Complex governance system issues for transportation renewal projects

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The use of public–private partnerships (PPPs) is growing in the United States in response to reductions in funding combined with an aging highway transportation infrastructure. Many other countries have longer experience with PPP and a greater understanding of the issues surrounding their use. The main governance issues to be addressed in PPPs deal with risk-sharing, relationships, contracts, and legal framework, and standard processes within dedicated organizational units. These governance issues are examined in the context of a case study for the US 36 Phase II PPP in Colorado. Findings suggest that for the US Phase II project, governance issues are resolved through more relational forms than prescriptive contractual language. Colorado has established a dedicated organizational unit to facilitate the use of PPPs, but there exist no standards or best practices in the United States for procurement, concession terms, or risk-sharing.

Keywords: public–private partnerships; project governance; project procurement

Background

In 2010, US highway infrastructure assets totaled 4,067,077 miles of roadway and 602,881 bridges. Tolled roads and bridges constituted only 5,062 miles of roadway and 136 bridges (Bureau of Transportation Statistics, 2011). Since 1993, US federal gas taxes have remained 18.4 cents a gallon for gasoline and 24.4 cents for diesel resulting in underpriced peak-hour highway travel (Levinson, 2004). To accommodate increased traffic and alleviate congestion, an annual investment of $125.6 billion will be needed for highways and bridges over the next 20 years (American Association of State Highway Transportation Organizations [AASHTO], 2003). In order to raise the capital needed to rebuild the highway infrastructure in the US, private capital will likely be required in the form of public–private partnerships (PPPs) supported by toll revenue. In liberalized infrastructure markets, various governance structures are being tested for application of PPP strategies in infrastructure development (Estache, 2004). PPP policies and practices have evolved in other world regions, but the United States remains a relatively slow mover in this market (Garvin, 2009). This study aims to uncover key governance issues impacting the implementation of PPP in the United States.

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Literature review

Public–private partnership

Privately financed infrastructure strategies were introduced in the United Kingdom in 1992 with the formal label of PPP adopted in 1997, and have been widely recognized as an effective way of delivering value for public infrastructure and services (Ke, Wang, Chan, & Cheung, 2009). In the US, the Federal Highway Administration (FHWA) established the Office of Innovative Program Delivery (IPD) in 2008 to provide resources to the transportation community to implement such innovative strategies as PPP in their complex infrastructure projects. The office of IPD provides five main programs including Project Delivery, Project Finance, PPPs, Transportation Infrastructure Finance and Innovation Act (TIFIA), and Revenue. According to the office, PPPs is a general term to describe contractual agreements formed between a public agency and a private sector entity that allow for greater private sector participation in the delivery and financing of transportation projects. Similarly, Canadian Council for Public Private Partnerships defines PPP as cooperative venture between the public and private sectors, built on the expertise of each partner that best meets clearly defined public needs through the appropriate allocation of resources, risks and rewards (Canadian Council for Public Private Partnerships, 2013). There are several potential advantages in engaging with the private sector for infrastructure procurement such as additional resource capability and capacity; accelerated project delivery; reduced costs and increased efficiency; risk transfer or sharing with private provider team; quicker access to new technology and innovative techniques; and increased project team accountabilities (FHWA, 2007).

Many different types of PPP have been adopted in infrastructure development around the world. Depending on the extent of involvement and the risks and responsibilities of the private sector in a project, PPP can take the following forms (Rebeiz, 2012):

- Procurement: The government outsources procurement activities to the private sector. However, the overall management control of the infrastructure remains under the jurisdiction of the government.
- Management: This arrangement is similar to the previously discussed procurement arrangement. The difference is that the government relinquishes some aspect of control and operation of the asset to the private sector.
- Lease: The private sponsor leases or rents the infrastructure from the government for a specified time period. The private sector has the right to cash flow resulting from the operation of the infrastructure.
- Concession: The government gives the private sector the right to finance, build, and operate an infrastructure project. The private sector has the right to cash flow for operating the infrastructure over the concession period. At the expiration of the concession period, the private sponsor transfers the control and assets’ ownership back to the government. At that point, the government could either decide to operate the plant itself or put the operation up for another round of bidding. Popular forms of concession agreements include build-own-operate-transfer (BOOT) and build-lease-transfer.
- Divesture: The government fully transfers the ownership and control of the assets to the private sector. A build-own-operate falls under this category as it permits the private sponsor to retain ownership of the project indefinitely with no obligations to return it to the government.
In the US, PPP options are categorized into two main categories based on the nature of a project, i.e. New Build Facilities and Existing Facilities. For the New Build Facilities, PPP options can be Private Contract Fee Service; Design Build; Design Build Operate Maintain; Design Build Finance; and Design Build Finance Operate Maintain. For the Existing Facilities, the options are limited to only Operations and Maintenance (O&M) Concessions and Long Term Lease Concession. However, in the European Union, PPP are classified into institutionalized PPP (mixed companies) and purely contractual PPP (Commission of the European Communities, 2004). Therefore, guaranteeing benefit from PPP requires recognition of the relative strengths and weaknesses of each type of structure and the aims and objectives of each party (European Commission, 2003).

The most frequent compensation mechanisms in PPP transportation infrastructure include real tolls (user fees), shadow tolls (public agency payment based on the amount of traffic using the facility), availability payments mechanisms (compensation based on the operator’s ability to operate and maintain the road to standards specified in the contract), and flexible-term concession (once specified gross revenue has been reached, the contract is terminated). Examples of major PPP transportation projects implemented in the US were Capital Beltway I-495 HOT Lanes in Virginia (80 year lease, $2,006 Billion total cost, toll revenue financed); I-595 Managed Lanes in Florida (35 year lease, $1,834 Billion total cost, availability payment financed), and Port of Miami Tunnel in Florida (35 year lease, $1,073 Billion total cost, availability payment financed) (FHWA, 2012).

**Risk-sharing**

With a typical contract length ranging from 35 to 40 years, or in some cases as long as 99 years like Chicago Skyway, PPP projects in transportation infrastructure are more exposed to numerous challenges and risks that compromise the project performance (FHWA, 2012; de Lemos, Eaton, Betts, & de Almeida, 2004). Construction projects worldwide manifest more risks than do other industries (Han & Diekmann, 2004). A BOOT project is recognized as one of the most risky project delivery schemes (Dey & Ogunlana, 2004). In infrastructure there are at least nine risks: technical, construction, operating, revenue, financial, force majeure, regulatory/political, environmental, and project default risks (Grimsey & Lewis, 2002). An inappropriate allocation/sharing of these risks between the public and private actors might reduce the number of bidders (Zitron, 2006) and lead to higher-than-necessary prices (Asian Development Bank, 2000). For instance, private toll road operators in Spain unexpectedly called US$2.7 billion of exchange rate guarantees in the 1970s and 1980s (Leruth, 2012).

To limit such ex ante situations that may lead to ex post opportunism, a risk matrix with contractual clauses addressing each risk should be developed and provided to the bidders before opening negotiation or starting the bidding process (Marques & Berg, 2010). Inappropriate assumptions in aggressive bidding strategies including excessively optimistic population growth estimates and unrealistic forecasts of demand of consumption per customer, can lead less well-equipped firms to win bids, which harms the public sector because a bidder with realistic assumptions loses, and the winner will seek to renegotiate the contract when the assumptions prove false (Marques & Berg, 2011). In the European Union, Eurostat requires that in all PPPs, the private sector must bear at least two of the following three risks: construction risk, demand risk, and/or availability risk. In Australia, New South Wales, Victoria, and Queensland share the philosophy that
private investors in PPPs, both equity and debt holders, must bear the downside market risks (Garvin, 2009).

Another issue in PPP is potential competing facilities. The ability of the public sector to construct or enhance parallel transportation infrastructures as part of future public policies to expand transportation capacity or to alleviate worsening traffic congestion can jeopardize the traffic demand of PPP facilities and vice versa. In the US, there has not been a uniform guideline about whether to include a non-competition clause in PPP agreements. For example, in California as opposed to Texas, the 91 express lanes agreement contained a non-competition clause that precluded the State from building unplanned facilities along 30 miles of the Riverside Freeway. When Caltrans, the California DOT, sought to expand a facility due to congestion, the concessionaire filed a lawsuit to stop the expansion (FHWA, 2012). After failing to nullify the non-competition clauses in 2003, Orange County Transportation Authority bought the express lanes for $207 million. However, risk presents itself as both threats and opportunities (Froud, 2003) depending on how capable relevant stakeholders are in handling it. Therefore, the knowledge and experiences in transferring or sharing risk between public sectors and private company or private consortia will contribute to the success or failure of a PPP infrastructure agreement.

**Relationship management: contracts and legal frameworks**

Relational agreements supported by trust are sometimes viewed as substitutes for complex contracts in interorganizational exchanges. The basis for adopting a relational governance approach for highly specific investments is that formal contracts may actually reduce trust between actors in the exchange and in fact promote the opportunistic behavior they are intended to discourage. In fact, research has shown that relational governance and contractual governance are complements more so that substitutes. Increasingly customized contracts are complemented with high levels of relational governance in order to create improvements in exchange performance (Poppo & Zenger, 2002).

In transaction cost economics and relational capital theory, governance structure is theorized to have a direct effect on the strategic performance of the alliance. Relational governance is more effective in strengthening the partnership, stabilizing the alliance, and facilitating knowledge transfer between actors in the exchange compared to contractual governance. These positive effects of relational governance are even greater when the alliance is subjected to pressures from the external environment (Lee & Cavusgil, 2006).

The relative importance of contractual and relational governance on exchange performance is influenced by the presence of a “boundary spanner” who can facilitate the implementation of governance mechanisms and exchange dynamics. In banking exchanges, relational governance is the principal governance mechanism associated with exchange performance. In these same bank exchanges, contractual governance also positively impacts exchange performance, but to a much lesser extent. This supports the findings if Poppo and Zenger that relational and contractual governance are complementary (Ferguson, Paulin, & Bergeron, 2005). The closeness of the boundary spanner to the client company in terms of information gathering is also influences the exchange performance. Such closeness between exchange actors would be difficult to achieve in an open bid, predominantly contractual governance environment.
The design governance mechanisms impacts the exchange actors’ willingness to make transaction-specific investments because of the numerous hazards associated with such investments. Research into the relative effectiveness of formal governance mechanisms (i.e. contractual agreements and financial commitments) compared to relational governance mechanisms (i.e. trust-based cooperative agreements) indicates that both formal governance and relational governance mechanisms impact actors’ tendencies to make specialized investments and that trust between actors is a moderating factor in the relationship between formal governance mechanisms and transaction-specific investments (Chwo-Ming, Tsai-Ju, & Zheng-Dao, 2006).

Where direct competition does not exist, private sector participation has been achieved through competition managed through contractual arrangements, ranging from simple contracts for specific services to long-term concessions that require operation, maintenance, and facility expansion (Devapriya, 2006). Generally such a contract requires large sunk investments and is vulnerable to opportunists (Williamson, 1976; Ubbels & Verhoed, 2008). In this sense a limited form of competition is introduced where firms compete to be selected as the private partner, but once selected there is no competition in the provision of service to the public at large (Siemiatycki & Farooqi, 2012).

However, crafting a perfect contract is believed to be impossible resulting in potentially costly conflicts between the partners, often leading to contract renegotiations and sometimes early termination of the concession (Siemiatycki, 2010; Vining & Boardman, 2008). Without competition at these stages, the operator will always have more information on the implications of alternative contractual arrangements, putting the private partner in a much stronger bargaining position (Bajari, Houghton, & Tadelis, 2006). Furthermore, it may reopen other issues to its benefit (Marques & Berg, 2011). This circumstance by itself promotes opportunistic behavior, including optimistic bidding at the public-tender stage – so the winner’s curse becomes a winner’s blessing (Marques & Berg, 2010). For example, in one major PPP in Ontario that sought to transfer revenue risk to the private sector, the Highway 407 toll road north of Toronto, the incoming government in 2002 undertook lengthy and ultimately unsuccessful legal action to restructure the toll agreement on the 99-year highway lease that enabled the private partner to realize very high profits. The public has also complained bitterly about aggressive toll collection tactics that are permitted within the concession agreement (Siemiatycki & Farooqi, 2012). Thus, the sole purpose of these contractual relationships is to create a framework guiding longer term relations and allowing for flexibility and cooperation, while maintaining performance incentives and punishment (Torrance, 2007).

**Lack of PPP standards**

Mahalingam (2010) argued that to maximize the effectiveness of PPP in delivering urban infrastructure services, the roles of coordination agencies, and regulators must be clarified. Given high risk and immensely complicated nature of PPP project, a recent trend in many developed and developing countries is the establishment of national PPP standards and dedicated organizational structures. Some major PPP units include Treasury PPP Taskforce and Partnerships UK in the United Kingdom, Partnership Victoria in Victoria, Australia, and National Treasury PPP Unit in South Africa. The Public–Private Infrastructure Advisory Facility (PPIAF) of the World Bank adopted a fairly inclusive definition of PPP Units, to include any organization designed to:
• Promote or improve number and quality of PPPs by trying to attract more partners, or trying to ensure that the PPP meet specific quality criteria such as affordability, value for money (VfM), and appropriate risk transfer.
• Has a lasting mandate to manage multiple PPP transactions, often in multiple sectors, i.e. such ad hoc PPP versus PPP teams working within a single ministry, or committees assembled only to work on specific transactions.

The advisory further outlines the main functions of the unit: (1) Set PPP Policy & Strategy, (2) Project Origination, (3) Analysis of Individual Projects, (4) Transaction Management, and (5) Contract Management, Monitoring, and Enforcement (PPIAF, 2007). Puerto Rico has designated a new public entity, the PPPs Authority, with broad authority to identify, evaluate and implement PPP projects. In China, in order to facilitate the implementation of PPP, the relevant central authorities have actively introduced a series of policies relating to the provision of public services by the private sector, such as the Opinions on Acceleration of Privatization Process of Public Facilities by the Ministry of Construction, which is now the Ministry of Housing and Urban–Rural Development (Wang, 2013). In the UK, there is a dedicated officer called the Department Representative responsible for performance monitoring, financial monitoring, and contract administration (Garvin, 2009). In the United States, there is no uniform standard on PPP procurement or governance, and no dedicated organizational structure for implementing PPPs. While autonomy among the states has certain advantages, it is inefficient, given the limited number of potential concessionaires on major projects, to have 50 unique markets for PPPs. This could deter private participation and drive up transaction costs (Garvin, 2009). While FHWA has made efforts to produce model enabling legislation and PPP program guidelines, more work in this area is needed (Garvin, 2009). In the US, there are 33 states and one US territory that have enacted statutes that enable the use of various PPP approaches for the development of transportation infrastructure (FHWA, 2013). Throughout the US as infrastructure financing becomes more complex, there is a concern that public entities in some states, cities, and metropolitan areas are ill equipped to consider such deals and fully protect the public interest (PPIAF, 2007).

**Recent global research on PPP theory**

McQuaid (2000) has suggested that the theory underlying the adoption of partnerships to deliver infrastructure is driven by several key factors:

• Purpose of the partnership; the partnership may be formed to acquire more resources than either partner can attain acting individually or it may create synergy between existing resources. Another purpose of the partnership may be to overcome some market, legal or regulatory constraint.
• Whether the partnership is strategic, aimed at the long-term accomplishment of larger objectives which may not be clearly defined at the time of formation, or whether it is programmatic, which is intended to accomplish specific near term goals, like completion of a specific infrastructure project.
• The underlying basis of the partnership will impact the execution of partnership objectives. For instance, whether the partnership is based on a cooperative trust agreement aimed at mutual benefit or whether the underlying basis is one of self-interest and quid pro quo controlled by the threat of legal sanctions (e.g. contractual).
The relative resource and power positions of the key actors in the partnership will influence the process by which the partnership evolves and executes its objectives. The governance structure will impact the performance of the partnership. The structure can range from very formal, legally binding contracts to more relationship based general agreements to cooperate.

The use of PPP extends from early projects with innovative financing similar to PPP in Australia, Canada, and the United States. A notable leader in the early PPP movement was the United Kingdom’s Private Finance Initiative policy. The last two decades have seen PPP’s implemented in virtually all parts of the world including Asia, continental Europe, and South America. As noted by Garvin (2009), research on best practices for PPP policies and practices have evolved in other world regions, but the United States remains a relatively slow mover in this market at the federal level. However, the US is now poised to draw upon the lessons learned from global experiences to better deliver PPP in the United States. For example, the use of VfM is a valuable tool in evaluating highway projects to help government officials determine whether a project is a good candidate for a PPP compared to conventional approaches (Decorla-Souza, Lee, Timothy, & Mayer, 2013). The VfM is primarily finance driven compared to the traditional cost-benefit analysis (CBA) used by most US transportation agencies. Even though the VfM evaluation technique is used in Europe, Australia, and parts of Asia, it has not been extensively researched for incorporation into the traditional CBA approach commonly used in the US (Morallos, Amekudzi, Ross, & Meyer, 2009).

In the US, public agency’s wanting to pursue implementation of PPP on a project typically involves some form of enabling legislation at the state level followed by project scoping, procurement and execution. To make the process run smoother, public agencies will need a solid legal foundation to establish and enforce long-term PPP agreements and standardized policies, processes and systems to guide the project through its life cycle. To support this new approach to infrastructure financing, public agencies are going to have to develop the technical skills within their workforce to identify, develop, and evaluate PPP projects and to negotiate agreements along with long term management and oversight of the project. One of the key considerations for each state is whether to create a special program division for PPP projects or manage them on a case-by-case basis. Special PPP programs create better efficiency on scoping, planning, procurement, execution, and long term oversight and can lead to partner selection that is viewed as fair and competitive (Decorla-Souza, Mayer, Jette, & Buxbaum, 2013).

Another example of lagging PPP research in the US is performance comparisons. Researchers in Europe have compared the cost and schedule overruns of P3 projects against publicly funded projects in mature P3 markets in Europe, but such research is just emerging in North America. Chasey, Maddex, and Bansal (2012) examined several P3 highway projects in North America and compared them to traditional projects for benchmarking data. Their results indicate that the P3 sample cost overruns averaged 0.81% and schedule overruns averaged 0.30%, compared with 1.49% cost overruns and 11.04% schedule overruns for DB projects and 12.71% cost overruns and 4.34% schedule overruns for publicly financed large-scale DBB highway projects. However, they note the relatively small sample size of completed construction phase PPP projects in North America as a limitation to the study and state that it is premature to draw firm conclusions.
Transportation agency leaders in the US can draw on research finding and experience from EU member states, where PPP is regarded as an important tool for attracting critical transportation infrastructure financing. EU institutions have played an important role in the development and success of PPPs for the transportation sector in Europe. The keys to success are the flexibility and adaptability of the PPP procurement process to meet needs of the project, react to economic and market conditions, and fit well within existing institutional environments (Medda, Carbonaro, & Davis, 2013).

PPPs have a long history in the US, but interest in modern PPPs for transportation infrastructure is a relatively recent development. Current research on PPP’s in the U.S. lacks sufficient depth or backing theory to inform or resolve the various views of PPPs. Proponents of PPP’s in the US say they are necessary to bring needed resources to bear on the nation’s eroding infrastructure while responsibly managing the risk to the public. Those opposed to PPP’s for transportation infrastructure claim that public agencies are better positioned to finance and own infrastructure and protect the public interest (Papajohn, Cui, & Bayraktar, 2011). The future of PPP’s in the US can clearly benefit from greater research and shared experiences in spite of the relatively low numbers of mature PPP’s in the US.

Research methodology

While the term PPPs can be applied to a range of agreements, the governance issues to be studied and analyzed in this paper will be limited to those involving private partner financing, design, construction, and long-term operation and maintenance of transportation infrastructure. From the literature review, we identified three broad areas of governance that impact the implementation of PPP transportation projects:

- Risk Sharing.
- Relationship Management, Contracts, and Legal Framework.
- Standard Procurement Practices and Dedicated PPP Organizational Units.

The research methodology employs a case study approach to allow for in-depth investigation of the complex governance systems used in transportation infrastructure projects. The US Highway 36 Phase II project in Boulder, Colorado serves as the case study for examination of governance issues. The case study methodology included a literature review to determine the state of practice, including a review of global governance practices. The case study continued with an examination of archival data for the US Highway 36 Phase II project gathered from multiple sources. After background information was collected, the lead researchers conducted preliminary phone interviews with project leaders at the FHWA and the Colorado Department of Transportation (CDOT). The final data collection for the case study was accomplished by researcher observation of a facilitated project management planning workshop attended by both project personnel and agency functional leaders. The facilitated project management workshop followed a structured, interactive process developed in previous research on effective management strategies for complex projects (Shane, Strong, & Gransberg, 2010). Five researchers participated in the case study analysis. Findings of the case study were validated through member checking.
Key findings

The CDOT has developed an innovative governance approach for managing some of their most complex highway infrastructure projects. The High-Performance Transportation Enterprise (HPTE) was formed to develop innovative and efficient financing, and governance mechanisms aimed at improving the delivery of safe, functional, and accessible highway infrastructure in Colorado while maintain effective cost and schedule performance.

Some of the unique financing and governance options utilized by HPTE include PPP, operating concession agreements, user fee-based project financing, availability payments, and design-build contracting. The HPTE is structured as a dedicated unit organized as a government-owned business within the CDOT (2013).

One of the drivers behind the formation of HPTE was the evolving nature of state and federal financing, governance, and contracting for major infrastructure projects. Since 2007, CDOT's budget has decreased approximately 30%. Within that same timeframe, project costs have risen significantly. PPP’s are considered an innovative solution to address these funding challenges.

Construction of Phase I of the US 36 project began in the summer of 2012 as a design-build project, but without the use of a private partner. By utilizing a PPP for Phase II of the project, CDOT has been able to add Phase II much sooner than originally planned, resulting in a comprehensive, multi-modal project extending from the I-25 corridor to the city of Boulder. The total corridor (Phase I and II) is expected to be open to traffic in 2016. This compares to an anticipated completion date of 2035 had traditional financing and governance been utilized.

An interesting governance issue for the US 36 Phase II project that required considerable deliberation and negotiation is the inclusion of a 50-year concession agreement between the private partner and HPTE. The proposed governance structure includes a contribution of capital by the concessionaire to design and build the managed lanes in addition to the long-term operation, maintenance, and reconstruction as needed throughout the term of the concession. In consideration of the capital contribution, the concessionaire will capture toll revenue from traffic in the managed lanes and will assume the financial risk if toll revenues fall short of projections. At the end of the 50-year concession, control of the managed lanes reverts to CDOT.

Another interesting governance issue is the control over tolling rates. The concession agreement stipulates that the HPTE Board of Directors will periodically negotiate with the concessionaire to fix tolls and fines within the parameters of the concession agreement. It is anticipated that tolling will be dynamically set to minimize congestion levels in the managed lanes. The final Request for Proposal was issued on 14 December, 2012 to three potential concessionaires and the preferred proposer was selected in April, 2013 (CDOT, 2012).

Some of governance issues that made the US 36 Phase II PPP unique include:

- The long-term nature of the concession (50 years).
- The requirement to integrate rehabilitation of existing non-revenue lanes with new revenue generating managed lanes into a single design-build PPP.
- The intention to have the concessionaire take over 50-year operation, maintenance, and rehabilitation of both Phase I and Phase II projects, even though the concessionaire did not participate in the design or construction of Phase I.
- Decision-making authority over establishing tolls, penalties, and enforcement protocols for the managed lanes.
- The pass-through of a federal TIFIA loan to the concessionaire.

Because of these challenges, traditional procurement with contractual governance problematic. As a result, CDOT held a series of one-on-one meetings with potential concessionaire partners, held a workshop for interested parties from industry, and exchanged draft RFP’s with potential proposers prior to the issuance of the final RFP. These incremental, interactive approaches to governance suggest a shift towards more relational governance, but this led to some opponents claiming that the contract was negotiated in secret and lacked legislative oversight (Denver Post, 2014).

The unique nature of the governance and risk issues required an atypical procurement process, for which there were no standards or prior history to provide guidance. The procurement process involved a number of meetings with potential bidders to discuss risk-sharing, decision-making, and other governance structures that are typically spelled out in legislation, agency policy, or contract language. In February of 2014, Plenary Group, the private partner for the US 36 Phase II PPP, launched a $20 million tax-exempt senior revenue bond issue underwritten by Goldman Sachs. The financing launch came prior to formal legislative approval, as the PPP contract became a controversial subject as many legislators demanded additional legislative oversight of the deal (Project Finance Magazine, 2014).

In late February 2014, the legislature backed off its demands for additional oversight and approved the financial close of the PPP, essentially recognizing the Colorado Transportation Commission and the HPTE were legally empowered to execute such a contract without legislative oversight (National Council for Public–Private Partnerships, 2014). This action came despite vehement objections from several groups led by taxpayer advocacy groups and clean energy activists opposed to capacity increases in general (not so much PPP’s specifically) and a petition opposing the contract signed by 20,000 Colorado voters (TheDenverChannel.com, 2014). One aspect of the PPP contract that drew particular ire of the opponents was clause mandating that CDOT is bound to act on behalf of the concessionaire to “remove all toll protesters and other trespassers from the project” (Drive Sunshine Institute, 2014). However, the use of PPP’s drew support from many government and business leaders along the corridor and had strong support from the Colorado Contractors Association, who asked the legislature not to take any action to inhibit or delay the financial closing of the PPP (Colorado Contractors Association, 2014). The public hearings during the legislative session became very contentious, with several protesters physically removed from chambers and a general breakdown of order. One of the Colorado Transportation Commissioners noted that the situation was unfortunate as CDOT and HTPE believed they had given sufficient time to hear all points of view, but she went to acknowledge that in the future, the procurement and contracting process for PPP’s would need to be more transparent (TheDenverChannel.com, 2014). This is consistent with a move toward a more trust-based relational governance approach, where transparency is critical to the establishment of trust.

Transaction costs are high when PPP’s have several unique aspects. The lack or standardized procurement processes, concession terms, contract forms, and even definitions create a need for prolonged, multi-agent negotiations. The lack of a well-understood procurement process also generated high administrative burden for CDOT and HPTE personnel and increased the uncertainty of proposal preparation for concessionaires. These issues had to be resolved through ongoing face-to-face negotiations.
Although the FHWA Office of Innovative Project Delivery has information available, the use of PPP’s in the United States is in its infancy. Furthermore, each state transportation agency and/or metropolitan area has unique culture, norms, regulations, and public involvement levels, which make it difficult to generate uniform guidance on best practices for risk allocation, contracting, concession terms, revenue risk rate establishment, etc. These issues are further complicated by agency risks created by displaced agency (the private partner had to assume maintenance risk for a previous segment that it didn’t design or build) and multi-agent contracting involving multiple owners (HTPE, CDOT, PPP). Many stakeholders along the corridor joined in support of using PPP on the project because it minimized risk to the public sector by transferring construction cost risks, operating and maintenance risks rehabilitation, and reconstruction risks and revenue risk, to private sector (Move Colorado, 2014).

Implications and recommendations

The evolving nature of infrastructure renewal projects in the United States will require innovative governance structures that do not fit traditional approaches utilized by most state departments of transportation and other transportation agencies. Infrastructure project governance in the United States has typically been achieved through contract mechanisms. However, in the case of PPPs, the long-term concession, uncertainties over operation, and maintenance issues make contractual governance problematic. In addition, a lack of standard procurement processes and contract terms results in high transaction costs. Because PPP are typically used on very large, complex projects, the potential contractor pool is more restricted than for typical infrastructure projects. This would suggest that relational governance could be easier to implement as fewer parties to the relationship facilitates the trust and communication that underscores relational governance. Such a shift will likely take a long time to develop in the United States because of long-standing preferences for contractual governance.

The current political climate in the US makes a movement away from traditional contractual governance of transportation projects problematic. Although research has shown that in PPP’s requiring project-specific commitment of assets perform better when relational governance complements contractual governance, the US 36 Phase II project demonstrates that US transportation agencies may have to do a better job of building trust with external stakeholders through improved transparency and better explanation of risk-sharing benefits.

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