

The Ingredients of Successful U.S. Public-Private Partnerships and a Path Forward for the Renewal and Expansion of U.S. Infrastructure

*By Gregory W. Hummel and Ross J. Altman**

The American College of Construction Lawyers (the “College”) counts among its purposes sharing information with its members about current developments in construction law and practice. To that end, one of the College’s Committees is devoted to the study of Public-Private Partnerships (“P3”). This article addresses a number of questions under evaluation by the P3 Committee.

Chief among those important questions is why P3 projects have been slow to develop in the United States. Additional, important questions under review by the P3 Committee include how best to take advantage of the promise of P3, in view of pressing, national needs.

Much of today’s infrastructure is nearing the end of its useful life. As it stands, America has no comprehensive, much less unified, plan to replace or repair it. Trillions of dollars are needed to modernize and expand the infrastructure in America. However, there are numerous competing demands for capital in the public sector—entitlement programs that are unsustainable, healthcare reform that has proved daunting, especially in the wake of the Covid pandemic, necessary defense spending to meet the challenges posed by China and Russia, an existing national debt that must be serviced and the shrinkage of the Federal Reserve’s balance sheet which must be carefully managed. Numerous other challenges impede the implementation of a sustainable plan to deliver upgraded or new infrastructure, including constrained budgets at all levels of government; a lack of coordination between various governmental units; a lack of, or limited, framework laws that enable private investment in infrastructure projects via public-private partnerships; and no or inadequate business planning around a comprehensive overall infrastructure strategy. Yet, today, with the Biden Administration’s hard and soft infrastructure plans there is reason for optimism.

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There is bipartisan support that recognizes the need to rebuild or redevelop classic infrastructure. Whether that bipartisan support applies to a wider range of public improvements and services remains to be seen. And, further, whether the reconciliation process contemplated by the Biden Administration and its Democratic allies in the U.S. Congress is the means to a more expansive national infrastructure program is also an open question as of this writing. One tool for the delivery of classic and more expanded public improvements and services is public private partnerships.

The National Council for Public-Private Partnerships has identified the following six keys to successful public-private partnerships:

- Statutory and Political Environment
- Organized Structure
- Detailed Business Plan
- Guaranteed Revenue Stream
- Stakeholder Support
- Partner Selection¹

Parts I and II of this article address these factors and, in particular, analyze representative P3 projects, both successful and unsuccessful.

Building on the statutory and project analyses of Parts I and II, Part III of this article discusses the specific challenges America faces today with regard to risk allocation in P3 projects and discusses the ingredients necessary for the potential of P3 projects to be successful in the U.S. Part IV of this article then charts a path forward particularly in light of the bills currently pending in Congress that seek to address classic infrastructure and an expanded range of public improvements and services.

Part I: The Public-Private Partnership²

A. What is P3?

The term public-private partnership (sometimes hereinafter “P3”) broadly refers to a variety of transactions in which a public or quasi-public entity (e.g., a state agency) shifts “some degree of control and responsibility for development and operation of a facility to be used by the public or for governmental or other

¹*See generally* Richard Norment, National Council for Public-Private Partnerships, Overview of Public-Private Partnerships, <http://www.nabp.net/events/assets/Norment.pdf>.

²Portions of Part I were heretofore published as part of a paper presented to the American College of Real Estate Lawyers (“ACREL”) by co-author Gregory W. Hummel in 2016 whose reuse here is authorized by ACREL as a result of this disclosure.

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institutional entity purposes” to a private entity.³ Simply, P3 is a “contractual agreement formed between public and private sector partners, which allows more private sector participation than is traditional.”⁴ The broad term can encompass “any scenario under which the private sector would be more of a partner than they are under the traditional method of procurement.”⁵ We share below some helpful diagrams depicting P3 arrangements that involve private capital, both equity and debt. Private sources of equity and debt are important features of P3 transactions although not always required. That said, most large P3 projects do involve private equity investment and/or debt. Traditionally, under non-P3 regimes, public agencies engage in a “design/bid/build” approach, whereby the public agency is the sole decision-maker with respect to all aspects of the public facility over the entire course of its existence, including bidding out the design and construction of a public facility and operating and maintaining such facility after its construction.⁶ In contrast, P3 transactions are structured such that all or a portion of the responsibility for designing, building, operating, financing and maintaining public facilities (including the accompanying risk) shifts from the public entity to the private developer.⁷

1. Types of P3s

P3 transactions can be structured in a variety of ways depending on the level of private sector involvement, responsibility and risk-taking the public entity determines is appropriate. Figure 1, below, depicts some common P3 transaction structures, with the lowest level of private activity and responsibility (i.e. traditional, non-P3 transactions) on the left and the highest level of private activity and responsibility on the right.

Figure 1

³Robert A. Thompson, “Public Private Partnerships in a Recessionary Economy*,” (2011): 10, http://files.ali-cle.org/thumbs/datastorage/skoob/articles/BKAC1103_TAB17-Thompson_thumb.pdf.

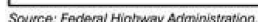
⁴U.S. Department of Transportation, “Report to Congress on Public-Private Partnerships,” (December, 2004), <http://www.fhwa.dot.gov/reports/pppdec2004/ppdec2004.pdf>.

⁵*Id.*

⁶Thompson at 3.

⁷*Id.* at 4.

Public-Private Partnership Options and Range of Responsibility



Build Operate Transfer and Build Transfer Operate: In a Build Operate Transfer transaction, the private entity constructs the public facility according to the public agency's specifications and operates the facility for a specified period of time.¹¹ At the end of such time, the public facility is transferred to the public entity.¹² The private partner may "provide some, or all, of the financing for the facility, so the length of the contract or franchise must be sufficient to enable the private partner to realize a reasonable return on its investment through user charges."¹³ In the Build Transfer Operate model, the transfer to the public entity occurs when construction is completed.¹⁴ Following transfer to the public entity, the public entity determines whether to operate and

¹⁴*Id.*

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maintain the facility itself, or the public entity can engage in another P3 to shift the responsibility for operating and maintaining to the same or a new private partner.¹⁵

Long-Term Lease Agreement: Here, the private party “leases or buys an existing facility from a public agency; invests its own capital to renovate, modernize, and/or expand the facility; and then operates it under a contract with the public agency.”¹⁶ Public and private partners may also utilize sale/leaseback structures whereby “the owner of a facility sells it to another entity, and subsequently leases it back from the new owner.”¹⁷

Design Build Finance Operate: On Design Build Finance Operate projects, the private partner “designs, constructs, operates, and maintains the facility for a specified period of time meeting specified performance requirements” and provides some or all of the financing.¹⁸ The public partner retains ownership of the facility.¹⁹

Build Own Operate: Under Build Own Operate, the “[d]esign, construction, operation, and maintenance of the facility are the responsibility of the [private] contractor.”²⁰ As the private partner “owns the facility and retains all operating revenue risk and surplus revenues for the life of the facility,”²¹ the Build Own Operate structure removes the public entity from the partnership.²²

Aaron Toppston of The Walsh Group has compiled some helpful Figures 2, 3, 4 and 5 set forth below which further elucidate P3 structures and risk analyses.

Figure 2

¹⁵*Id.*

¹⁶*Id.*

¹⁷*Id.*

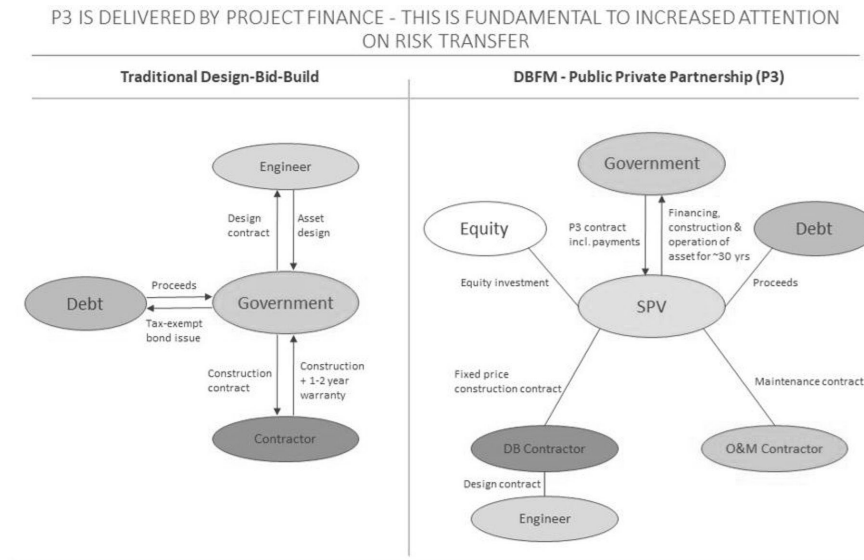
¹⁸National Cooperative Highway Research Program, *supra* note 10, at 8.

¹⁹*Id.*

²⁰*Id.*

²¹*Id.*

²²Report to Congress on Public-Private Partnerships, *supra* note 4, at viii.

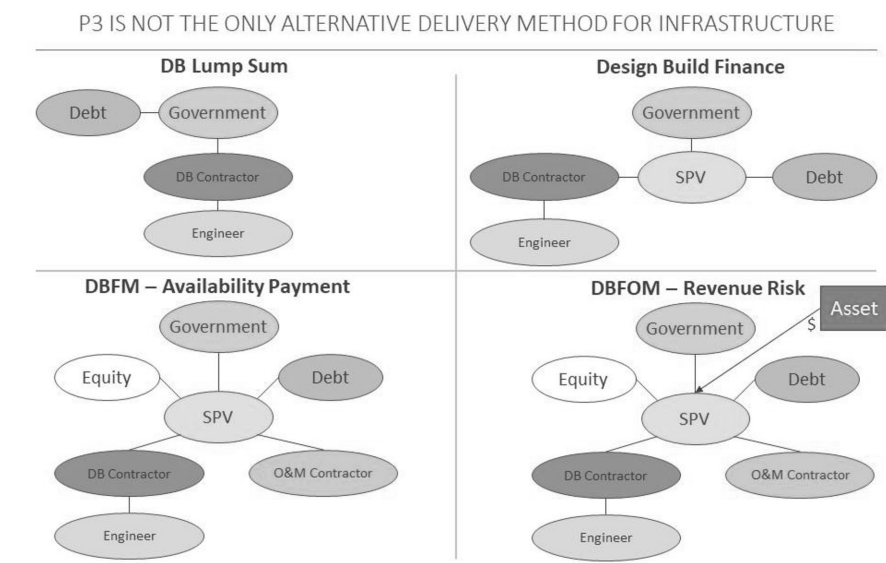


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Toppston’s key point is that P3s frequently involve a substantial number of project finance structures and practices and it is crucial to understand the differences between conventional public works procurement and public finance on the one hand and public private partnership procurement and project finance on the other. Toppston’s Figure 3 follows:

Figure 3



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2. Funding and Financing P3s

As noted in Figure 3, just as the public-private risk-responsibility allocation structure differs widely among P3s, the sources of funding for P3s also vary; however, the sources of payment in P3 projects typically comprise some form of user fees or availability payments. User fees are payments associated with the actual use of the infrastructure by the public whereas availability payments are payments made for the supply or provision of the infrastructure and not the degree of its use, often called “offtake.”

Tolls are among the most common revenue streams underpinning a P3 project and are a classic form of user fee.²³ Users of the public facility are charged tolls or other user fees, which private bidders use in structuring their offers (for the purposes of determining return on investment, raising equity or securing financing).²⁴ Alternatively, instead of the user of the public facility paying the toll to the private operator directly, the public entity may pay the private partner fees based on the public usage of the facility. Such fees are known as “shadow tolls.”²⁵

Availability payments allow the most flexibility in setting rates for the use of a public improvement/public service, based on what the public entity views as appropriate compensation to the concessionaire for the service provided.²⁶ This flexibility can cut both ways for the service provider, insofar as it may allow the concessionaire to earn greater returns than it would otherwise see from other types of user fees, but the public entity may also exercise its discretion to limit the scope of the return the concessionaire might realize from the project.

Other sources of funding and financing include lease payments, vehicle registration fees, bonds and other debt, public sector grants, and equity investments. For example, the private partner may lease a facility from the public entity, make lease payments to the public entity, and receive fees or tolls from the users of the facility. Alternatively, the private partner may finance and

²³*Id.* at 12.

²⁴Deloitte, “Closing America’s Infrastructure Gap: The Role of Public-Private Partnerships,” (2007): 34, http://www.infrastructureaustralia.gov.au/publications/files/Closing_the_Infrastructure_Gap-The_role_of_PPPs_Deloitte_2006.pdf.

²⁵*Id.*

²⁶*Id.*

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THE INGREDIENTS OF SUCCESSFUL U.S. PUBLIC-PRIVATE PARTNERSHIPS AND A PATH FORWARD FOR THE RENEWAL AND EXPANSION OF U.S. INFRASTRUCTURE construct the public facility and lease it back to the public entity. Governmental bodies may also leverage future revenues to issue bonds to finance the projects. Some project contracts may also require the private partner to make an equity investment in the project, thereby providing the project with an inflow of privately funded capital.²⁷

3. Risk Allocation

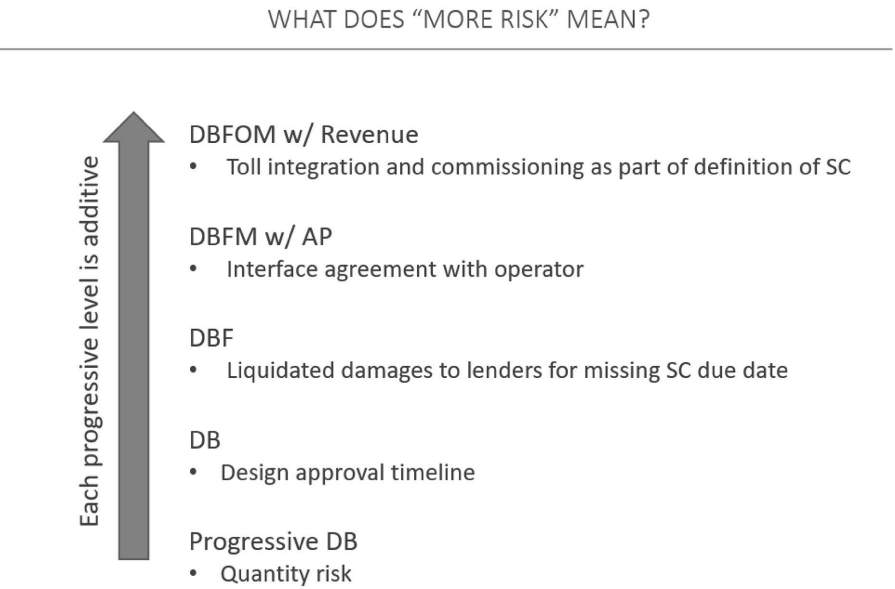
Toppston’s Figures 4 and 5 show a range of risks and how they can be allocated:

Figure 4



²⁷The National Council for Public-Private Partnerships, *supra* note 10.

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Figure 5



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Finally, Toppston’s Figure 6 identifies ten risks that should be analyzed and allocated to the party best able to bear them in any P3 project:

Figure 6

10 RISKS THAT SHOULD BE ADDRESSED ON ALL ALTERNATIVE DELIVERY PROJECTS

Environmental Permits	Hazardous Materials
Right of Way Acquisition	Geotechnical Conditions
Due Diligence Availability	Shortlisted Bidder Stipend
Utility Relocation	Railroads and 3 rd Parties
Post Bid Government Approvals	Design Approval Process

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In the case studies set forth in Part II, these and other risks will be discussed. Part III, on risk management in P3 transactions, will further analyze these risks. But first we will discuss the promise and benefits of P3.

B. Benefits of P3s

P3s involve a variety of benefits for both the public and the private partners. In general, public entities have pursued P3s in order to leverage their limited financial resources and expertise.²⁸ Some of the potential benefits of P3s are:

1. Projects are more likely to be delivered on time and within budget.
2. P3s often shift the risk (and cost) of maintenance and repairs to the private partner.²⁹ This shift helps ensure a high level of maintenance of critical public facilities in the face of political gridlock or budgetary constraints.
3. P3 projects often generate cost savings as a result of both reduced construction costs as well as lower life-cycle costs associated with the ongoing operation and excellent maintenance of public facilities.
4. P3s allow the spreading of cost of public projects over the course of their useful life, rather than paying (and thus necessarily securing upfront financing for) all of the cost of the project at the outset. When the initial outlay burden is reduced or alleviated, construction of the public project can commence sooner. Some P3s are structured so the “private-sector partner [. . .] makes a substantial cash, at-risk, equity investment in the project, and the public sector gains access to new revenue or service delivery capacity without having to pay the private-sector partner.”³⁰ Here, the public entity gains access to an outlay of private funds to pay for the project but does not have to repay such funds. Rather, the private partner earns a return through its equity position, sharing in a portion of the future profits of the private-public venture.
5. P3s often provide the public with a positive and consistent

²⁸The National Council for Public-Private Partnerships, Top Ten Facts about PPPs, <http://www.ncppp.org/ppp-basics/top-ten-facts-about-ppps/>.

²⁹The National Council for Public-Private Partnerships, Top Ten Facts about PPPs, <http://www.ncppp.org/ppp-basics/top-ten-facts-about-ppps/>.

³⁰U.S. GENERAL ACCOUNTING OFFICE, PUBLIC PRIVATE PARTNERSHIPS, TERMS RELATED TO BUILDING AND FACILITY PARTNERSHIPS 14 (1999), <http://www.gao.gov/archive/1999/gg99071.pdf>.

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customer experience, since the private partner relies on tolls or other user charges for its source of revenue and that use depends on satisfied customers who frequently and consistently use the public facilities delivered by these P3s.

6. P3s allow the public entity to focus on outcomes rather than being responsible for the means by which those outcomes are achieved.

Whereas the risk- and cost-shifting benefits of a P3 model are readily apparent in the context of large-scale transportation projects and roads due to the substantial up-front investment of time and resources required to design and construct these projects and the significant long-term maintenance obligations involved, the benefits of P3 in the social infrastructure context (e.g., educational and health care facilities) are somewhat less intuitive. Nonetheless, they apply with equal force. One of the primary arguments for private investment in the social infrastructure space is that competition in the marketplace tends to increase both the quality and the effectiveness of the services provided, particularly where the private provider can operate on a smaller scale, offer different perspectives, and serve users across classes and income levels.³¹ The contractual arrangement of the P3 allows governments to select among private providers through an open bidding process that defines the desired quality standards and outcomes that the provider must meet.³² Moreover, because private entities are generally not subject to the same restrictions on hiring and firing that apply to government employers, private providers of social services may have more contracting flexibility to attract the most qualified staff and to let go of underperforming staff, leading to more stable, higher quality services.³³ Further, private investors' interest in increasing its return on investment creates a strong incentive to increase value for money, which can lead to innovative new methods of providing necessary services, thereby increasing the efficiency and the breadth of services offered.

Privatization has the further advantage of allowing for the creation of a replicable, scalable model, with the result that necessary services such as education and health care may be offered to a wider audience than would otherwise have access to limited

³¹See Martha Minow, "Public and Private Partnerships: Accounting for the New Religion," 116 HARV. L. REV. 1229, 1242 (March 2003).

³²See generally Harry A. Patrinos, Felipe Barrera-Orsorio, and Juliana Guaqueta, The World Bank, "The Role and Impact of Public-Private Partnerships in Education," (2009), at 4. <https://documents1.worldbank.org/curated/en/453461468314086643/pdf/479490PUB0Role101OFFICIAL0USE0ONLY1.pdf>.

³³*Id.*

available public resources.³⁴ Private entities that have a proven track record of success in a particular community may be offered opportunities to design, construct or operate more facilities in that area, creating a de facto standard of best practices that can then be applied on a larger scale.³⁵ This effort requires investment on the part of both the private and public entity partners to track, document, and learn from both the successful and the unsuccessful innovations that are implemented and to replicate the most successful practices while, at the same time, tailoring them to meet the needs of the community they serve.³⁶ If implemented effectively, competition in the provision of social services can improve practices across the sector as a whole, not just in the particular facility under private management. Our discussion in Part II respecting the Long Beach Courthouse, the Howard County Courthouse, and the UC Merced Campus P3 projects point the way forward on social infrastructure P3s. On the other hand, our discussion of the Indianapolis Courthouse P3 project illustrates lessons learned of how not to proceed.

C. P3 in the United States

Beginning in the 1990s, States began to consider concession agreements to solve their surface transportation problems, through rail projects and toll roads. The typical concession project is “where private firms hold management and construction responsibilities, but not ownership, and those rights are transferred back to the state after a fixed period of time.”³⁷ Some of these transportation concession agreements proved to be “bad deals,” either for the public³⁸ or for the private entity entering into the concession.³⁹ These deals and their consequences were widely publicized. In turn, state actors became less willing to pursue

³⁴Patrinos, *supra* note 32, at 63.

³⁵*Id.*

³⁶*Id.*

³⁷Marc Scribner, Competitive Enterprise Institute, “The Limitations on Public-Private Partnerships: Recent Lessons from the Surface Transportation and Real Estate Sectors,” (2011): 7, <http://cei.org/sites/default/files/Marc%20Scribner%20-%20The%20Limitations%20of%20Public-Private%20Partnerships.pdf>.

³⁸*See, e.g.*, David Futrelle, “Chicago’s Parking Meter Debacle: The Check Is Not in the Mail,” TIME Online, May 11, 2012, <http://business.time.com/2012/05/11/chicagos-parking-meter-debacle-the-check-is-not-in-the-mail> (surveying the Chicago public’s strongly negative perception of a 75-year lease of the city’s parking meters to a private company).

³⁹*See, e.g.*, Sara Randazzo, “Indiana Toll Road Operator Files for Bankruptcy,” Wall Street Journal Online, Sept. 22, 2014, <http://online.wsj.com/article/s/indiana-toll-road-operator-files-for-bankruptcy-1411395866> (summarizing the bankruptcy filing of the private operator of the Indiana Toll Road, noting that

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P3s or even pursue creation or modernization of P3 legislation.⁴⁰ For the public, these P3 projects exposed state actors' lack of experience to evaluate P3 projects and, on the other side of the deal, revealed that the private sector may not be a true "partner" with the public but rather has dual motivations of both delivering the infrastructure in question as promised, but also profiting from the transaction. While the idea of a private company profiting from its construction should not cause much consternation given that contractors in the traditional "design, bid, build" framework have been profiting in that model for decades, the lack of transparency (and in some instances, perceived lack of transparency) has increased the public's concern with regard to private profit motive.

However, P3 remains an attractive option. It allows units of government to obtain expert design, construction, and operation of a complex public infrastructure project from an experienced private firm. At the same time, the public can shift related risk to the private firm, without transferring ownership of the project itself.⁴¹ The key is to properly evaluate each P3 opportunity within a statutory and regulatory framework which allows for both public input and transparency.

Part II. Keys to Success: Building a Predictable P3 Pipeline

If the P3 structure is to flourish on a broad scale in the United States, a consensus has emerged that units of government will need to develop a pipeline of workable projects that can provide more certainty for prospective private developers and investors. The means of accomplishing this end are less understood. Parts II.A and II.B of this article posits several key conditions for establishing an ideal environment for establishing a predictable, reliable pipeline of P3 projects, including strong enabling legislation, organized structure, detailed planning, and guaranteed revenue streams. Part II.C considers a number of case studies illustrating the presence or absence of these factors.

A. Key Considerations in Structure, Contracting, and Legislation

It is particularly important to select an appropriate partner-

the road "has struggled for years with a heavy debt load and lower-than-expected traffic").

⁴⁰PriceWaterhouseCoopers, "Public-private partnerships: The US Perspective," (2010): 3, 10 and 13, http://www.pwc.com/en_US/us/capital-projects-infrastructure/publications/assets/Public_Private_Partnerships.pdf (comparing States' quality of infrastructure and PPP legislation).

⁴¹See Brookings-Rockefeller Project, *supra* note 32, at 2–3 (describing the continuum of types of transit P3s).

ship structure and to have both a strong contract and strong enabling legislation in place. The choice of partnership structure will depend largely on the public entity's needs and circumstances, as well as its regulatory structure and oversight capacity.⁴² In general, case studies show that the government usually sees the most cost savings from contracting out operations as well as facility procurement and, indeed, social services such as schools and hospitals involve an array of services that can easily be "unbundled" and contracted out to private providers.⁴³ Projects that incorporate a private component only for the provision of facilities have proven to be of limited efficiency and, in fact, contracting for facilities alone may actually be more expensive than traditional procurement methods, particularly where transaction costs are high.⁴⁴

At least one study has posited that efficiency gains can be achieved by using a "bundling" approach to facility-only procurement. In this model, the public entity would contract for the provision of multiple facilities at once, rather than on a facility-by-facility basis. The primary benefit of this approach is that, for smaller projects, traditional P3 models can impose too many transaction costs to make the project attractive to a private developer, given the significant investment that goes into bidding on a P3 project and the relatively modest returns that can be generated from constructing and maintaining one facility.⁴⁵ Bundling together several small projects or grouping together the construction of a facility along with other ancillary structures and/or activities⁴⁶ creates an economy of scale that reduces transaction costs and is more likely to attract bids from potential developers.⁴⁷ This bundling approach is present in the Long Beach Courthouse P3 project to some degree; to greater degree in the Merced Campus P3 project; most of all in the Pennsylvania Bridges and Kentucky Wired case studies, all discussed below.

On the legislative side, enabling statutes for P3 should not only clearly define the role of private providers in the state's

⁴²Rob Taylor and Simon Blair, The World Bank Group, "Public Policy for the Private Sector: Public Hospitals," (Jan. 2002): <https://openknowledge.worldbank.org/bitstream/handle/10986/11358/multi0page.pdf?sequence=1&isAllowed=y>.

⁴³*Id.* at 3.

⁴⁴Patrinos, *supra* note 32, at 5, 13.

⁴⁵"Closing America's Infrastructure Gap: The Role of Public-Private Partnerships," *supra* note 24, at 18.

⁴⁶E.g., a hospital and associated research or training facilities.

⁴⁷"Closing America's Infrastructure Gap: The Role of Public-Private Partnerships," *supra* note 24, at 18.

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overall strategy for providing such services, but the legislation itself should set clear and objective criteria that private providers must meet and should establish a quality assurance system to ensure that those criteria are being met. Further, to maintain some degree of control and accountability in the context of these traditionally public services, states should consider including criteria that are tied to specific “public” goals, such as non-discrimination, accessibility, safety, cost control, and due process.⁴⁸

Similarly, contracting for the private provision of services must be sensitive to the public nature of the services provided. In the absence of specific “public purpose” provisions in a state’s enabling legislation, public entities may need to incorporate certain standards and criteria into their P3 contracts, including non-discrimination provisions, provisions to ensure universal access, and cost control measures. Further, P3 contracts should include clear enforcement mechanisms, including “step-in rights” that allow the government to take over the performance of the contract in the event of a failure to meet quality or financial standards.⁴⁹ Ultimately, the government that contracts with a private provider for services should be responsible and accountable for the consequences of those contracts.⁵⁰

B. Examples of State Legislation Enabling P3

Too often, states seeking to implement a P3 project adopt enabling legislation on merely a project-specific or sector-specific basis, forcing states to recreate the wheel for each P3 project. A truly robust P3 program requires broader enabling legislation spanning across sectors, giving state and local governments the flexibility to experiment with using the P3 structure outside the context of a specific infrastructure sector.⁵¹ Such a program allows states to select appropriate projects regardless of sector constraints, and without requiring specific legislative approval for each discrete project.

One over-arching lesson derived from a review of successful P3 schemes is the need for a governance system that allows for transparency,⁵² appropriate cost-benefit analyses, defined

⁴⁸See Marc Mitchell, M.D., M.S., “An Overview of Public Private Partnerships in Health,” (2008): 21, <https://cdn1.sph.harvard.edu/wp-content/uploads/sites/1989/2020/04/PPP-final-MDM.pdf>.

⁴⁹Taylor, *supra* note 42, at 4.

⁵⁰Minow, *supra* note 31, at 1260.

⁵¹For example, transportation.

⁵²Pagano, Proceed with Caution: Avoiding Hazards in Toll Road Privatizations, 83 St. J. L. Rev. 351 (2009) (stressing the importance of accountability

processes to ensure timely adoption and implementation⁵³ and the ability to integrate these into a framework which provides some degree of certainty for private parties. Transparency is necessary given the perception that P3s fail to protect the public interest,⁵⁴ with governments passing off their responsibilities to private entities with little incentive to serve adequately the populations who will use or rely on the privatized services.⁵⁵ Similarly, to combat the perception that a private entity is inappropriately profiting at the taxpayer or government expense and to the detriment of the public,⁵⁶ P3s should be analyzed to ensure they are actually serving the public interest. Building in timelines assures that P3 projects can get off the ground and not languish unnecessarily by forcing public review bodies and officials to act or evaluate the projects within set deadlines.⁵⁷

As discussed below, Virginia, Florida, and Maryland stand out for having implemented P3 regimes that accomplish many, if not all of these goals.

1. Virginia

The Virginia P3 statutes, regulations, and guidelines can be seen as a model in articulating and following the keys to successful P3s.⁵⁸ Virginia's Public-Private Transportation Act of 1995⁵⁹ and the Public-Private Education Facilities and Infrastructure

that is only possible through public access to information and noting criticism of perceived secrecy in the coming about of P3s).

⁵³James J. Regimbal Jr., "An Examination of the Virginia Public-Private Transportation Act of 1995," (2012): 5, https://www.southernenvironment.org/uploads/publications/va_public_private_transpo_act.pdf (noting that "timely adoption and efficient construction of a project" are seen as one of the numerous benefits of PPPs).

⁵⁴The Associated General Contractors of America, AGC White Paper on Public-Private Partnerships, (undated): 5, <https://www.agc.org/sites/default/files/Files/Advocacy/PPP%20White%20Paper%20Final%202020.pdf>. See also, Jaimie Rall, et. al., Nat'l Conf. of State Legislatures, Public-Private Partnerships for Transportation: A Toolkit for Legislators, (2010): 12, <http://www.ncsl.org/documents/transportation/PPPTOOLKIT.pdf>.

⁵⁵Governments partnering with private entities has even been characterized as potentially "shady dealings." Scribner, *supra* note 37, at 1.

⁵⁶Rall, *supra* note 54, at 11.

⁵⁷For example, Virginia's PPTA manual requires initial evaluation of an unsolicited proposal within 30 days.

⁵⁸The Commonwealth even refers to itself as "an international leader in the use of public private partnerships." Commonwealth of Virginia, "Implementation Manual and Guidelines for the Public-Private Transportation Act of 1995," (Nov. 2014): 3, https://www.virginiadot.org/office_of_transportation_public-private_partnerships/resources/UPDATED_PPTA_Implementation_Manual_11-07-14_FOR_POSTING_TO_WEBSITE_-_changes_accepted.pdf; see also Regimbal,

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Act of 2002⁶⁰ form the core of Virginia's P3 program. The PPTA constitutes the main means for the construction of new, large transportation projects in the Commonwealth.⁶¹ The PPTA has been amended a number of times since its initial adoption, including in 2002 and 2008, and in addition to the statutory text, the Implementation Manual and Guidelines provides detail as to the process of approving transportation P3s in the Commonwealth. As the Implementation Manual notes, the PPTA allows for flexibility, including in the means of financing P3 projects.⁶²

The process, from origination to completion is described at length in the Implementation Manual. This process begins with project identification, contemplating both solicited and unsolicited projects, before a two-tiered screening occurs. This screening first includes a high-level project screening that is followed by a detail-level screening. During the project development phase, a value-for-money analysis⁶³ occurs. It is the VfM, which is repeated before recommending the selection of a project that is essential for assuring that the public interest is appropriately rewarded. As the Implementation Manual explains, the VfM analysis is conducted "to determine whether a project provides more benefits to its users and to the Commonwealth when delivered through the P3 delivery process than when delivered through an alternative method."⁶⁴ The analysis assesses whether the combination of costs and quality meet the objectives that the Commonwealth has defined.⁶⁵ This protection of the public financial interest resurfaces in Virginia code § 33.2-1803.E, requiring all P3 projects with estimated costs exceeding \$50 million to be audited at the cost of the private entity.

The PPTA, through the Implementation Manual, also acts to ensure transparency and public participation. For example, prior to finalization, pursuant to Virginia Code § 33.2-1820.B, the proposal is submitted for public comment for a period of 30 calendar

supra note 53, at 5 ("Virginia is considered a national leader in implementation of public-private transportation projects.").

⁵⁹PPTA.

⁶⁰PPEA.

⁶¹Regimbal, *supra* note 53, at 1.

⁶²Implementation Manual and Guidelines for the Public-Private Transportation Act of 1995, *supra* note 58, at 70.

⁶³VfM.

⁶⁴*Id.* at 30.

⁶⁵*Id.*

days prior to consummating the agreement.⁶⁶ These 30 days also illustrate the efforts Virginia goes to ensure a predictable and effective timeline. The Implementation Manual, for each phase of the project, lays out a table of Key Action Items and the associated time requirements.⁶⁷ The effect is to keep project development on schedule and provide a somewhat predictable time horizon from proposal through consummation of an agreement to complete the project.

Virginia's PPTA and its associated procedures have led to a number of successful infrastructure projects. These include the expansion of the I-495 Expressway (Capital Beltway), the Downtown Tunnel/Midtown Tunnel/Martin Luther King Freeway Extension in Norfolk and Portsmouth, and the Route 895 Pocahontas Parkway near Richmond. In the case of the Pocahontas Parkway, using a P3 may have shaved 15 years off the project's commencement.⁶⁸ The I-495 expansion cost less than Virginia's estimate and displaced fewer nearby residents with its innovative design.⁶⁹

Where the PPTA provides the structure around transportation P3s in the Commonwealth, the PPEA establishes the means to use P3s for infrastructure, education projects, and public facilities of all types.⁷⁰ Modeled after the PPTA, the PPEA was adopted in 2002, with project proposals beginning in 2003. While not as robust as the Implementation Manual for the PPTA, the Guidelines and Procedures for the PPEA instruct the state and local institutions in adopting projects pursuant to the PPEA.⁷¹ The Guidelines and Procedures note that P3 projects are appropriate under the PPEA "where private involvement may provide the project in a more timely or cost-effective fashion [and] lead to

⁶⁶*Id.* at 36.

⁶⁷*See, e.g., id.* at 31, Table 6 (indicating that the VfM is to take 60 days and an update to the project risks is to take 30 days).

⁶⁸Scribner, *supra* note 37, at 11.

⁶⁹Public-Private Partnership Concessions for Highway Projects: A Primer, *supra* note at 24.

⁷⁰The PPEA has been described as "an alternative procurement tool that allows Virginia communities to develop non-transportation related infrastructure projects through public-private partnerships." AGC WHITE PAPER ON PUBLIC-PRIVATE PARTNERSHIPS, *supra* note 54, at 5.

⁷¹*See generally* Commonwealth of Virginia, "Guidelines and Procedures for the Public-Private Transportation Act of 2002," (Jan. 17, 2008), <https://dgs.virginia.gov/LinkClick.aspx?fileticket=H9WdcbwMscY%3d&tabid=62>.

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productivity or efficiency improvements in the public entities' processes or delivery of services."⁷²

Like its more extensive elder sibling the PPTA, the PPEA Guidelines ensure that a project is evaluated with the public interest in mind. For example, project financing in a proposed P3 is assessed for cost and cost-benefit to the relevant agency,⁷³ the overall project is checked for "compatibility with the appropriate local or regional comprehensive or development plans,"⁷⁴ and local government or citizen comments are factors in the assessment.⁷⁵

2. Overview of Virginia Regulatory Process

Under the PPEA, project proposals may be submitted in response to a solicitation by the state or on an unsolicited basis to meet a need identified by the private party.⁷⁶ A copy of the proposal must also be provided to the affected unit of local government, who is given a chance to provide written comments that will be considered in the evaluation of the proposal.⁷⁷ For solicited proposals, there is no fee for submission; for unsolicited proposals, a fee based on the cost of implementing the proposal is required, ranging from \$5,000 to \$50,000.⁷⁸

Solicited proposals, those submitted in response to an RFP, are evaluated in two phases: Part 1 consists of an initial conceptual stage, and Part 2 is the detailed stage.⁷⁹ The solicited proposal must conform to the format and specific information requests the Agency determines relevant. Submission of unsolicited proposals forces the relevant agency to determine "whether to accept the unsolicited proposal for publication and conceptual stage consideration."⁸⁰ If accepted, competing proposals are invited through public notice lasting at least 45 days. After the notice period closes, the agency will evaluate the unsolicited proposal and any competing proposals, making a recommendation to the relevant Cabinet Secretary or the Governor as to whether the project should not proceed, should proceed with the original proposal,

⁷²*Id.* at 1.

⁷³*Id.* at 21.

⁷⁴*Id.* at 22.

⁷⁵*Id.* at 23.

⁷⁶Guidelines and Procedures for the Public-Private Transportation Act of 2002, *supra* note 71, at 3.

⁷⁷*Id.* at 4.

⁷⁸*Id.*

⁷⁹*Id.* at 8.

⁸⁰*Id.* at 9.

should proceed with a competing proposal, or should proceed with multiple proposals.

At the conceptual stage, project proposals must contain information in each of the following areas: (i) qualifications and experience; (ii) project characteristics; (iii) project financing; (iv) anticipated public support or opposition; (v) project benefit and compatibility; and (vi) any additional information not inconsistent with the PPEA.⁸¹ For projects that make it to the detailed review stage, further information will also be required. The Commonwealth's guidance lists sixteen areas for the detailed stage, including: a topographical map depicting the location of the proposed project, a conceptual site plan, conceptual plans and elevations showing the general scope and configuration of the proposed project, a detailed description of the proposed participation of state and/or local agencies, a list of public utility facilities that would be crossed by the proposed project, a statement and strategy for securing all necessary property, a detailed listing of firms that will be providing design and construction guarantees, a total life-cycle cost for the proposed project, a detailed discussion of assumptions regarding user fees or rates, discussion of any government support or opposition for the project, demonstration of consistency with appropriate local development plans, description of an ongoing performance evaluation system or database to track performance criteria, identification of executive management and the officers and directors of the firm submitting the proposal, and an acknowledgment that the submission complies with the Virginia Ethics in Public Contracting Act.⁸²

Once a proposal is selected based on assorted criteria listed in the guidance, the private party and the public entity may enter into either interim or comprehensive agreements regarding the project. Prior to any agreement negotiations, however, the detailed proposal is submitted to the Public-Private Partnership Advisory Commission for review, a body which then provides the agency with its recommendations.⁸³ Authority to enter into an agreement with the private party is granted to the head of the relevant government agency.⁸⁴ Nonetheless, no agreement, interim or comprehensive, is permitted absent approval from the Governor or the appropriate cabinet secretary to continue to Part 2 of the review.⁸⁵ Similarly, prior to any agreement, the agency must have submitted the proposed agreement to the Public-

⁸¹*Id.* at 12.

⁸²*Id.* at 18–19.

⁸³*Id.* at 23.

⁸⁴*Id.* at 24.

⁸⁵*Id.*

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Private Partnership Advisory Commission at least 30 days prior to the date of the agreement's execution.⁸⁶

The PPEA Guidance also directs that a public comment period of 30 days is required before entering into an interim or comprehensive agreement.⁸⁷ Finally, once an interim or comprehensive agreement is executed, the procurement records must be available to the public upon request, though trade secrets and certain non-public financial records will not be made public through the procurement records.⁸⁸

3. Florida

Like Virginia, Florida has also been active in using P3s to advance development in the state. Florida statute section 334.30 governs public-private partnerships for transportation projects. The statute notes an aim of “rapid construction,” and in doing so, authorizes solicited and unsolicited proposals “for the building, operation, ownership, or financing of transportation facilities.”⁸⁹ The statute is written to protect the public interest by specifically requiring that, prior to approval, the project is determined to be in the public's best interest and that costs are generally to be borne by the private entity.

In addition to P3s in the transportation project realm, Florida recently enacted Section 287.05712 “to encourage investment in the state by private entities.”⁹⁰ The new law created a task force to recommend guidelines that the public entities should consider pursuant to project requests.⁹¹ Statutorily, however, the public entities are directed to ensure that projects are in the best interest of the public and that cost overruns are not borne by the taxpayers.⁹² With an eye toward transparency, unsolicited projects are subjected to public comment period, ensuring the opportunity for appropriate public input.⁹³

4. Maryland

Recently, Maryland undertook to have a more comprehensive means of soliciting and approving P3 projects. To that end, in 2013, HB 560 was adopted. Maryland has declared a public policy in support of public-private partnerships, with an aim toward

⁸⁶*Id.*

⁸⁷*Id.* at 26.

⁸⁸*Id.* at 27.

⁸⁹Fla. Stat. Ann. § 334.30(1).

⁹⁰Fla. Stat. Ann. § 287.05712(2)(b).

⁹¹Fla. Stat. Ann. § 287.05712(3)(a).

⁹²Fla. Stat. Ann. § 287.05712(4)(d).

⁹³Fla. Stat. Ann. § 287.05712(6)(c).

improving state infrastructure and improving the state economy by using P3s.⁹⁴ For P3s in transportation in particular, the state has adopted regulations to govern the process. These regulations require a two-phase review process.⁹⁵ Initially, the conceptual proposal is reviewed for feasibility, with phase two introducing a more detailed review to ensure conformity with the public interest.

Maryland introduces public involvement into the mix by incorporating a 60 day period for written comments from affected jurisdictions,⁹⁶ and by requiring that agreements be published online while review is ongoing.⁹⁷ Maryland's new statute also has the built in time frames that can keep project development on track. For example, the statute requires review of P3 agreements within 30 days.

C. Case Studies—Successful and Unsuccessful P3 Projects

Port of Miami Tunnel

The Port of Miami is the second largest economic engine in the region. Miami faced significant challenges as a result of truck and other traffic congestion to and from the Port of Miami over downtown Miami streets⁹⁸ and this congestion also constrained growth at the Port.⁹⁹ Moreover, this congestion also impeded redevelopment in the northern portion of downtown Miami. The recognition of these challenges drove a design alternatives analysis that concluded a tunnel from the Port via Watson Island to I-395 was the best solution. The Florida Department of Transportation¹⁰⁰ concluded that a P3 approach made sense given the complexity of the following project components: a tunnel under Government Cut in place of the Port Bridge, roadway work on Dodge and Watson Islands, MacArthur Causeway Bridge widening, and a 43-foot diameter boring machine to be tailor made for this project.¹⁰¹

Three world class consortia responded to a Request for Proposals and FDOT chose MAT Concessionaire, LLC comprised of

⁹⁴Md. Code Ann., State Fin. & Proc. § 10A-102.

⁹⁵Md. Code. Regs. tit. 11, § 11.07.06.11.

⁹⁶*Id.*

⁹⁷Md. Code Ann., State Fin. & Proc. § 10A-203.

⁹⁸Over 16,000 vehicles each weekday of which nearly 4500 were trucks.

⁹⁹See <http://www.portofmiamitunnel.com/project-overview/overview/project-overview-1/>.

¹⁰⁰FDOT.

¹⁰¹*Id.*

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Bouygues Travaux Publics and Meridiam Infrastructure Finance. A 35 year concession agreement was executed with Meridiam investing 90% and Bouygues investing 10% of the required equity. Bouygues Civil Works Florida was the contractor. Its tunneling skill proved invaluable as the tunnel tubing needed to rest on a coral bed.¹⁰²

FDOT paid MAT \$100M in milestone payments and \$350M in a final acceptance payment. FDOT agreed to 30 years of availability payments¹⁰³ during the operating period under the concession agreement subject to inflation adjustment and deductions for not meeting performance standards. In October 2044, MAT is obligated to return the project to FDOT in first class condition. Total cost of design and construction was approximately \$668.5M. The public partners shared the cost of the project with FDOT agreeing to pay 50% of the design and construction cost plus all operations and maintenance costs. The other 50% of design and construction cost came from Miami-Dade County and the City of Miami. Elements of this funding included \$45M in right of away donation by Miami-Dade County and \$50M from the City of Miami. MAT worked with FDOT to obtain a TIFIA guarantee as part of the plan of finance.¹⁰⁴

The Port of Miami Tunnel is one of the best examples of how to do P3. Note several key features: (i) compelling public needs centered on alleviating congestion, spurring redevelopment of northern downtown Miami, connecting multi modes of infrastructure seamlessly and separately (i.e., trucks underground and under sea, cars more free to travel in downtown Miami, cars and trucks gain direct access to I-395, strengthening one of the largest economic engines in the region); (ii) sufficient time invested in design, first by exploring alternative solutions, then preparing the detailed design; (iii) involved all relevant units of government in the procurement design, selection, financial planning and funding, construction, commissioning, operation and management (i.e. Florida through its FDOT, Miami region through the City of Miami and Miami-Dade County, the federal government through Department of Treasury, USDOT, among other departments and agencies). This combination of public partners drove significant private sector interest and resulted in best in class participants, Meridiam on development and finance and Bouygues for tunneling and related construction.

¹⁰²Id.

¹⁰³Set at a maximum of \$32.5M per year.

¹⁰⁴Id.

Goethals Bridge

The New York New Jersey Port Authority¹⁰⁵ recognized the need to replace the 1928 Goethals Bridge with a new crossing at Arthur Kill that would connect Staten Island to New Jersey and provide commuters and freight carriers' critical access. As part of the design alternatives process improving and expanding the existing bridge was explored and found not feasible. This decision allowed the 1928 bridge to remain in operation during the construction of the new bridge creating a twofold benefit, first no need to work around existing operations and second clear demonstration of the use such a new bridge would continue to serve thereby demonstrating reliable offtake. This new cable stayed bridge features six 12 foot travel lanes, 12 foot outer shoulders, 5 foot inner shoulders and a 10 foot bike/pedestrian path along the Northern edge of the New Jersey bound side. This new bridge is dual span, one traveling to Staten Island and the other to Elizabeth, New Jersey. Moreover, the new bridge includes a central area between the eastbound and westbound roadways that can accommodate future transit service.¹⁰⁶

The NYNJPA chose to deliver this new bridge using a design-build-finance-maintain concession agreement. This contracting approach was a first for NYNJPA and allowed continued operation and toll setting and collection to be controlled by NYNJPA. From 2010 to 2014, NYNJPA issued Requests for Information, then Requests for Qualification and finally Requests for Proposals. Pursuant to the Request for Proposals, the concession was awarded to NYNJ Link Partnership comprised of Macquarie Infrastructure & Real Estate Assets and Kiewit Development who in turn hired Kiewit Infrastructure, Weeks Marine, Massman Construction and Parsons Transportation Group of New York to design and build the new bridge. The NYNJPA kept a number of its advisors in place over the course of the design, building, financing and maintenance of the new bridge. The overall project budget was approximately \$1.44B and was funded using a combination of tax exempt Private Activity Bonds of \$453.3M, a TIFIA backed loan of \$473.7M, NYNJPA milestone payments of \$125M¹⁰⁷ and NYNJ Link Partnership equity of \$106.8M and predevelopment costs of \$300.2M contributed by NJNYPA.¹⁰⁸

The new Goethals Bridge also demonstrates features of a successful P3 project: (i) it replaced an aging bridge with a dual span

¹⁰⁵NYNJPA.

¹⁰⁶See [fhwa.dot.gov/ipd/project_profiles/ny_goethals.aspx](https://www.fhwa.dot.gov/ipd/project_profiles/ny_goethals.aspx).

¹⁰⁷Drawn from NYNJPA sources.

¹⁰⁸Id.

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state of the art cable stayed bridge that serves one of the largest economic regions in the U.S.; (ii) it had the benefit of a long established intergovernmental authority, NYNJPA, who had the resources to fund substantial predevelopment costs and had established relationships with federal, state and local units of government that enabled access to tax exempt private activity bond financing and TIFIA supported senior debt financing; (iii) it attracted the interest of some of the leading design, construction, financial and maintenance firms and (iv) it allowed NYNJPA to retain the right to set and collect tolls thereby keeping that important policy function in public hands.

Pennsylvania Rapid Bridge Replacement

Whereas the Port of Miami Tunnel and Goethals Bridge projects were large, complex P3 projects undertaken for the benefit of major metropolitan areas, the Pennsylvania Rapid Bridge Project demonstrates that the P3 approach can be used to deliver needed infrastructure to rural areas on a statewide basis. Pennsylvania has one of the largest number of bridges in the U.S. and they are owned in large part by the Pennsylvania Department of Transportation.¹⁰⁹ Moreover, many of these bridges were old, in rural areas and in need of repair.¹¹⁰ PennDot undertook a P3 procurement that involved design, construction, financing and maintenance via a concession agreement that targeted the replacement of 558 structurally deficient bridges averaging over 50 years old. The goals of this P3 centered on quicker replacement, at lesser cost, with less impact on the motoring public.¹¹¹

Five teams bid for the concession and Plenary Walsh Keystone Partners, a partnership comprised of Plenary Group USA Ltd. and Walsh Investors LLC¹¹² was awarded the concession. PWKP in turn hired a joint venture comprised of Walsh Construction Company and Granite Construction Company to undertake the bridge replacement and Walsh Infrastructure Management was responsible for the maintenance.¹¹³ A focus of this P3 project was bridges of a certain size and design¹¹⁴ that allowed the mass production of components and common means and methods for staging, construction and traffic management. Like the teams that delivered the design and construction in Miami and New York

¹⁰⁹PennDOT.

¹¹⁰4500 were structurally deficient.

¹¹¹See <https://www.penndot.gov/ProjectandPrograms/p3forpa/pages/rapid-bridge-replacement-project.aspx>.

¹¹²PWKP.

¹¹³Id.

¹¹⁴40' to 75' spans.

and New Jersey, innovation and deep experience in the civil works involved were present in this bridge replacement project.

Another notable feature of this P3 project was its tailored enabling legislation.¹¹⁵ These Acts created new revenue sources for PennDOT's use that in turn enabled the issuance of private activity bonds by the Pennsylvania Economic Development Authority of Series 2015 Bonds in the amount of \$721.5M. PWKP contributed equity of \$59.4M. PennDOT provided mobilization and milestone payments of \$224.7M. The concession agreement provided annual availability payments of \$35.8M for 25 years.¹¹⁶

Another innovation was the manner in which the NEPA process required by the Private Activity Bond allocation was handled. US DOT has the authority to grant SEP-15 approval authority to PennDOT. A key step in this delegation was an early agreement between PennDOT and USDOT which outlined the conditions under which deviations from requirements of Title 33 of the U.S. Code could occur. This early agreement also established reporting requirements that help streamline process, reduce costs, accelerate schedule, assure quality and comply with the applicable NEPA requirements and objectives. As a result of these and other innovations in design and construction, the unit cost of these bridge replacements was reduced from approximately \$2M to \$1.6M.¹¹⁷

The Port of Miami Tunnel and Pennsylvania Rapid Bridge Replacement projects demonstrate the value of early and close coordination between state DOT's and USDOT. They also demonstrated the importance of framework laws and predevelopment agreements and aligned public and private teams before P3 procurement occurs. These features in turn contributed to new insights into life cycle costing and economies of scale that bundled construction programs can deliver.

Ohio River Bridges

The state of Indiana and the city of Louisville, Kentucky undertook innovative project delivery for two bridges and related infrastructure crossing and adjacent to the Ohio River. The northbound crossing for I-65¹¹⁸ involved a design-build approach and hence is not the focus of specific comment here apart from the observation that Indiana and Kentucky and their many departments and agencies and political subdivisions worked

¹¹⁵Pennsylvania Acts 88 and 89.

¹¹⁶See Infrastructure Case Study Rapid Bridge Replacement at bipartisan-policy.org.

¹¹⁷See <http://www.pennidot.gov> Ibid.

¹¹⁸Downtown Crossing.

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closely on all facets of this complex Ohio River Bridges project. The focus of this case study is the “East End Crossing” 8 miles north of the Downtown Crossing. The East End Crossing connects I-265/SR265 to I-265/KY841.

First some background. In 1991, the Kentucky Transportation Cabinet¹¹⁹ and the Indiana Department of Transportation¹²⁰ sponsored the Ohio River Bridge Study. Another study was undertaken in 1995 which endorsed a two bridge solution, one bridge being renovated for the Downtown Crossing and the other a new bridge for the East End Crossing. The components of the East End Crossing were a 762 meter cable-stayed bridge and a 512 meter twin-tube tunnel providing access to this new bridge on the Kentucky side of the Ohio River. Also involved in the East End Crossing were 19 engineering structures and upgrades to the surrounding roadway network and related infrastructure to make those components modern and safe.¹²¹

In early 2012, INDOT undertook a feasibility study for a P3 approach to the East End Crossing and in March of that year issued a Request for Qualification which resulted in four shortlisted teams. In November, 2012, WVB East End Partners¹²² comprised of Walsh Investors, Vinci Concessions and Bilfinger Project Investments was selected for a design, build, finance, operate and maintain concession at a cost of \$763M and for a 35 year term. This concession also obligates East End Partners to maintain and operate a 29.02 mile stretch of SR 265 and KY 841. The plan of finance for the East End Crossing involved state and federal milestone payments of \$392M which were partially funded with a \$162M TIFIA loan and other state and federal funding involving among other things a Milestone Private Activity Bond Series A and B in the amounts of \$488.9M and \$18.9M respectively. This funding was issued by a joint authority created by legislation in Kentucky and by executive order in Indiana.¹²³

There are a number of distinctive features of the Ohio River Bridges project that stem from the planning work done in the 1990s. Kentucky recognized the P3 leadership, experience and enabling legislation Indiana had. Hence Indiana led the P3 part of the project, i.e. the East End Crossing. Notably, though, collaboration occurred before the two crossing projects were procured. A Louisville and Southern Indiana Bridges Authority

¹¹⁹KTC.

¹²⁰INDOT.

¹²¹See [vinci-construction-projects.com/Ohio River Bridges-East End Crossing](https://vinci-construction-projects.com/Ohio_River_Bridges-East_End_Crossing).

¹²²East End Partners.

¹²³See i69ohiorivercrossing.com.

was created comprised of 14 members, 7 from Indiana and 7 from Kentucky.¹²⁴ A key accomplishment of this authority was the execution of a Memorandum of Agreement which contained a term sheet outlining procurement strategies, tolling policy, advisory roles and responsibilities and provisions addressing delays which shared responsibility for delay arising from the other party's actions. This term sheet drove the negotiation and approval of the Bi-State Development Agreement and its related Intergovernmental Cooperation Agreement. These two agreements in turn created a one off P3 office—known as the Bi-State Management Team, comprised of representatives of Indiana and Kentucky's transportation and finance departments and USDOT's FHWA as well as a number of consultants and community partners.¹²⁵ P3 Offices can be formal as in Virginia or informal arising by way of contractual arrangements of one sort or another, typically through the use of intergovernmental agreements.

These features in effect acted as a well-conceived P3 framework and P3 office. Moreover, this Bi-State Authority requested the ability to toll from the FHWA which it granted as an electric tolling mechanism. The Bi-State Authority then established a KY-IN Tolling Authority which in turn established a tolling policy that distributed the revenue equally to the two states. This Tolling Authority in turn selected E-Z Pass Group¹²⁶ to operate the electric tolling.¹²⁷ Another innovation involved the Indiana Finance Authority¹²⁸ collecting its share of the toll revenue and including this toll revenue as part of its biennial budget submission to INDOT resulting in the IFA receiving a portion of INDOT's biennial budget appropriation. Further, if a shortfall in tolling revenues arose, then IFA would use its biennial appropriate amount to cover required availability payments. Any excess toll revenues not needed would be returned to INDOT.¹²⁹

The Ohio River Bridges project share features common to the other bridge and tunnel projects we have examined. Those features involve advanced and comprehensive planning, using one state's longer and deeper experience to undertake one of the crossings using a P3 approach, selecting team members with par-

¹²⁴Drawn from 4 appointed by the Mayor of Louisville and 3 appointed by the Kentucky Governor.

¹²⁵Id.

¹²⁶E-Z.

¹²⁷Indiana had a contract with E-Z and Kentucky joined in for this particular project.

¹²⁸IFA.

¹²⁹See zims-en.kiwix.campusafrika.gos.orange.com/wikibooks_en_all_maxi/A/Public-Private_Partnership_Policy_Casebook/Ohio_River_Bridges.

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ticular engineering experience with cable stayed bridges crossing a river as mighty as the Ohio,¹³⁰ selecting team members with particular engineering experience in labor relations and storm water management.¹³¹

Long Beach Courthouse

One of the most successful examples of the use of P3 for social infrastructure in the United States is the Governor George Deukmejian Courthouse in Long Beach, California. Construction on the 531,000 square foot building was completed in 2013 and the courthouse has been occupied since September 9, 2013.¹³² The courthouse building, which was expressly authorized by the state's Budget Act of 2007, is the first major civic building in the United States to be delivered through P3 and represented the California judiciary's first "Performance-Based Infrastructure"¹³³ project.¹³⁴ The courthouse PBI project was developed in response to the need to replace the existing courthouse—which was widely described as "one of the worst buildings in the state" and suffered from functional and security flaws as well as a failure to meet accessibility requirements.¹³⁵

The effort was a partnership between the State of California; Long Beach Judicial Partners LLC¹³⁶,¹³⁷ which served as the project developer; Clark Design/Build of California, the project's design-builder; and AECOM as the architect-engineer of record.¹³⁸ LBJP was engaged to finance, design, build, operate and maintain the new court building while the state will maintain ownership of the land and building over the course of the 35-year agreement.¹³⁹ Under the terms of the agreement with LBJP, the state would

¹³⁰Vinci was like Bouygues in this sense.

¹³¹Walsh was involved in both crossings and here and in Pennsylvania demonstrated unusual competence in assembling the contracting and subcontracting teams that coped well with construction means and methods as well as ensuring a wide representation of local contractors and employees.

¹³²Los Angeles County, Governor George Deukmejian Courthouse, Long Beach, <http://www.courts.ca.gov/facilities-la-longbeach.htm#ad-image-0> (last visited Dec. 3, 2014).

¹³³PBI.

¹³⁴California Courts, Fact Sheet: Governor George Deukmejian Courthouse, http://www.courts.ca.gov/documents/factsheet_longbeach_courthouse.pdf.

¹³⁵California Courts, Fact Sheet: Performance-Based Infrastructure: Courthouse Construction, <http://www.courts.ca.gov/documents/PBI.pdf>.

¹³⁶LBJP.

¹³⁷A subsidiary of Meridiam Infrastructure.

¹³⁸California Courts, Fact Sheet: Long Beach Judicial Partners, http://www.courts.ca.gov/documents/fact_sheet_lbjp.pdf.

¹³⁹Fact Sheet: Performance-Based Infrastructure, *supra* note 135.

pay nothing until the building is occupied, and thereafter the state will pay a starting annual service fee of \$50 million, which includes the costs to design and construct the building, the cost to finance the project, and the cost of operations, utilities, maintenance, and replacement of building equipment as it reaches the end of its useful life.¹⁴⁰ However, this annual fee may be adjusted based on building performance.¹⁴¹ Specifically the state's agreement with LBJP includes a fee abatement provision in the event that adequate court space or functionality is unavailable as needed. Further, expansion room for additional courtrooms will be leased to the Los Angeles County for the next fifteen years, with the rental revenue going to the state.¹⁴²

The Long Beach Courthouse has 5 floors, 31 court rooms, below grade detention facilities, food court and retail space, facilities for Los Angeles County agencies, separately secure parking for judges and an adjacent renovated and expanded parking facility. It cost \$343M to design and build. LBJP provided \$49M in equity and obtained a \$443M 7 year floating rate mini-perm loan which provided a 4 year refinancing window following completion. This mini-perm loan was retired through the issuance of a bond in the par amount of \$518.4M which carried a 6.88% coupon. That bond was subscribed by 10 investors including insurance companies and pension funds. The first annual lease payment was \$53.65M and similar annual lease payments continued thereafter subject to adjustment if operational performance standards are not met.¹⁴³

A key feature of this P3 project was its Value for Money Analysis.¹⁴⁴ There were two of these undertaken: one during the procurement process when multiple teams were vying for selection and another after LBJP was selected. This VfM served as both a benchmark and a negotiation tool throughout the procurement process. In this regard, the judiciary's Administrative Office of the Courts (AOC) worked with representatives of the Vancouver

¹⁴⁰California Courts, FAQs: Los Angeles County, Governor George Deukmejian Courthouse, Long Beach, <http://www.courts.ca.gov/facilities-la-longbeach.htm#tab3660>.

¹⁴¹Fact Sheet: Performance-Based Infrastructure, *supra* note 135.

¹⁴²California Courts, Background: Los Angeles County, Governor George Deukmejian Courthouse, Long Beach, <http://www.courts.ca.gov/facilities-la-longbeach.htm#tab3660>.

¹⁴³Zims-en.kiwix.campusafrika.gos.orange.comwikibooks_en_all_maxi/A/Public-Private_Partnership_Policy_Casebook?Long_Beach.

¹⁴⁴VfM.

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office of Ernest & Young¹⁴⁵ and AOC submitted them to the California Department of Finance for its review. The VfM analysis typically involves assigning a value for risks like construction delays, unanticipated operating costs, labor disputes among other risks. The other key part of a VfM analysis involves assigning a discount rate between the net present value of a P3 project and the net present value of traditional financing. Senate Bill 75 required AOC to prepare an evaluation of the cost effectiveness after completion and it revealed that the cost of the Long Beach Courthouse was comparable to the cost of projects delivered through traditional design build bid techniques using conventional public finance methods.¹⁴⁶ There has been criticism of the VfM analyses used in this P3 project. The gist of this criticism was twofold. First, the Legislative Analyst of California¹⁴⁷ argued that the Long Beach Courthouse project was singled out rather than being part of a comprehensive analysis of several projects that could be undertaken with a P3 approach. Second, LAC challenged the finding that the Long Beach Courthouse project was sufficiently complex to warrant a P3 approach, arguing that conventional public financing and design build bid would have sufficed.¹⁴⁸ The AOC responded that the multipurpose features of the Long Beach Courthouse project created the requisite complexity, i.e., civil and criminal courtrooms, detention facilities, state and county judicial operations under the same roof, retail and restaurant uses, secure parking and public parking, LEEDS certification and the like.¹⁴⁹ The concern expressed about the one off P3 approach does warrant discussion and we will consider it in connection with our discussion of airport and university P3 projects.¹⁵⁰

The success of this project may be attributed in part to strong performance incentives. Due in large part to the incentive structure established in the concession agreement, construction of the facility came in both under budget and ahead of schedule. A second key factor in the success of this project is the engagement and oversight of the state, through the judiciary's Administrative Office of the Courts.¹⁵¹ Over the course of the project, the AOC took the lead in the procurement process, working with the

¹⁴⁵Who had had experience with Canadian P3 projects to prepare these VfM analyses.

¹⁴⁶See The Jury Is Out at [wispolicyforum.org](https://www.wispolicyforum.org) pp. 25–27.

¹⁴⁷LAC.

¹⁴⁸Id.

¹⁴⁹Id.

¹⁵⁰Infra.

¹⁵¹AOC.

state Department of Finance and the state legislature's Joint Legislative Budget Committee to set and to validate the terms and conditions of the agreement with LBJP.¹⁵² As noted above, key also to the success of the project was the completion of a Value for Money analysis, which revealed that the project compared favorably with a public sector analogue and projected that the state would save approximately \$26 million through the PBI process, or approximately 3.5% of the overall project value.¹⁵³ This VfM analysis served as both a benchmark and a negotiation tool throughout the procurement process to ensure that the project would deliver value to the state.¹⁵⁴ Senate Bill 75, which passed the California legislature in 2013, similarly required the AOC to prepare an evaluation of the cost-effectiveness of the project by mid-2014.¹⁵⁵ This report, which was submitted to the Legislature in June 2014, revealed that the cost of the project was comparable to the closest similar project in size and scope delivered through traditional delivery methods.¹⁵⁶ Approximately 90 percent of California courthouses have been deemed to require significant renovation, repair or maintenance. Accordingly, a P3 approach to the renovation or replacement of these courthouses warrants consideration.

Indianapolis Courthouse

Marion County, Indiana had a courthouse in deplorable condition and a total of 11 facilities scattered throughout Indianapolis serving a variety of judicial and law enforcement functions. In fact, the courthouse was so decrepit that a federal takeover was threatened. Such a crisis should have created an opportunity, yet for reasons we examine below such an outcome did not occur. The then mayor of Indianapolis appointed a director of Enterprise Development who oversaw a process of investigating 10 locations for a new courthouse. In an early misstep, an abandoned General Motors plant site was chosen which was not well served by transit and also was remote from the central business district. A performance specification was also developed which required a 3000 bed detention facility, on-site medical facility, 28 court rooms and 10 hearing rooms, 960 bed minimum security facility, sheriff's offices, offices for prosecutors and public defenders and parking for

¹⁵²FAQs: Los Angeles County, Governor George Deukmejian Courthouse, Long Beach, <http://www.courts.ca.gov/facilities-la-longbeach.htm#tab3660>.

¹⁵³*Id.*

¹⁵⁴*Id.*

¹⁵⁵California Courts, Document Archive: Los Angeles County, Governor George Deukmejian Courthouse, Long Beach, <http://www.courts.ca.gov/facilities-la-longbeach.htm#tab15455>.

¹⁵⁶*Id.*

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members of the public and also employees from all of the foregoing. This Mayoral led effort conceived of a design-build-finance-operate and maintain P3 project. An RFQ was issued. Five teams responded and three teams were shortlisted. As part of the RFP process, availability payments of no than \$50M annually were offered.¹⁵⁷

WMB Heartland Justice Center Partners¹⁵⁸ comprised of Meridiam Infrastructure Indy Justice, LLC, Walsh Investors, L.L.C. and Balfour Beatty Investments, Inc. was selected from the short list. WMB proposed an annual availability payment of \$47M for 35 years subject to adjustment for failures to meet certain operating and maintenance standards. These availability payments would aggregate \$1.645B. Notably, heretofore, Indianapolis and Marion County had been spending \$123M per year for the leasing, operation and maintenance of the 11 facilities this new courthouse would replace. Further, the construction cost of the new courthouse was \$408M according to the bid submitted of Walsh/Heery Joint Venture submitted as part of the WMB response to the RFP. This \$408M amount contrasted with a \$520M amount projected in a 2011 study undertaken previously by Indianapolis and Marion County. WMB hired Barclays Capital Inc. as a private placement agent for the private financing this P3 would require. As a result, four major institutional investors, Met Life, Mass Mutual, New York Life and Sun Life Financial entered into commitment letters that attached detailed term sheets that provided fixed rate financing for the full term of this P3 project.¹⁵⁹

And, yet, this P3 did not proceed. Why? The reasons are several. First, the RFQ/RFP process was not transparent. Recall that the Mayor of Indianapolis had appointed a Director of Enterprise Development. The operations of the Enterprise Development group was essentially a de facto executive department of municipal government. The Request for Proposals, the responses thereto, the short list submittals, and the selected team's further submittals were not shared until two months *after* WMB had been under contract. The components of the \$50M cap on annual availability payments was not explained. Further, although there had been an independent analysis of this P3 project by Indianapolis' Mayor's office, that analysis did not consider operations, maintenance and risk transfer costs. Then, there was the political context. This P3 project was the brainchild of a Republican Mayor's administration. The Indianapolis City

¹⁵⁷ See https://en.wikibooks.org/wiki/Public-Private_Partnership_Policy_Casebook/Indianapolis_Courthouse.

¹⁵⁸ WMB.

¹⁵⁹ Id.

Council was controlled by Democrats. And, they undertook their own analysis of this P3. Moreover, a candidate vying for the Democratic nomination for mayor called for a delay since that primary was less than a month away when final action on proceeding with this P3 was imminent. Moreover, the Republican Mayor under whom this P3 project was launched was not standing for re-election. There were also real estate flaws in the selection of the GM site. The site lacked transit access. It was not in the central business district. It did not anchor downtown redevelopment. Also, this all unfolded in the wake of the Ferguson, MO when issues of racial justice and social equity were pronounced.¹⁶⁰

The takeaways from the Heartland justice Center P3 stand in contrast to the Long Beach Courthouse P3 and as we shall see in the next case study, also the Howard County, Maryland Courthouse P3. First, conduct an open and transparent process around site selection, requests for qualifications and proposals, and value for money analyses. Further, have the value for money weigh all the relevant factors, designs, construction costs, financing alternatives,¹⁶¹ operational and capital savings as a result of a comprehensive life cycle cost analysis and private operation and maintenance and finally the value of risk transfer itself.

Howard County Circuit Courthouse

Howard County, Maryland is responsible for housing and administering a circuit court. Those functions are in a building that dates from 1843. Hence, a compelling need for a new and modern courthouse existed. Moreover, Howard County's population has steadily increased over the past several decades and hence the caseload of its circuit court had grown too. As a result, Howard County embarked upon a study of ways to address these needs and one area of focus was P3 since when properly structured and with the right partners, P3 can enable projects which are larger, more innovative and cost efficient by a number of measures. So, Howard County took an approach that involved doing a fair amount of homework before even starting any procurement. It studied the Canadian P3 experience and the Long Beach Courthouse P3 project. It also retained its own set of advisors to study P3 as an approach and then tailored it to the needs of its new courthouse.¹⁶²

As a result of this study, Howard County chose a design-build-

¹⁶⁰Id.

¹⁶¹Particularly the difference between tax exempt bond financing in concert with the conventional design/build/bid approach.

¹⁶²See <https://www.hawkins/project-profile/howard-county-circuit-courthouse-p3-project>.

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finance-operate-maintain approach and issued a Resolution from its County Council supporting it in early March 2017. We have chosen to focus on the specific dates of certain governmental actions in this case study because Howard County set a record in getting from its first actions to financial close, 11 months. A key was wedding public finance to public works. Accordingly, in May 2017, Howard County authorized the issuance of General Obligation bonds for this P3 project in a way that allowed the construction financing the ultimately selected P3 team would obtain to be taken out with these to be issued General Obligation bonds. With takeout financing thus enabled, Howard County then begin the procurement process undertaking a series of steps which might best be termed taking market soundings and building rapport with the private sector participants in P3 projects. Part of this work involved extensive stakeholder outreach including meetings with the Spending Affordability Advisory Committee the County had established, also the County Auditor and County senior staff all culminating in a value for money analysis.¹⁶³ This VfM became the basis for the County's decision to pursue a P3 approach. The elements of the VfM analysis included a combination of financial and technical factors. The financial score formula calculated a net present value of 30 years of proposed availability payments. Unusually, the financial factor contributed only 20% of the overall weighting. More was devoted to technical factors including project approach, design approach, construction approach and facilities management approach. Notably, the Expression of Interest, the Request for Proposal and Project Agreement documents were all prepared prior to the commencement of the procurement process. In so doing, several things were accomplished: P3 private sector participants knew several key approvals were already accomplished, including the GO Bond Resolution being in hand and therefore available to takeout the construction financing at substantial completion. Another key factor was a stipend for each of the short listed teams being authorized. These measures showed Howard County's tangible commitment to the P3 approach. Howard County also included this P3 project in its capital and operational budget. The actual procurement process started in a forum termed Industry Day. There, those expressing interest in the courthouse project met one on one with Howard County and its advisors. This way industry insights could be gathered prior to issuing the RFP. A compressed yet realistic timeline was endorsed and followed so the County Executive and

¹⁶³VfM.

County Council would be able to take necessary actions to achieve financial close before their respective terms expired.¹⁶⁴

The procurement process itself was split into an evaluation of the Expressions of Intent that drove to a short list of those being invited to respond to a Request for Proposals. A Selection Committee comprised of the Administrative Judge, Budget Administrator, Planning and Zoning Director, Public Works Facilities Bureau Chief and Public Works Operations and maintenance Chief was created. Further the County purchasing Administrator was appointed to act as a fairness advisor during the procurement process.¹⁶⁵ Nine teams responded to the call for Expressions of Interest and three teams were shortlisted to receive invitations to submit responses to the RFP. The Selection Committee chose Edgemoor-Star America Judicial Partners comprised of Edgemoor Infrastructure and Real Estate,¹⁶⁶ Star America Fund GP,¹⁶⁷ HOK, Clark Construction Group, Harkins Builders and Johnson Controls. Edgemoor and Star America provided the equity. The Howard County Courthouse will cost approximately \$150M, contain 230,000 square feet and provide 600 parking spaces with another 500 parking spaces available through an expansion option. Edgemoor and Star America secured interim construction financing from three banks and one institutional investor. As provided in its GO Bond resolution, Howard County will retire this construction financing when the new Courthouse is substantially complete. Further, Howard County will make an annual service payment of approximately \$10M starting in fiscal 2022 subject to adjustment for inflation and compliance with operating and maintenance standards.¹⁶⁸

The Howard County Courthouse P3 approach is worthy of duplication. It has virtually all the elements of a predictable P3 process: a public champion, a transparent process, deep industry sounding, a compressed yet reasonable timeframe, a worthy project, thoughtful mix of public and private financing, excellent advisors on both the public and private sides, fairness permeated the process and selection and notably the contract documents. It reminds one of the advice a distinguished law professor at Northwestern University once gave: Spend two thirds of your exam time planning the answer you are about to commit to your bluebook and one third of the time writing it. Perhaps there was

¹⁶⁴Id.

¹⁶⁵Id.

¹⁶⁶Edgemoor.

¹⁶⁷Star America.

¹⁶⁸See <https://ijglobal.com/articles/136393/howard-county-courthouse-p3-mar-yl-and-us>.

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a Northwestern University School of Law graduate at Hawkins & Delafield or one of the other fine firms advising Howard County.

LaGuardia Airport Main Terminal

LaGuardia Airport's history explains some of its challenges. It came into being through the will of New York City's Mayor Fiorello LaGuardia and the help of the Depression era Works Progress Administration. Its location is small, cramped and utterly urban. And it has been subject to withering criticism: For example, in the wake of Superstorm Sandy, then Vice President Biden remarked that LaGuardia looked like an airport in a third world country. Yet, as long ago as 2004, the Port Authority of New York and New Jersey¹⁶⁹ began studying the inefficiencies of LaGuardia, particularly the Central Terminal Building.¹⁷⁰ As a result, the Port Authority formulated the LGA Redevelopment Program comprised of the CTB replacement project and an infrastructure program involving certain related airport supporting facilities. The Port Authority decided to pursue the CTB replacement project as a design, build, finance, operate and maintain P3 project.¹⁷¹

The Port Authority released its Request for Qualifications in October 2012 and received 16 submittals. Almost a year later, an initial request for proposals was issued. Then in April of 2014 a final RFP was issued to four teams and three teams responded. The Port Authority expected to declare a winner in the fall of 2014 but a decision by then Governor Andrew Cuomo to launch a redesign competition for LaGuardia and other New York airports delayed picking a winner. This redesign led to a more comprehensive vision for the redevelopment of LaGuardia. In May 2015 the Port Authority selected LaGuardia Gateway Partners¹⁷² comprised of Vantage Airport Group, Skanska Infrastructure Development, and Meridiam's MI LaGuardia.¹⁷³ LGP contributed \$1.4B in equity. The concession period is 40 years.¹⁷⁴

At approximately \$4B, the CTB replacement P3 project and related infrastructure projects are one of the largest projects undertaken with a P3 component. A particular challenge is undertaking this P3 in an operating airport and in concert with related infrastructure work being undertaken independently by the Port

¹⁶⁹The Port Authority.

¹⁷⁰CTB.

¹⁷¹https://en.wikibooks.org/wiki/Public-Private_Partnership_Policy_Casebook/LaGuardia_Central_Terminal.

¹⁷²LGP.

¹⁷³Id.

¹⁷⁴See <https://ijglobal.com/articles/101027/laguardia-airport-ppp-us>.

Authority directly. A large portion of the CTB replacement project's cost was financed with Series A tax exempt special facility revenue bonds in the par amount of \$2.26B issued with an interest rate of 4.2% and a Series B taxable special facility revenue bond in the par amount of \$150M issued with an interest rate of 3.6%. These bonds were oversubscribed, have maturities ranging from 2024 to 2050, were underwritten by Citigroup, Wells Fargo, and Barclays; \$412M of the Series A bond were insured by the monoline Assured Guaranty and as such Series A was assigned a BBB rating by Fitch because among other things (i) the Port Authority is contributing \$1.2B toward new improvements to LaGuardia including within the central hall of the reconfigured CTB and (ii) the outlook for the operating period was stable with 80% of the projected operating revenue to be derived from airline terminal fees and the other 20% from concessions' revenue.¹⁷⁵

The LaGuardia CTB P3 is large and complex and as such is sui generis. That said, it had the benefit of a long established sponsor, the Port Authority. The insertion of a redesign competition complicated timing. Nonetheless, the market responded well both in terms of design/build and finance functions. Further study is warranted regarding the industry reaction to the actual project experience. Some concern has been expressed regarding the risks transferred, the complex nature of the construction means and methods and the particular challenge of the LaGuardia location both during construction and as other parts of the vision for LaGuardia are implemented including for example the proposed air train station.

Denver International Airport Great Hall

Great Hall Partners comprised of Ferrovial Airports, Saunders and others were awarded a design, build, finance agreement to upgrade the Jeppesen terminal at Denver International Airport.¹⁷⁶¹⁷⁷ The scope of work for the Great Hall P3 project included new shopping and food service areas, relocating and expanding TSA areas, and creating a new check-in area and thereby improving passenger flow and access. Notably, DIA and Great Hall Partners did enter into a Pre-development Agreement which allowed the parties to collaborate on design and negotiate terms, conditions and costs. That collaboration led to a 34 year P3 Development Agreement which contemplated a \$1.8B cost and a project completion in 2021. Financial close occurred in December 2018. Trouble ensued. Great Hall Partners gave notice

¹⁷⁵Id.

¹⁷⁶DIA.

¹⁷⁷Said terminal project hereinafter the "Great Hall P3 project."

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of pre-existing concrete issues in February, 2019 and also subsequently submitted a claim for delay. The parties tried mediation to no avail. In August, 2019, DIA terminated the P3 Development Agreement for convenience. In so doing, DIA ultimately incurred significant costs to bring on a replacement team. DIA reverted to a conventional design/build approach with a program manager with a revised completion date in 2024. Moreover, the termination for convenience cost more than \$170M.¹⁷⁸

What went wrong and why? Simply put, DIA did not have the resources necessary to manage a complex redevelopment P3 project. That fact coupled with a concealed condition respecting the defective concrete created an environment that challenged both DIA and Great Hall Partners. DIA wanted an ongoing role in design development and project oversight; yet, DIA had a small in house team with limited authority. Great Hall Partners was beset with many requests for changes and failures to make decisions in a timely manner. The lessons learned from this failed P3 include: consider the risk inherent in rehabilitating an existing operating facility in a dynamic environment, acknowledge the difficulty of managing the expectations of multiple stakeholders like DIA, airlines, TSA, other units of state and local government, create a P3 office for the project sponsor that enables deeper understanding of design development and project execution, and undertake sufficient due diligence on existing conditions so concealed conditions do not surprise.¹⁷⁹

Chicago Parking Meters and the Indiana East-West Toll Road

Now for a shift in focus from design, build, finance, operate and maintain agreements. The Chicago Parking Meters and Indiana East-West Toll Road transactions are privatizations and produced very different results.

In 2008, the Chicago city council approved a 75 year lease of Chicago's parking meters for a one-time \$1.16B payment. This lease required Chicago Parking Meters LLC,¹⁸⁰ an investment group led by Morgan Stanley, to install kiosks at strategic intervals serving multiple parking spaces so payment could occur by credit cards. This lease also prohibited Chicago from creating off street parking facilities that would compete with street parking spaces except in limited circumstances. Soon after this lease was executed, parking rates doubled in the central business district and went even higher in other parts of Chicago. Predict-

¹⁷⁸ See Plenary 5 on Public Private Partnerships: The American Experience-Denver International Airport delivered at the American College of Construction Lawyers 2019 Annual Meeting by Jody Debs.

¹⁷⁹ Id.

¹⁸⁰ CPM.

ably, these increases provoked outrage and further a report of Chicago's independent inspector general concluded that the parking meters had been leased for one-half of their value. Also, the proceeds from this \$1.16B payment were spent on current budget needs in contrast to the planned uses of a \$400M long time reserve, a \$325M midterm reserve, a \$326M budget stabilization fund and a \$100M human infrastructure development fund. As a consequence of this near term spending, in less than two years, only \$180M of the \$1.16B amount was left.¹⁸¹

In 2004, Mitch Daniels was elected Indiana's governor. He undertook several studies related to transportation projects and funding. These studies demonstrated a funding gap of \$1.8B in the next decade and also identified a number of means to close that funding gap. One of these measures involved leasing a 156 mile segment of Indiana's East-West Toll Road. The Indiana Toll Road Concession Co.¹⁸² paid Indiana \$3.85B for a 75 year concession. In return, ITCC agreed to install electronic tolling, upgrade and widen portions of this Toll Road and maintain certain levels of service in both urban and rural areas served by this Toll Road. The concession allowed ITCC to increase tolls. Passenger car tolls increased from \$4.65 to \$8.00 and truck tolls also increased. There were caps for these toll increases to the greater of 2%, rate of inflation or rate of increase in per-capita GDP. The proceeds of this concession were used to retire \$200M in existing Toll Road debt, \$240M for local aid to the 7 counties through which the Toll Road passed, \$150M in infrastructure aid to all local governments in Indiana, \$120M to Indiana's Northwest Regional Development Authority, \$500M to a long term reserve and the balance to funding parts of Governor Daniels' expanded Major Moves highway improvements. The use of the Toll Road did not meet the projections ITCC had expected and as a result, ITCC filed for bankruptcy. IFM Investors bought the concession out of bankruptcy and the Toll Road continues to operate in accordance with the concession's terms.¹⁸³

The Indiana Toll Road privatization did not end well for ITCC. Yet, since the inception of the concession, the Toll Road operated as required and the funds generated from its sale were put to good uses. That was not the case with the lease of Chicago's parking meters. What were some of the key differences between these two privatizations? Chicago's city council was asked to approve a 600 page lease a mere 36 hours after they received it. Indiana's

¹⁸¹See The Lessons of Long-Term Privatizations: Why Chicago Got It Wrong and Indiana Got It Right, Aaron Renn, The Manhattan Institute.

¹⁸²ITCC.

¹⁸³Id.

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Toll Road lease was the subject of extended study by the Governor's office and heated debate in the Indiana legislature before proceeding. CPM fumbled in the early stages of privatization, parking meters were stuffed to overflowing with coins, kiosks to accept credit cards were slow in coming and once they were installed, often did not work. ITCC by contrast maintained and operated the Toll Road as required notwithstanding its bankruptcy and its successor continues to so operate it. The proceeds of each lease were treated radically differently, in Chicago spent down rapidly on expenses in largest part unrelated to transportation and in Indiana were thoughtfully allocated to a combination of reserves and transportation and other infrastructure expenditures.¹⁸⁴

Some key lessons are: Suffuse any P3 deal with transparency because these complex deals require time for the public to review and understand them. Otherwise suspicion will always lurk and perception will be formed that is nigh unto impossible to change since the public is skeptical of private sector ownership and operation and control of public assets as a general matter; carefully manage the transition from public to private operation; have one time revenues devoted to the infrastructure from which they are derived; watch out for all the budget implications of privatization (Chicago failed to account for an annual net contribution from parking meter revenue to its general fund; also Chicago failed to require CPM to accommodate actions mandated by the Americans with Disabilities Act). Another set of lessons center on the forms and uses of the infrastructure sought to be privatized: Does it stand alone? Like a bridge or tunnel. To what degree is it subject to multiple uses? Like streets, parking spaces and sidewalks which can be closed, combined or used in concert. To what degree is it subject to zoning and land use regulation as opposed to just one use which is enduring; for example, like bridges or tunnels versus roadways, parking spaces or sidewalks or plazas. Is the infrastructure dynamic? For example, like airports, schools, campuses versus bridges, tunnels, and to some degree toll roads. The foregoing are concerns which may be able to be addressed in the concession agreement and its appendices but being able to foresee the changes that will occur in a 75-year concession of dynamic infrastructure categories is daunting.¹⁸⁵

Kentucky Wired

The Kentucky Wired P3 project is among the most complex undertaken at least in terms of geographic scope and number of stakeholders involved. It covers the state of Kentucky and

¹⁸⁴Id.

¹⁸⁵Id.

involves most units of government and many stakeholders in the telecommunications industry. Clearly necessity was the mother of its invention: As recently as 2017, Kentucky ranked 47th in the U.S. in broadband speeds and capacity. Without digital capacity, Kentucky lacked a key resource to compete in today's economy. The genesis of Kentucky Wired did germinate within state government. Several state agencies requested funding for the build out or strengthening of broadband networks in 2013. Those requests coincided with the work of the Shaping Our Appalachian Region,¹⁸⁶ an initiative that enjoyed gubernatorial and congressional support. As a result of these agency requests and SOAR's findings, Kentucky initiated some industry sounding through a Request for Information¹⁸⁷ process. The information gathered from the RFI's demonstrated that individual private carriers could not themselves undertake a project that would provide a complete fiber optic system. Accordingly, Kentucky stepped up to provide the middle mile backbone of such a system. The vision was a network that would allow open access to local public and private internet service providers. To manage Kentucky Wired, Kentucky created the Kentucky Communications Network Authority.^{188 189}

Kentucky reached a 30 year concession agreement with a Macquarie Capital led consortium to design, build, finance, operate and maintain this statewide network in 2015 in exchange for availability payments. The plan of finance was complex and included \$232M in tax exempt revenue bonds and \$58M in taxable revenue bonds, an equity contribution from the concessionaire of \$21M, a public in kind equipment contribution of \$30M and a federal grant of \$23.5M received through the Appalachian Regional Commission. Kentucky did have the advantage of marshalling most of the state agency budget amounts already anticipated for existing internet services. An initial consolidated and expanded budget for Kentucky Wired was \$324.4M comprised of site acquisition,¹⁹⁰ site preparation and construction. Significant delay and cost overruns¹⁹¹ arose from the difficulty encountered in obtaining pole attachment agreements, in some part from major incumbent telecom carriers like A T & T and Windstream. That said, though, at least 70 telecommunications, electric and municipal utilities were involved in providing access

¹⁸⁶SOAR.

¹⁸⁷RFI.

¹⁸⁸KCNA.

¹⁸⁹See https://www.fhwa.dot.gov/ipd/project_profiles/ky_kentuckywired.aspx.

¹⁹⁰In this project, pole attachment agreements in the main.

¹⁹¹\$88M.

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or services or both. Kentucky's offtake will be revenue from wholesale leasing of access to the backbone from a range of internet service providers including satellite companies, large corporate users and smaller broadband providers.¹⁹²

The Macquarie led consortium was comprised of Macquarie NG-KIH Holdings,¹⁹³ Leducor and First Solutions. As is its practice, MNG-KIH sold a substantial portion of its original 75% to DIF Infrastructure in 2018. The Design Builder is NG-KIH DBLLC Contractors that in turn is comprised of Leducor and Overland Contracting, an entity owned by Black & Veatch. The concession agreement required equipment refreshes in years 11 and 21 of the concession term. Fujitsu Network Communications provided design, equipment, operations and maintenance including those refreshes.¹⁹⁴

The Kentucky Wired P3 project is marked by several firsts and many lessons if not best practices: statewide scope, marshalling of most state agencies internet service capital and operational costs into an integrated budget and project, putting the state at the heart of the delivery of one of the most important tools in the 21st century digital driven economy, industry sounding RFI's that led to the retention of leading private sector companies knowledgeable in P3 and broadband infrastructure delivery, marshalling of federal, state, local and private sector equity and debt, confronting and then meeting the challenge of infrastructure hosting with pole attachment agreements from reluctant and likely heretofore dominant internet service providers by agreeing to cover \$88M in costs as a result of these supervening events. On this latter point, Kentucky's desire to provide broadband to rural areas and also to own fiber and leasing it to a range of users drove in part some of this risk taking. Therein lies a valuable lesson: the sovereign here chose to assume a risk in the concession agreement that likely would not have been accepted in the private sector.¹⁹⁵ Finally, Kentucky Wired has taken a considerable amount of criticism for its statewide approach pitting it against telecom incumbents among other entities with vested interest or risk aversion. And the ultimate assessment of the success of Kentucky Wired is not yet determinable. That said, Kentucky has shown leadership in a critical area of infrastructure and in an important way shown initiative in helping its workforce

¹⁹²Id.

¹⁹³MNG-KIH.

¹⁹⁴Id.

¹⁹⁵See Figure 6, *supra*, on right of way risk.

change from a resource extraction based economy¹⁹⁶ to a knowledge based economy in step with the digital era now prevailing.

Denver Fastraks

One of the largest transit projects in the U.S. was undertaken by the Denver based Regional Transit District.¹⁹⁷ One of its funding sources was unusual if not unique: namely, a 2004 voter approved FasTracks plan that authorized a sales tax for Denver and 36 of its surrounding units of local government. That geography encompassed the full spectrum of political points of view, yet on the need for regional transit there was unanimity as all these units of government approved the imposition of an additional sales tax. FasTracks involved the design and construction of the University of Colorado A line and G Line and a segment of the B line to Westminster plus certain other facilities. RTD chose a design, build, finance, operate and maintain P3 structure to undertake this project known as the Eagle P3 project. In 2009, RTD issued a Request for Proposals and in response RTD ultimately chose Denver Transit Partners¹⁹⁸ comprised of Fluor Enterprises Inc.¹⁹⁹ and Macquarie Group²⁰⁰ and entered into a 34 year concession agreement whereby RTD will pay DTP to operate and maintain these portions of RTD's transit system. DTP in turn entered into a design/build agreement with Fluor, HDR Global Design Consultants, Balfour Beatty Rail, Inc., and Ames Construction, among others. RTD retains ownership of all assets constructed as part of the Eagle P3 project and sets fares and establishes fare policy and also retains all revenues generated by the facilities so constructed. Further, RTD makes availability payments based on certain performance specifications. DTP financed the Eagle P3 project's cost of \$2.043B with a \$1.03B FTA New Starts Full Funding Grant Agreement, Private Activity Bonds of \$396.1M, \$280M TIFIA loan, RTD sales tax revenue of \$128.1M, Revenue Bond proceeds of \$56.8M, equity of \$54.3M and a combination of federal, state and local grants and other contributions of \$113.8M.²⁰¹

The first phase of the Eagle P3 project went well and indeed was award winning. Trouble arose in the latter phase with two challenges in particular: one predictable, the other not. Voters

¹⁹⁶I.e. coal.

¹⁹⁷RTD.

¹⁹⁸DTP.

¹⁹⁹Fluor.

²⁰⁰Uberior Infrastructure Investments and John Laing Investments purchased Macquarie's position at financial close.

²⁰¹See https://www.fhwa.dot.gov/ipd/project_profiles/co_eagle_project.apsx.

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were reluctant to increase the sales tax amount when cost overruns and delays in the completion of the entire scope of FasTracks occurred, particularly the segment northwest of Westminster on Northwest Rail Line B. These delays were occasioned in part by a provision in the New Starts Full Funding Grant Agreement which required the deployment of new technology in connection with at grade rail crossings. Also, the Northwest line shares tracks with a class one freight rail company. The lessons learned are several: Be wary of new technologies particularly in the realm of anything involving safety measures, fashion a P3 project with a scope that is capable of completion in one or two phases, avoid shared track-
age where possible, and perhaps consider breaking a large project into separate districts so that segments can be financed with local revenues based on geographic proximity. On balance though, FasTracks does feature most of the attributes of a pioneering and successful P3: a creative mix of federal, state, local and private financing centered on Denver's Union Station linking Denver's International Airport to Denver's urban core, an integrated approach to regional transit, availability payments keyed to operating and maintenance standards, formulation of policy and retention of fare and other revenues by the public sector, prequalification and selection of strong team members to deliver the design, build, finance, operation and maintenance P3 project requirements.

Merced Campus

Our next case study centers on the University of California²⁰² Merced campus. It takes the place of the Long Beach Courthouse project as the largest social infrastructure P3 undertaken in the U.S. and enables this newest UC campus to accommodate up to 10,000 students by providing student housing, new classrooms, teaching and research facilities. The Merced Campus P3 project cost \$1.2B and was completed on budget and on time.²⁰³

Plenary Properties Merced²⁰⁴ led the P3 team comprised of Webcor Builders, Skidmore, Owings & Merrill LLP and Johnson Controls Inc. Like the Howard County Maryland Courthouse P3 project, the Merced Campus P3 project involved a comprehensive group of public champions, sought and received counsel from a wide range of P3 experts, married together a range of public and private stakeholders, engaged some of the most experienced P3 companies to design, build, finance and maintain this P3 project. As the newest campus in the UC system, the UC Merced Chancel-

²⁰²UC.

²⁰³See <https://news.ucmerced.edu/news/2020/merced-2020-project-wraps-stands-largest-public-private-partnership-completed-us>.

²⁰⁴PPM.

lor and EVP/CFO were two of the key public champions. The UC Board of Regents acted as an advisor. Merced's Mayor and City Council were also early supporters. A notable feature of this P3 involved the use of the Urban Land Institute's Advisory Panel Services in 2012. Since 1947, the Urban Land Institute has led volunteer panels of industry experts studying complex land use, zoning, market sounding, financing and development strategy problems most often in the context of a specific geography. That 2012 study set the stage for a Request for Qualifications that in turn generated six responses out of which three groups were short-listed. As noted, the Plenary Group²⁰⁵ was chosen to lead the private sector team in June of 2016 and the UC Board of Regents approved the Merced Campus P3 project conceptual design and authorized the proposed external financing plan in July of 2016. Thereafter the operative agreements were executed including the 39 year concession agreement which featured availability payments of \$51M per year for 35 years.²⁰⁶

The location of this P3 project was a 219-acre university owned site adjacent to the existing Merced campus and involved new student housing,²⁰⁷ teaching and research facilities, and faculty offices. The financing plan was comprised of \$600M from UC, \$590M from PPM and \$148M from UC Merced. An unusual and perhaps risky feature of this P3 is the retention of the operational functions with UC Merced. That coupled with the dependence on the UC system for a substantial portion of the capital expenditure does depart from some of the features of the design/build/finance/operate/maintain model. The reasoning behind this modified approach likely centers on the commitment of the UC system to the San Joaquin Valley and its many first generation college students, many of whom are of Hispanic heritage.²⁰⁸

Pembroke School

In Florida, developer Haskell Educational Services²⁰⁹ of Miami teamed with Pembroke Pines public charter school for the design, construction and operation of its new facility in September 1998.²¹⁰ In exchange for operating the school, HES was guaranteed public

²⁰⁵ Canada.

²⁰⁶ See https://en.wikibooks.org/wiki/Public-Private_Partnership_Policy_Casebook/UC_Merced (hereinafter "Public-Private Casebook").

²⁰⁷ 1700 beds.

²⁰⁸ Public-Private Casebook, *supra* note 206.

²⁰⁹ HES.

²¹⁰ Ronald D. Utt, Ph.D., "How Public-Private Partnerships Can Facilitate Public School Construction," The Heritage Foundation Backgrounder (Feb. 23, 1999), <http://www.heritage.org/research/reports/1999/02/partnerships-aid-public-school-construction>.

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support in the amount of \$3,750 per student per year, an amount which would not be sufficient to cover operating costs.²¹¹ By implementing construction and design efficiencies on the front-end, HES was able to achieve cost savings that allowed it to make up the shortfall and, at the same time, spur innovation in school design. Some of these design elements included reconfiguring special-purpose rooms such as the school cafeteria into multipurpose rooms to allow for more intensive use of space that would otherwise stand idle; replacing the traditional school library with several small “media rooms” that could be shared by one or more classrooms; streamlining administrative office space; replacing the standard school kitchen with a “warming kitchen” and contracting out food services; and building smaller classrooms that accommodated no more than twenty-five students, in an effort to discourage overcrowding.²¹² As a result, the Pembroke facility was built at a cost savings of 22 to 34 percent below the cost to construct a new public elementary school at the time.²¹³

As in the Pembroke example, another potential cost-saving approach is to contractually authorize a private developer an opportunity to generate additional revenue by offering fee-based after school programs or, alternatively, by renting the building space—including, in the school context, classrooms, meeting rooms, auditoriums, computer labs or science labs—outside of school hours to other non-profit and for-profit users for approved educational purposes.²¹⁴ This supplemental rental opportunity can mean savings for the public entity, to the extent that the public entity can negotiate lower payments in exchange for use of the facility only during core school hours.²¹⁵ This multiple-use potential also creates an incentive for the developer to design and construct an attractive, high-quality space that will accommodate intensive use over the life of the facility.²¹⁶ This intensive use approach not only increases the convenience and accessibility of after-hours educational opportunities for students, who might otherwise not be able to take advantage of these programs due to lack of transportation options, but it also can offer new resources for their parents and other community members, to the extent the space can be used for continuing education, refresher courses, or job training programs.

²¹¹*Id.*

²¹²*Id.*

²¹³*Id.*

²¹⁴*Id.*

²¹⁵*Id.*

²¹⁶*Id.*

D. Ingredients of Successful U.S. Public Private Partnerships

At the outset of this article, we listed six keys to successful P3s. They are: a favorable statutory and political environment for the P3 project in question; an organized structure; a detailed business plan; a guaranteed revenue stream; meaningful stakeholders support; and smart partner selection. Our intervening statutory and case study analyses has corroborated these six keys, added some more, and gave context to why they are important.

The P3 laws in Virginia, Maryland, and Florida provide a framework and process to undertake successful P3 projects. Bespoke laws can work also. For example, the Pennsylvania Bridges case study demonstrated this approach with Pennsylvania Acts 88 and 89. Bespoke laws were also features of the Kentucky Wired and Ohio River Bridges case studies. Overall, though, Virginia's two pieces of legislation and accompanying guidelines are the best examples of P3 enabling legislation.

Another key is a P3 office, a group of public and private leaders charged with making high-level decisions about the P3 projects under its purview. The P3 office can be officially established or arise in response to a specific project. And, the existence of excellent framework legislation and a robust P3 office helps create a supportive political environment for P3 projects. More is required than a P3 framework law and P3 office to ensure the correct political environment for any given P3 project to flourish.

The political considerations are several: transparency of process coupled with effective industry soundings, signaling of seriousness of public purpose and intent, adequate due diligence around the risks a given P3 project may carry, among others. Regarding transparency, contrast the approaches taken by Chicago on its parking meters' privatization and Indianapolis's abortive courthouse project with the approaches Howard County and Indiana took with its courthouse and toll road, respectively. The seriousness of public purpose was evident in the Port of Miami Tunnel, Goethals Bridge and Ohio East End River Bridge Crossing. Put another way, these and other projects we discussed chose the right kind of infrastructure, bridges and tunnels, and often the right scale: For example, one of two bridges over the Ohio River rather than both.

As noted above, a P3 office can arise in the context of a specific P3 project and such a project-specific P3 office is warranted in connection with the most complex projects like the Ohio Bridges, Pennsylvania Rapid Bridge Replacement and LaGuardia Main Terminal. That said, though, for P3s to become more successful and widespread the Virginia examples of detailed framework

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laws and guidelines coupled with well-developed P3 offices show the best way forward.

Simply contrast the failure of the Indianapolis Courthouse P3 Project for the lack of an effective P3 office, transparency, front end due diligence, among other things, with the Port of Miami Tunnel, Pennsylvania Rapid Bridge Replacement, East End Crossing, Long Beach Courthouse, LaGuardia Airport Main Terminal and Merced Campus P3 projects. They all featured detailed business plans, although Port of Miami, Ohio River Bridges and LaGuardia Main Terminal evolved over many years. Howard County Courthouse and Merced Campus are better examples of deliberate, cohesive planning. So, too, the Pennsylvania Rapid Bridge Replacement. Indianapolis Courthouse shows the perils of lack of transparency and absence of an effective P3 office. The private parties there although being P3 industry leaders could not overcome (i) opacity and (ii) politics. Those two factors also plagued Chicago's parking meters privatization. Moreover, Chicago chose inappropriate infrastructure and did not use the proceeds of privatization for infrastructure purposes. Rather, it sold at a discount price public goods, bungled the promised modernizations of the parking meters themselves and undermined the P3 opportunities in Illinois more generally. Moreover, the P3 framework laws in Illinois are limited.²¹⁷ Chicago was not alone in P3 stumbles. Denver Fastraks was brilliant at the outset but then ran out of funding. Denver International Airport's Great Hall lacked an effective P3 office and also failed to undertake adequate due diligence on concealed conditions. Kentucky Wired was also challenged by the difficulty in securing hosting agreements from well-established industry hegemony, like AT&T. Nonetheless, Kentucky's business planning was focused on a deficiency, lack of broadband, a 21st century imperative for any state, much less one confronting a workforce lacking skills and beset with retraining workers mired in a dying coal industry. The Long Beach Courthouse delivered quality social infrastructure but its promise for more quality courthouses has remained unfulfilled. Perhaps the success of the Merced Campus P3 project will spur more innovation and P3 projects by the California Judiciary.

Guaranteed revenue streams were clear in the Goethals Bridge, Port of Miami Tunnel and East End Crossings P3 projects. Availability payments paved the way for the Long Beach and Howard County Courthouses. Denver Fastraks relied on sales tax and federal grants among other things. Many of our case studies wedded public finance and project finance. Examples include Goethals Bridge, Pennsylvania Replacement Bridges, Howard County

²¹⁷ Although Illinois Senate 1900 shows some promise.

Courthouse, LaGuardia Airport Main Terminal, and Kentucky Wired. Moreover, Goethals Bridge and LaGuardia Airport Main Terminal featured the long established New York New Jersey Port Authority which functioned like a sophisticated P3 office. Stakeholder support is a critical part of any successful P3 project and the government agencies in the Port of Miami Tunnel, Ohio Bridges, Denver Fastraks took the time to develop consensus and hence the requisite degree of stakeholder support; so, too, the Pennsylvania Bridges. The Indianapolis Courthouse and Chicago Parking Meters were notable examples of failure to achieve stakeholder support. Long Beach Courthouse was successful as a one-off, not more. The jury is still out on Kentucky Wired and to some degree LaGuardia Main Terminal; so, too, the latter stages of Denver Fastraks.

Finally, smart partner selection occurred in (i) Port of Miami Tunnel with Bouygues, (ii) Goethals with Macquarie, Kiewit, and Massman, (iii) East End Crossing with Vinci and Walsh, (iv) Pennsylvania Bridges with Walsh and Plenary, (v) LaGuardia with Vantage, Skanska, and Meridian, (vi) Howard County Courthouse with Edgemoor and Clark and (vii) Merced with Plenary.

Part III. Risk, Allocation, and Related Matters.

A. Large, Complex Projects

As a general proposition, construction projects are high risk endeavors. Owners initiate projects based on economic assumptions which may not come to fruition. Contractors must marshal and coordinate numerous resources to complete an enormous number of tasks and activities, any one of which could result in significant cost or delay (or both) if not performed well. On top of all of that, the parties will likely need to respond to any number of unforeseen conditions or circumstances that might arise throughout the duration of the project.

As the cost and complexity of a construction project increases, so does the risk involved, and it is not necessarily a straight-line correlation. In fact, a regular refrain with respect to so-called megaprojects is that two thirds of them fail. That statistic appears to be so routinely accepted that it often is cited without attribution, although it may have originally emanated from a well-

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known work of Edward Merrow published in 2011.²¹⁸ A number of subsequent studies corroborate Mr. Merrow's findings.²¹⁹

Megaprojects are generally defined as having a contract value of one billion USD, or more, and a project failure defined as the occurrence of one or more of the following events: (a) exceeding budget by 25% or more, (b) delays in completion of 25% or more of the schedule requirements, and (c) failure to achieve business objectives of the project within one year from completion or start-up.²²⁰ Numerous factors contribute to such a high failure rate, but the common denominator among such failures is project scale; that very large and complex projects simply behave differently than smaller projects and systems.²²¹

One recent study found that nine out of ten megaprojects had cost overruns, with overruns of 50% common.²²² By way of example, rail projects examined had an average overrun of 44.7%. Such projects also had a ridership shortfall of 51.4%, i.e., failing to achieve business objectives. For roads the average cost overrun was 20.4%, combined with a 50% likelihood that user demand would be less than 80% of that projected.²²³ Similarly poor performance was tracked in connection with schedule. If the evidence demonstrates that only one in ten megaprojects is on budget, one in ten on schedule, and one in ten achieves business objectives, then the success rate for megaprojects is approximately only one in a thousand.²²⁴

The relationship between project size and complexity with project risk is instructive in the context of P3 transactions, which are typically associated with large and more complex construction projects (although not necessarily megaprojects). In theory, a P3 delivery methodology could be used on a project of any size, but the challenges, complexity, and effort involved in P3 transactions

²¹⁸Edward W. Merrow, *Industrial Megaprojects: Concepts, Strategies, and Practices for Success* (Hoboken, New Jersey: John Wiley & Sons, Inc., 2011).

²¹⁹For example, see RT-315-Successful Delivery of Megaprojects, Construction Industry Institute, 2015; Bent Flyvbjerg, *What You Should Know About Megaprojects, and Why: an Overview*, Project Management Journal, Vol. 45, No. 2, April-May, 2014.

²²⁰Merrow, *supra* note 219, at 38. Flyvbjerg uses similar criteria. Merrow states that the one billion USD figure is based on 2003 dollars, but that dollar amount is used in other studies and reports without any adjustment for changes in cost over time.

²²¹Bob Prieto, *Changing Risk Manager's Perceptions*, July 20, 2021, available at www.linkedin.com/pulse/changing-risk-managers-perceptions-bob-prieto/, last accessed October 17, 2021.

²²²Flyvbjerg, *supra* note 215.

²²³*Id.*

²²⁴*Id.*

generally is only warranted for a large project like those profiled above in Part II of this article, i.e., large infrastructure projects. P3s also have an added layer of complexity generated by the nature of a public-private relationship and the duration of that relationship in a P3 setting.

B. Mixed Results

Given the size and complexity of many P3 projects, it is not surprising that results have not always met expectations. Indeed recent media coverage notes that a yet to be published study undertaken by The Travelers Companies concluded that over the last 15 years, infrastructure projects with a value greater than 250 million USD have been a poorly performing sector for contractors.²²⁵ For context, the study examined 224 heavy civil projects constructed between 2004 and 2020, which included transportation infrastructure and other large-scale projects for which Travelers was a surety or co-surety. Those delivered through a P3 methodology proved to be the “most money-losing” for the design-build (or EPC) team. The article describing the study does not reveal whether such losses also were suffered at the project company/concessionaire level, but the potential for such risk is apparent.

The reported findings of the Travelers study reinforce some recent P3 market experience in the United States. For example, Skanska disclosed substantial losses on P3 projects in the United States.²²⁶ Several large construction companies that have been active in the P3 sector also have announced that they will not pursue P3 transactions in the United States at the project company/concessionaire level or make equity investments in such projects.²²⁷

Despite the obstacles inherent in large, complex construction projects, many P3s are successful projects. The ingredients for success are not necessarily easy to identify, as each P3 project differs from others in some respects, such as overall transaction structure, specific deal terms, risk allocation, economic assumptions, or other project issues. And, because the P3 delivery

²²⁵ Jeffrey Steele, *Report: P3 megaprojects often lose money for contractors*, Construction Dive, Sept. 28, 2021. Available at <https://www.constructiondive.com/news/report-p3-megaprojects-often-lose-money-for-contractors/606480/>, last accessed October 17, 2021.

²²⁶ Peter Reina, Debra K. Rubin, and Jim Parsons, et al., Skanska Books \$100M Write-Off On P3s As US Civil Chief Exits That Role, *Engineering News-Record*, Oct. 24, 2018., www.enr.com/articles/45637-skanska-books-100m-write-off-on-p3s-as-us-civil-chief-exits-that-role.

²²⁷ Kim Slowey, *Pursuing a better balance of risk for P3 projects*, Construction Dive, Nov. 3, 2020, www.constructiondive.com/news/pursuing-a-better-balance-of-risk-for-p3-projects/588269.

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methodology is still something of an emerging market in the United States, no standard approach has evolved. Nonetheless, the case studies above in Part II of this article reveal a few characteristics found in some P3s that appear to contribute to project success.

C. Threshold Issues

As noted, the data and results regarding P3 projects is conflicting. Clearly risk increases with value and complexity, and numerous studies have determined that such projects are more likely to underperform expectations. The P3 methodology in and of itself does not resolve the obstacles noted in such studies. Nonetheless, a study by Syracuse University concluded that P3 models have a higher likelihood of success.²²⁸ What accounts for such variations?

As a threshold matter, not all construction projects are well-suited for a P3 delivery methodology. Forcing a P3 approach on a project that isn't a good fit will hamper project outcomes. Even if properly executed, such a project may not achieve the expected, or at least desired, level of success. The administration, mechanics, duration, or other features of the P3 methodology will create burdens that cannot be entirely overcome. McKinsey & Company posit that when projects go wrong, hindsight shows that the problems began at the outset, due to poor justification and need for the project, misalignment among stakeholders, insufficient planning, and inability to find or use the appropriate capabilities.²²⁹

From the perspective of the public sector, a P3 project must address a true user need. In other words, provide a legitimate and much needed service. A "bridge to nowhere" might be completed on time and on budget, but is of limited value to the public sector. Therefore, a proper value-for-money analysis is crucial. The public sector most honestly appraise project costs and evaluate likely benefits, as well as consider alternate approaches. Anything less heightens the probability of a failed project—one that is over

²²⁸ *Public-Private Partnerships: Benefits and Opportunities for Improvement in the United States*, Syracuse University, 2017, available at <https://eng-cs.syr.edu/wp-content/uploads/2017/04/P3Report.pdf>, last accessed October 17, 2021, and also cited in Michael Della Rocca, *The rising advantage of public-private partnerships*, Voices, McKinsey & Company, June 2017, available at <https://www.globalinfrastructureinitiative.com/article/rising-advantage-public-private-partnerships>, last accessed October 17, 2021.

²²⁹ Nicklas Garemo, Stefan Matzinger, and Robert Palter, *Megaprojects: The good, the bad, and the better*, Infrastructure, July 1, 2015, McKinsey & Company, available at <https://www.mckinsey.com/business-functions/operations/our-insights/megaprojects-the-good-the-bad-and-the-better>, last accessed October 17, 2021.

budget, delayed, or unable to achieve business objectives. And, a failed project will erode the potential to secure public support for future P3 projects.

An example of a transparent process for selecting projects is found in South Korea, which established in 2005 the Public and Private Infrastructure Investment Management Center (PIMAC) to obtain accurate data and project costs, as well as to evaluate project benefits. PIMAC conducts feasibility studies on potential public megaprojects and performs value-for-money analysis for such projects.²³⁰ In 2015 McKinsey & Company reported that PIMAC had rejected almost half of the projects it reviewed as compared to a rejection rate of 3% prior to the formation of PIMAC.²³¹ Such a robust analysis of project need and value provides an opportunity to filter out projects with a higher probability of failure. That's part of the threshold equation for a P3 project.

From the perspective of the private sector, the entire P3 transaction must be a commercial success or at least commercially viable. That's the other side of the threshold equation. It isn't enough for the design and construction of the project to be completed on time and on budget, as difficult and important as that may be. The obligations of the project company/concessionaire extend over the life of the concession or other operating agreement. The project must be profitable over the life of the entire transaction so that lenders are repaid, investors earn a return on capital, and the project company/concessionaire fulfills all of its obligations to the public sector. A project without such prospects won't be a good candidate for a P3 methodology.

D. Achieving Success

If a potential P3 project satisfies the threshold criteria identified above, then it may be a fit for a public-private partnership. But, the parties must then figure out how to combine their respective skills and resources and execute the transaction in a way that facilitates project success. Identifying the factors that may lead to a successful P3 project is not easy. Variations among P3 projects and the wide range of challenges confronted, which often are transaction specific, make any generalization or standard rules for success difficult to divine. Nonetheless, by examining the case studies above in Part II of this article, certain features emerge that contributed to the success of some of those projects. Such factors can be described or organized in a range of

²³⁰Id.

²³¹Id.

THE INGREDIENTS OF SUCCESSFUL U.S. PUBLIC-PRIVATE PARTNERSHIPS AND A PATH FORWARD FOR THE RENEWAL AND EXPANSION OF U.S. INFRASTRUCTURE categories and often are inter-related.²³² One such approach is set forth below for purposes of illustration and reference.

- *Clear Goals and Metrics.* Successful P3 projects have a clear business objective and metrics through which to measure success. Such objectives and metrics are not limited to what the public hopes to achieve through the P3 project. The private sector party must also make clear what success looks like from its vantage point. By identifying each party's objectives and the applicable metrics, the parties are able to design a transaction with improved odds of achieving success for each party. That exercise also may expose any disparity between one party's expectations and the other party's intentions, which could easily spawn disputes if left unaddressed.
- *Public and Political Support.* It takes a tremendous effort to assemble a P3 transaction and obtain the support of all stakeholders. Therefore, political and legislative support for the P3 project is essential. Such an effort also will be enhanced if there is a "champion" for the P3 project or support from a P3 office to help drive and maintain momentum for the project from procurement through execution. Political support also means public support, as the P3 project will likely draw upon taxpayer dollars, directly or indirectly, and dictate availability and use of limited public services and resources. Moreover, a P3 project may require special legislation to proceed, which will be easier to obtain with the support of the public.
- *Mutual Commitment.* A P3 project is much more likely to succeed if the public sector and private sector truly treat each other as partners. Research indicates that success in P3 projects is somewhat derivative of a productive working relationship, and in particular (a) a commitment to a strong partnership, (b) mechanisms to communicate effectively, (c) a willingness to jointly solve and recover from problems. Such relationships exhibit a commitment by each party to achieve the other party's goals that is equal to the commitment of each party to achieve its own goals.²³³ That mutual commitment is key if a long-term relationship is to thrive, particularly since the contractual documentation cannot anticipate everything that might occur over time.

²³²For another approach assembled by the National Council for Public Private Partnerships, see *supra*, note 1.

²³³Elyse Maltin, *What Successful Public-Private Partnerships Do*, Harvard Business Review, January 8, 2019, available at <https://hbr.org/2019/01/what-successful-public-private-partnerships-do>, last accessed on October 17, 2021.

- *Strong Teams.* P3 projects are large and complex. Not every private sector contractor or public sector entity has the skill and expertise to tackle such an endeavor. Moreover, such projects require a collaborative approach (or at least are more likely to succeed with such an approach). Assembling the right teams can greatly influence outcomes and requires (a) an honest assessment of project needs and risks, and (b) a commitment to remain engaged throughout the entire process.
- *Equitable Risk Allocation.* Risk allocation between public sector and the private sector must be equitable and clear. That can be a tall order. The temptation to transfer risk often is strong. At other times, however, a party may prefer to retain risk rather than pay a perceived premium to transfer that risk. But the risk remains regardless of where it is allocated, so the object becomes an equitable allocation of risk consistent with effectively managing such risk. Successful P3 projects exhibit a degree of risk sharing, i.e., allocating risk to the party best able to manage it and making appropriate adjustments to the economic formulas underlying the transaction.

E. Risk Allocation Challenges

The natural tendency when drafting and negotiating contracts is to transfer risk. That temptation can be particularly powerful with respect to construction projects, which often involve significant risks that are unknown or unpredictable at the time of contracting. Transfer of risk may make sense, but it can come with unintended consequences, such as increased cost to cover a risk contingency, higher transaction costs, reduced contractor interest in the project, and acrimonious relationships.²³⁴ But a risk does not disappear simply because it has been contractually transferred, even when a premium is paid for such transfer. Only the obligation to manage the risk in the first instance has been transferred. If the party that assumes such obligation cannot control or isn't able to manage that risk, then the only thing really accomplished by such allocation is simply the transfer of blame.²³⁵

Methods of risk allocation often are described in three basic categories: (1) transfer of risk, (2) retention and management of the risk, and (3) financing the risk (i.e., insurance). Deciding which approach to use for each potential risk in a large and

²³⁴Ross J. Altman, Jeffrey Cruz, and Peter Halls, *One-Sided Contracts: Do They Pay Off?*, *Journal of the American College of Construction Lawyers*, Vol. 11, No. 1, Winter 2017, 167.

²³⁵Morrow, *supra* note 219, at 278.

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complex project like a P3 is a difficult exercise. First, the technical and financial ramifications are huge. Second, the relationship between the public and private entities, which is unconventional and of an extremely long duration, complicates the analysis. As noted above, large and complex construction projects behave differently. Typical approaches to project risk allocation may not always work well for such projects.

In the context of a P3 project, the customary roles of the owner, design professional, and contractor become blurred and may be shared to some extent. The project company/concessionaire likely will be responsible for both design and construction (not just one or the other), and in many P3 projects the project company/concessionaire also will invest equity, arrange for financing of its work, and be responsible for operations and maintenance of the completed project, i.e., assume some responsibilities and risks customarily associated with project ownership. The struggle to allocate risk in the context of a P3 project, therefore, arises in part from the non-conventional allocation of responsibility among the project participants. Moreover, the value-for-money analysis may actually reward the transfer of risk without digging deeper into whether such risk transfer is likely to be effective.

The potential disconnect in a P3 project between risk transfer and the ability to manage risk is particularly evident in connection with certain risks that typically are retained by the ownership entity in a traditional project delivery methodology. When a project company/concessionaire assumes many of the traditional responsibilities of ownership, however, it does not necessarily follow that all risks of ownership also should be transferred to the project company/concessionaire. That is particularly true with respect to any such risk that cannot be effectively controlled or managed by the project company/concessionaire. Indeed, the private sector partner to a P3 project generally evaluates how such risks are handled in deciding whether to submit a proposal for a P3 procurement.

In Figure 6 above, Aaron Toppston identifies ten risks to be considered by bidders or proposers for projects with alternative delivery methodologies. Those ten risks are: environmental permits, hazardous materials, right of way acquisition, geotechnical conditions, due diligence availability, shortlisted bidder stipend, utility relocation, railroads and 3rd parties, post-bid government approvals, and design approval process. Surely there are others, but the ten highlighted by Toppston reinforce concerns regarding the correlation between risk allocation and the ability to manage risk.

Each of the items noted in Figure 6 pertains to matters typically associated with project ownership and poses risks that are

difficult for a project company/concessionaire to predict, manage, or price at the time of contracting. Further, if any such risk were to come to fruition, the schedule consequences easily could be dramatic. Yet on a P3 project, the public sector partner may desire the private sector partner to assume such responsibilities given the nature of the transaction. It comes as no surprise, therefore, that Toppston emphasizes the importance of evaluating such risks when alternative project delivery systems are employed. Conventional approaches to risk allocation won't necessarily produce satisfactory results when applied to an unconventional delivery methodology like a P3.

In fact, a McKinsey & Company report argues that risk allocation in a P3 project requires a different calculus.²³⁶ To the public sector, risk is a budgetary line-item; the private sector, however, sees risk as something that requires proactive management regardless of whether the risk materializes.²³⁷ The difference between how the public and private sectors view risk can cause a misalignment between risk allocation and the respective capabilities of each of the public and private sector partner. The McKinsey report contends that P3 projects will achieve better results when the public sector partner takes a long-term view that (1) amortizes risk over the entire life-cycle of the project, and (2) optimizes the participation of the private sector by transferring risks that the private sector can manage effectively and retaining risks that the public sector can manage better.

F. How it Can Play Out²³⁸

As noted above, the challenges of risk allocation are amplified in a P3 project due to the nature and duration of the relationship between the public and private sectors. Moreover, the consequences of risk allocation can be particularly burdensome given the value and complexity of such projects. Some P3 projects have handled those challenges better than others and provide examples from which lessons can be learned regarding the allocation of risks identified by Toppston as particularly important when using a nonconventional form of project delivery methodology.

²³⁶Frank Beckers and Uwe Stagemann, *A smarter way to think about public-private partnerships*, Risk & Resilience Practice, McKinsey & Company, September 2021, available at <https://www.mckinsey.com/business-functions/risk-and-resilience/our-insights/a-smarter-way-to-think-about-public-private-partnerships>, last accessed on October 17, 2021.

²³⁷*Id.*, pages 3 and 4; and also see Merrow, *supra* note 219, pages 300–303.

²³⁸The authors gratefully acknowledge the contribution of our colleague Barbara Werther for her preparation of the material upon which this Section III.F. is based, and her description of the Hampton Roads project and documentation.

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1. A Common Risk and Market Response

For example, risks associated with geotechnical conditions are a major commercial issue on all construction projects. Two fundamental questions arise with respect to allocating the risk of differing site conditions, including: (1) what, if anything, will the project owner provide to identify to potential contractors pre-existing site conditions and to what extent are contractors able to rely upon such information; and (2) what, if any, schedule and financial relief will be granted to the contractor if unknown pre-existing site conditions are found. The absence of reliable site data and information can be highly problematic for contractors, particularly if the proposed construction contract does not provide relief to a contractor upon encountering unknown pre-existing site conditions. Best practices have long held that project owners should conduct geotechnical and other studies prior to procurement of a construction contract to enable competitive and market pricing.

Government contracts practitioners are very familiar with the Differing Site Conditions clause, FAR 52.236-2 (Apr. 1984), and the Site Investigation Clause, FAR 52.236-3 (Apr. 1984). Similar provisions are also included, almost uniformly, in private contracts.²³⁹ When such a provision is included in a contract, the contractor is more likely to price the work without contingency for concealed conditions. In theory, the project owner is in the better position to investigate existing conditions and absorb the cost of any differing site condition, and is more appropriately responsible for the conditions existing at the site. If the contractor subsequently discovers differing site conditions during performance of the work, then, after proper notice, the project owner will enter into a change order for the time and cost of addressing the differing site condition. By eliminating any contingency in the contractor's pricing, the ownership entity avoids payment of a windfall for differing site conditions that may not exist.

A project owner often retains a civil engineer or geotechnical engineer to perform a Phase I or Phase II study, or to take borings, and will provide the resulting geotechnical information, feasibility studies, hazardous material studies, and other similar data to potential bidders. The extent of insurance applicable to such services likely is limited. Additionally, most engineers only perform such services subject to a contractual limitation of liability. Therefore, if the information regarding site conditions is

²³⁹For example, see the General Conditions of the Contract for Construction, AIA Document A201 (2017), sections 3.7.4, 3.7.5, and 10.3, American Institute of Architects, available at https://help.aiacontracts.org/public/wp-content/uploads/2020/05/Preview_A201-2017.pdf#_ga=2.51406441.1127374617.1634501875-1571407556.1634501875, last accessed October 17, 2021.

inaccurate or incomplete, the risk for the most part remains with the project owner under a typical differing site conditions clause analysis. The project owner will be responsible to pay the cost of remediation or other activities required to address a differing site condition.

From time-to-time project owners attempt to transfer the risk of differing site conditions to the contractor through use of disclaimers or other exculpatory language intended to erode the right of a contractor to rely on any site data or information provided by the project owner. When projects are delivered through more traditional methodologies, however, the law generally limits the effectiveness of such efforts.²⁴⁰ The project owner is generally held to have impliedly warranted the adequacy and sufficiency of the documents provided to the contractor. But, that implied warranty is less certain to exist under less conventional delivery methodologies like P3 where the traditional roles of owner and contractor become blurred or shared. Whether the implied warranty applies in a nonconventional delivery approach may depend on the facts pertaining to transaction structure. A P3 owner might be in a better position to transfer the risk of differing site conditions given that many of the responsibilities associated with project ownership also are transferred. Nonetheless, should the risk of differing site conditions simply cascade downstream, or might principles of risk sharing be a more productive approach?

2. Example of a Reasoned Approach

The Virginia I-64 Hampton Roads Bridge Tunnel Expansion Project offers an example of how the public and private sectors struggle with the allocation of risk arising out of differing site conditions. Although not a P3 project as commonly contemplated, i.e., where the private sector partner is responsible to operate and maintain the completed project, and maybe provides financing of its work, the Hampton Roads project offers an example of a risk sharing approach whereby the public sector retained some of the responsibility for the cost of remedial action for an unexpected event based on pre-bid information provided by the ownership entity.²⁴¹ Many successful P3 projects exhibit a similar approach to risk sharing.

²⁴⁰Shannon J. Briglia and Michael C. Loulakis, article, *Geotechnical Risk Allocation on Design-Build Construction*, Volume 11, Issue No. 2, Journal of the American College of Construction Lawyers (Sept. 2017).

²⁴¹The Hampton Roads project is sometimes described as a P3, but probably is more accurately described as involving multiple design-build contracts. The project is described as an example of Alternative Project Delivery on the website for the Center for Innovative Finance Support, Project Profiles, of the U.S. Department of Transportation, Federal Highway Administration, available at <https://www.fhwa.dot.gov/innovation/cifss/p3/>

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The Final RFP for the Hampton Roads Bridge Tunnel Expansion Project, issued on September 27, 2018, states in Section 4.1.2 of the General Conditions that the “Department, to the extent permitted by the Legal Requirements, will pay Design-Builder for Design-Builder’s costs for Remedial Actions with respect to any Unknown Pre-Existing Hazardous Materials and Third-Party Hazardous Materials, the presence of either of which constitutes a Hazardous Environmental Condition.” However, if the Design Builder can recover funds from a trust fund, such as the Virginia Petroleum Storage Tank Fund, or from third parties “with respect to Unknown Pre-Existing Hazardous Materials, . . . Design Builder will pay such amounts to the Department . . .” subject to certain qualifications.

Virginia also accepted responsibility for third party claims against the Design Builder for personal injury, damages or harm to property or business due to any pre-existing hazardous materials and any related fines or penalties. Of course, the Hampton Roads contract contains a typical exception that Virginia will not reimburse the Design Builder’s costs for so-called Remedial Actions resulting from the Design Builder’s failure to prosecute the work in accordance with the plans or contract documents. The Design Builder also retained indemnification obligations to the extent arising from any hazardous materials brought on to the project site or from a failure to perform in accordance with legal requirements.

In the Hampton Roads project, which includes both roadway and bridge improvements, along with tunneling, there is a specific time period set aside for the Design-Builder to validate the scope of work provided in third party geotechnical and hazardous materials reports issued by Hampton Roads by performing any additional tests that it deems advisable. The RFP provided that the Design-Builder, after receipt of a limited notice to proceed, will perform “such testing, inspections and investigations as may be necessary to perform its obligations under the Contract Documents, including additional geotechnical investigations or Hazardous Materials studies.” This study period is referred to as the Scope Validation Period.

The RFP states, “Design-Builder shall not be entitled to any adjustment in the Contract Price and/or Contract Times due to impacts of Differing Roadway and Bridge Improvements Site

[tps://www.fhwa.dot.gov/ipd/project_profiles/](https://www.fhwa.dot.gov/ipd/project_profiles/), last accessed on October 17, 2021. Regardless of how one chooses to classify the delivery system, the project is a good example of how the public and private sectors can develop a method of risk sharing with respect to matters that customarily are associated with the responsibility of the ownership entity and, as a consequence, frequently misaligned in a P3 project.

Conditions encountered during construction . . . not identified during the Scope Validation Period, unless Department, in its sole discretion, determines that the circumstances associated with such Differing . . . Site Condition justify making such adjustment. The identical clause appears in the contract for the tunneling scope of work. Accordingly, for tunneling portion of the Hampton Roads project, a Scope Validation Period has been injected into the time for performance for the Design-Builder to perform further testing/investigation, but at the end of the day, Virginia remains willing to consider paying for or granting time relief for a differing site condition not identified during the Scope Validation Period beyond the information set forth in the Geotechnical Baseline Report, and retains discretion to make adjustments to costs or time or both.

The Hampton Roads contract is interesting because it recognizes the potential for owner provided documentation to be inaccurate, and even contemplates that the contractor may not discover potential differing site conditions during the Scope Validation Period. The reservation of discretion on the part of Hampton Roads to compensate or grant time to the Design-Builder on the tunneling portion of the work for issues discovered beyond the Geotechnical Baseline Report attempts to allocate risk fairly and in a manner correlated to the ability to control or manage the risk.²⁴²

Part IV. The Path Forward

We had hoped to discuss newly enacted Acts of Congress addressing hard infrastructure (e.g., roads and bridges) and so-called soft infrastructure (e.g., educational and health care facilities) embodied in the first instance in H.R. 3684 before the U.S. House of Representatives in the fall of 2021, having been passed by the U.S. Senate in the summer of 2021. H.R. 3684 shows the path forward for much-needed infrastructure investments. The legislation builds on many heretofore successful programs like TIFIA, WIFIA and RRIF. It also facilitates a process whereby US DOT can advance detailed business planning around an array of infrastructure including transit oriented development within 1/2 mile from a station. The TIFIA, WIFIA and RRIF programs are key pieces of projects of regional and national significance. The loan funds enabled by those acts can finance 100% of projects undertaken in rural areas up to \$150M in amount. Moreover, there are a number of ways to combine these programs using the public private partnership framework laws, P3 offices, and detailed

²⁴²The issue of risk allocation in P3 projects is complex. The discussion provided is intended as an overview. The authors hope to provide a more fulsome discussion in a subsequent article.

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business plans discussed in Parts I, II, and III. Accordingly, your authors promise another article delving deeply into these new Acts of Congress when enacted and some specific suggestions on projects and their financing plan possibilities in a forthcoming issue of the ACCL Journal.