches, since public budget and debt are increasingly rationed.*

C. Improved Project Delivery?

Delivery Time and Cost. Can P3 toll concessions improve on-time/on-budget development of transportation projects and especially mega-projects? There exists a large global database that could provide a starting point for researching this question. What are the benefits, if any, of moving the project to a partnering arrangement led by the private partner, and how can they best be measured? The literature review found limited quantification on these measures. Researchers should more closely examine: what does the US case study evidence suggest about delivery time and project cost?

Spending Controls. Administrators and politicians do not want to relinquish control over spending decisions, and are urged on in this view by traditional contractors. Many of the anticipated benefits of P3 development are thought to be associated with private decision-making. Who controls (or should control) the purchase and contracting decisions for a P3 project and what are the pros and cons of various P3 contract arrangements. To what extent is this control issue just normal resistance to change, or political and/or bureaucratic reluctance to relinquish control over spending decisions? Might these agency reasons for retaining control be contrary to the project's effectiveness and ultimately also the public interest?

Procurement Formats. Project delivery is intimately intertwined with the governmental procurement process. It would be important to assemble the evidence about the effectiveness of design-build, best value, and life-cycle components in delivering cost-effective projects on time and within budget? Reliance on the low-bid, DBB approach to project procurement forecloses many potential improvements, such as paying a little more up front to improve life cycle (or O&M) performance of the project. Researchers should identify and quantify these factors.

Unsolicited Projects. There is considerable variation among the states as to whether a P3 agency should entertain unsolicited projects, or advance only its own solicitations within its own program of projects? What do the administering offices say about unsolicited projects, what does the record show, and how does this contrast with the views of potential private partners?

> *Benefits. Better understanding the circumstances under which P3 projects can be expected to deliver time and budget benefits would expedite project approach decisions. Understanding the benefits and trade-offs of various procurement formats could clarify agency pathways and boost project benefits substantially.*

D. Process and Administration

Enabling Statutes. The enabling statutes and administrative practices of an agency have a pervasive effect on the likelihood of realizing benefits from a P3 approach, as does the political atmosphere in the state or jurisdiction. What enabling factors are most important as preconditions for successful P3s? Compare various state statutes for key features and

correlate where possible with level of progress on developing P3s. Examine whether the enabling statutes should be made consistent across states, and whether this would facilitate corporate partnering on a broader scale?

Key Provisions. Identify and evaluate key provisions of enabling legislation that seem to promote effective P3 development. What additional features should be recommended to encourage P3s? Early analyses suggested that decision-making authority should rest with a central P3 office; did that approach prove realistic? Examine other early experience concerning key provisions of enabling statutes? For example, should other P3-compatible activities be incorporated, such as public structures or even private development, to allow a broader umbrella of financial support through value capture? That is, would an expanded project scope bolster financial feasibility or just add more problems in implementation. What are the pros and cons of incorporating additional features into Virginia's Public Private Transportation Act (PPTA), for example, such as lessons learned from transit-oriented development or those from Virginia's Public-Private Education Facilities and Infrastructure Act (PPEA)?

Explore the impacts of adding additional "governmental" conditions onto the private party to a concession agreement, such as minority business preferences (MBE) and other labor and purchase requirements. How many supplemental state or agency priorities can be loaded onto a P3 process before its proposed or potential benefits are finally eroded?

Compare P3 Offices. Profile and contrast various actual P3 agency structures and approaches. Are lead P3 agencies typically independent, within DOTs, or generic to multiple agencies? What resources and decision-making powers do P3 agencies need? Are there states where the P3 approach is a mainstream option in the fashion envisioned in recent Federal legislation (MAP-21)?

Assess Canadian Approach. Assess the benefits and shortcomings of the Canadian approach. Identify key facets of the Canadian approach to P3s. What accounts for the large number of P3 projects undertaken? Research should compare and contrast the P3 agencies of Canada (e.g., Partnerships BC and Partnerships Victoria) with the few "fledgling" P3 programs units that exist thus far in the US: for example, programs in Puerto Rico, Virginia, Florida, Texas, and California. What programs and processes have been most effective, and by what standard? This examination should include enabling legislation, structure of the agency and programs sponsored, and metrics used for project prioritization such as Value For Money (VFM).

Value for Money (VfM) Analysis. VfM itself warrants careful dissection and analysis. Is this the appropriate method for evaluating P3 proposals? Are the needed components agreed upon and well quantified? Are there best practices in the application of VfM, and are they followed consistently? Would consistent use of VFM give all the best projects to the private sector, and leave the public sector with the most difficult projects to implement, both financially and otherwise? Would decisions based on a present value approach to VfM be more appropriate than trying to obtain partners on the most difficult projects where risk premiums would be high and co-funding high as well to attract

partners? Should there be more transparency in these project analyses, or is this project evaluation information too sensitive (or too uncertain) to expose to constant adversarial scrutiny?

Where a Public Sector Comparator is used, in practice, to decide which projects to pursue as agency projects or P3s, careful analysis is warranted of how the Comparator is used and how that approach differs from VfM.

Post-Closing Tasks and Oversight. Assess and highlight the need for life-cycle partnering once financial close has been obtained. The transition of the P3 relationship from project contracting and financial close to implementation brings a host of new issues to the table. The partnership continues to need a facilitator on the government side to resolve these issues. Identify key implementation and operational problems faced by private partners and what approaches seem to work. Should the public P3 office remain involved, or should another facilitator be identified in each area of interaction, such as policing, emergency response, transponder and electronic toll collection (ETC), vehicle registration issues, etc.

> *Benefits. An examination of enabling provisions could assist all states in providing a benchmark analysis to establish the future P3 framework, and could assist FHWA in their examination of uniform provisions. Similarly, comparison of valuation approaches should help clarify the most meaningful features for an evaluation analysis*.

E. Other Issues

Education and Public Acceptance. The P3 approach is relatively novel for the US and not well understood among public officials or the public at large. There needs to be a better understanding about what outreach approaches work to educate and improve the understanding of the public agencies, legislatures, and general public on the efficacy of P3s? And, targeted approaches to gain public acceptance as well as instructional modules must be developed.

Leadership and the Need for Champions. In virtually all successful innovative approaches, the role of leadership is crucial. P3s are no different. Researchers should examine the US P3 experience to illuminate the role of leadership and the emergence of program and project champions. How do champions emerge and at what project stage are they most important?

Develop Survey Information. To establish a foundation for educational outreach, an excellent starting point would be to conduct a survey of state DOT officials to discern their respective views and attitudes on various aspects of the P3 approach. The survey might be followed with a series of focus groups for state officials and possibly the public at large to explore attitudes on certain issues in more depth. The understanding gained from this attitudinal research would then be built into the educational workshops and forums to clarify and illuminate key factors on the P3 approach.

Identify and Dispel Common Misconceptions. There appear to be many embedded misconceptions about P3s; some of these may be clarified in the surveys and workshops, and several misconceptions have been identified by past studies. For example, a NCHRP Synthesis (Synthesis #291, 2009) identified the following misunderstood issues:

- Non-compete clauses are a cause of public concern, yet often a priority for private partners seeking to protect their investment when developing transport infrastructure. Some restraints on development of competing facilities may be necessary when P3 concessions reach out 30-to-50 years and have long-term debt to service. Examples of non-compete and limited compete provisions in practice and should be explored and evaluated to identify workable approaches. Recent examples of alternative such as revenue guarantees should be explored in more depth given the uncertain economy.
- Tolls will often underpin a P3 project and there is widespread concern that tolls could be increased at will by the private partners. Tolls may indeed be a necessary feature of many P3 projects, certainly some stream of revenues is needed, but toll levels and changes can be closely regulated by the terms of the partnership agreement. Identify examples of toll provisions commonly inserted into the P3 agreements, and assess whether the regulation of tolls by contract has proven workable.
- Loss of Control. Once the concession is implemented, there is widespread concern that public officials will lose control over the facility and be at the mercy of the private partner. Research should develop examples of how various projects have balanced public and private interests, generally using contract provisions to do so. To what extent have contract provisions proved enforceable and workable toward these goals?
- Other misconceptions would be identified from the survey of DOTs.

Transit and Rail. Is the P3 approach suitable for public transport and rail services? Some would argue "yes," because these projects are even more in need of capital infusion, but what factors could make "transit" projects compatible with private sector requirements and financial feasibility? For one, the public is already subsidizing transit, so co-funding would be easily justified. Hence, if the social marginal cost of transit is relatively low, and almost certainly below average cost, and if there are developmental, environmental and other indirect benefits, then a subsidy or co-funding for capital cost is justified. Hence, the public agency would be justified to pursue a P3 with substantial upfront public funding. But that reasoning seems to lead back to the original problem, a lack of public funding. The P3 approach seems possible where a flow of annual payments from any source could support a cooperative private investment.

Federal Role. In light of the recurrent fiscal drama in Washington, there is a need to examine the role played by the Federal government. How essential is it? Will the restraint on discretionary programs and the lack of long-term authorizations do more harm or good to the viability of P3 programs? At the moment, it appears via the latest Federal legislation (MAP-21) that TIFIA credit support has gained substantially in

importance! Other federal funds may no longer be a reliable source of project support. For example, grant anticipation funding has suffered as Federal grants become unreliable. In light of growing rehabilitation needs, there is also a strong need to examine the potential impact of revising existing restraints on tolling for the Interstate System to bolster state ability to fund their burgeoning rehabilitation needs.

> *Benefits. Developing base-line survey information on agency and public understanding of P3s would allow much more targeted development of educational and outreach programs to enhance public understanding and acceptance and dispel misconceptions. Clarifying potential P3 implications for transit and rail projects could open up avenues of desired development for those modes. An understanding of the changing Federal budget and credit landscape and consequent implications for P3s could allow for more rational and expedited project planning.*