AIAI
Association for the Improvement of American Infrastructure

Together, we move P3s forward.

Financing Models and Risk Management

June 6, 2017

Infrastructure – An Investment Worth Making

We cannot afford to wait.

- ***The Cost of Doing Nothing***
  - Deferred Maintenance
  - Inflation
  - Increased Congestion / Limited Capacity
  - Closures / Systemic Failures

- ***The Need to Address Critical Infrastructure***
  - You need a place to live
  - Your house needs a roof

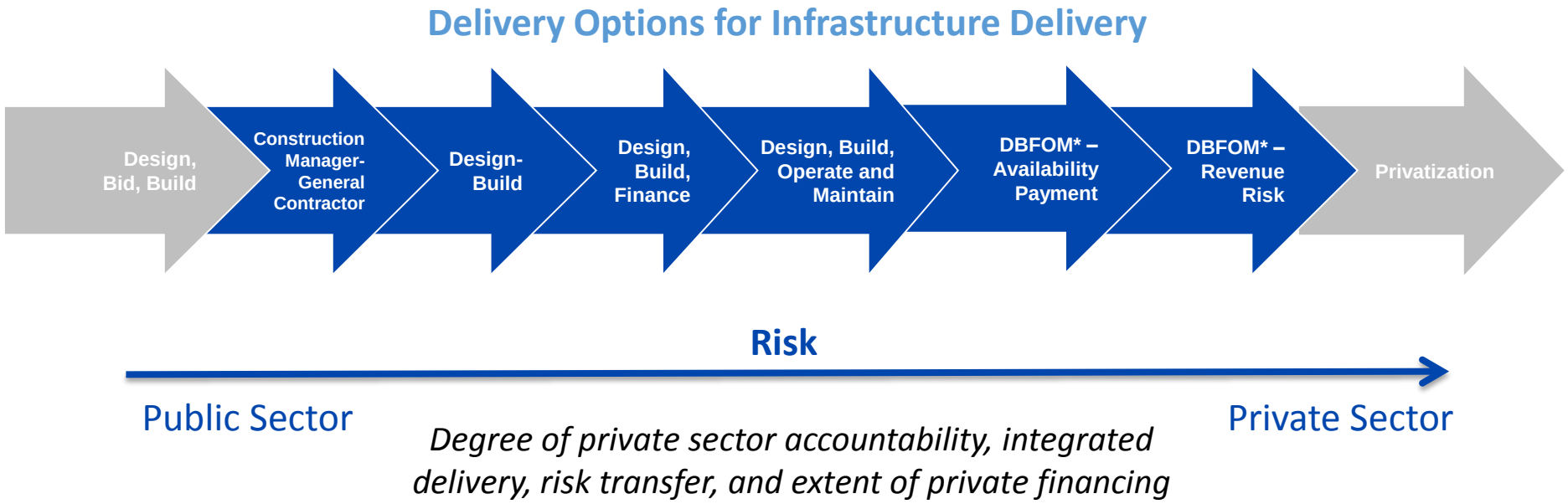
- ***Stretching Dollars Further Utilizing P3***
  - Accelerated Project Delivery
  - More Efficient Project Management
  - Greater Innovation
  - Lower Life Cycle Cost

P3 Basics
Key Considerations

- Typically partially / wholly **financed** by debt leveraging project revenues
  - Revenue streams: lease payments, some form of direct user fee (toll)
  - Revenues supplemented by money, right-of-way, or other contributions
- Private partner *will* make an **equity** investment; in long-term lease structure, likely will make upfront payment
- Public partner *may* need to make upfront payment (e.g., milestone payments) to reduce capital cost financing
- Private partner *may* be required to assume partial or full **revenue risk**
  - Revenue generators (or hybrid)
- May be structured as an **availability payment**
  - Non-revenue generators (or revenue doesn't cover)
- May be structured as **lease-leaseback (long-term lease)**

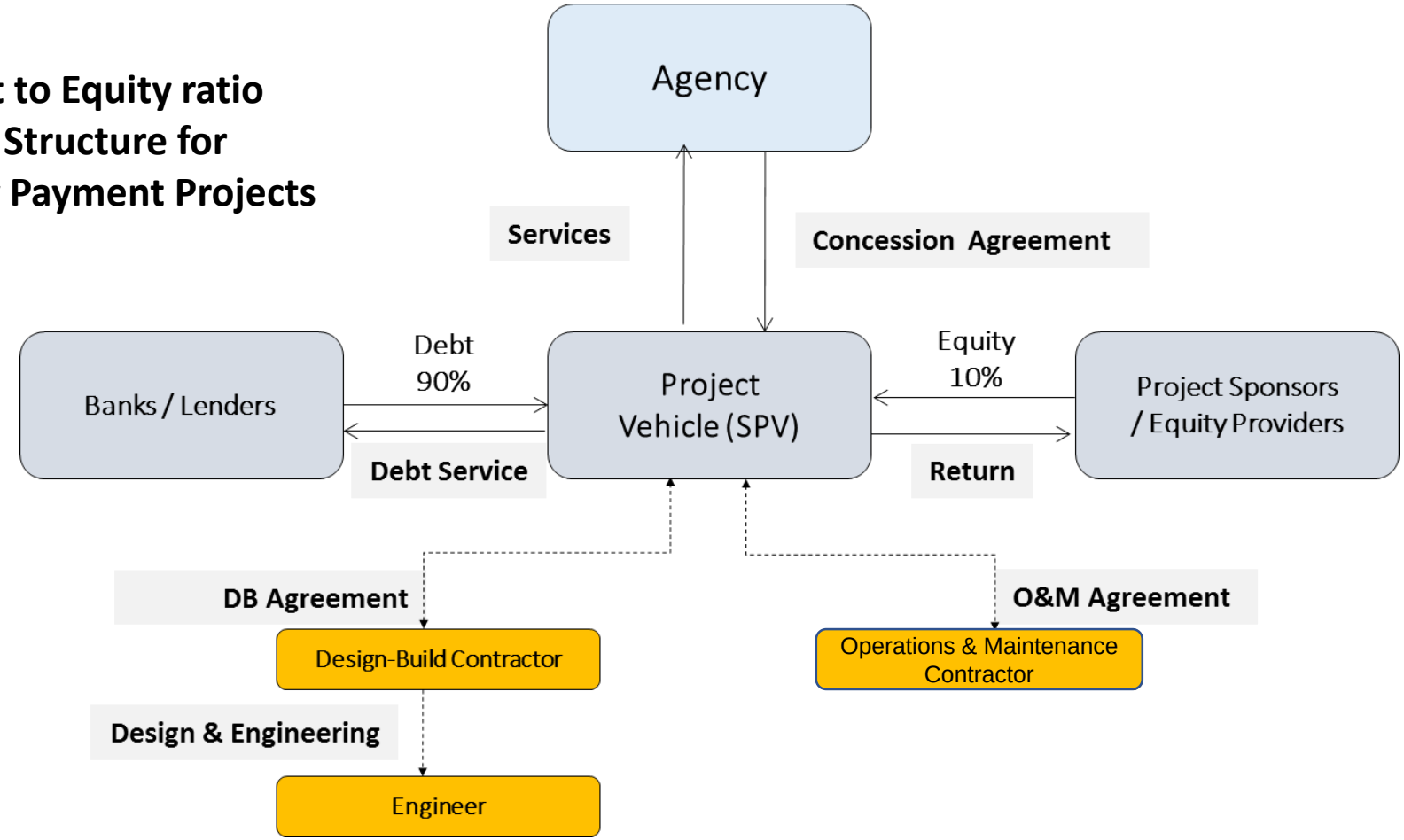
- **<u>Drivers</u>: Revenue Stream, Risk Appetite, Scale, Market, Lenders**

P3 Basics
Delivery Models



P3 Basics
Typical Structure: Availability Payment Model

90/10 Debt to Equity ratio is a Typical Structure for Availability Payment Projects



P3 Basics
Funding vs. Financing

Funding

Public money made available to the project. This contributed capital is not intended to be repaid or carry a cost (i.e. interest or return on investment). Typical sources include:

- Availability Payments
- User Fee Revenue
  - Tolls
  - Fees/charges
  - Rent

Financing

Money provided by private investors to pay for construction costs, concession payments and other large project costs. This capital is intended to be repaid and does carry a cost (i.e. interest and return on investment). Typical sources include:

- Debt
- Equity

A Framework for Innovation

- Set the parameters
  - Counterparty Credit Quality
  - Appropriations Risk
  - Affordability and other Limits

- Be receptive to innovation
  - Establish a framework to assess alternate concepts

- Don’t be too prescriptive – allow the market to innovate
  - Funding types
  - Financing profiles

P3 Financing Packages

- **Traditional Governmental Finance Approach**
  - Governmental Purpose Bonds – Qualified Management Contract requirement means limited private involvement
  - Risk retention by the government
  - State revolving funds – EPA
  - Federal: WIFIA, USDA, CDBG, BOR, ACE and others
- **Public Private Partnership Approach**
  - Equity 10-30%
  - Debt 70-90%
- **Forms of P3 Debt**
  - Federal Sources Outlined Above plus
  - Private project finance market
  - Tax-exempt Private Activity Bonds (PABs) – state cap allocation challenge
  - Club Arrangements of Banks
- **P3 Equity Providers ($300B available in USA)**
  - Private Equity
  - Life Insurance Companies
  - Pension Funds

Repayment Methods

Revenue Risk	Availability Payments
Private partner directly dependent upon sources of revenue collected by the operation of an asset to offset the capital investments made to deliver the asset	Project owner repays private partner for operating and maintaining that level of performance, throughout the life cycle of that asset
Private partner directly collects fees, fares or tolls	Project owner sets rates and retains all revenues
Private partner unable to collect revenue if asset is unavailable	Project owner levies punitive measure for non-availability
Private sector may see an “upside” and benefit from usage; or, may experience a “downside” if there isn’t sufficient usage of the asset	No private sector “upside” or downside and no private benefit from usage because the project owner retains demand risk
Examples: • 495 HOTLanes and I-95 Express, Virginia • Texas A&M University, Texas • North Tarrant Expressway, Texas	Example: • I-595, Florida • Goethals Bridge, PANY&NJ

Standard Terms – Revenue User Fees

REVENUE | DEMAND RISK	EXAMPLE	DESCRIPTION	RISKS & CONTROL
FIXED-USE CHARGE FOR UTILIZATION OF ASSET	Fees, Fares, Taxes or Tolls	- A ship is charged for the use of a port. - A car is charged a toll for using a bridge or tunnel.	Demand risk can be taken by the public or private entity or both. Typically, risks are borne by the private sector as this is how investment returns are achieved. Functional daily control of the asset can be outsourced to experts if desired. Ownership ALWAYS remains with the public entity.
AGREED UPON FEES FOR SERVICES PROVIDED	Campus Housing	Students pay for their room and board, and this “fee for service” is collected and directed to offset capital investments made to restore or modernize or build new campus housing.	
VARIABLE USAGE FEES (MILEAGE-BASED, TIME-OF-USE BASIS)	Managed Lanes	Access to converted HOV (High occupancy Vehicle) lanes to ease congestion or provide alternative lanes for travelers, where a car is charged according to predetermined amounts, based on length of segment or time of day usage on managed lanes	

Standard Terms – Availability

AVAILABILITY RISK	EXAMPLE	DESCRIPTION	RISKS & CONTROL
MILESTONE PAYMENTS FOR REACHING AGREED UPON DESIGN, PRE-CONSTRUCTION OR CONSTRUCTION GOALS.	Design drawings completed to specified level to initiate construction.	Payments to the construction company and/or sponsor come due once a bridge is complete. The public sector takes minimal construction risk, but if project is completed as agreed, payments are made.	In availability projects, the construction, and at times performance risk of an asset is shifted to private sector. Public funds are only paid when construction is complete or services are delivered. Control typically transfer to public entity once construction requirements are met. Ownership ALWAYS remains with public entity.
PAYMENTS FOR PROVIDING A FACILITY IN AN ACCEPTABLE CONDITION.	Ensuring that facility meets performance and acceptable use standards.	Payments to concessionaire can be structured in a managed service contract. Private sector takes on responsibility for a single, fully integrated service solution for security, building maintenance, management of all day-to-day operations, and would only be paid when services are delivered.	

Standard Terms – Availability

HYBRID MODELS	EXAMPLE	DESCRIPTION	RISKS & CONTROL
REVENUE RISK FOR OPERATIONAL PHASE ASSUMED BY PUBLIC SECTOR.	Fare box revenue to offset investments, in DBFM when operations remain with public sector.	Availability to perform operations determines payment to private sector, while public partner takes on fare or fee collection.	Risks can be shared or remain with either the public or private entity, depending on the project and needs of the owner (public entity, sponsor).
LAND VALUE EXCHANGE (AIR RIGHTS, FAR OR DEVELOPMENT RIGHTS, TAX INCREMENT FINANCING (TIF)).	Off balance sheet transaction value to provide capital cash offset.	Sale of excess city land parcels to accommodate a consolidation of municipal facilities..	

Financing Costs – a P3 Red Herring

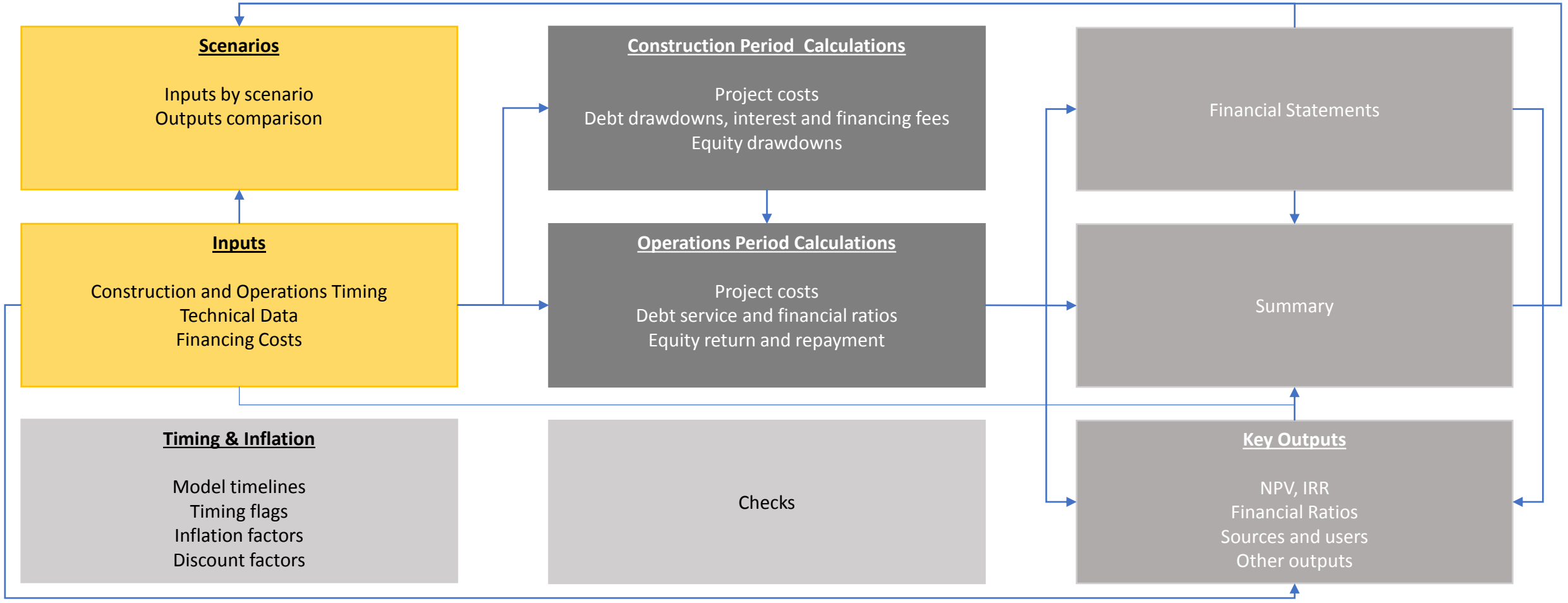
Focusing on finance costs alone misses the significant advantages that a P3 structure offers the public sector:

1. Risk Transfer and Innovation;
2. Short and Long Term Budget Certainty; and
3. Matching long term revenues (tax or user fees) with long term expenses (availability payments)

There is no free lunch –

costs and benefits need to be balanced

How the Model Works



Example Screenshot of Input Tab

Row		Constant	Unit	Total		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	
2	Financial year ending	-	*Error checks*			2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	
3	PSC - Timeline label	5	*Alerts*			Pre-Constr.	Pre-Constr.	Construction	Construction	Construction	Construction	Operations	Operations	Operations	Operations	Op
4	P3 - Timeline label					Pre-Constr.	Pre-Constr.	Construction	Construction	Construction	Operations	Operations	Operations	Operations	Operations	Op
5	Delayed PSC - Timeline label					Delayed	Delayed	Delayed	Delayed	Delayed	Pre-Constr.	Pre-Constr.	Construction	Construction	Construction	Cons
6	Model column counter	**Constant**	**Unit**	**Total**		1	2	3	4	5	6	7	8	9	10	
49	**P3 - SERIES INPUTS**															
50																
51	**P3 - PRE-CONSTRUCTION**															
52																
53	P3 - Pre-construction period timeline	-	labels	-	-	Year 1	Year 2									
54	P3 - Pre-construction period year #	-	year #	-	-	2015	2016									
55	P3 - Pre-construction cost 1 - Profile		%	100.00%		50.00%	50.00%									
56	P3 - Pre-construction cost 2 - Profile		%	100.00%		50.00%	50.00%									
57	P3 - Public procurement costs (including compensation of losing bids) - Profile		%	100.00%		50.00%	50.00%									
58	P3 - Private procurement costs (costs of winning bid) - Profile		%	100.00%		50.00%	50.00%									
59	P3 - Private procurement costs (cost of non-compensated losing bids, only considered in PDBC/		%	100.00%		50.00%	50.00%									
60																
61																
62	**P3 - CONSTRUCTION**															
63																
64	P3 - Construction period timeline	-	labels	-	-	Year 1	Year 2	Year 3								
65	P3 - Construction period year #	-	year #	-	-	2017	2018	2019								
66	P3 - Construction cost 1 - Profile		%	100.00%		33.00%	33.00%	34.00%								
67	P3 - Construction cost 2 - Profile		%	100.00%		33.00%	33.00%	34.00%								
68	P3 - Construction cost 3 - Profile		%	100.00%		33.00%	33.00%	34.00%								
69	P3 - Construction cost 4 - Profile		%	100.00%		33.00%	33.00%	34.00%								
70	P3 - Construction cost 5 - Profile		%	100.00%		33.00%	33.00%	34.00%								
71	P3 - Construction cost 6 - Profile		%	100.00%		33.00%	33.00%	34.00%								
72	P3 - Construction cost 7 - Profile		%	100.00%		33.00%	33.00%	34.00%								
73	P3 - Quality assurance - Profile		%	100.00%		33.00%	33.00%	34.00%								
74																
75																
76	**P3 - TRAFFIC RAMP UP**															
77																
78	P3 - Operations period timeline	-	labels	-	-	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	
79	P3 - Operations period year #	-	year #	-	-	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	
80	P3 - Traffic ramp up - Profile		%			50.00%	60.00%	70.00%	90.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	1
81																
82																
83	**P3 - SUBSIDY / MILESTONE PAYMENT**															
84																
85	P3 - Subsidy / milestone payment period timeline	-	labels	-	-	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	

Example Screenshot of Output Tab

Key Project Dates

Item	Start	End	Term (Yrs)
Construction	1 Jan 10	30 Sep 12	2.8
Operations	1 Oct 12	30 Sep 42	30.0
Senior Debt	1 Oct 12	30 Sep 30	18.0
Mezzanine Debt	1 Oct 12	30 Sep 22	10.0

Model Information

Summary Page Updated	8/12/2009 16:07
Last Printed	8/12/2009 16:07
Checks	OK

Funding Terms

Type	Financing Fee	Facility Fee	Rates Base	Rates Margin	Rates All in
Construction Facility	1.0 %	0.5 %	3.8 %	4.5 %	8.3 %
Senior Debt	n/a	n/a	3.8 %	3.5 %	7.3 %
Mezzanine Debt	n/a	n/a	3.8 %	8.0 %	11.8 %
Working Capital	n/a	0.5 %	n/a	n/a	6.8 %

Macroeconomic Assumptions

	Per Annum
Inflation	2.5 %
Tax Rate (Project)	30.0 %
GST/VAT Rate	10.0 %

Debt Ratios

Debt	ICR Min	DSCR Min	DSCR Lockup	Lockup Periods	LLCR Min	Av Years Outstanding
Senior	1.7	1.3	Disabled	Disabled	-	12.3
All		1.1	Disabled	Disabled	-	7.4

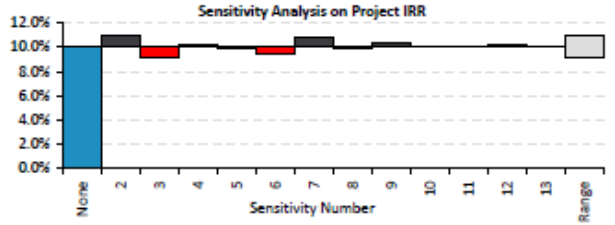
Sources & Uses of Funds

Sources	$'000	
Senior Debt	106,391	72.5 %
Mezzanine Debt	7,337	5.0 %
Shareholder Loan	19,811	13.5 %
Equity	13,207	9.0 %
Total	146,747	100.0 %

Uses	$'000	
Construction Costs	117,248	79.9 %
Up Front Costs	3,000	2.0 %
Advisory Fee	3,731	2.5 %
Interest During Construction	15,082	10.3 %
Financing Fees	1,450	1.0 %
Cash Accounts	6100	4.2 %
GST/VAT timing	136	0.1 %
Total	146,747	100.0 %

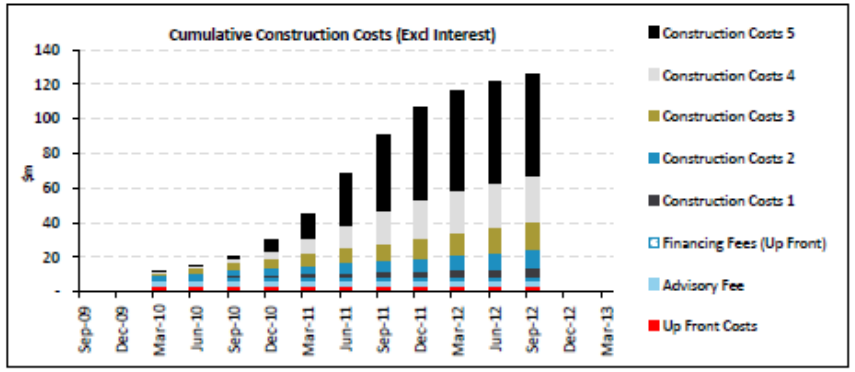
Project and Equity Returns

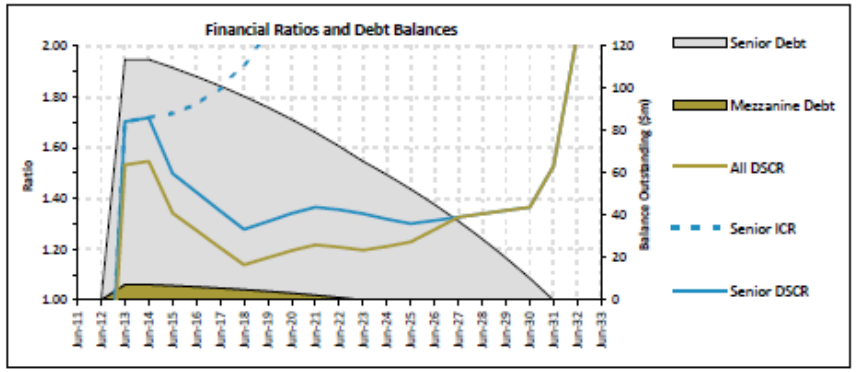
	Base Case	Case 1	Case 2	Case 3	Case 4
Project IRR, post-tax	10.1 %	-	-	-	-
Equity IRR, post-tax	13.0 %	-	-	-	-
Equity IRR, pre-tax	13.2 %	-	-	-	-
Payback Years	13.0	-	-	-	-
Terminal Value	5.0 x	No	No	No	No
Terminal Value $m	131	-	-	-	-

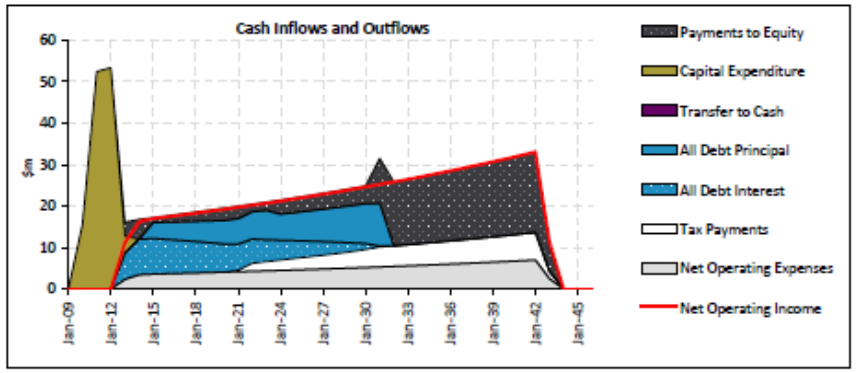


Sensitivities

	Sensitivity	Project IRR
1	None	10.1%
2	CPI +1%	11.0%
3	CPI -1%	9.2%
4	Debt Base Rate +1%	10.2%
5	Debt Base Rate -1%	10.0%
6	Construction Costs +10%	9.4%
7	Construction Costs -10%	10.9%
8	Operating Costs +10%	9.9%
9	Operating Costs -10%	10.3%
10	Debt Margins +20 bp	10.1%
11	Debt Margins -20 bp	10.1%
12	Senior Debt Ratio +5%	10.2%
13	Senior Debt Ratio -5%	10.0%
	Range	1.9%







Identifying and Allocating Risks

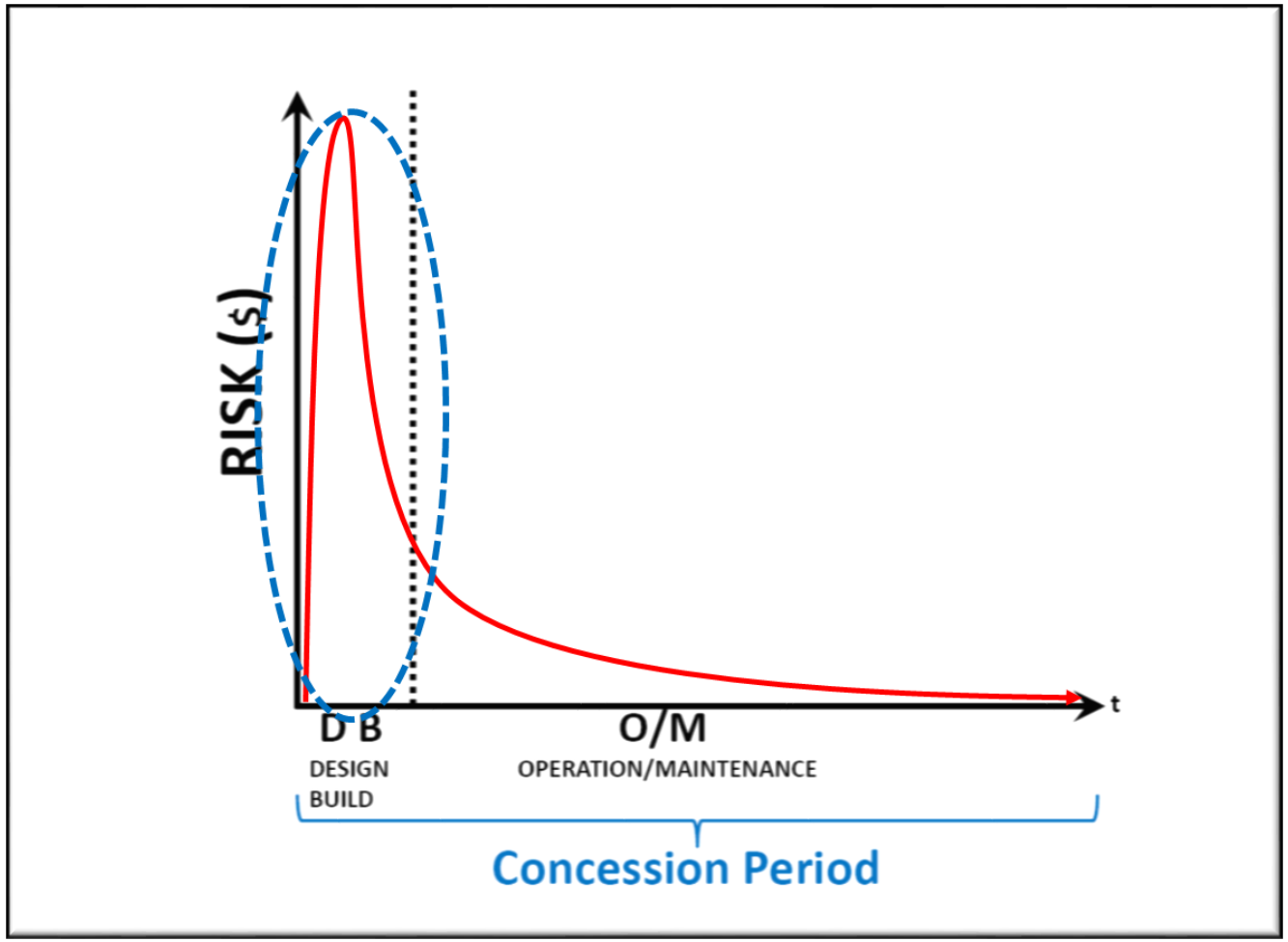
- **Risk sharing is a key component and feature of P3s**
  - Partners exercise greater control and responsibility
  - Integrated function (mitigates risk, creates efficiencies)
  - Spreads risk over time (life cycle of asset)

- **Private Partner prices its risks**
  - VfM: assessing costs of transfer of risks to experts who can (best) manage
  - Macro-economic risks, project risks, participants' risks
  - There are market-tested allocations, know them

- **Allocate parties better positioned to manage, or share**
  - Assign to third party (i.e., insurers)

- **Risk Management Best Practices**

Risk Distribution



Risk Opportunities

- The financial elements and long term obligations provide risk opportunities that differ from other alternative contracting approaches

- Risk allocation is at the core of P3s:

  Risk transfer = Innovation Incentive

- Transferring too little risk diminishes potential VfM

- Transferring too much risk (a risk that is unmanageable) results in contingency additives diminishing the VfM

Risk Opportunities

- Phased construction may lower overall costs or at least defer capital expenditures until actually required

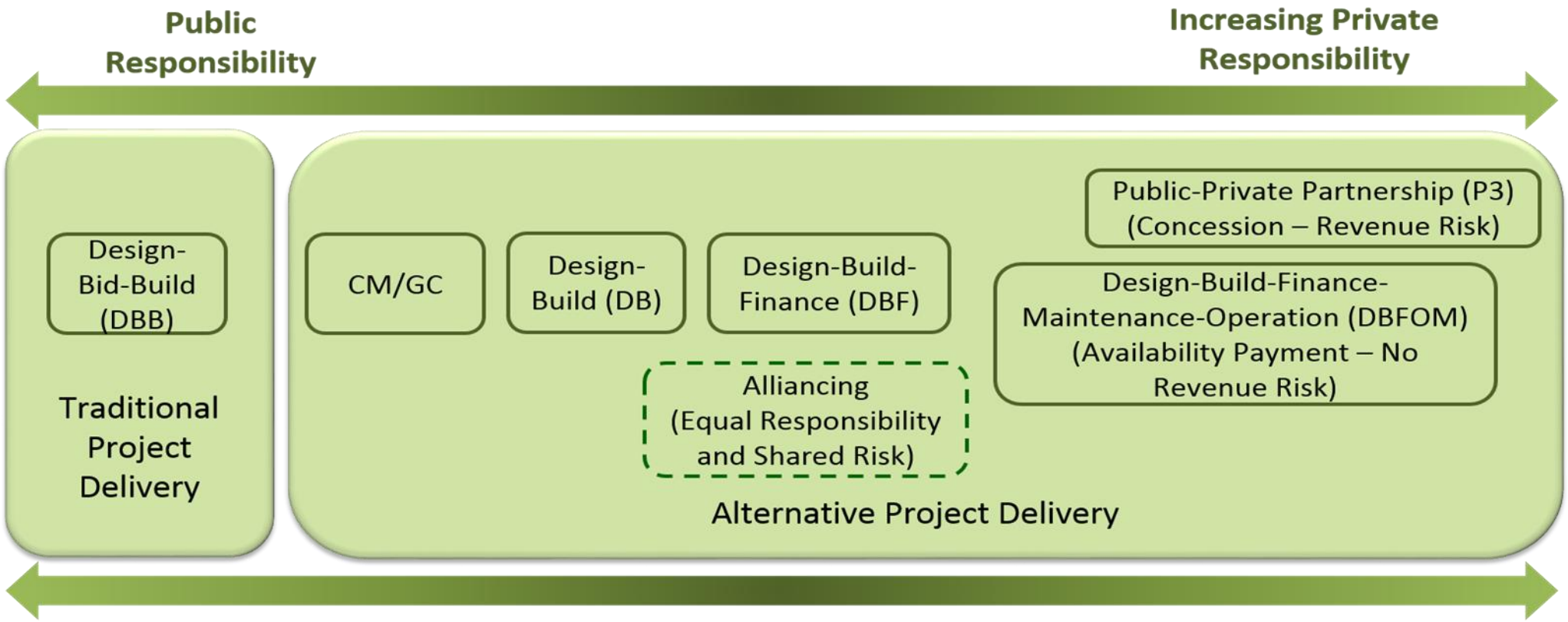
- Higher capital costs may result in lower life cycle costs providing an overall better project at lower cost

- Higher capital costs may result in a better overall project – for example (toll project):

    - *Better mobility solution/enhanced traffic access*
    - *Higher revenue/stronger financial feasibility.*

- Construction challenges with unique solutions may result in a lower cost yet result in a positive level of product performance that could not have been met with traditional risk/contracting approaches

Risk Analysis and Management



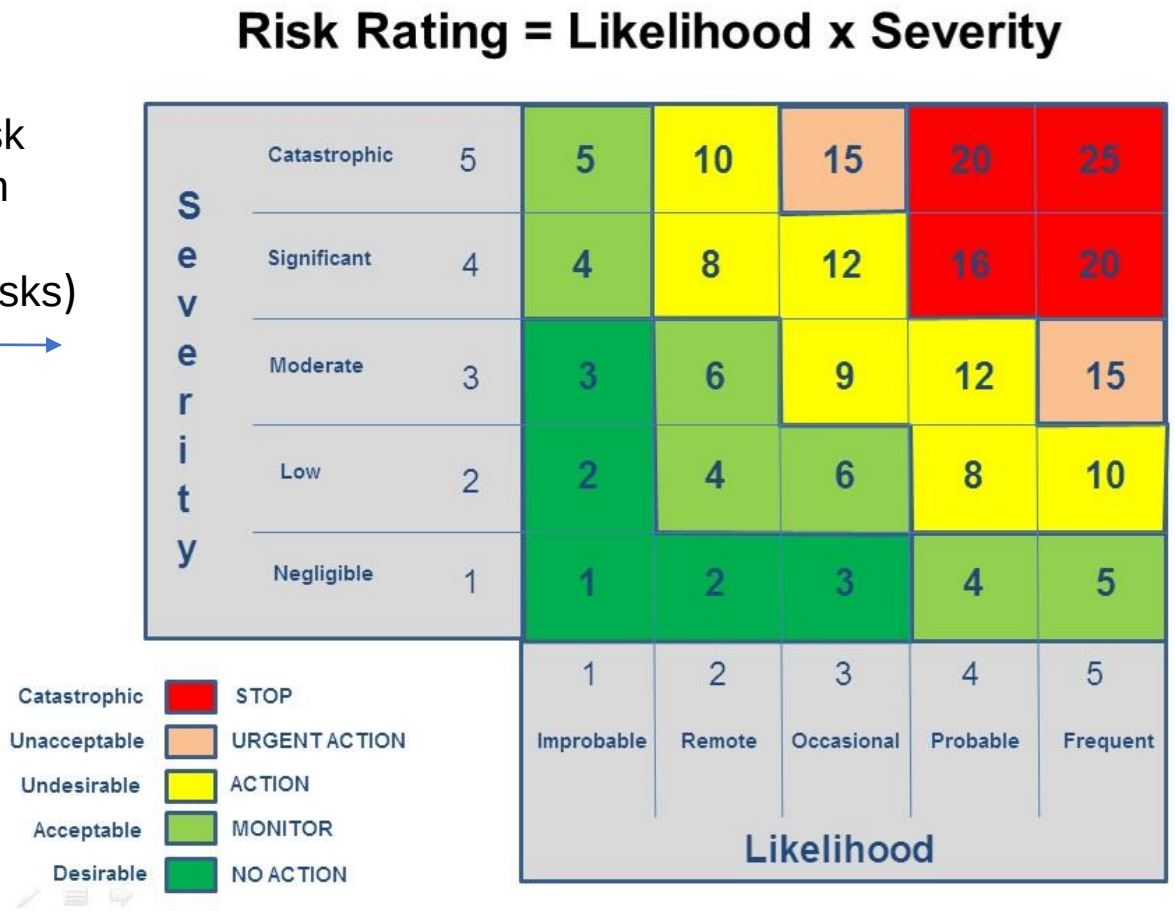
Risk Analysis and Management

Typical Risk Allocations between public/private

- Construction
  - Accuracy and Design Completion
  - Environmental policy requirements
  - Labor Agreements
  - Scope Changes
  - Cost Growth
- Financial
  - Schedule
  - Interest Rate
- Operational
  - Revenue
  - Level of Service

Risk Analysis and Management

Standard Example Risk Matrix (with discussion around valuing likelihood/severity of risks)



★ Preferred approach:

Dividing severity into two 5 point components of cost impact and schedule impact for a possible score of 10 with likelihood of 5 points and a total possible of 50 tends to provide a better analysis.

This approach allows mitigation planning to reduce all three categories and reflect a truer adjusted score.

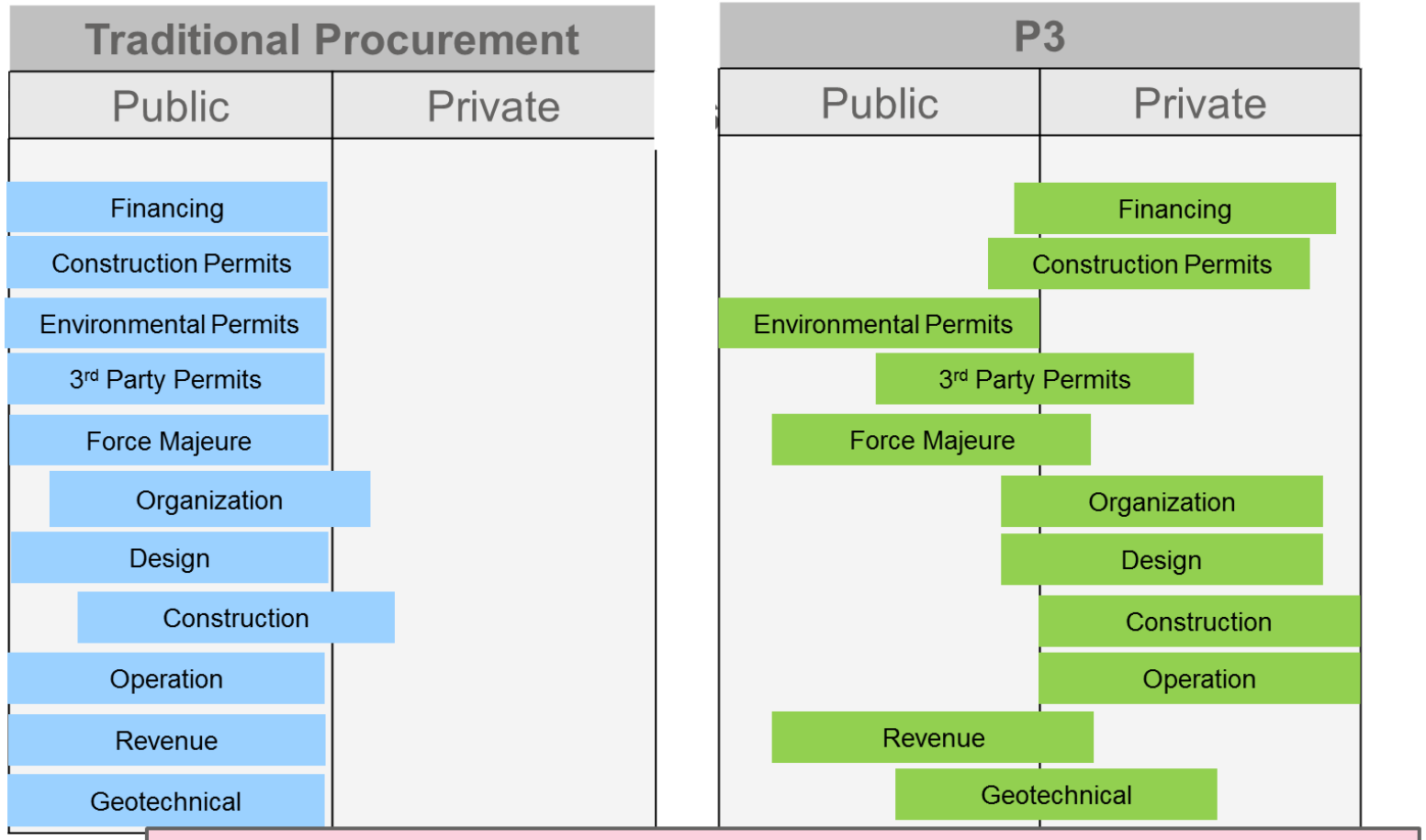
Value for Money – What matters to you

- There are many ways to achieve effective risk transfer through the use of private funding tools.

- Identify what matters for each project:
  - Risk management, transfer or elimination
  - Minimize project costs
  - Maximize project scope

- Select from the vast toolkit of available models
  - Balance the amount, timing and type of public funding

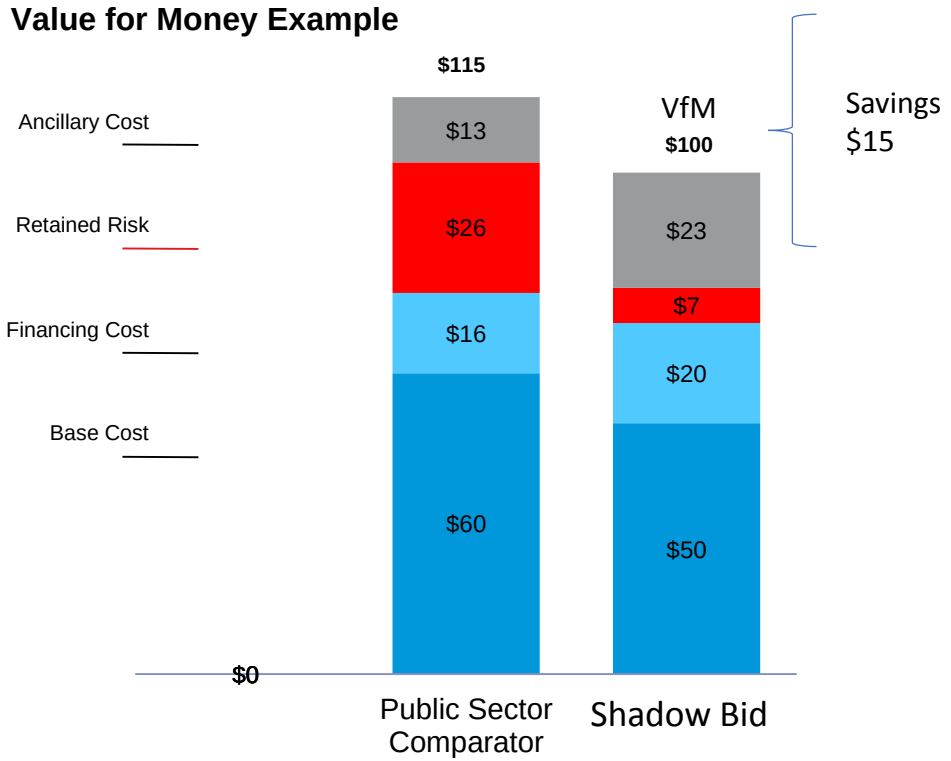
Value for Money (VFM)



Each Risk has a “Value”. The optimized allocation of specific risks occurs when risk is assigned to the party which can mitigate or manage the risk more efficiently.

Value for Money

- Value for Money (VfM) analysis is a process used to compare the financial impacts of a P3 project against traditional public delivery alternatives. The process to establish VfM includes:
  - Creating a Public Sector Comparator (PSC), which estimates the whole-life cost of carrying out the project through a traditional approach;
  - Estimating the whole-life cost of the P3 alternative (either as proposed by a private bidder or a hypothetical “shadow bid” at the pre-procurement stage); and
  - Comparing results.
- Value for Money is an industry-accepted decision driver.



Questions