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Internationally Recommended Best Practices in Transportation Financing Public-Private Partnerships (P3s)

Lawrence Martin[1], Wendell Lawther[2], Graeme Hodge[3] & Carsten Greve[4]

[1] Department of Public Affairs, University of Central Florida, USA

[2] School of Public Administration, University of Central Florida, USA

[3] Faculty of Law, Monash Center for Regulatory Studies, Monash University, Australia

[4] International Center for Business & Politics, Copenhagen Business School, Denmark

Correspondence: Lawrence Martin, Department of Public Affairs, University of Central Florida, P. O. Box 163680, Orlando, Florida, USA. Tel: 1-407-823-5731. E-mail: lawrence.martin@ucf.edu

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Abstract

Transportation financing public-private partnerships (P3s) are a common practice in many countries. However, they represent a relatively new approach to transportation infrastructure financing for state and local governments in the United States. In a transportation financing P3 project, a private sector partner designs-builds-finances-operates- maintains (DBFOM) a transportation infrastructure asset (road, highway, bridge, tunnel, etc.) with an emphasis on *financing*. Under this type of arrangement, the private sector partner is primarily responsible for securing all or substantially all of the funding necessary to construct new transportation infrastructure and/or rehabilitate existing transportation infrastructure. This study reviews the international experience of national and sub-national governments with transportation financing P3s. The primary purpose of this study is to identify internationally recommended best practices in transportation financing P3s. Based upon the study findings, a checklist in then proposed that can be used by U.S. state and local governments to assess their current or proposed transportation financing P3 policies and procedures. The article makes a contribution to the literature on transportation financing P3s by bringing together for the first time internationally recommended best practices in ten major areas.

Keywords: public-private partnerships, P3s, transportation, infrastructure, best practices

1. Introduction

Decades of failing to adequately maintain U.S. infrastructure (e. g., roads, highways, bridges, tunnels, ports, water and wastewater facilities and others) has resulted in a major public policy crisis. A recent study by the American Society of Civil Engineers (ASCE, 2013) rates the condition of U. S. infrastructure as “mediocre” to “poor.” The report estimates that it will cost some $3.6 trillion by 2020 to bring U. S. infrastructure up to “good” condition (ASCE, 2013; Holeywell, 2013).

The situation with respect to U.S. transportation infrastructure is particularly troubling. Former U. S. Department of Transportation Secretary Ray LaHood has described the nation’s highways and roads as “one big pothole” (*New York Pos*t, 2013, p 26). The U. S. suffers from a “perfect storm” of: deteriorating transportation infrastructure, increased traffic demands and no money (Geddes & Wagner, 2010). U.S. federal and state highway gas taxes are insufficient to address the nation’s transportation infrastructure needs. Many U.S. states have not raised their gasoline taxes in years, some for as long as 20 years. The federal gasoline tax, currently at 18.4 cents per gallon, has not been increased since 1997 (*New York Times,* 2013). Given the anti-tax climate in the U.S. today, it is difficult to predict when gasoline taxes might ever be increased. How then can U.S. state and local government deal with their transportation infrastructure needs? A partial solution may be through the use of transportation financing public-private partnerships (P3s).

Transportation financing P3s are a generally accepted tool of government in many other countries (e. g., Australia, Canada, the European Union, South Africa, South America and elsewhere). In the U.S., however, state and local governments have only recently begun to realize their potential. Currently there are some 700 plus P3s operating around the world helping to meet transportation and other infrastructure needs. However, only 28 of these projects

are in the U.S. (*Wall Street Journal,* 2013; Istrate & Puentes, 2011; Infrastructure Australia, 2008; PPP Canada, 2011; Conference Board of Canada, 2010; United Nations, [UN] 2008; Araujo & Suterland, 2010; World Bank, 2012).

As of January 1, 2013, thirty-three U. S. states (Alabama, Alaska, Arkansas, Arizona, California, Colorado, Connecticut, Delaware, Florida, Georgia, Illinois, Indiana, Louisiana, Maine, Maryland, Massachusetts, Minnesota, Mississippi, Missouri, Nevada, N. Carolina, N. Dakota, Ohio, Oregon, Pennsylvania, S. Carolina, Tennessee, Texas, Utah, Virginia, Washington, W. Virginia and Wisconsin) have passed legislation allowing state departments and agencies, and in some instances local governments, to enter into P3s for transportation and other infrastructure projects (Martin & Saviak, 2013; Istrate & Puentes, 2011; NCSL, 2010).

2. What are Public-Private Partnerships (P3s)?

No universally agreed definition of a public-private partnership (P3) exists. However, one definition that travels reasonably well internationally is provided by the World Bank. The World Bank (2012, p. 12) defines a P3 as, a long term contract between a government agency and a private firm for the purpose of developing a public asset or providing a public service for which the private firm bears significant risk and management responsibility.

Transportation financing public-private partnerships are a special class of P3s where the private sector partner designs-builds-finances-operates-maintains (DBFOM) a transportation infrastructure asset (road, highway, bridge, tunnel, other) with an emphasis on *financing*. Under this type of P3 arrangement, the private sector partner is primarily responsible for securing all, or substantially all, of the funding necessary to construct new transportation infrastructure and/or rehabilitate existing transportation infrastructure. Transportation financing P3s usually involve multi-year contracts (20, 30, 50 years or longer) and the use of tolls paid by users, subsidies provided by government or some combination of both to cover operating and maintenance expenses as well as debt service.

3. Study Purpose

The principal purpose of this study is to identify international recommended best practices in transportation financing public-private partnerships (P3s). Based upon the study findings, a checklist in then presented that can be used by U.S. state and local governments to assess their current or proposed transportation financing P3 policies and procedures. The article makes a contribution to the literature on transportation financing P3s by bringing together for the first time internationally recommended best practices in ten major areas.

4. Methodology

The authors, all with backgrounds in public-private partnerships, conducted an extensive review of the literature on transportation financing P3s including: books, book chapters, journal articles, government documents and reports issued by international organizations. The review focused on transportation financing P3 practices recommended by national and sub-national governments [e. g., Australia, Canada, European Union, South Africa, South America, others] based upon their actual experiences as well as practices recommended by international organizations [e.g., the World Bank, the Organization for Economic Cooperation & Development, the European Investment Bank, the United Nations and others] that have conducted cross-national studies of P3s. By identifying commonalties in policies and processes in transportation financing P3s across a broad cross section of national and sub-national governments, the research attempts to maximize the potential generalizability of the study findings to U.S. state and local governments (Przeworski & Tune, 1970).

5. Internationally Recommended Best Practices in Transportation Financing P3s

The term *internationally recommended best practices* is used throughout this article. The term is operationally defined as: any policy, procedure, process or activity for infrastructure P3s in general, transportation P3s in particular or transportation financing P3s in specific that has been recommended as a standard operating practice by governments internationally or international organizations (e. g., the World Bank, the Organization for Economic Cooperation & Development [OECD], and others) that have studied P3s. It is important to emphasize that not all internationally recommended best practices are derived exclusively from transportation financing P3s. Where a particular policy, procedure, process or activity has become a standard international operating practice for P3s in general or transportation P3s in particular, it is assumed to also be applicable to transportation financing P3s as well, unless there is evidence to the contrary. The discussion of internationally recommended best practices in transportation financing P3s is organized around 10 major areas: (1) size and complexity, (2) structured process, (3) stakeholder consultation and support, (4) dedicated P3 units, (5) risk assessment and allocation, (6) value for money [VfM] analysis (7) special purpose vehicle, (8) project financing, (9) procurement, and (10) contracting.

5.1 Size & Complexity

In countries with extensive experience with P3s (e. g., Australia, Canada, the United Kingdom), the preliminary identification of a potential transportation financing P3 project is usually based on issues of scale and complexity. Proposed P3 projects, including both transportation and non-transportation projects, tend to be complex and large (US$100 million or more) in order to justify the higher transaction costs (financing, procurement, contracting and other activities) (e. g., HM Treasury, 2012; PPP Canada, undated; USDOT, 2009).

5.2 Structured Process

After satisfying the criteria of complexity and scale, many countries utilize some combination of planning, business case analysis and/or life-cycle costing to insure that a transportation financing P3 truly meets the needs of the government. For example, Australia Government guidelines require the use of what is called a "scoping study." The purpose of the scoping study is to demonstrate how the proposed transportation financing P3 project addresses a government priority (Infrastructure Australia, 2008; Australian Department of Finance & Administration, 2006).

The Canadian government takes the position that a qualitative analysis of potential transportation financing P3 projects should take place first, followed by a quantitative (financial) analysis. The qualitative analysis, which is referred to as the "screening stage," involves consideration of such factors as: the government's transportation needs and strategic program, policy objectives, timing, stakeholder support and other factors. If a potential transportation financing P3 project passes the qualitative analysis, it is then subjected to the quantitative analysis (PPP Canada, undated).

The National Audit Office (NAO, 2006) of the United Kingdom refers to its approach as a "strategic analysis" which combines aspects of both a business case analysis as well as a financial analysis. The National Treasury of the Republic of South Africa (2004) conducts what it calls a "feasibility study."

5.3 Stakeholder Consultation & Support

Recent P3 research based studies, reports and position papers issued by governments and international organizations place an increasing emphasis on stakeholder consultation and the building of stakeholder support for both transportation and non-transportation P3s (HM Treasury, 2012; Australia Department of Finance & Administration, 2006; NAO, 2006; PPP Canada, undated; PPIAF, 2009). Stakeholders can be citizens, users of the transportation asset, elected officials, the business community, governments and others. PPP Canada (2011; undated) points out that many examples exist of P3 projects, both transportation and non-transportation, that were unsuccessful because the public did not feel a sense of ownership or commitment.

In advocating for greater engagement with stakeholders, other countries and international organizations emphasize that P3s in general, and transportation financing P3s in particular, are not well understood (US DOT, 2009). Stakeholder understanding of transportation financing P3s is a necessary predicate to the creation of stakeholder support. Complete and full transparency is a major reoccurring theme in most transportation financing P3s in most countries (Head, 2011). For example, Australia requires stakeholder consultation from the outset of a transportation financing P3 (Australia Department of Finance & Administration, 2006), while the National Audit Office (NAO, 2006) in the United Kingdom recommends stakeholder consultations at each stage of a P3 project.

5.4 Creation of Dedicated P3 Units

Because transportation financing P3s are non-standard activities that involve complex issues of engineering, economics, financing, law, procurement, contracting and others, many government departments and agencies at both the national and sub-national levels lack staff with the requisite knowledge, skills and experience. Consequently, in many countries, transportation financing P3s projects are directed or carried out by dedicated offices called *P3 units*. The World Bank (2007) defines a P3 unit as an organization that has been established to promote or improve P3s or that has a lasting mandate to manage P3 projects. Some 31 countries have dedicated P3 units operating at either the national or sub-national levels including 18 member countries of the Organization for Economic Cooperation & Development (OECD) and 14 member countries of the European Union (Istrate & Puentes, 2011; Burger & Hawkesworth, 2011; World Bank, 2007; OECD, 2010). Dedicated P3 units enable governments to recruit, train and maintain a cadre of qualified staff, which in turn, increases the probability that P3s will be both initiated as well as successfully completed.

5.5 Risk Assessment & Allocation

One of the more attractive features of transportation financing P3s is the potential for project construction and operations risk to be better managed by transferring them from the government to the private sector partner. The private sector partner, and not the government, then becomes responsible for bringing the transportation project

on-line, on-time and under-budget. The major risk question to be addressed in any transportation financing P3 is: how should risk be allocated? Which risks should be transferred to the private sector partner? Which risks should be retained by the government? And which risks should be shared? (Infrastructure Australia, 2008). There are numerous categories of risk associated with P3s (Montero, 2010; Infrastructure Ontario, 2007; New South Wales Government, 2006). Some of the major risk categories identified by the World Bank as being particularly relevant to transportation financing P3s are: financing, traffic/revenue, technology, political and regulatory, and *force majeure* or act of God (Estach, Juan & Trujillo, 2007).

Historically, the general rule in P3s, both transportation and non-transportation, has been that the partner (government or private) best positioned and able to manage the risk should assume the risk. Financing risks are usually transferred to the private sector partner (Araujo & Suterland, 2010) in keeping with the DBFOM nature of transportation financing P3s. Traffic/revenue risks as well as technology risks are also usually transferred to the private sector partner (Leahy, 2005). Political and regulatory risks are usually retained by the government. A few risks are shared, for example *force majeure*. Researchers at the Organization for Economic Cooperation & Development (OECD) believe that more attention should be paid in transportation financing P3s to *force majeure* risk (Araujo & Suterland, 2010). Due to the long term (30, 50 or more years) nature of transportation financing P3 projects, conditions will most certainly arise that were not anticipated when the original contracts were signed.

Current international thinking suggests that governments should not attempt to transfer as much risk as possible to the private sector partner, but rather should consider the optimum allocation of risk between both partners. For example, Australia takes the position that the optimum approach to risk allocation is the one that optimizes project outcomes and is not necessarily the one that has the lowest risk to the government (Australia Government, 2008). The National Audit Office (NAO, 2006) of the United Kingdom as well as the European Public Private Partnership Expertise Center (EPEC, 2012) both take a similar view.

Despite considerable international research into risk and risk transfer in P3s, there are no specific criteria that will ensure the optimum allocation of risk to both the government and the private sector partners (Girmscheid, 2013).

5.6 Value for (VfM) Money Analysis

Decisions about when to use a transportation financing P3s in the place of traditional infrastructure financing (TIF) utilizing direct government borrowing should be made taking into consideration the full range of: economic costs, risks, benefits, timing and other considerations discounted over the life of the asset (Grimsey & Lewis, 2005). Most countries (e. g., Australia, Canadian, France, South Africa, Spain and the United Kingdom) with a history of transportation financing P3s use value for money (VfM) analysis (Boardman & Vining, 2010; Burger & Hawkesworth, 2011; Conference Board of Canada, 2010).

Many countries have very detailed policies concerning when a transportation financing P3 is preferred to traditional infrastructure financing (TIF). TIF is frequently the default category and a P3 can only go forward when the VfM analysis demonstrates that the government will achieve better value for money. For example, the Australian government takes the position that when a P3 project and a TIF project have the same level of service, quality and project scope, risk, etc., then the lowest cost option is preferred. When a P3 project and TIF project have the same level of costs and benefits, then the lowest risk option is preferred. (Infrastructure Australia, 2008).

VfM analysis is generally consistent at the policy level across Australia, Canada and the United Kingdom, but differs at the implementation level (USDOT, 2011). At the policy level, VfM analysis usually involves a multi-stage approach that consists of: a quantitative analysis, a risk analysis valuation and allocation, and expert judgment to assess relevant differences in costs. Apparently, some countries routinely conduct an additional VfM analysis which compares *ex post* actual transportation P3 costs with *ex ante* estimated P3 costs. For example, the Organization for Economic Cooperation & Development (OECD) reports that Australia, Chile and Ireland conduct *ex post* VfM analyses for all P3 projects, while the Czech Republic, France, Greece, Hungary, Italy, Korea, Mexico and South Africa perform *ex post* VfM analyses for selected P3s (Burger & Hawkesworth, 2011).

Crucial to a VfM analysis is the creation of a *public sector comparator* (PSC). The PSC is a hypothetical benchmark which is used to estimate the cost of government delivery based on traditional infrastructure financing (TIF). Most countries that utilize VfM analysis also utilize a PSC (Grimsey & Lewis, 2005; Australia Department of Finance and Administration, 2006).

Some cost adjustment is generally made in the VfM analysis for the value of the risk transferred to the private sector partner as well as the value of the risk retained by the government (Grimsey & Lewis, 2007). The value of transferred risk assumed by the private sector partner can be *one of the most important factors* in a VfM analysis. The average value of transferred risk in an Australian P3 project (using a PSC) is estimated to be some 8%, while

in the United Kingdom the estimate is between 10-15% (Grimsey & Lewis, 2005). However, computing the value of the risk transfer is more art than science.

Another important consideration in VfM analysis is the discount rate used to return future revenues and expenses to present day values. The higher the discount rate used, the lower the net present value (NPV) and the more attractive a transportation financing P3 becomes (Boardman & Vining, 2010; Yescombe, 2007). Thus, the discount rate significantly affects a VfM analysis and can tilt the outcome in favor of either a transportation financing P3 or traditional infrastructure financing (TIF) (Hodge, 2010). In reviewing the Australian P3 experience over the last 20 years, some researchers conclude that discount rates have been consistently too high thus favoring P3s (Hodge & Duffield, 2010).

While recognized internationally as a substantial problem in the conduct of VfM analyses, no consensus appears to exist in terms of the appropriate discount rate that should be used. Some governments have settled upon a fixed discount rate. The United Kingdom is a case in point. The HM Treasury recommends a 3.5% *real* (adjusted for inflation) discount rate for P3 projects of 30 years or less (HM Treasury, 2011, 2008; Grimsey & Lewis, 2007). Some governments suggest a discount rate that varies by sector (e. g., transportation, hospitals, schools, other). Some governments suggest that the discount rate should be determined on a case-by-case basis (Government of Victoria, Australia). Still other governments use the "long term borrowing rate" as the discount rate (National Treasury, Republic of South Africa, 2004). Finally, some governments take no position at all on what the discount rate should be (Sarmento, 2010).

A major problem with the international evidence on VfM analyses is the lack of rigorous evaluation designs and unclear counterfactuals. A 2009 review of VfM studies conducted to date concluded that sometimes transportation financing P3s do constitute value for money, other times not so much (Hodge & Greve, 2009).

5.7 Special Purpose Vehicle

A critical aspect of any transportation financing P3 is the creation of a "special purpose vehicle" (SPV). A SPV is a corporate entity created for the sole purpose of managing all aspect of the transportation financing P3 project from funding to design and construction to operations and maintenance (Figure 1). The SPV becomes the private sector transportation financing P3 partner. International experience suggests that a separate SPV should be created for each transportation financing P3. The rationale is that a SPV should not have competing priorities. The SPV usually arranges the project financing through a combination of equity and debt. However the project financing may also include government grants and loans and government guarantees (Araujo & Suterland, 2010; World Bank Institute, 2012). The SPV operates and maintains the transportation infrastructure asset usually through sub-contracts.

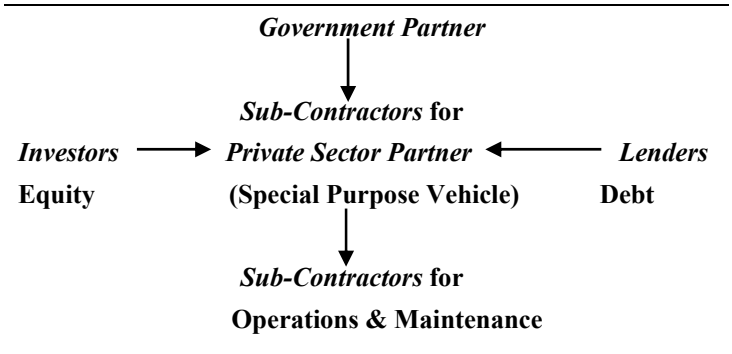

Figure 1. Typical structure of a Special Purpose Vehicle (SPV)

5.8 Project Financing

By definition in transportation financing P3s, part or all of the initial funding required by the project is provided or arranged by the private sector partner. Financing generally includes considerations of both design and construction costs as well as operations and maintenance costs since the long term viability of a P3 projects must be determined.

Transportation financing P3s represent a different type of financing that is unlike either traditional public financing or corporate financing (UN, 2008). Transportation financing P3s generally use what is called *project financing*, also referred to as limited recourse financing. In project financing, investors are repaid primarily, if not exclusively,

from the cash flow and earnings of the asset (road, highway, bridge, tunnel, other). In principle, project financing results in limited financial exposure for both the government partner as well as the private partner. In practice, too, project financing has been credited with facilitating the construction of large transportation infrastructure projects that otherwise might not have been undertaken (Evans & Bowman, 2005).

Debt is usually provided by banks, international financial institutions or from capital markets. Debt, in the form of bonds, is particularly attractive to pension funds and insurance companies looking for long term investments with dedicated revenue streams (HM Treasury, 2012; European PPP Expertise Center, undated). Debt also plays a significant role in determining the financial viability of a transportation financing P3 project. If a proposed P3 project does not pass financial review, lenders (banks and other financial institutions) will simply be unwilling to lend. In transportation financing P3s, all debt is at risk, which is why lenders charge a "credit risk margin." Historically, debt has constituted 80% or more of the total required capital (HM Treasury, 2006). However, since the great recession of 2008, some international lenders have withdrawn from the P3 market, while others now require higher premiums (Hodge & Greve, 2013).

Equity usually constitutes 10% to 20% of the total required capital (HM Treasury, 2006). Equity is generally provided by the private sector P3 partner (the special purpose vehicle) and/or its sub-contractors (e.g., architectural firms, construction firms) or by financial institutions. Transportation financing P3s are considered stronger when the private sector P3 partner, including sub-contractors, has an equity position in the project as the investment serves as an added performance incentive.

Operating revenues become available when a transportation asset comes on-line. From a financing perspective, operating revenues must be sufficient to cover both operating and maintenance costs as well as debt service. Operating revenues come from two primary sources, user fees (tolls) and government subsidies (shadow tolls and availability payments) (Smith, Alexander & Phillips, 2011; World Bank, 2012). Tolls are fees paid by users of a transportation asset (roads, highways, bridges and tunnels, other) either directly to the private sector partner or to the government. Shadow tolls are like tolls, but they are paid by the government to the private sector partner. Shadow tolls are often used when tolling is highly unpopular with stakeholders or when government does not wish to bear the cost of the infrastructure through its own budget. Availability payments are payments made by the government to the private sector partner when a transportation asset is open and available to users and when the operation and maintenance of the asset meets contractually prescribed quality standards.

5.9 Procurement

A major challenge in conducting a transportation financing P3 procurement is that different private sector firms can, and generally do, submit different financing plans (World Bank, 2012). This fact alone makes traditional procurement approaches (invitations for bid [IFB], request for proposals [RFPs] and competitive tendering) difficult to apply to transportation financing P3s. In 2006, the European Union (EU) issued a directive specifying "competitive dialogue" as the preferred procurement approach for all P3s including transportation financing P3s (Arrowsmith & Treumer, 2012; EPPC, 2010). One of the EU's major motivations for creating the competitive dialogue approach was to enable member governments to avoid legal challenges (bid protests) when awarding complex infrastructure contracts (Burnett, 2009).

Competitive dialogue is a semi-structured, multi-phase process that allows simultaneous discussions and negotiations with multiple potential contractors. Each phase of the process is used to clarify the government's needs and also to reduce the number of potential contractors until one or more best and final offers are secured by the government. The European Public-Private Partnerships Center (EPEC, 2010) identifies four defining features of competitive dialogue: (1) the number of bidders can be limited, (2) dialogue with the bidders during the process is essential, (3) discussions may continue even after submission of final bids, and (4) the basis for contract award is the "most economically advantageous tender" (MEAT).

A new approach like competitive dialogue that provides governments with significantly increased discretion in how they implement the procurement process might be expected to also increase the number of procurement challenges (bid protests). As of June 2009, some 3,000 competitive dialogue procurements had been initiated in European Union (EU) countries with the United Kingdom accounting for almost half of this number (Burnett, 2009). A recent study, however, found no evidence of an increase in procurement challenges in the United Kingdom or other EU countries (Arrowsmith & Treumer (2012).

5.10 Contracting

A review of international practice suggests an increasing recognition on the part of governments that transportation financing P3 contracts are – and will continue to be - *incomplete contracts.* Due to the complex nature of

transportation financing P3s, their potential length (up to 99 years in a few cases) and the ever changing environment, contracts will never be able to identify and deal with every possible contingency that might arise. The French Ministry of Public Works, Transport and Housing in addressing the issue notes that recognizing the incomplete nature of P3 contracts, ". . . promotes a new balance in the contractual effort over time. It turns out to be advantageous not to seek precision at all costs from the outset, so as to preserve resources and flexibility over the life of the project" (Lorrain, undated, p. 37). The Organization for Economic Cooperation and Development (OECD) likewise suggests that transportation financing P3 contractual relationships need to be flexible (Araujo & Suterland, 2010).

At the same time governments internationally are re-conceptualizing how best to deal with the incomplete nature of transportation financing P3 contracts, they are also simultaneously attempting to standardized contract documents in order to reduce transaction costs (HM Treasury, 2012; Conference Board of Canada, 2010; Istrate & Puentes, 2010). Transaction costs have been estimated to approximate 10% or more of the capital value of P3 projects (Dudkin & Valila, 2005).

International transportation financing P3 contracts tend to average between 30 and 40 years in length. The average of transportation financing P3 contracts in OECD (Organization for Economic Cooperation & Development) countries is 30 years (Araujo & Suterland, 2010).

Many countries use key performance indicators (KPIs) in their transportation financing P3 contracts. These KPIs are frequently tied to both incentives and penalties (USDOT, 2009, 2011). These countries stress that transportation KPIs should focus on what customers, or users, consider important such as reliable travel times, safe travel environments, etc. The Highway Agency in the United Kingdom has identified six suggested transportation KPIs: (1) the reliability of the road network, (2) on-time delivery of major projects, (3) the safety of the road network, (4) safe and reliable condition of the road network, (5) reduction in carbon admissions, and (6) customer satisfaction (USDOT, 2009). The use and inclusion and key performance indicators (KPIs) is recommended by the United Kingdom's HM Treasury (2007) as the basis of contract administration and monitoring.

International experience suggests that effective contract management is essential throughout the implementation of a transportation financing P3 project. Effective contract management includes maintaining a good working relationship with the private sector P3 partner. Contract management and monitoring should include the monitoring of risk that may result in service interruptions and the development of contingency plans for dealing with such situations (Leahy, 2005).

HM Treasury suggests that monitoring should take place at three levels: private sector partner self-monitoring via its quality management system, government partner evaluation of the private sector partner's quality management system, and user reports of service failures. HM Treasury also recommends that private sector partner payment mechanisms and schedules be based on four principals: (1) no payments made to the private sector partner until facilities are constructed and associated services are available, (2) only single unitary charges should be made for services delivered, (3) penalties should be assessed for substandard performance, and (4) penalties should be based on the severity of the performance failure (HM Treasury, 2007).

6. Internationally Recommended Best Practices Check List for U. S. State & Local Governments

Based upon internationally recommended best practices, some guidance (Table 1) can be provided to U.S. state and local governments considering either the adoption, or increased use, of transportation financing public-private partnerships.

7. Summary & Conclusion

This article has reviewed the experience of national and sub-national governments with the objective of identifying internationally recommended best practices in transportation financing public-private partnerships (P3s). Because other countries have a longer history with using P3s for transportation infrastructure, they provide valuable and useful guidance that can assist U.S. state and local governments as they move into this new and important area of transportation infrastructure financing. To this end, an international recommended best practices checklist was presented.

A word of caution is in order concerning the adoption of the best practices identified in this study or indeed the adoption of any best practice. While the authors attempted to survey a broad spectrum of international experiences with transportation financing P3s, there is always the possibility that the lessons learned in one setting, or even in multiple settings, may not be totally applicable to other settings. Thus, the internationally recommended best practices check list must be viewed within the contexts of individual U.S. state and local governments.

Table 1. Internationally recommended best practices check list for transportation financing P3s

Dimension	Internationally Recommended Best Practice
Size & Complexity	Transportation financing P3 projects should be both complex and large (US100 million or greater).
Structured Process	A structured process (e. g., business case analysis) should be used to determine if a proposed transportation financing P3 meets the needs of the government.
Stakeholder Consultation & Support	Stakeholders should be involved in transportation financing P3s from the outset. Stakeholder relations should be managed throughout the project. Full transparency should be the objective.
Dedicated P3 Units	Where multiple transportation financing P3s are contemplated, dedicated P3 units should be created.
Risk Assessment & Allocation	Risks should be assessed and optimally allocated between the public and private partners.
Value for Money (VfM) Analysis	A value for money (VfM) analysis should be conducted on all transportation financing P3 projects. Transportation financing P3 projects should be evaluated against as a Public Sector Comparator (PSC) that assumes traditional infrastructure financing.
Special Purpose Vehicle (SPV)	A separate corporate SPV should be created for each transportation financing P3 project.
Project Financing	Project financing (also called limited recourse financing) should be used to protect both the public and private sector partners.
Procurement	A procurement process (such as a RFQ followed by a RFP, the use of competitive dialogue or some other process that allows detailed and protracted negotiations) should be used.
Contracting	Transportation financing P3 project contracts should: be recognized as"incomplete contracts," average between 30 and 40 years and include key performance indicators (KPIs). The KPIs should form the basis for contract monitoring.

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