



Private Participation in US Infrastructure

THE ROLE OF PPP UNITS

CARTER B. CASADY AND R. RICHARD GEDDES

OCTOBER 2016

A M E R I C A N E N T E R P R I S E I N S T I T U T E

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AMERICAN ENTERPRISE INSTITUTE

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Executive Summary

The use of public-private partnerships (PPPs) is expanding globally. PPP contracts have become the main vehicle to incorporate private-sector skills, resources, and risk management into the delivery of critical infrastructure facilities. PPPs include two key elements: bundling together, in some combination, facility design, construction, operation, maintenance, and financing, along with the meaningful transfer of infrastructure-related risks to private partners. PPPs have been used to deliver network infrastructure such as roads, bridges, tunnels, and water systems, as well as social infrastructure such as schools, hospitals, prisons, and courthouses. Properly designed, executed, and enforced PPPs can create substantial social value. Poorly designed PPPs, however, can generate social costs. Therefore, ensuring careful end-to-end management of the PPP process is crucial to their success.

Countries around the world are addressing those challenges by creating PPP units. PPP units are quasi-governmental entities that assist the public sector with pre-project screening, project prioritization, education, and expert advice. PPP units have been established in Australia, Canada, China, Israel, Japan, Egypt, the United Kingdom, and India, among many other countries. They strive to ensure that infrastructure projects attract private participation while promoting the public interest. Despite their global popularity, PPP units remain relatively understudied and underused in the United States.

PPP units have effectively supported private participation in infrastructure around the world. Because the US lags behind other developed countries in PPP use, the benefits of such units would likely be large if implemented here. In this report, we consider how the United States can effectively use PPP units. Fifty such units would emerge if undertaken at the state level. This would result in many relatively small units with minimal PPP deal flow that fail to capture economies in size and scope. Alternatively, a single large federal PPP unit could create problems of its own. We explore a middle ground: creating seven regional PPP units in conjunction with a federal unit. Modeled roughly on the West Coast Infrastructure Exchange (WCX), these regional PPP units mirror the seven emerging US economic megaregions. Their formation would occur in concert with evolving federal PPP unit efforts.

We then review the set of benefits generated by our proposed regional PPP units. Benefits include greater public-sector understanding of and expertise in PPP project delivery, discovering and implementing global best practices, improved project screening and prioritization, lower transaction costs associated with PPPs, and the allocation of capital to higher-valued projects. Greater reliance on PPP units would refocus US infrastructure investment on asset performance, rigorous project evaluation, and enhanced public-sector procurement capacity. PPP units would also allow state and local governments to improve their infrastructure project development and delivery while effectively managing risk and addressing a set of well-recognized US infrastructure problems.

Private Participation in US Infrastructure: The Role of PPP Units

Carter B. Casady and R. Richard Geddes

Public-private partnerships (PPPs) are used globally to incorporate private-sector skills, resources, and risk management expertise into various aspects of infrastructure project delivery. PPP has become an expansive term to describe bundling together basic project-delivery functions, including facility design, construction, operation, maintenance, and financing, along with the transfer of significant infrastructure-delivery-related risks to private partners. When properly designed, executed, and enforced, PPPs can create social value through on-time and on-cost delivery, synergies between various bundled project components, innovation in project design, incorporation of global expertise, access to new sources of capital, increased technological adoption, and reliance on life-cycle costing and life-cycle asset maintenance, among other important benefits.¹ Conversely, poorly negotiated and executed PPPs can generate substantial social costs. They are frequently renegotiated² and may be undertaken for political expedience rather than net social benefit.³ Therefore, ensuring careful end-to-end management of the PPP process is crucial.

Globally, PPPs have emerged as the main contractual vehicle to facilitate private participation in infrastructure. The United States lags behind other developed countries that have successfully used them for decades.⁴ This includes neighboring North American countries. For example, Canada has attracted about six times the amount of private investment in infrastructure in recent decades via PPPs per dollar of

gross domestic product, relative to the United States.

PPPs are an important tool for addressing numerous endemic US infrastructure problems. Although the United States has benefited from well-designed and well-developed infrastructure systems across sectors for decades, many facilities now suffer from years of deferred maintenance.⁵ Some systems, including many roads, local streets, bridges, tunnels, airports, and water and wastewater systems, require major renovation and fresh investment. In addition to simply restoring those facilities to a state of good repair, reconstruction today would benefit from an array of innovative technologies, new materials, and new designs not available at original construction.

There is widespread agreement that PPPs can add value, and policies have been adopted at both the state and federal levels to encourage their use. Thirty-four US states have adopted PPP-enabling laws designed to create the stable legal and institutional framework necessary to attract the long-term, irreversible investment required to deliver many infrastructure services.⁶ Moreover, financial instruments, such as private activity bonds (PABs) and Transportation Infrastructure Financing and Innovation Act (TIFIA) loans, were created to encourage private investment in infrastructure. In January 2015, the Obama administration expanded the PAB concept to urge the creation of Qualified Public Infrastructure Bonds (QPIBs). It emphasized those instruments' value in promoting PPPs, stating that "QPIBs will extend the benefits of municipal bonds

to public private partnerships, like partnerships that involve long-term leasing and management contracts, lowering the cost of borrowing and attracting new capital.”⁷ Additionally, in July 2016, Transportation Secretary Anthony Foxx announced the creation of the Build America Bureau within the US Department of Transportation (USDOT). The new bureau will combine several major PPP-related programs, including TIFIA, the Railroad Rehabilitation & Improvement Financing (RRIF), the PAB program, the Build America Transportation Investment Center, and the new \$800 million FASTLANE grant program under one large umbrella.⁸

Many countries worldwide have also turned to PPP units to facilitate private participation in infrastructure. Although their precise structure varies, PPP units are typically independent governmental or quasi-governmental entities. They usually provide pre-project screening, prioritization, education, support, and expert advice to public-sector project sponsors wishing to use PPPs. In addition to providing education and training to public officials, these units universally strive to ensure that PPP contracts promote the public interest. Dedicated, specialized PPP units are a policy tool that remains relatively understudied and underused in the United States, however.⁹

PPP units have been used globally to facilitate PPPs and successfully attract risk capital into infrastructure investment. Countries with established units include Australia, Canada, China, Ghana, India, Indonesia, Israel, Japan, Kenya, Malawi, New Zealand, Philippines, Singapore, and the United Kingdom. More recently, Albania, Egypt, Mozambique, Nigeria, Tanzania, and Turkey have created such units.

To our knowledge, we are the first to explore *regional* PPP units as a tool to facilitate greater private participation in infrastructure delivery in the United States. We next review the definition and structure of PPP units and consider reasons why many countries—and some US states—have created them. We briefly discuss the benefits of such units and how they might operate more broadly in the United States. We then describe our proposal. We urge the creation of regional PPP units along with a national PPP unit,

which may emerge out of the nascent Build America Bureau. We stress that each US state—along with the District of Columbia, Puerto Rico, and perhaps large municipalities—creating its own unit could result in a large number of small PPP units relative to the number of PPPs likely to be concluded in the state. Such small units would not benefit from economies of scale or scope (such as across economic sectors) in PPP unit structure. We instead suggest building on the concept of the multistate WCX.

Each of our proposed regional PPP units includes several economically linked states. States are grouped based on emerging economic megaregions. This is appealing because demand for the large infrastructure projects, that is, where PPP units are most helpful, reflects megaregion economic activity rather than state boundaries. Under our proposal, PPP-unit structure reflects the large-scale economic activity that propels demand for major infrastructure projects. Moreover, infrastructure needs would likely vary substantially across US megaregions. For example, the renovation and maintenance of existing facilities may be more important than new design and construction, depending on economic region. PPP unit missions should vary accordingly.

What Are PPP Units?

PPP units are used increasingly worldwide to deliver critical infrastructure facilities. However, public-sector procurement agencies—particularly in countries with little history of PPP use—often lack the expertise or administrative capacity necessary to properly structure, evaluate, negotiate, and enforce PPP contracts, which can be complex. Therefore, fully understanding the long-term implications of entering into a PPP arrangement is essential for public officials wishing to use them. PPP units have been established worldwide to help address such challenges.¹⁰

A PPP unit’s functions, coverage, governance, and funding source may differ across jurisdictions. Although a single, widely accepted definition remains elusive, international organizations have offered viable definitions. The Organisation for Economic Co-operation and Development defines a PPP unit as

“any organization set up with full or partial aid of the government to ensure that the necessary capacity to create, support, and evaluate multiple public-private partnership agreements is made available and clustered together within government.”¹¹ World Bank offers a broader definition. It states that these organizations are granted “a lasting mandate to manage multiple PPP transactions, often in multiple sectors” and are specifically designed to promote and improve PPPs, managing quantity and quality of PPPs, and “[ensuring] that PPPs meet specific quality criteria such as affordability, value-for-money (VfM), and appropriate risk transfer.”¹² Regarding structure and function, the European PPP Expertise Centre states:

PPP Units (sometimes also referred to as “agencies” or “task forces”) can serve a wide variety of purposes. In this report, a PPP Unit broadly refers to a unit that operates across sectors and projects at either a national or subnational/state/municipal government level. In this context, such a PPP Unit may be a division within a cross-sectional ministry, established as a separate agency or an incorporated entity that is at least partly publicly owned.¹³

Although PPP units are typically not procuring agencies themselves, these dedicated units frequently assist other government bureaus in procuring multiple projects, either from a single sector or from numerous sectors. More specifically:

A PPP unit is a public entity (government, public/private corporation, or nonprofit) that supports other government agencies to procure projects through a PPP process; it is not the procuring agency. It is a “dedicated” agency, meaning that it has a permanent structure dealing with multiple projects versus ad-hoc teams put together in ministries and departments to deal with procurement through a specific PPP project. It may support government agencies in procuring PPP projects that span multiple sectors or in just a specific sector, such as transportation.¹⁴

Carefully considering PPP unit functions helps to illuminate their benefits. The European PPP Expertise

Centre divides the main functions of a PPP unit into three areas: (1) PPP policy support and related activities; (2) program and project-delivery support; and (3) project approval and quality control. We consider each area in turn.

The first functional area includes crucial tasks such as initial support for the jurisdiction’s PPP program. This is particularly important for emerging PPP programs (i.e., the development of a series of projects for delivery as PPPs) that are intended to grow over time. Such activities are expansive. In addition to basic PPP education and training, they include raising awareness of the costs and benefits of PPPs as applied in that region, coordinating PPP efforts across governmental units, working to standardize the basic provisions of PPP contracts, interacting with potential private partners, and managing information on PPP projects.¹⁵

The second functional area focuses on project-level PPP support. This includes technical support for both longer-term PPP programs and for individual projects. Support at the project level includes technical assistance with project selection, preparation, and management. This can be both immediate (as a kind of help desk) and longer term (to structure a viable PPP program). There is typically a focus on offering PPP-related skills that are not readily available from outside consultants, or which require careful interpretation and explanation if they are. Skills include objective VfM analysis of projects using a rigorous public-sector comparator. Additional tasks include objective assessment of a particular PPP project’s impact on the government’s longer-term budget situation. Members of PPP units also occasionally serve on project-specific oversight bodies even though the actual procuring authority remains responsible for project oversight.¹⁶ Although PPP units rarely act as explicit transaction advisers, they always strive to ensure that public-sector officials are cognizant of what both individual projects and longer-term PPP programs require in terms of public resources, time, and expertise.

The third functional area—project approval and quality control—includes whether to offer the project to investors as a PPP and when to commence procurement under a PPP structure. Although units

vary widely in their authority to actually approve specific projects as PPPs, they typically provide technical support and expertise to those bodies holding such authority.¹⁷ There are several key functions that PPP units would likely perform in this area. They play a crucial role in helping public agencies prioritize the projects that are tendered as PPPs. They also help public officials decide, as a matter of policy, whether they will accept unsolicited project proposals. PPP units may also assess any allowed unsolicited proposals that are submitted and whether those must be offered for general bidding. Regarding technical support, PPP units assist public officials if the contract is renegotiated or goes to arbitration after the project has begun.

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The PPP unit concept is well-grounded in economic theory. Two broad, related economic theories help explain PPP units. First, PPPs are complex contracts involving sunk, network assets. Those contracts are characterized by high transaction costs, which include the costs of gathering information about

potential transactions, actually negotiating the transaction, and then enforcing the contract.¹⁸ Indeed, contracting costs are often posited as the main social cost associated with the PPP approach, against which potential benefits must be weighed. The complexity of projects that bundle together numerous project-delivery elements adds to those costs. PPP units can thus be understood as a way of reducing or economizing on transaction costs. Rather than having PPP expertise spread out over many public-sector agencies, for example, a PPP unit centralizes and consolidates that expertise so that one team—which may have PPP experience across numerous economic sectors—can help prepare and negotiate viable PPP contracts. More simply, a PPP unit can be viewed as a fixed social cost. PPP units can lower the transaction costs per PPP by spreading that fixed cost out over more contracts, particularly if they are organized along regional lines, as we propose.

The second economic justification for PPP units relates to the inherent nature of infrastructure investment itself. Infrastructure often requires large amounts of sunk, irreversible investment that is specific to a particular purpose, location, or relationship. This creates scope for opportunism, which was defined by Nobel Laureate Oliver E. Williamson as “self-interest seeking with guile.”¹⁹ That is, once large infrastructure investments are made, both the public-sector project sponsor and the private partner have incentives to engage in opportunism by renegeing on or renegotiating the original agreement.

Opportunistic incentives are, of course, known by both parties before contract close. This gives rise to the hold-up problem: Although both parties know they would likely benefit from the transaction, they may be reluctant to invest for fear that their partner will renege on the agreement. Substantial infrastructure policy research focuses on addressing the problem of opportunism and thus on ways to reduce the hold-up problem. This helps promote large investment in socially valuable infrastructure.

As our analysis suggests, solutions to the hold-up problem require both parties to credibly pre-commit to refraining from opportunistic behavior. Both long-term contracts and PPP-enabling laws can be understood

as mechanisms aiding credible pre-commitment. We view PPP units as akin to other mechanisms that help signal credible pre-commitment on the part of project sponsors.²⁰ We consider somewhat less abstract benefits of PPP units below.

Benefits of PPP Units

We divide our assessment of benefits created by PPP units into those accruing to any jurisdiction versus those specific to the United States. Regarding general benefits, properly structured PPPs can effectively reduce the substantial transaction costs associated with PPP contracts, as noted above. They also enhance credible pre-commitment by both the public and the private sectors, reducing the hold-up problem. Consolidating the skills and information necessary to undertake PPPs, which may be distributed across many public-sector agencies, is a straightforward example of transaction-cost reduction.

Additional benefits stem from reducing project risk. By improving public-sector expertise and capacity to undertake projects such as PPPs, PPP units help reduce the risks associated with the contracting approach and with infrastructure project delivery in general.²¹ This occurs through several channels. First, PPP units lower risks via improved project prescreening and structure for delivery as a PPP. Similarly, by depoliticizing and prioritizing the projects offered, units help ensure that the highest-valued opportunities are offered first. These steps reduce the risk that inappropriate or low-value projects are pursued and brought to market, perhaps for political reasons. This, in turn, lowers the risk associated with the jurisdiction's overall PPP portfolio. Finally, by learning from global best practices across sectors, PPP units can help public agencies create a standardized, generally accepted framework that has been effective in other jurisdictions.

Second, PPP units reduce project risk via enhanced transparency throughout the PPP process. Creating an institutionalized, formal structure and process for project screening and prioritization enhances transparency, as does the adoption of a clear framework for PPP structure within the jurisdiction. Although

deviations from the default process are possible, they require added justification and explanation. Careful consideration of deviations from standard contractual structure would also help build confidence in the PPP process.

Third, PPP units institutionalize the process of discerning and adopting best practices from other jurisdictions. This is particularly important in the United States, which has relatively little experience with this delivery approach. This function helps public-sector project sponsors avoid reliance on PPP contractual provisions that may increase public-sector risk, while encouraging adoption of other provisions that help manage risks effectively.

In addition to risk management, PPP units create benefits through interactions with potential private partners. This includes explaining, marketing, and providing information on the set of projects planned in the jurisdiction (i.e., the PPP program) under that unit's aegis. This lowers the cost to investors, particularly from outside the jurisdiction, of learning about infrastructure investment opportunities. An effective PPP unit thus not only signals that the region is "open for infrastructure business" but also facilitates understanding of the specific opportunities that are available.

Finally, given their role, the unit's senior staff will likely have extensive experience with PPP structure and financing. Indeed, PPP units often attract expertise in PPPs that is normally unavailable to the public sector. This is due to greater flexibility in compensation relative to other government agencies and a specialized, compelling mission attractive to experienced experts.

We next consider reasons why the United States, more than other jurisdictions, would likely reap benefits from the creation of PPP units. The United States is unusual in not using dedicated PPP units more intensively, despite having the world's largest economy, highly developed network infrastructure across sectors, a pressing need for added investment, and prominent efforts in other countries.²²

PPP units would likely generate substantial value due to the relatively small role that privately provided equity financing has historically played in the United

States. This is often combined with limited or no bundling of various project elements. Together, those features constitute what is sometimes termed “traditional delivery” of US infrastructure.

By depoliticizing and prioritizing the projects offered, units help ensure that the highest-valued opportunities are offered first.

Although the definition varies across countries, traditional infrastructure delivery in the United States refers to procuring unbundled projects using a design-bid contracting approach while relying heavily on tax-exempt municipal bond financing. Public-sector officials in the United States thus have less experience with private-sector financing (and transfer of risk to private-sector partners) and with procuring projects when various basic functions are combined. This may also lead to poor coordination across agencies when using PPPs and limited institutional learning from global PPP experience. Both bundling and risk transfer via PPPs requires that public procurement officials acquire new skill sets. Economically speaking, the current lack of familiarity with innovative project delivery suggests that aspects of PPP-related transaction costs are relatively high in the United States and could be lowered substantially using PPP units.

Another reason the United States lags behind other developed countries in PPP use stems from its highly federalist structure. We refer to this as the 50-plus-two jurisdictional problem. That is, PPP contracts are

controlled by the applicable procurement laws in the 50 states, the District of Columbia, and Puerto Rico, and in some cases large municipalities. This creates challenges for PPP delivery and for large investors who must contend with differing state-level PPP-enabling laws—if such laws exist at all—combined with idiosyncratic state procurement regulations. Participating in PPPs may have high costs, including understanding state-specific social norms and acquiring state-specific institutional knowledge. Investors may be loath to devote the extensive time and effort required to learn the PPP laws in one state or locality, particularly when the anticipated number of PPPs from that jurisdiction is low. This reluctance reduces competition in bidding for those PPPs that are offered. Conversely, increasing the number of PPP bidders that PPP units can facilitate also increases competition across jurisdictions, which is an important benefit.

On the supply-of-projects side, PPP units would likely increase the number of PPP contracts offered because of improved advising, project screening, project prioritization, and the adoption of a standard-form contract for a particular PPP type (e.g., a toll road or bridge). The costs incurred by potential investors in learning the US market would be applicable to more jurisdictions, more infrastructure sectors, and thus more possible contracts. This results in more PPP-viable projects. Moreover, for economic regions containing numerous relatively small states (and thus smaller PPP deal flow), such as the Northeast, there would likely be substantial scale economies in technical assistance and PPP oversight.²³ We next consider the structure of PPP units in Canada, which is a leader in this area.

PPP Units in Canada

Canada’s experience with PPP units is instructive for the United States. Canada has relied on PPPs for decades and is a recognized world leader in its use. Canada shares some of the same infrastructure challenges as the United States, including similar weather and mature systems across sectors in need of renovation, combined with demand for selected system expansion. It also shares a federalist structure with

the United States and has PPP units at both the federal and provincial levels. Canada's reliance on PPP units in public procurement provides government authorities with the necessary capacity to offer, conclude, and enforce PPP contracts.

The federal government houses a PPP unit called PPP Canada. Established in 2009 as a federal Crown corporation that reports through the minister of finance to parliament, PPP Canada works to improve Canada's PPP expertise and develop its national PPP market. It also manages Canada's \$1.25 billion PPP Canada Fund and part of the \$14 billion New Building Canada Fund.²⁴ The latter was created in 2014 to support infrastructure projects having national, regional, and local significance. PPP Canada's organizational structure includes a CEO, an independent board of directors, and a board chair. It also works with PPP units at the provincial level to help standardize Canada's procurement processes and improve coordination among various government agencies.

Although PPP Canada and the federal government play an important role in influencing PPP procurement procedures and policies, their direct involvement in infrastructure provision is minimal. Similar to US states, Canadian provinces retain responsibility for actual infrastructure provision. They use PPP units extensively to facilitate efficient procurement. Provincial units include Partnerships British Columbia, Infrastructure Ontario, Infrastructure Quebec, Alberta Infrastructure, Partnerships New Brunswick, and SaskBuilds. These entities are primarily responsible for advertising PPP projects, conducting PPP project technical assistance and advisory services, instituting standardized procurement best practices, and offering policy guidance to their respective provincial governments.

This two-tier institutional structure is likely a key driver of Canada's effective use of PPPs in infrastructure project delivery. Although US PPP units would be structured differently than some PPP units abroad to account for America's multijurisdictional structure, adopting a basic two-tiered institutional framework of PPP units, similar to that employed in Canada, would facilitate private investment in infrastructure at multiple levels.²⁵

Regional US PPP Units

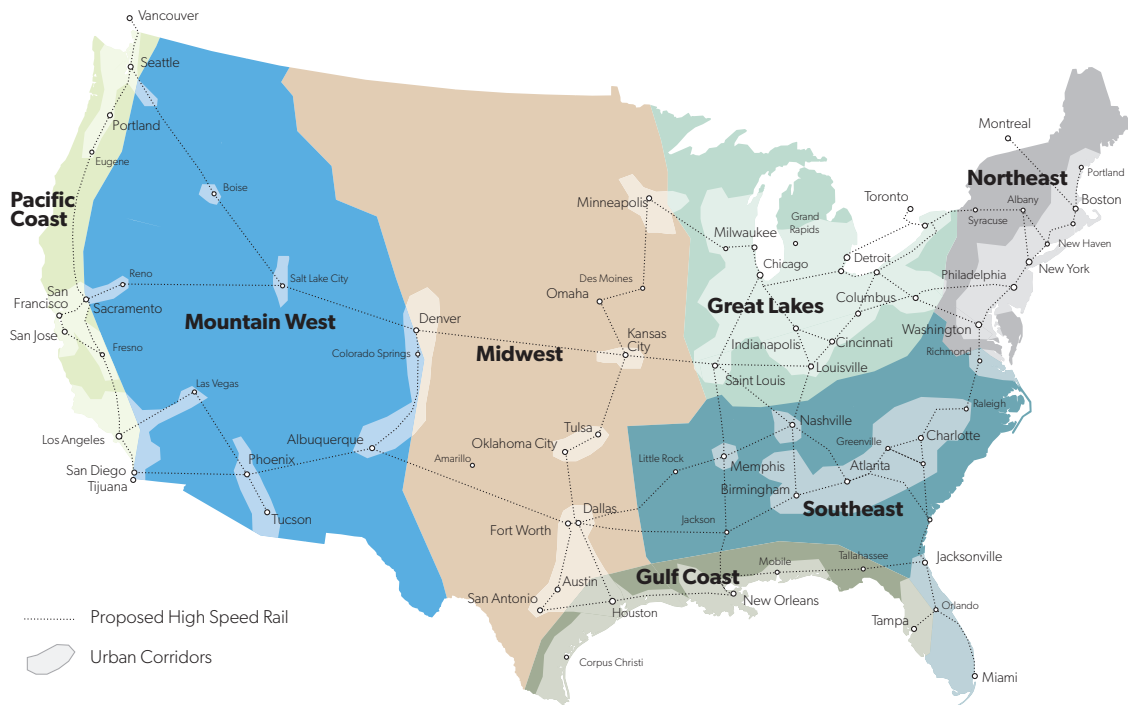
We next examine how PPP units could be productively applied to increase private participation in US infrastructure delivery. Using the Canadian PPP unit structure as a guide, we focus on an appropriate organizational structure given the US multijurisdictional setting.

Outside of the federal level, regional—rather than state-specific—PPP units are an appealing structure. First, America's 50-plus-two jurisdictions may constrain infrastructure policymaking to boundaries that are poorly aligned with broader economic activity in the region. Second, greater coordination across states is important for projects with various infrastructure systems that are likely to be increasingly interconnected due to technological advances. The multijurisdictional problem will also fail to spread the fixed, institutional cost of creating a PPP unit across numerous projects.

We instead suggest structuring PPP units to include states in emerging economic megaregions. Regional units will help member states develop standard-form PPP contracts applicable to that region, including a core set of contractual clauses and provisions. These provisions would clarify such issues as treatment of noncompete clauses, compensation clauses, revenue-sharing agreements, availability payments, confidentiality agreements, and the acceptability of unsolicited proposals, among many other considerations, in PPP agreements.²⁶ Regional units would also help member states create performance-based PPP contracts. Such contracts include clearly defined key performance indicators (KPIs) with appropriate penalties and rewards depending on observed performance. KPIs may include pavement smoothness, level-of-service ratings, lane availability, and other observables. Regional PPP units would also provide technical assistance to government agencies regarding best practices throughout the region and to outside groups that may wish to engage the PPP unit.

This concept is not novel. Organizations such as the Western High Speed Rail Alliance and the WCX focus on regional infrastructure challenges. Moreover, the National Governors Association is coordinating

Figure 1. Rethinking the Map: American’s Seven Megaregions



Source: Based on Parag Khanna, “A New Map for America,” *New York Times*, April 15, 2016, <http://www.nytimes.com/2016/04/17/opinion/sunday/a-new-map-for-america.html>.

metropolitan planning and infrastructure investment across states. The National Conference of State Legislatures has produced a PPP toolkit to help legislators better understand PPPs.²⁷ Those efforts could be expanded by creating regional PPP units, which would facilitate greater multistate collaborative PPP efforts.

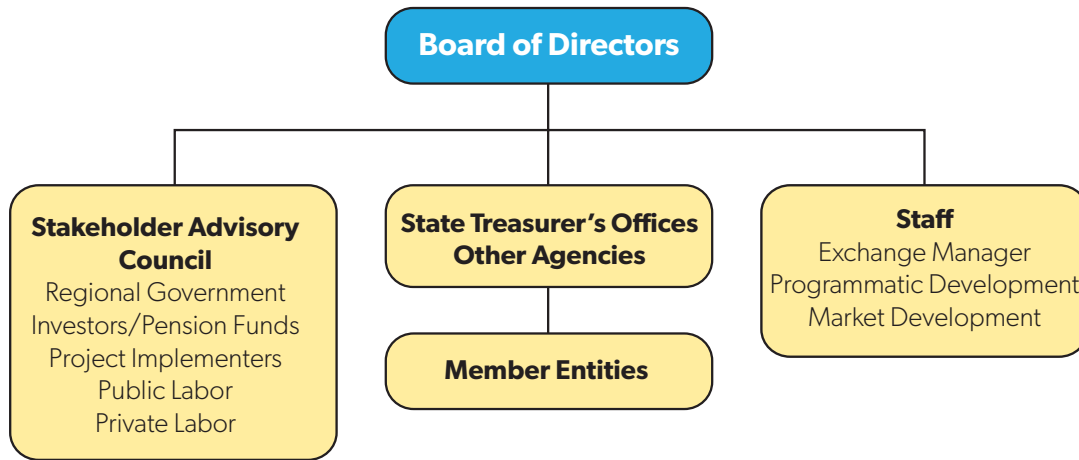
A regional structure facilitates consideration of the interconnectivity and network characteristics of infrastructure, which often transcends state lines. It also encourages cooperation across state and local boundaries. We consider aligning regional PPP units with seven distinct megaregions, defined by similar demographics and economic structures, as shown in Figure 1.²⁸ These regional PPP units would facilitate state participation in regional infrastructure partnerships.

The WCX offers an example that could be tailored to regional PPP units throughout the United States. The WCX was created in 2012 by the governors and treasurers of California, Oregon, and Washington,

in concert with the premier of British Columbia.²⁹ Headquartered in Portland, Oregon, it was designed to be a regional platform to address critical infrastructure needs along the Pacific Coast. It functions as an independent 501(c)(3) nonprofit. Its board of directors consists of two senior officials from each Western-member state appointed by the governors and treasurers. The board also includes the executive director of Partnerships British Columbia, a PPP unit in British Columbia tasked with bringing private-sector financing, alternative procurement structures (e.g., PPPs), and operational expertise to infrastructure projects in the province.

In its ideal structure, the board would create direction for the organization by outlining its work platform, providing oversight and approval of its annual budget, and supervising both its exchange manager and advisory council. While the exchange manager and its staff of industry professionals would lead programmatic and market development, an advisory

Figure 2. Proposed Regional PPP Unit Organizational Structure



Source: CH2M HILL, “West Coast Infrastructure Exchange Final Report,” November 16, 2012, <https://www.calpers.ca.gov/docs/forms-publications/wcx-final-report.pdf>.

council would bring together institutional investors, representatives from local and regional governments, project developers, implementation experts, and organized labor to address stakeholder concerns while also ensuring protection of the public interest. This framework is well suited for regional PPP units (see Figure 2).

The WCX’s proposed functions also make it a sound model for US regional PPP units. These key functional categories include: (1) developing standards for private-sector participation in infrastructure project delivery; (2) promoting infrastructure development, finance, and operations best practices; (3) assessing the full life cycle and sustainability considerations of infrastructure investment decisions; (4) providing objective expertise, technical assistance, and advisory services to the public sector; (5) using the expertise of PPP innovators such as Partnerships British Columbia; (6) evaluating traditional and alternative financing and procurement models for infrastructure projects; and (7) developing an infrastructure pipeline that connects projects with private capital before investment.

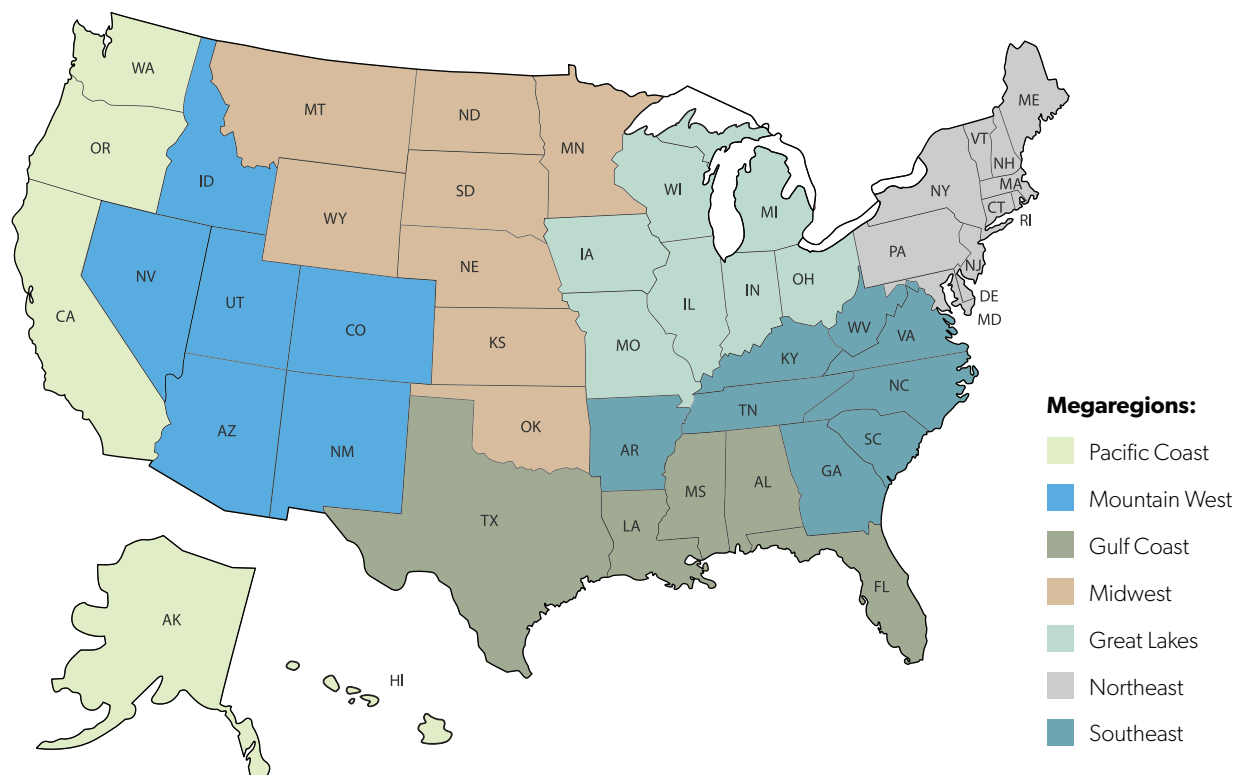
The WCX model offers an adaptable organizational structure to America’s seven economic megaregions,

A regional structure facilitates consideration of the interconnectivity and network characteristics of infrastructure, which often transcends state lines.

helping to address the multijurisdictional problem. Figure 3 illustrates how each state would fit into one of the seven megaregions.

Table 1 catalogs which states, districts, and territories fall under each regional PPP unit’s jurisdiction, as determined in Figure 3. Additionally, US regional units may also include Canadian PPP units, as exemplified by Partnerships British Columbia’s membership in the WCX. This leverages Canada’s extensive

Figure 3. America’s Seven Economic Megaregions, Adapted to State Borders



Source: Authors’ calculations.

experience with PPP procurement while exploiting the now-extensive cross-border economic interactions between the two countries.

Although the WCX’s current structure offers a model for US regional PPP unit’s organizational framework, these entities must also respect state sovereignty. We do not recommend that states be required to join a regional PPP unit. We instead argue that dedicated PPP units will create such high value for states at relatively low cost that they would opt in voluntarily as a regional PPP group member. Consequently, states would be free to leave the group at any time.

Regional PPP units would also remain in a strictly advisory role and would be unable to impose restrictions on PPP structure in nonmember states. Member states would remain free to do PPPs outside of the regional PPP unit framework and to modify the basic contractual structure as needed (but again,

subject to a greater standard of justification).

We also rely on international experience regarding PPP unit funding. Participating member states would partially fund their regional PPP unit via annual membership fees and modest consulting fees for specific professional advisory and technical services.³⁰ States may also pay supplemental fees to their respective regional PPP unit for promotion and advertising services (e.g., advertising infrastructure in their economic region to global investors). Finally, although regional PPP units may receive some taxpayer support, units could defray their costs by including some of their expenses in the closing costs of PPP projects procured by member states.³¹ Under this structure, PPP unit success would depend largely on the performance and quality of services provided to each member state. Member states would exit from regional units that systematically underperform or otherwise fail to create value.

Table 1. PPP Units for America’s Seven Economic Megaregions

Megaregion	PPP Unit	State, District, or Territory
Pacific Coast	West Coast Infrastructure Exchange	Washington, Oregon, California, Alaska, Hawaii, British Columbia (Canada)
Mountain West	Mountain West Infrastructure Exchange	Idaho, Nevada, Utah, Colorado, Arizona, New Mexico
Gulf Coast	Gulf Coast Infrastructure Exchange	Texas, Louisiana, Mississippi, Alabama, Florida, Puerto Rico
Midwest	Midwest Infrastructure Exchange	Kansas, Oklahoma, Montana, Wyoming, North Dakota, South Dakota, Nebraska
Great Lakes	Great Lakes Infrastructure Exchange	Wisconsin, Michigan, Iowa, Missouri, Illinois, Indiana, Ohio
Northeast	Northeast Regional Infrastructure Exchange	Maryland, Washington, DC, Delaware, Pennsylvania, New Jersey, New York, Connecticut, Rhode Island, Massachusetts, New Hampshire, Vermont, Maine
Southeast	Southeast Regional Infrastructure Exchange	Tennessee, West Virginia, South Carolina, North Carolina, Virginia, Arkansas, Georgia, Kentucky

Source: Authors’ calculations.

National US PPP Unit: Partnerships USA

Regional PPP units raise the question of the appropriate federal role in PPP facilitation. Following Australia and Canada, we suggest a national-level PPP unit (which we call Partnerships USA). This unit would be charged with streamlining national PPP procurement guidance, offering PPP training, and promoting global best practices. We suggest forming Partnerships USA by combining several extant entities. Under the Fixing America’s Surface Transportation Act of 2015, the secretary of transportation has the authority to consolidate USDOT entities. The secretary could feasibly merge the newly formed Build America Bureau with the recently authorized National Surface Transportation and Innovative Finance Bureau, which is an entity responsible for advising state and local transportation authorities on best practices relating to project procurement, funding, and financing. Together these agencies would constitute Partnerships USA.³²

Once formed, Partnerships USA would acquire an organizational structure similar to PPP Canada. Remaining within USDOT, Partnerships USA would be restructured as a government-owned corporation subject to private corporate law (i.e., “corporatized”). It would be governed by a board of directors with a fiduciary duty to act in the interest of its (sole) shareholder, the secretary of transportation. Under this quasi-governmental structure, Partnerships USA would fulfill a variety of infrastructure roles across multiple sectors. One is facilitating cooperation, best practices, global outreach, and learning across the seven regional PPP units. Partnerships USA would also facilitate collaboration across regional PPP units, particularly for large projects crossing megaregions. For example, a PPP project to improve passenger rail service in the Northeast Corridor from Richmond to Boston—perhaps by upgrading rail infrastructure to allow higher speeds—requires coordination among economic regions.³³ Using our definition of a regional PPP unit, such a PPP would require cooperation

between the Northeast and the Southeast units. Similarly, a PPP rail project from Los Angeles to Las Vegas would require cooperation between the Pacific Coast and the Mountain West regional units. Partnerships USA could serve as a platform for facilitating such agreements. Importantly, creating regional PPP units will diminish greatly the number of governmental entities that would need to coordinate to conclude such large multistate agreements.

Partnerships USA would also obtain funding through a combination of consulting fees for specific professional services, both technical and advisory in nature (such as VfM analysis) and application fees related to the administration of various competitive grant and loan programs (i.e., TIFIA, RRIF, Transportation Investment Generating Economic Recovery Discretionary Grants, PABs, Water Infrastructure Finance and Innovation Act, etc.). Partnerships USA may also receive fees from regional US PPP units that heavily use its policy guidance, procurement materials, and other advisory services.

However, to mitigate potential conflicts of interest, we suggest Partnerships USA, like regional PPP units, receive some taxpayer support. Through this funding approach, Partnerships USA would be held to high standards of performance, accountability, and transparency while limiting its budgetary impact.

Partnerships USA's role would be mainly advisory, however. It would have no authority to impose a PPP contractual structure on any state or regional entity. This allows procuring agencies to tailor their PPP agreements to specific circumstances and project conditions while benefiting from global best practice and regional coordination. Moreover, general recommendations made by Partnerships USA would not impose required standards of PPP management across other levels of government. Alternatively, public agencies, procuring authorities, and regional PPP units would be free to adopt procurement guidance, policies, and procedures that meet regional, state, municipal, and local infrastructure needs. Finally, as with regional units, Partnerships USA would encourage PPP procurement in the United States by promoting US PPPs abroad.

Our Proposal's Benefits

Based on the Canadian experience, establishing a national PPP unit along with regional entities would help address barriers hindering US PPP development. By establishing PPP units as quasi-independent entities, these entities will have greater flexibility and ability to adapt to changes in market conditions than under the current approach. PPP units are, by design, vehicles of consistency and transparency that allow for responsive policy change.

In the US context, PPP units would be instrumental in addressing America's multijurisdictional challenges. Establishing regional PPP units in the United States would help avoid duplication of public-sector PPP capacity across 52 jurisdictions. Although there is a general consensus that the United States needs to build more public-sector capacity in the PPP space, a federalist structure makes it costly for many states to pursue active PPP programs. As a result, some states may be poorly positioned to develop projects as PPPs that cross state lines or are otherwise affected by megaregion economic activity. Regional PPP units would help internalize such state spillovers. Regional PPP units may also have the effect of harmonizing various aspects of PPP laws from state to state, to the extent they are in conflict, while providing the scale needed to develop PPPs in the United States.

Regional PPP units provide a level of expertise, transparency, and pre-commitment beyond that offered by a state-level PPP-enabling law. Such units would allow member states to develop a multistate project protocol that standardizes investment decision making. This helps states avoid common, widely recognized problems with PPPs that lead to hold-up problems in infrastructure investment and contractual breakdown later in the process. It also reduces the problem of renegotiation of PPP contracts, allowing states to use more sophisticated PPP bidding structures, while creating infrastructure transactions that are both more predictable and more attractive to private investors.³⁴

Finally, regional PPP units would create an institutional structure to facilitate the salutary wrapping of projects across state lines, which conserves on PPP

transaction costs. The premier example of multiproject wrapping in the United States is the Pennsylvania Rapid Bridge Replacement PPP.³⁵ This innovative PPP consolidated the renovation of 558 aging Pennsylvania bridges into one contract, which was awarded to Plenary Walsh Keystone Partners. Renovation will be completed by the end of 2017. The bridges are mostly crossings on smaller state highways in rural areas. They typically do not cross interstate highways or large river crossings. Regional PPP units would be well positioned to facilitate the wrap of similar projects across state lines.

Ultimately, the establishment of a two-tiered system of PPP units would facilitate investment in performance-based infrastructure and create robust, transparent, and objective measures that streamline project evaluation, assessment, and procurement capacity for state and local governments. It would also enhance their risk-management capacity, project screening, and project finance capabilities.³⁶

Summary and Conclusions

US infrastructure faces serious challenges, including years of deferred maintenance, lack of rehabilitation, and inadequate investment. To remain economically competitive in an era of rapid technological change and increasing globalization, new ways to direct capital into reconditioning, replacing, and improving physical infrastructure must be explored. PPPs have emerged as a key tool to facilitate greater private participation in infrastructure delivery. Many countries have turned to PPP units to successfully deliver well-structured PPPs.

The United States has been surprisingly slow to create dedicated PPP units to encourage PPP procurement and attract investment dollars to critical US infrastructure projects. We recommend the United States adopt a comprehensive and robust two-tiered system of PPP units to facilitate greater private investment in US infrastructure. We suggest the formation of regional PPP units that correspond with emerging economic megaregions throughout the country in conjunction with the creation of a national

PPP unit. The latter could be accomplished via consolidation of USDOT entities such as Build America Bureau and National Surface Transportation and Innovative Finance Bureau.

By developing PPP units at the regional level, these entities would benefit from economies of scale and scope in PPP unit design. Using the WCX as a model, each regional entity would include several states that correspond to emerging economic megaregions. By avoiding replication of public-sector capacity across 52 US jurisdictions, regional PPP units enhance the flexibility of procuring authorities looking to adapt to changing PPP market conditions. Additionally, the need for large infrastructure projects is often more appropriately reflected by megaregion economic activity than by state boundaries. Under our proposal, PPP unit structure is tailored to the large-scale economic activity that drives demand for major infrastructure projects.

At the national level, instituting a PPP unit would help streamline bureaucratic structures, standardize PPP procurement guidance, and promote policies that efficiently and effectively support the management of US PPPs projects. The success of regional PPP units will rely heavily on performance, quality, and the ability to evolve and adapt to the constantly changing needs and conditions of infrastructure investing throughout the country.

Overall, the creation of a two-tiered system of PPP units throughout the US would increase transparency in infrastructure investment, reduce the substantial transaction costs associated with PPP contracts, and enhance credible pre-commitment by both the public and the private sectors, thereby reducing the hold-up problem. It would help establish a market for infrastructure investment that is built around asset performance, streamlined project evaluation, robust delivery assessment, and improved public-sector procurement capacity. In this way, state and local governments throughout the US can improve their project planning, screening, finance, and risk management skills while effectively addressing pressing infrastructure needs throughout the country.

Notes

1. William Reinhardt, “The Case for Public-Private Partnerships in the US,” *Public Works Financing* 265 (November 2011), http://www.mcmillan.ca/Files/TMurphy_caseforP3_Infrastructure_0508.pdf; US Department of the Treasury, “Expanding Our Nation’s Infrastructure Through Innovative Financing,” September 2014, https://www.treasury.gov/resource-center/economic-policy/Documents/3_Expanding%20our%20Nation’s%20Infrastructure%20through%20Innovative%20Financing.pdf; and US Department of the Treasury, “Expanding the Market for Infrastructure Public-Private Partnerships,” April 22, 2015, <https://www.treasury.gov/connect/blog/Pages/Expanding-the-Market-for-Infrastructure-Public-Private-Partnerships-.aspx>.
2. J. Luis Guasch, *Granting and Renegotiating Infrastructure Concessions: Doing It Right* (Washington, DC: World Bank Publications, 2004).
3. Eduard Engel, Ronald D. Fischer, and Alexander Galetovic, *The Economics of Public-Private Partnerships: A Basic Guide* (New York: Cambridge University Press, 2014).
4. Istrate and Puentes also state that “by any measure, the United States is a laggard in terms of PPP projects. Between 1985 and 2011, there were 377 PPP infrastructure projects funded in the United States, only 9 percent of total nominal costs of infrastructure PPPs around the world.” Emilia Istrate and Robert Puentes, “Moving Forward on Public Private Partnerships: US and International Experience with PPP Units,” Brookings Institution and Rockefeller Foundation, December 2011, 3, https://www.brookings.edu/wp-content/uploads/2016/06/1208_transportation_istrate_puentes.pdf.
5. We use the term “facility” here to include network infrastructure such as roads, bridges, and tunnels. While transportation PPPs have attracted substantial attention, we view the PPP approach as broadly applicable. PPPs can be applied to the delivery of water and wastewater treatment systems, airports, seaports, and social infrastructure such as schools, hospitals, prisons, and courthouses. We view PPP units as playing an important role in infrastructure provision across sectors.
6. R. Richard Geddes and Benjamin L. Wagner, “Why Do US States Adopt Public-Private Partnership Enabling Legislation?” *Journal of Urban Economics* 78 (November 2013): 30–41.
7. Brian Chappatta, “Obama Proposes New Muni Bonds for Public-Private Investments,” Bloomberg News, January 16, 2015, <http://www.bloomberg.com/news/articles/2015-01-16/obama-proposes-new-muni-bonds-for-public-private-infrastructure>.
8. The Build America Bureau states that “The Bureau serves as the single point of contact and coordination for states, municipalities, and project sponsors looking to utilize federal transportation expertise, apply for federal transportation credit programs and explore ways to access private capital in public private partnerships.” See US Department of Transportation, “About the Build American Bureau,” August 30, 2016, <https://cms.dot.gov/policy-initiatives/build-america/about>.
9. Studies have focused on PPP units internationally, see World Bank, “Public-Private Partnership Units: Lessons for Their Design and Use in Infrastructure,” World Bank and Public-Private Infrastructure Advisory Facility, 2007, <http://documents.worldbank.org/curated/en/220171468332941865/pdf/431390REPLACEMoteopartnershipounits.pdf>.
10. Istrate and Puentes state that “a PPP unit is the response to an identified institutional problem encountered by a government in managing its PPP program. The government failures (or nonmarket failures) may include poor procurement incentives, lack of coordination among government agencies, lack of expertise or sufficient information, and high transaction costs in proceeding with PPP deals.” See Istrate and Puentes, “Moving Forward on Public Private Partnerships,” 6.
11. Organisation for Economic Co-operation and Development, “Dedicated Public-Private Partnership Units: A Survey of Institutional and Governance Structures,” 2010, <http://www.oecd.org/gov/budgeting/dedicatedpublic-privatepartnershipunitsasurveyofinstitutionalandgovernancestructures.htm>. Similarly, Tserng et al. conclude that most PPP units “inform and guide government departments.” See “Analyzing the Role of National PPP Units in Promoting PPPs: Using New Institutional Economics and a Case

Study,” *Journal of Construction Engineering and Management* 138, no. 2 (2012): 242–49.

12. World Bank, “Public-Private Partnership Units: Lessons for Their Design and Use in Infrastructure.”
13. European PPP Expertise Centre, “Establishing and Reforming PPP Units: Analysis of EPEC Member PPP Units and Lessons Learnt,” August 2014, http://www.eib.org/epec/resources/publications/epec_establishing_and_reforming_ppp_units_en1.
14. Istrate and Puentes, “Moving Forward on Public Private Partnerships.”
15. European PPP Expertise Centre, “Establishing and Reforming PPP Units.”
16. PPP units have served as actual procuring entities, but such cases remain rare.
17. This may be due to concerns over potential conflicts of interest within the PPP unit. See European PPP Expertise Centre, “Establishing and Reforming PPP Units,” 12.
18. Alexandra Benham and Lee Benham, “Chapter 11: The Costs of Exchange,” in *The Elgar Companion to Transaction Cost Economics*, ed. Peter G. Klein and Michael E. Sykuta (Northampton, MA: Edward Elgar Publishing, 2010).
19. Oliver E. Williamson, *The Economic Institutions of Capitalism* (New York: Free Press, 1985).
20. This view is consistent with existing analysis of PPP units. The Directorate-General Regional and Urban Policy of the European Commission states that “such (national PPP) units and the public sector in general, have a key role to play in creating trust which in turn allows a reduction in risk and therefore cost, but importantly also the development of effective and sustainable partnerships.” See World Bank, “Public-Private Partnership Units.”
21. This benefit has been noted by other commentators. See Tserng, “Analyzing the Role of National PPP Units in Promoting PPPs,” 247.
22. In addition to the West Coast Infrastructure Exchange, Virginia’s Office of Public-Private Partnerships, which was created in the Public-Private Transportation Act of 1995, has garnered national attention. See Virginia Department of Transportation, “About P3 Virginia,” Virginia Public-Private Partnerships, 2014, <http://www.p3virginia.org/>.
23. Indeed, five large states—California, Florida, Texas, Virginia, and North Carolina—account for the vast majority of US PPP activity. It is unlikely that smaller states lacking established programs could generate the flow of PPPs necessary to justify their own dedicated PPP units.
24. Infrastructure Canada Government of Canada, “The 2014 New Building Canada Fund: Focusing on Economic Growth, Job Creation and Productivity,” February 13, 2014, <http://www.infrastructure.gc.ca/plan/nbcf-nfcc-eng.html>.
25. Although we do not explore its structure here, Australia maintains a similar PPP unit structure, with a federal PPP unit working in concert with state-level units.
26. Geddes and Wagner, “Why Do US States Adopt Public-Private Partnership Enabling Legislation?.”
27. See National Conference of State Legislatures, “Public-Private Partnerships for Transportation: A Toolkit for Legislators,” 2015, <http://www.ncsl.org/research/transportation/public-private-partnerships-for-transportation.aspx>.
28. Parag Khanna, “A New Map for America,” *New York Times*, April 15, 2016, <http://www.nytimes.com/2016/04/17/opinion/sunday/a-new-map-for-america.html>.
29. See West Coast Infrastructure Exchange, “What Is WCX,” <http://westcoastx.com/>.
30. Such fees should be modest to encourage maximum use of PPP unit services by member states.
31. We do not advocate full coverage in PPP closing costs to avoid possible conflicts of interest in PPP project screening and prioritization. See Istrate and Puentes, “Moving Forward on Public Private Partnerships.”
32. American Road and Transportation Builders Association, “2015 ‘Fixing America’s Surface Transportation Act’: A Comprehensive Analysis,” 2015, <http://www.artba.org/newsline/wp-content/uploads/2015/12/ANALYSIS-FINAL.pdf>. Transportation Secretary Anthony Foxx recently consolidated several entities into the Build America Bureau, which the Fixing America’s Surface Transportation (FAST) Act provided authority to do. The FAST Act, however, also created the Surface Transportation and Innovative Finance Bureau, which has not yet been formally established. We here suggest further consolidation of the Build America Bureau with the Innovative Finance Bureau.
33. For an example of how such a PPP might be structured, see R. Richard Geddes, “Making Amtrak Compete Would Benefit All,” Real Clear Politics, June 8, 2015, <http://www.aei.org/publication/making-amtrak-compete-would-benefit-all/>.

34. CH2M HILL, “West Coast Infrastructure Exchange Final Report,” November 2012, <https://www.calpers.ca.gov/docs/forms-publications/wcx-final-report.pdf>.

35. See Plenary Walsh Keystone Partners, “What Is the Rapid Bridge Replacement Project?” 2015, <http://parapidbridges.com/projectoverview.html>.

36. CH2MHILL, “West Coast Infrastructure Exchange Final Report.”

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