

Yours, Mine and Ours: Risk and Risk Allocation in Public Private Partnerships^{1, 2}

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Public private partnerships are much like marriages. There are good ones, bad ones, and some which just seem to struggle forward. And similar to the outset of any new marriage, each party brings to the table different assets, with different senses of value and ownership. When each brings significant assets to the table, there may be a pre-nuptial agreement that defines how those individual assets may be used in good times and how they will be divided in bad times.

For public private partnerships, comprehensive development agreements and definitive concession agreements represent the pre-nuptial basis for sharing rewards and allocating risks. Some risks will accrue to only one partner in this very public marriage while others, much like community property, will be shared.

In this paper, we will examine some of the risks that accrue to the different parties in this “marriage” and how that risk allocation changes as the nature of the marriage changes.

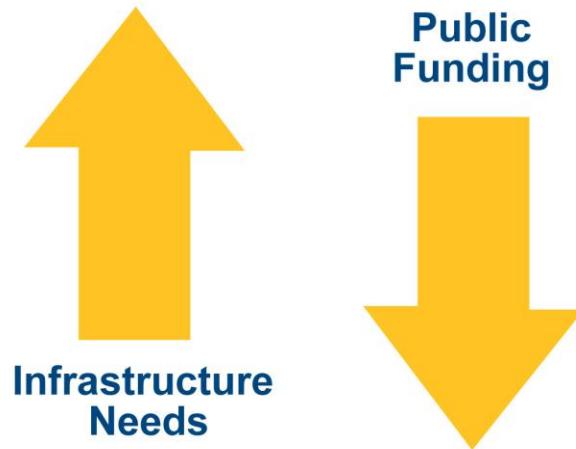
But first, let us spend a minute setting the stage.

Why PPPs – The Problem in a Nutshell

There is a multibillion-dollar backlog of unfunded major capital projects, and it is getting bigger every year. The growth in this backlog is driven not only by underinvestment in new capital expansion and deferred renewal today but also by deferred maintenance in the past. Simply, there is not enough public funding, based on current infrastructure delivery models, to meet the world’s growing infrastructure needs.

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This funding gap is not just a U.S. problem but rather is very much global in scope. What are the principal drivers of this funding gap?

- Growing world population
- Increased population in the world's urban mega-regions
- Aging infrastructure
- Inadequate funding based on “industrial” tax models
- High construction inflation growth driven by competition for scarce natural resources
- Project delivery models which fail to value risk and time
- High debt levels

Growing world Population

Increased population in the world's urban mega-regions

Aging infrastructure

Inadequate funding based on “industrial” tax models

High construction inflation growth driven by competition for scarce natural resources

Project delivery models which fail to value risk and time

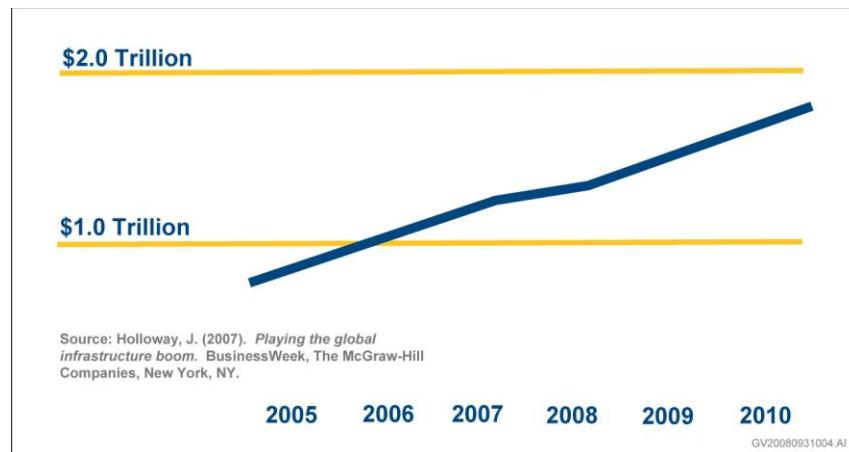
High debt levels

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Drivers of Global Funding Gap

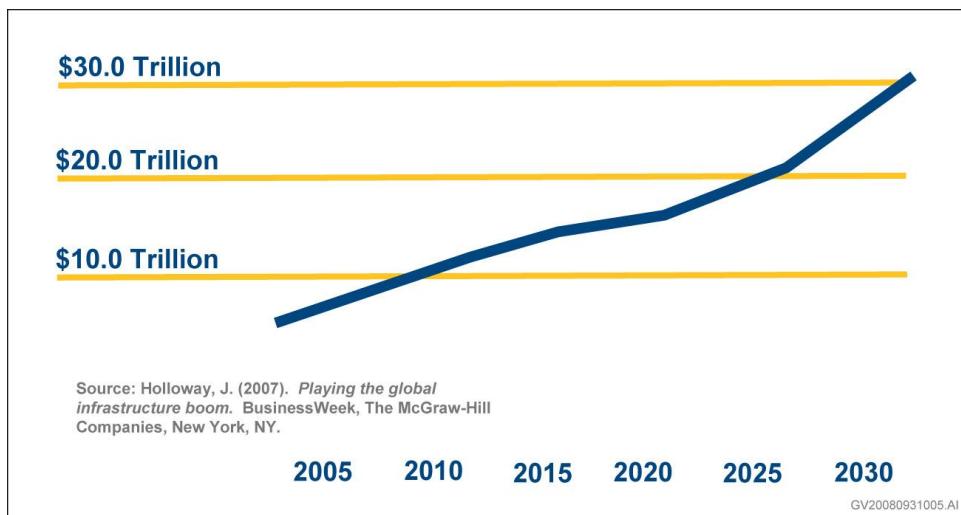
The needs are great. Depletion and deterioration of our public infrastructure is increasing at exponential rates as can be seen in the following figure for just the United States.

And the cost of meeting those needs are daunting and only projected to grow without a changed paradigm. Today, in the United States, funding needs exceed \$1.7 trillion according to the American Society of Civil Engineers, and these are only projected to grow.



Funding Needed for U.S. Infrastructure

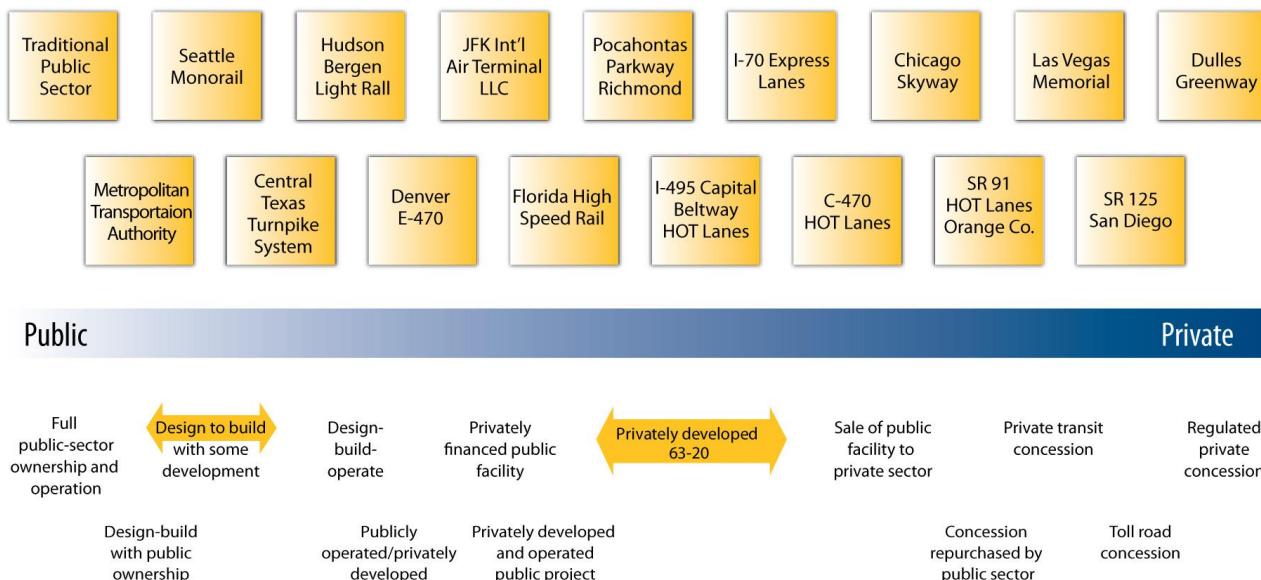
Globally, the challenge is even greater, as new mega-regions are built out and population growth in many areas continues at higher rates than the industrial societies are currently experiencing.



Funding Needed for Global Infrastructure

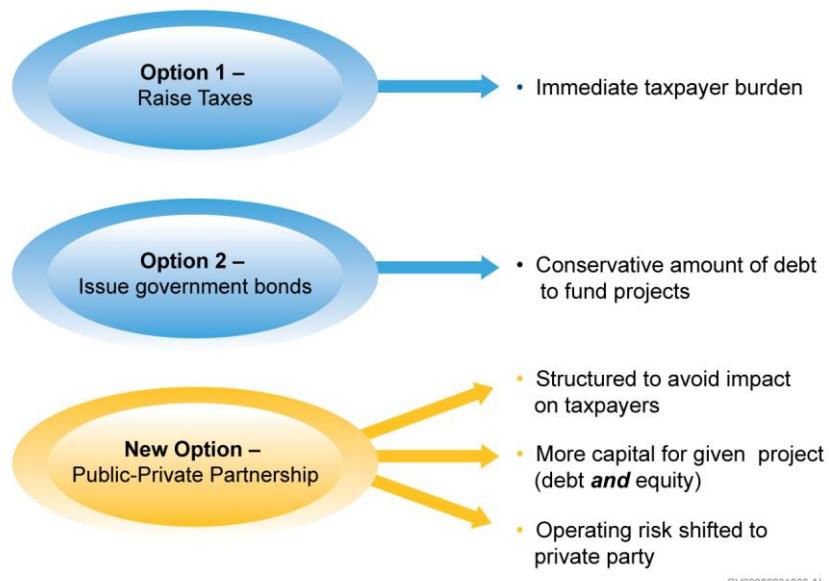
Why a PPP Solution?

Public private partnerships offer the potential to, first and foremost, greatly improve execution certainty. This is a point worth repeating. PPPs allow for a full-out frontal assault on many of the more controllable factors driving today's funding shortages. Increased use of design-build PPP forms drives full pricing of risks and provides increased discipline on scope control. Use of design-build-maintain PPP models increases the focus on life-cycle characteristics. The introduction of a private financing dimension into the PPP model further shifts the risk-reward decision point, while an introduction of market type risks acts as a filter on project selection and prioritization.



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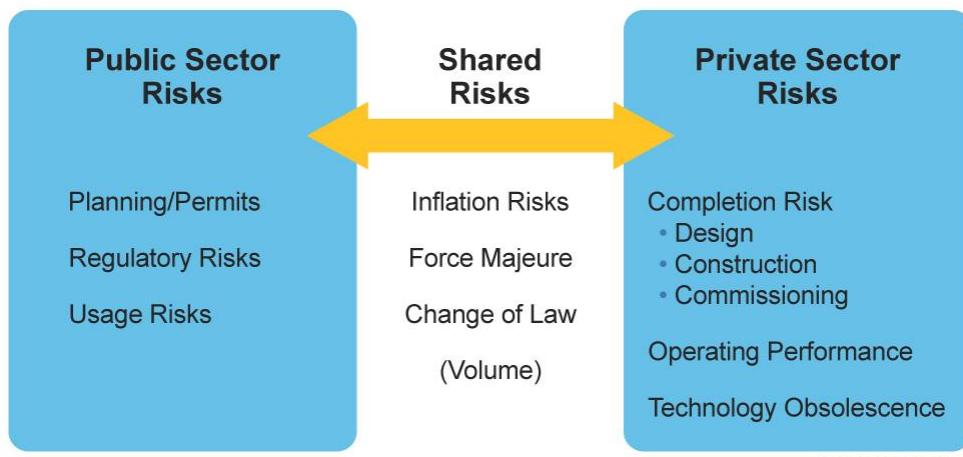
PPPs Exist across Risk-Reward Spectrum



PPPs Provide a New Source of Capital

So What Are PPPs?

Simply, a public private partnership (PPP) describes a government service or private business venture which is funded and operated through a partnership of government and one or more private sector companies. They redefine the traditional sharing of risks and rewards in the development, delivery, and operation of infrastructure projects and in the provision of related services.



Let us take a broad look at the “types” of PPPs there are, so we may better understand the nature of the risks that exist. Simplistically, we will view them as coming in two colors and two flavors. Let us look at each in turn.

PPPs Come in Two Colors

Public private partnerships come in two colors:

Brown (more appropriately called brownfields)
Green (more appropriately called greenfields)

Color Me Brown

Brownfield PPPs are characterized by an existing asset with defined revenue stream. Improvements may be required to this asset, but typically it will represent a more definable delivery risk (less property takes, reduced environmental process, well-established use in place) than a project that is essentially a new build of substantive rebuild. An existing revenue stream can be largely maintained or enhanced during delivery of any required improvements and the revenue stream has growth potential.

Color Me Green

Greenfield PPPs are characterized by a largely new asset with a new revenue stream. Buildout of the new facility requires a high delivery risk associated with property acquisition and environmental, design, and construction uncertainties. These risks are significantly reduced in any brownfield scenario. The new revenue stream has economic and political risks associated with it and is unproven with respect to the rate at which it comes online, steady state level reached, and potential for long-term pricing growth. Greenfield developments represent a higher risk at each stage of the life cycle of the project.

Comparative Risk Profile in PPP

As we have seen above, color matters in assessing the relative risks with different types of public private partnerships. These risks may be seen as falling broadly into three categories:

- Development stage risks
- Operating risks
- Financing risks

Let us look at each of these broad categories.

Development Risks

Development stage risks for both brownfield and greenfield PPP projects start first and foremost with the presence of political will. This risk is common to both “colors” of PPPs, and, in the absence of political will, the likelihood of achieving a successful PPP rapidly approaches zero.

While greenfield PPPs will likely require enabling legislation, the requirement for brownfield projects is less clear. In many instances, existing economic development or “real estate” type legislation governing the sale and leasing of government property may provide a sufficient context.

In both greenfield as well as brownfield contexts, the respective regulatory frameworks are evolving, with increasing attention being paid to those elements that go towards protecting the “public good.”

Existing environmental legislation, while equally applied to both colors of PPPs, will most likely have a greater impact on the successful realization of greenfield projects due to their typically higher relative new construction content and their increased likelihood of required property takes resulting in increased right-of-way acquisition type risks.

Project delivery risks associated with engineering, procurement, and construction are the dominant risks in greenfield projects as contrasted with brownfield projects. The role and importance of the EPC contractor dominates in greenfield project delivery.

Risk	Brownfield	Greenfield
Development risks		
Political will	#1 requirement	#1 requirement
Enabling of legislation	May not be required	Typically required
Regulatory framework	Evolving	Evolving
Environmental permitting	Only for expanded capacity	Significant
ROW acquisition	Only for expanded capacity requiring ROW addition	Significant
EPC risks	Limited to expansion	Significant

Operating Risks

Similar to the differences in the risk profile that we see related to the development of greenfield and brownfield PPP projects are the relative operating risks associated with each color of PPP.

By their very nature, brownfield projects have an operating history that tends to significantly reduce their risks relative to those encountered by greenfield projects. Brownfield projects do not face the ramp-up risks encountered by greenfield projects, a risk which tends to shift the steady state cash flow streams forward or further out in time and represents an important variable in the pricing of risk associated with this type of transaction.

Investments in brownfields may result in increased facility use, or increased user fees may reduce usage; however, these variances will be from the pre-PPP well-defined baseline. Greenfield projects do not enjoy comparable baselines, so any evaluation, no matter how well founded on traffic or revenue type studies, falls to a certain degree in the realm of “build it and they will come.”

Similarly, other risks such as diversion characteristics; vehicle mix, in the case of a highway; ratio of peak to average demand; maintenance characteristics; and other external project constraints will be known or carry less uncertainties than comparable considerations for greenfield projects.

Both greenfield and brownfield projects, however, will share a common risk characteristic during the operating phase, namely, the likelihood and rate of growth in any revenue streams.

Risk	Brownfield	Greenfield
Operating risks		
Ramp-up risks	None	Significant
Steady state traffic volumes	Known	Projected
Diversion characteristics	Predictable if previously tolled	Significant
Vehicle mix	Known	Projected
Growth rate	Projected	Projected
Peak to average ratio	Known	Projected
Maintenance characteristics	Known	Projected
Corridor-related constraints	Known	Projected

Financing Risks

Of the many risks faced by greenfield and brownfield PPPs, perhaps the greatest variability involves those that deal with the financing and financial aspects of the projects. Traffic or other similar revenue profiles may be largely known in the case of brownfield projects while they are nothing more than projections for greenfield projects.

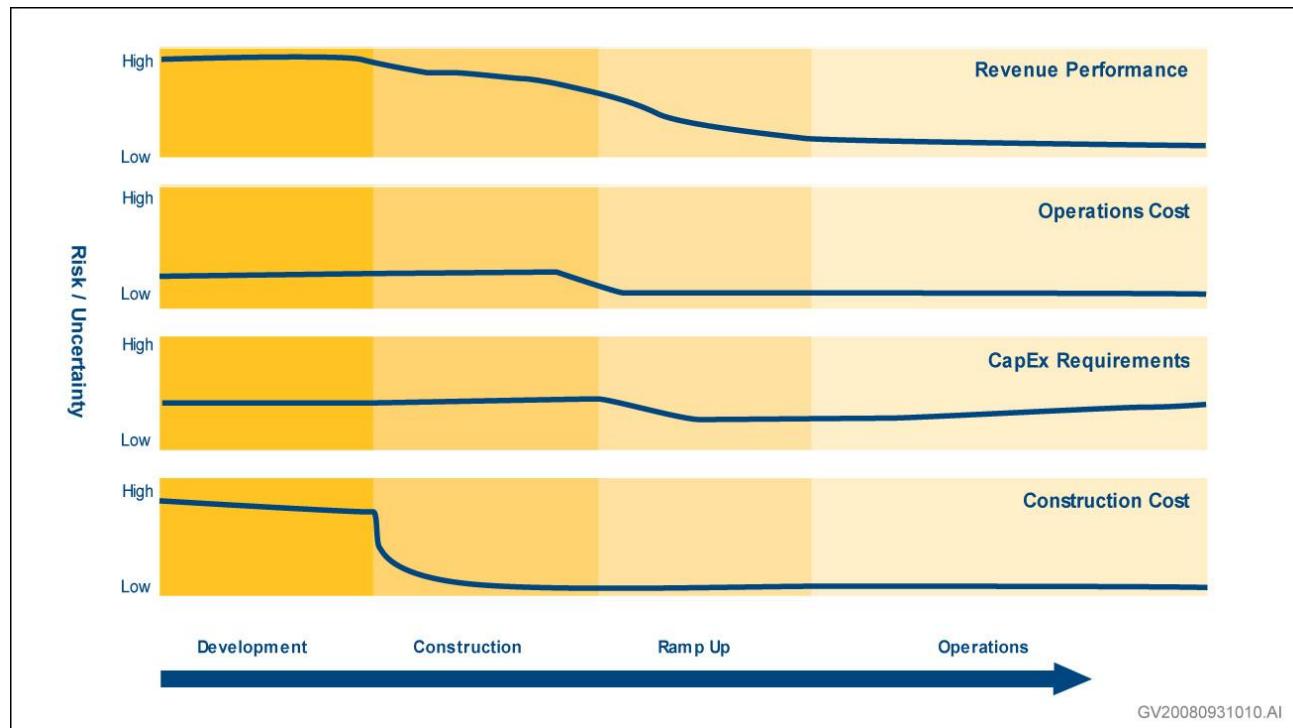
While both “colors” of PPPs will involve growth projections, brownfields have the benefit of building from a historical baseline.

Brownfield projects, however, carry a higher risk with respect to future asset financial performance than greenfields since, to a very high degree, brownfield assets will be aged and subject to limited upgrade as contrasted with the new build of greenfield projects. This point should be reiterated. Adequate maintenance and renewal provisions, while important to both “colors” of PPPs, take on added importance in brownfield projects. The length of PPP periods must be carefully considered as well as any turnover requirements imposed on the facility to ensure adequate financial provisions have been made with respect to these assets.

The recent accelerated growth in construction escalation relative to CPI type growth is an emerging risk which has not been sufficiently factored into brownfield PPP financial evaluations, in my view. Brownfields will be required to make investments in their facilities at an accelerated rate compared to greenfield projects and, as such, will be more heavily driven by the relative costs growth in the shorter term.

In the case of highways, both greenfield and brownfield projects share similar type risks related to toll rate growth and sensitivity around toll rates. Analogous risks would exist in their sectors where market type risks are transferred to the private partner.

Each PPP type carries with it different risks associated with refinancing, tax benefits, and ability in the United States to use certain tax advantaged sub-debt structures. The certainty around the brownfield PPP revenue model limits the scope for subsequent refinancing while the progressive de-risking of greenfield PPPs provides one or more significant opportunities to further increase the project's leverage and return capital to equity investors. This de-risking process occurs as new construction is completed, ramp-up rates and ultimate base levels are realized, and longer-term revenue growth rates considering all factors (rate sensitivity, competition from other facilities, and underlying market growth) are better understood.



Many PPP models will include provisions for progressive revenue sharing, but the nature of greenfield projects (typically to maximize the asset put in place) will tend to limit the scope of such revenue sharing as contrasted with brownfield transactions.

Tax risks vary and could be the subject of a paper unto themselves; however, tax risks include, in the case of brownfields, co-venture risk while certain structures, such as availability-based ones, have the potential to accelerate certain profits into the construction phase of the project from a federal tax perspective.

Risk	Brownfield	Greenfield
Financing risks		
Traffic profile	Known	Projected
Traffic growth	Projected from historical baseline	Projected
Asset condition	Aged	New
Time to required capacity additions	Short to medium	Medium to long
Toll rate growth/sensitivity	Projected	Projected
Refinancing	Limited opportunity	Significant opportunity
Revenue sharing with state	Function of up-front payment structure	Limited opportunity
Tax benefits	Co-venture risk	Availability payment structure may accelerate profits into construction phase for federal tax
Availability of TIFIA	Limited to capacity expansion	Significant opportunity
Availability of PABs	Limited to capacity expansion	Value uncertain

PPPs Come in Two Flavors

Public private partnerships come in two flavors:

- Not-for-profit (Public Benefit Corporations, 63-20s, 501 (c) 3s)
- For-profit (Concession)

While I will simplistically look at each “flavor,” it is important to recognize the potential for hybrids exists. With respect to “color” as well as consideration of the scope of service or facility that is the subject of the PPP, there is an ability to tune the PPP to meet the specific needs and challenges of each project.

Not-For-Profit PPPs

Not-for-profit PPPs are characterized by a lack of direct private sector involvement in optimization of cash flows, pre-debt service, and during the operating phase of the PPP. Private sector involvement however is very high during the development and implementation phase, and indirect involvement continues through lenders who wish to ensure timely repayment and the sustained quality of the asset they are financing.

Let us look at some of the characteristics of a not-for-profit PPP over the PPP life cycle.

Not-for-profit PPPs typically have shorter PPP periods (target of 30 years) than those experienced under the for-profit model. These periods however are **fungible** as contrasted with most for-profit public private partnerships with:

Worse than expected revenue profile

Not-for-profit continues to operate until debt repaid

Better than expected revenue profile

Debt retired earlier

Facility flips to state on debt retirement

Early clawback by state more easily achieved

Not-for-profit PPPs essentially exist to repay the facility debt, with tolls or other revenue rates set to reflect the facility financial needs to retire that debt in a targeted time frame.

The private developer earns a development fee plus fees from contracts which may include EPC and O&M services among others.

Tax exempt debt available in the United States for these facilities provides opportunities not available in international markets and has seen early use in United States as states feel their way through an evolving PPP process (Virginia Route 895 Pocahontas Parkway).

The “clawback” ability (state repays outstanding debt to accelerate asset transfer) aids in deployment of the first PPPs by addressing many of the “public good” issues which arise in connection with PPPs.

Evolving capital market features have provided more flexibility than the traditional municipal bond market, although recent turmoil and weaknesses in the capital markets are likely to introduce new uncertainties and risks into all forms of infrastructure finance. Not-for-profit PPPs facilitate use of government “capital” without many of the political perception risks that a for-profit model may have.

For-Profit PPPs

For-profit PPPs are characterized by the assumption of real revenue risk and direct involvement in optimizing cash flows and pre-debt service during the operating phase of the PPP. The concession agreement provides a framework within which the PPP operates commercially and may include features such as revenue sharing with the public sector; restrictions on pricing growth or maximum rates of return are permitted.

Let us look at some of the characteristics of a for-profit PPP over the PPP life cycle.

For-profit PPPs typically have longer PPP periods (50 year-plus). Unlike not-for-profit PPPs, these periods are not **fungible**, and, as such, variances in revenue profiles have different effects than in the case of a not-for-profit PPP. Let us look at the effect of these revenue variances:

Worse than expected revenue profile

Concession period unaffected; return on equity reduced

Better than expected revenue profile

Equity returns significantly enhanced

In a for-profit PPP model, the facility reverts to the state at the end of the concession period or earlier on any default. Early clawback by the state is not easily achieved and tolls or other rate mechanisms reflect a strategy to maximize revenue. There is no consideration other than that, and rates are constrained only by contract and market forces. Contract constraints, however, over the time period of typical for-profit PPPs are worth little.

Typically tolls or other rate mechanisms reflect equivalent purchasing power (economic growth) rather than underlying CPI or cost growth. This makes PPPs particularly attractive in areas where economic growth is likely to outstrip underlying cost growth. In effect, in areas where wealth is created, such as cities, they exist and grow because of this fundamental principle.

Any traffic or other usage type growth beyond what is modeled in the initial financial plan is to the benefit of the PPP developer and investors. Similarly, the value of congestion growth or growth in other premium priced services is to the benefit of the developer and other equity investors. In addition, the developer earns a development fee plus fees from contracts plus equity returns commensurate with other investors.

The for-profit PPP model mobilizes a broader cross section of capital markets to achieve:

Longer **tenor**

Graded debt trenches with respect to quality

Equity with long-term return time horizon

The for-profit PPP model is focused on capturing value in the longer-term growth wedge which traditional municipal finance models are typically not able to capture. As such, acceptable returns require longer PPP periods.

For-profit PPP models have an ability to capture depreciation benefits, and their structure may incorporate inflation hedging features.

Let us turn now and look at the scope of PPPs that are possible by focusing on different risk/reward points.

PPP “Symmetry” of Risk and Reward Provides Range of Options

PPP delivery can occur over a wide range of forms that are definable by three discrete points of risk/reward symmetry:

- Initial delivery-based performance
- Life-cycle-based performance
- Market-based performance

Let us look at each in turn.

Initial Delivery-Based Performance

Symmetry of risk and reward can encompass:

- Design-build
- Design-build-finance
- Design-build-finance with short initial commissioning period (effectively an extended warranty)

Life-Cycle-Based Performance

Symmetry of risk and reward can encompass:

Design-build-operate-maintain (DBOM)

Inputs control

Design-build-finance-operate-maintain

Inputs control

Availability

Outputs control

Market-Based Performance

Symmetry of risk and reward can encompass:

Shadow toll

Assumption of part or all of traffic risk

Real, fixed toll concession

Assumption of traffic risk and economic risk related to any concession agreement
price escalation (CPI, personal income, and GDP)

Dynamic tolling concession

Full market risk and pricing

Balance between Risk and Reward is Essential for Success

In considering the variety of risks, both unique and non-unique, that a PPP may face, it is also important to understand the rewards that assumption of those risks entails in order to ensure the proper balance is set. Similarly, it is important to understand the contract issues which must be considered and how their resolution will weigh on both risk and reward.

In this section, we will look at each of these factors.

Sources of Risk and Reward (Profit)

Profit in a public private partnership may exist at many points in the PPP life cycle, and corresponding risks accrue based on the underlying assumptions, uncertainties, and management of these risks. This section will consider risk and reward related to:

- Development
- Design-build
- Traffic and revenue
- Financial engineering
- Operations and maintenance

The sources of profit available to the private sector partner in a PPP come from the assumption of risks and project uncertainties, provision for and disciplined management of risks assumed, progressive reduction of project uncertainties, and capture of the value of this reduced uncertainty.

Development Risks and Rewards

Development risks decrease as you move from unsolicited to solicited proposal processes and from greenfield to brownfield PPP forms. In many ways, these risks are proportional to the development gestation period and the number of stakeholders involved

Examples of development risk include:

- Lack of political will
- Inadequate legislative or regulatory frameworks
- Environmental constraints and approval timeline

- Numbers that do not pencil
- Cost and timeframes to get to an executed agreement

Development profit typically comes from a development fee typically paid at financial close. This fee may provide for recovery of development costs at financial close and may include a success fee based either on development capital put at risk or overall project value. Development fees may also effectively include “carried interests” in the project.

For a PPP developer, fees are not what principally drive the equation.

Design-Build Risks and Rewards

Design-build risks are a major feature in almost all public private partnerships. These risks can include:

- Interface risks traditionally retained by the owner
- Certain geotechnical and environmental risks traditionally maintained by the owner
- Final design in accordance with all project constraints and applicable standards
- Material, labor, and productivity risks over extended time frame
- Liquidated damage and implicit warranty risks beyond traditional contracts

Examples of design-build risk are many, but some illustrative examples are:

- Design basis for estimate missed a major feature
 - Total design-build cost already fixed
- Assumed geotechnical or environmental risk materializes
- Designer delays construction subcontractor
- Fuel, steel, or concrete costs grow at unexpected rates
- Labor contracts expire and new contracts have significantly higher costs
- Weather reduces productivity

Cost risks are significant, and managing uncertainty is key to design-build profitability.

Design-build profit is derived from careful scope control or reduction in scope, in effect finding ways to build “a better mousetrap” (e.g., changed profile of road within spec to eliminate need for material disposal outside of project right-of-way). It is also derived from improved means and methods such as simplified construction details or an ability to accomplish multiple tasks from a single staging. In today’s world of rapidly escalating construction material costs, profit may also be derived from leveraged purchasing using strategic suppliers or schedule acceleration to earn bonus while reducing escalation risks. Such schedule acceleration may come from techniques such as “possession management” in a rail PPP or prefabrication to address labor productivity or cost at the final construction location.

Structured, continuous, and aggressive risk management is key.

Traffic and Revenue Risks and Rewards

The examples of risk that follow, while specific to those one may encounter in a tolled highway, are nonetheless representative of what one may experience under other PPP revenue structures. Risks vary significantly between greenfield and brownfield projects with factors such as those below affecting risk perceptions at the development and operating stages of the PPP:

- Traffic ramp-up drivers and rates
- Development, congestion, growing freight percentage, and personal and discretionary income growth
- Shoulder periods and changed annualization rates over time
- Local, regional, and national traffic patterns acting on the facility
- Mismatch between assumed traffic volumes and physical capacity of facility
- Required capacity additions to handle modeled traffic volumes not accounted for in project financial model design
- Unit pricing index (\$/mile) growth rates assumed
- Linkage to value of time assumptions and modeling (time savings and affordability)
- Toll leakage and diversions
 - Competing facilities impacts
- Timing, changed patterns over concession period, and enforcement regime
- Traffic mix assumptions/changes
- Modal shifts, HOV growth, changed freight patterns, and reverse commutes
- Impact of maintenance, renewal, weather, and accidents on availability levels

Revenue Considerations for Managed Lanes

- Value of time
 - Time savings term
 - Affordability term
- Increases to the extent that income of the candidate user population grows faster than the CPI
- Top MSA income growth has historically outpaced CPI growth
- Modeling of toll rate growth in excess of CPI requires confidence in the level selected

Toll rate growth in excess of CPI, even if allowed by the concession agreement, may face future political risks

Bias terms for toll roads and electronic tolling

Annualization factor

Growth of weekend traffic volumes and congestion over concession period

Peak spreading

Wider peak or higher toll rate during “shoulder periods”

Definition of rush hour changes

Traffic and revenue risks may be allocated differently under different PPP structures (revenue based, availability, and shadow “tolling”) ranging from government, equity investors, senior debt holders, and subordinated debt holders including subordinated debt structures such as the federally provided TIFIA loans available for select U.S. highways.

Traffic and revenue profits can arise in several different ways. Examples based on U.S. highway PPPs are listed below and are representative of considerations in other PPP markets. PPP profit drivers can include:

Quicker traffic ramp-up

Higher overall traffic levels and faster than assumed traffic growth rates

Changed mix of traffic to more profitable profile

Managed lanes

Higher congestion levels

Stronger economic growth

Increased value of time

Growth in annualization factor

Slower HOV/mass transit penetration

Added value capture from ROW

Value-added services – Service areas, park and ride

Advertising

“Corridor” value for other utilities

Financial Engineering Risks and Rewards

Financial risks in public private partnerships are displayed across multiple layers of risk. These layers include:

- Senior debt
 - Bank debt
 - Taxable or tax exempt bonds
 - Private Activity Bonds (PABs)
- Sub-debt
- Equity

Risks to each of these layers changes over the project life cycle as coverage ratios change with changes in uncertainty while refinancing and restructuring opportunities emerge. Improving financial strength, principally through the reduction of project uncertainties, means more gearing for greenfields as the existing debt recovery period decreases.

Monoline Insurance

Early in 2008, concerns over monoline insurance providers were emerging, and rating agencies approached their review of the monoline insurers with increased scrutiny. The results were mixed among the agencies and for each individual insurer. At that time, MBIA, FGIC and CFIG, Ambac, and XL saw their rating outlooks or ratings changed given the increased stress levels placed on their capital positions. Also, there was uniformity among the agencies in that FSA and Assured Guaranty have the least amount of CDO and RMBS exposure and their “AAA/Aaa” ratings and stable outlooks were affirmed. Since early 2008, financial positions have deteriorated, and ratings have been impacted. The situation remains fluid, and the outlook for the re-emergence of this financial engineering tool as a key component in PPPs is clouded.

The approach used by the monolines in setting their credit default spreads for individual projects remains relevant today as a structured approach to assessing financial risks and establishing targeted pricing levels for each layer of risk. Risk pricing in various financing levers must include consideration of:

- Ability to provide early, meaningful cash flows to equity
- Financial engineering features that drive profitability
 - Senior debt
 - Interest accretion period
 - Sculpting of principle repayment
 - Coverage ratio and other covenants
 - Effective interest rate (taxable versus tax exempt)

TIFIA

Ability to structure debt on a back-loaded basis

Interest accretion period

Effective interest rate

Sub-debt

Patience versus return trade-off

Equity

Ability to monetize depreciation benefits

Return of capital timing

Refinancing

Timing, frequency, and increased gearing

Operations and Maintenance Risks and Rewards

Operation and maintenance risks and profits represent a significant portion of a PPP's life-cycle financial model and one which receives inadequate attention in the author's view. O&M cost models are not as robust as construction and financial risk models, and good public sector analogs for such costs are hard to find. The long-term disinvestment in facility O&M by the public sector over an extended period of time has contributed to a trillion-dollar-plus backlog of maintenance and repair in the United States alone, and globally the figure is much larger. This sustained disinvestment introduces uncertainty into what a requisite level of maintenance investment should be for various infrastructure systems. As such, small changes in maintenance assumptions can have large impacts in the financial capacity of a project. This factor will become increasingly important as projects re-gear and new investors, with shorter capital recovery periods, enter the equation.

Alternatively, those PPPs that are best able to "crack the code" and optimize O&M investment regimes will greatly improve **out** year cash flows and ultimate facility value. O&M risk elements that require special attention include, but are not limited to, the following:

Major maintenance

Life span of major structures relative to PPP period

Changed safety or regulatory requirements during operating phase

Failure of project element

Construction cost escalation at higher than assumed rates

Renewals, rebuilds, and replacements

Effect of material selections on renewal periods and frequency
Accelerated wear from increased or changed usage
Loss of capacity as a result of more frequent or inefficient renewal processes
Technology upgrades
Labor cost growth faster than local CPI (unionization; other)

O&M profits are augmented through optimization of labor through combined periodic maintenance and renewal activities; better life-cycle performance through improved performance of selected materials; efficient customer service and collections organization; availability contracting; and innovative finance of initial project systems (enhanced cash flow).

What is a Successful PPP?

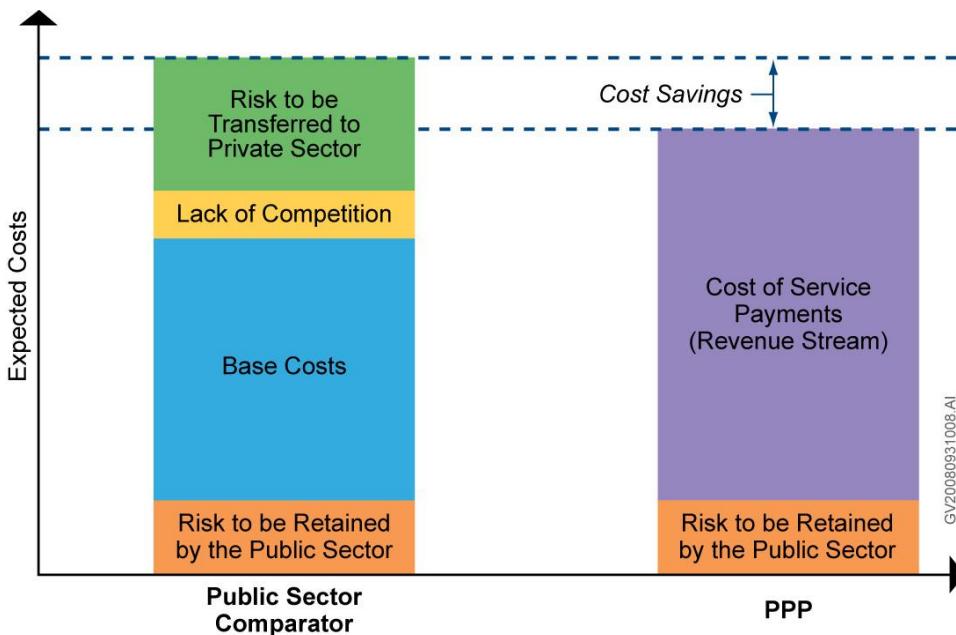
Until now, we have focused on the various models of PPPs, the “colors” and “flavors” they come in, and the various classes of risk. Before we turn to what some of the contract issues are that we must address in the various PPP agreements and contracts, it is first important to understand some of the attributes of a successful PPP.

To be successful, a PPP must provide improved project execution and performance certainty to the public sector. It must more efficiently apply available capital or access additional sources of capital. This can be accomplished through:

- Scope control
- Life-cycle framework
- Real pricing of risks
- Sculptable finance structures

A successful PPP effectively allocates life-cycle risks and provides attractive return with good performance upside to private sector.

This potential benefit can be measured and various strategies built upon the notion of a public sector comparator to provide a sense of a public private partnership’s likelihood of success.



In a successful PPP, a consistent framework for success must exist. Key attributes of this framework include:

- Political will is strongly present
- Good legislation exists
- A transparent procurement process exists
- Implementing agencies embrace change
- A clear path forward is identifiable
- Stakeholders will support the project, and it FLIPS
- The public sector partner clearly understands risks
- The project addresses a real need
- Public sector partner clearly understands all obligations
- The PPP exhibits the three key attributes of successful PPPs
 - Maximum infrastructure for the lowest cost
 - Appropriate risk weighted returns
 - Protection of “minority” interests

Contract Issues – A Reprise

Throughout this paper many potential risks are identified, and in effect each must be appropriately addressed in various agreements and contracts. The table below provides a reprise of these major risk categories and provides an initial checklist for risk allocation, documentation, and ultimately management. This list is not all encompassing and does not include more traditional commercial risks than what one can reasonably expect to encounter in such transactions.

PPP Contracts – Addressing the Risks

Issues	Considerations
Risk	Uncertainty and who owns it is what a PPP negotiation is all about
Concession period	Time to recover target rate-of-return; repayment of debt Procedure for toll rate approvals (and linkage to cash flows and costs) Rules related to transfer of assets for non fully amortized investment
Investment	Commitments Timing of toll rate increases and linkage to political cycles Amortization rules (accounting, tax, and concession agreement-specific)
Toll rates and structure	Rates, structure, free vehicles, and mechanisms for adjustment over time Targeted efficiency gains Modeling of uncertainty and changing financial coverage ratios become key parameters in the negotiation process Handling of any non-regulated activities must be carefully addressed Cross subsidies clearly defined and any restrictions placed on use of cross subsidies fully understood
“Social engineering”	Objectives and their potential impacts on toll rates and structure must be clearly developed
Quality	Technical and service quality standards Caps or floors Level of fines Relationship between cost, quality, and level of fines
Contractor/developer rights	Counterparty rights which arise from financial agreements, including subsidies and tariff guarantees contained in the contract Rights to operate the service and degree of independence of those rights from the granting authority De facto monopoly rights Rights with respect to third parties State rights transferred to concessionaire (eminent domain) Rights to use the facility and receive fees Rights of government to repurchase concession at an early date and basis for any such repurchase

About the Author



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Bob Prieto is a senior executive effective in shaping and executing business strategy and a recognized leader within the infrastructure, engineering and construction industries. Currently Bob heads his own management consulting practice, Strategic Program Management LLC. He previously served as a senior vice president of Fluor, one of the largest engineering and construction companies in the world. He focuses on the development and delivery of large, complex projects worldwide and consults with owners across all market sectors in the development of programmatic delivery strategies. He is author of nine books including "Strategic Program Management", "The Giga Factor: Program Management in the Engineering and Construction Industry", "Application of Life Cycle Analysis in the Capital Assets Industry", "Capital Efficiency: Pull All the Levers" and, most recently, "Theory of Management of Large Complex Projects" published by the Construction Management Association of America (CMAA) as well as over 800 other papers and presentations.

Bob is an Independent Member of the Shareholder Committee of Mott MacDonald and a member of the board of Dar al Riyadh. He is a member of the ASCE Industry Leaders Council, National Academy of Construction, a Fellow of the Construction Management Association of America and member of several university departmental and campus advisory boards. Bob served until 2006 as a U.S. presidential appointee to the Asia Pacific Economic Cooperation (APEC) Business Advisory Council (ABAC), working with U.S. and Asia-Pacific business leaders to shape the framework for trade and economic growth. He is a member of the Millennium Challenge Corporation advisory board where he had previously served. He had previously served as both as Chairman of the Engineering and Construction Governors of the World Economic Forum and co-chair of the infrastructure task force formed after September 11th by the New York City Chamber of Commerce. Previously, he served as Chairman at Parsons Brinckerhoff (PB) and a non-executive director of Cardno (ASX)

Bob serves as an honorary global advisor for the PM World Journal and Library and can be contacted at rpstrategic@comcast.net.