



Value for Money Assessment

October 22, 2014

P3 Training – Maryland DOT



Session Objectives

- On the basis of this session, the participant will gain the ability to:
 - Explain the concept of VfM assessment
 - Explain the steps and methodology to build a PSC and Shadow Bid
 - Oversee the performance of a state-of-the-art VfM assessment by experts



Session Outline

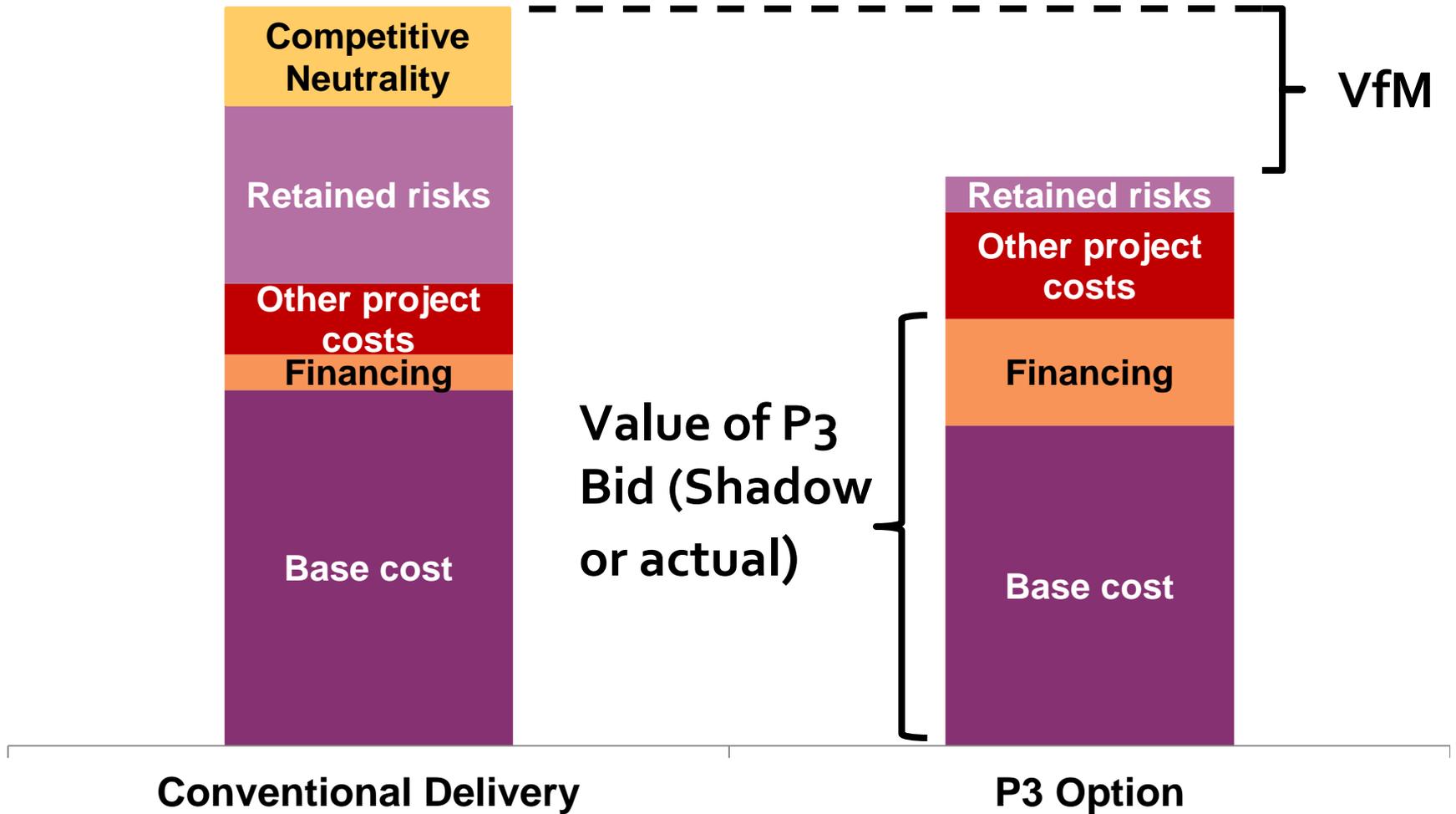
- Part I** Benefit-Cost Analysis vs. Value for Money Analysis
- Part II** Use of Discount Rates
- Part III** Scoping and Defining Alternatives
- Part IV** Qualitative Analysis
- Part V** Constructing a Public Sector Comparator
- Part VI** Constructing a Shadow Bid
- Part VII** Comparing the PSC and Shadow Bid



Part 1

Difference between Benefit-Cost Analysis (BCA) and Value for Money (VfM) Analysis

What is Value for Money?





How do BCA and VfM Differ?

BCA and VfM answer different questions and use different analytical approaches

Question	Analysis Approach
What are the financial consequences of the P3 project delivery option from the perspective of the agency's financial balance sheet?	Financial (VfM)
Will the P3 delivery method result in more net economic benefits?	Economic (BCA)*

* This is the focus of current FHWA research



How Do BCA and VfM Differ? (cont.)⁷

- BCA and VfM use different accounting systems
- **VfM is a Financial Assessment:**
 - Considers financial elements only, i.e., “cash flows”
 - Focuses on costs and revenues; benefits to society (e.g., user benefits from accelerated project delivery or improved performance) not evaluated quantitatively
 - Perspective is that of the procuring agency
- **BCA is an Economic Assessment:**
 - Considers full range of costs and benefits
 - May include financial elements, but some such elements may not be included, e.g., tolls, taxes, financing
 - Perspective is that of society as a whole

Accounting for Costs

Project Costs	BCA	VfM
<ul style="list-style-type: none"> ● Capital costs ● O&M costs ● Risk impacts ● Transaction costs: <ul style="list-style-type: none"> ○ Defining outputs ○ Developing contract ○ Procurement ○ Design ○ Obtaining financing ○ Monitoring and oversight 	✓	✓



Accounting for Other Social Impacts

Other Social Impacts	BCA	VfM
<p>User benefits:</p> <ul style="list-style-type: none">• Travel time savings• Incident/accident cost savings• Vehicle operation cost savings <p>External costs and benefits:</p> <ul style="list-style-type: none">• Emissions (air pollution, GHG)• Noise• Emergency response	✓	✗

Accounting for Financing

Purely financial transactions, i.e., economic transfers	BCA	VfM
<p>Cash flows:</p> <ul style="list-style-type: none"> ○ Revenues (taxes, tolls, etc.) ○ Debt and equity contributions ○ Interest and dividend payments 	<p>x</p>	<p>✓</p>



Questions Answered by VfM Analysis

Project Development Phase:

- How will the proposed P3 impact the financial position of the public sponsor relative to conventional delivery?
- How will the proposed P3 payment mechanism impact the financial position of the public sponsor relative to a base case payment mechanism (e.g., availability payment)?
 - **SHADOW BID VS. PUBLIC SECTOR COMPARATOR**

Procurement Phase:

- Does the *preferred P3 bid* provide the most value?
- Does the *actual P3 agreement* add value compared to conventional delivery?
 - **ACTUAL BID VS. PUBLIC SECTOR COMPARATOR**

Questions Answered by BCA

- Does the project yield benefits that exceed the costs?
 - **Scope selection:** Compare different project scopes
 - **Funding selection:** Compare funding alternatives (taxes vs. tolls)
 - **Timing selection:** Compare alternative delivery dates for selected scope and funding scheme
 - **Procurement type selection:** Compare DBFOM to conventional delivery
 - **P3 payment mechanism selection:** Compare alternative P3 payment mechanisms to DBFOM with availability payments

How are BCA and VfM Related?

Financial Evaluation

Financial assessment of funding options to decide on funding, e.g., toll rates needed, tax subsidies, etc.



VfM analysis to evaluate whether a P3 procurement alternative provides value to the public agency's balance sheet

Economic Evaluation

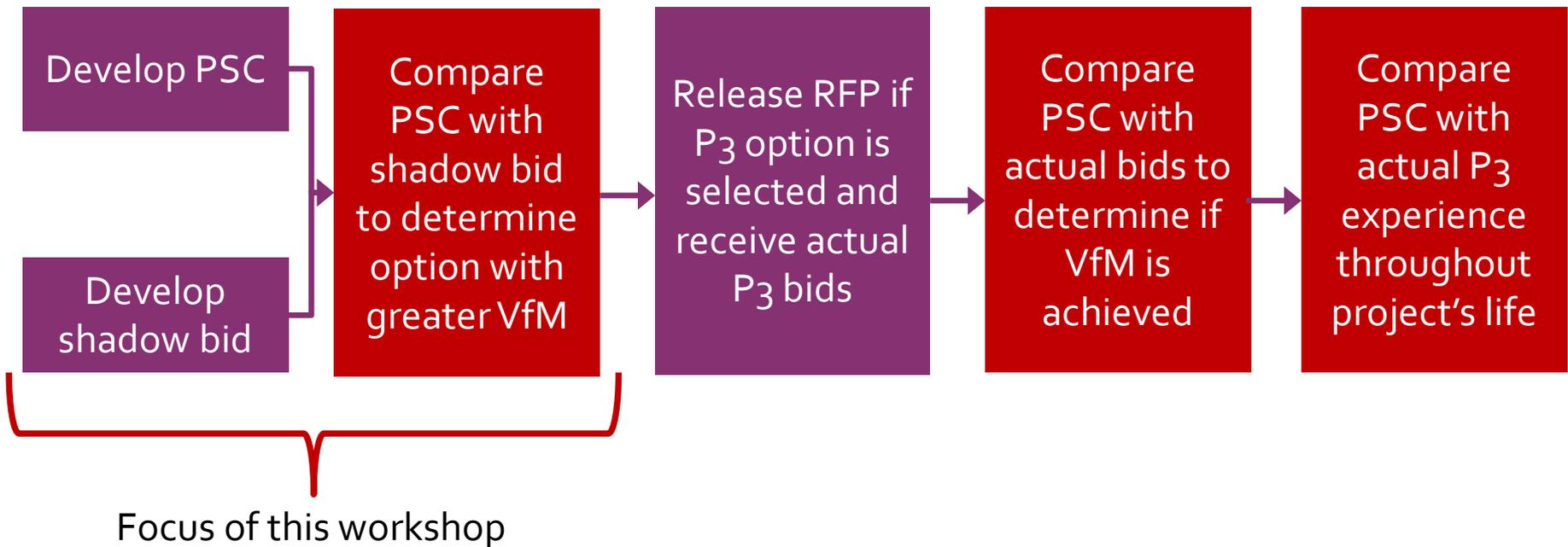
Project Delivery BCA* to evaluate P3 alternatives vs. conventionally delivered, based on P3 characteristics:

- Scope
- Funding
- Schedule
- Procurement type
- P3 payment mechanism

* This is the focus of current FHWA research

Timing of VfM Analysis

- Agencies typically conduct VfM analyses once they decide to undertake a project and wish to assess delivery options



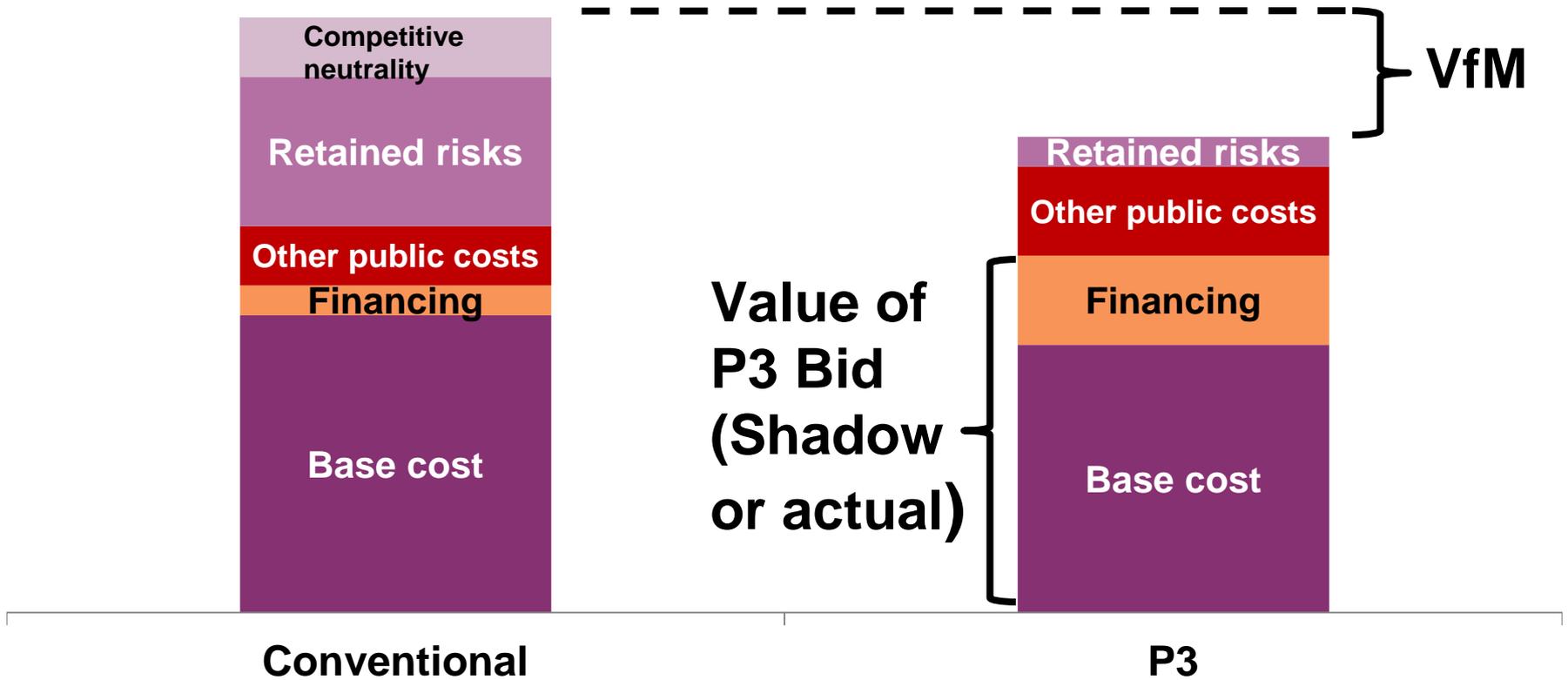


Part II

Use of Discount Rates



Comparing Conventional with P3 Delivery



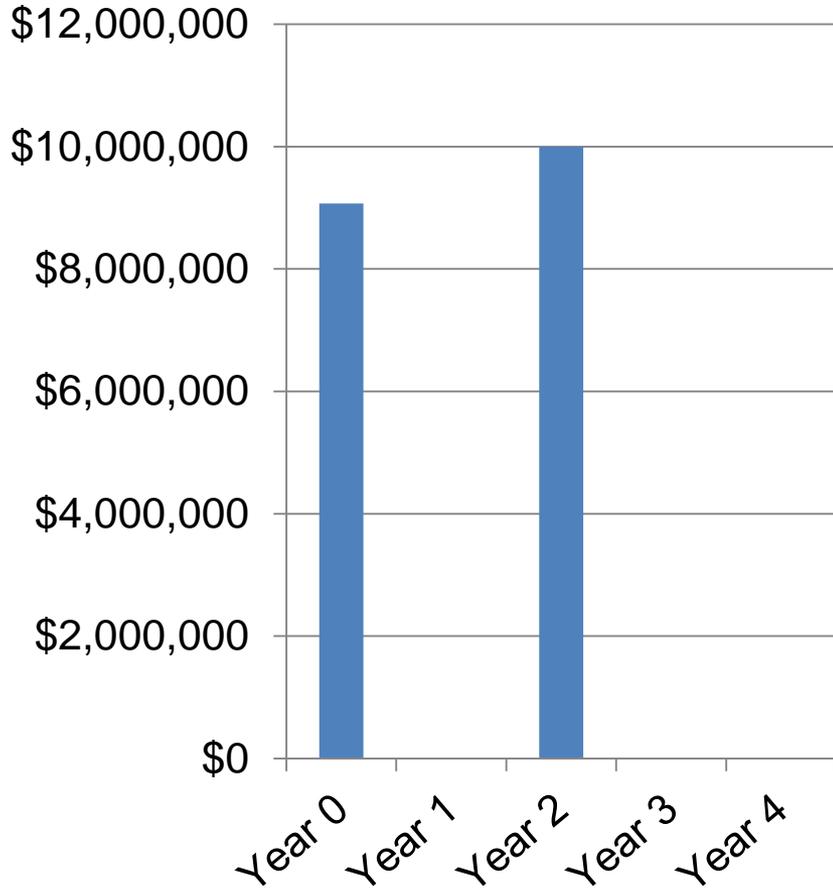
Present Value

- **Present Value:** A metric to determine the time-adjusted (and sometimes risk-adjusted) value of future project cash flows
 - **Net Present Value (NPV):** Sum of present values of positive and negative cash flows, including the initial investment
 - **Net Present Cost (NPC):** A term used for an NPV that is a net cost

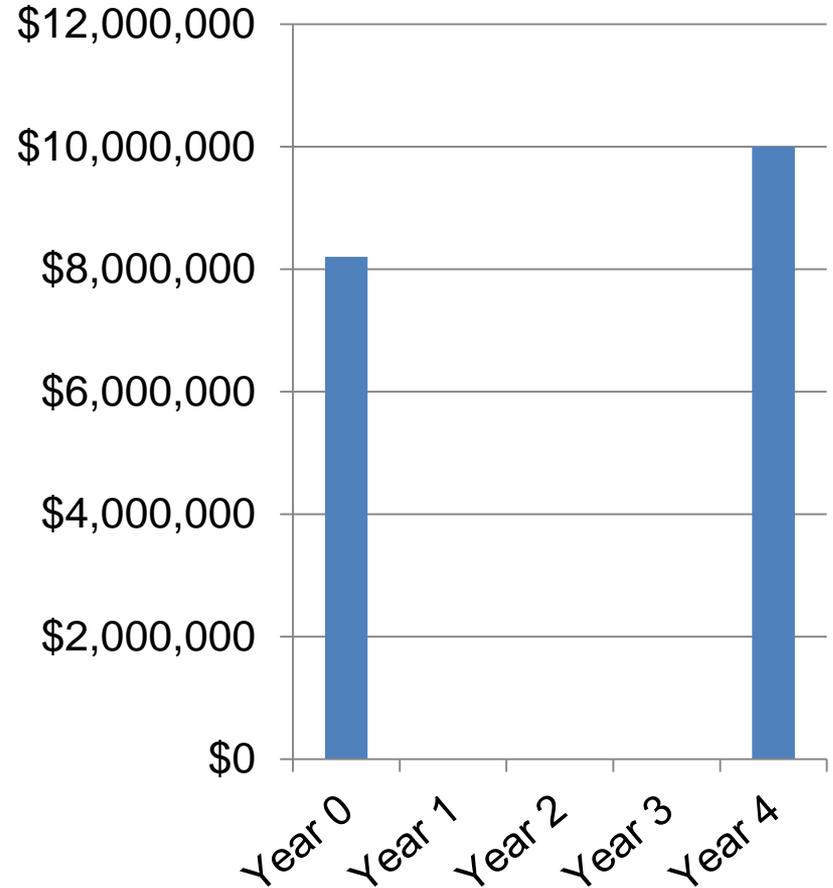


Example of Present Value Calculation

Present Value of \$10M received in Year 2 at 5% discount rate



Present Value of \$10M received in Year 4 at 5% discount rate



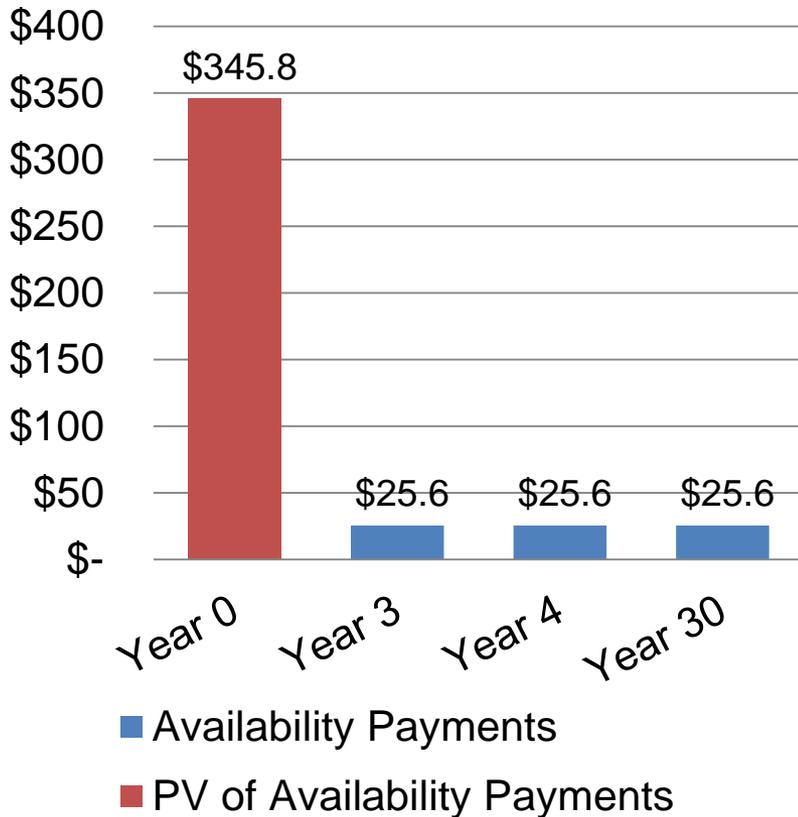
Discount Rate

- **Discount rate** is a percentage by which a cash flow element in the future is reduced per year, applied exponentially
 - It is used to estimate how much money would have to be invested currently, at a rate of return equal to the discount rate, to yield the cash flow in future (e.g., annuity)
 - It is also used to estimate how large an investment can be justified at a required rate of return equal to the discount rate on the basis of expected future cash flows (e.g., mortgage loan)
 - It may be used to account for uncertainty in future cash flows – one “certain” dollar is worth more than one uncertain dollar (e.g., stock vs. bond valuation)

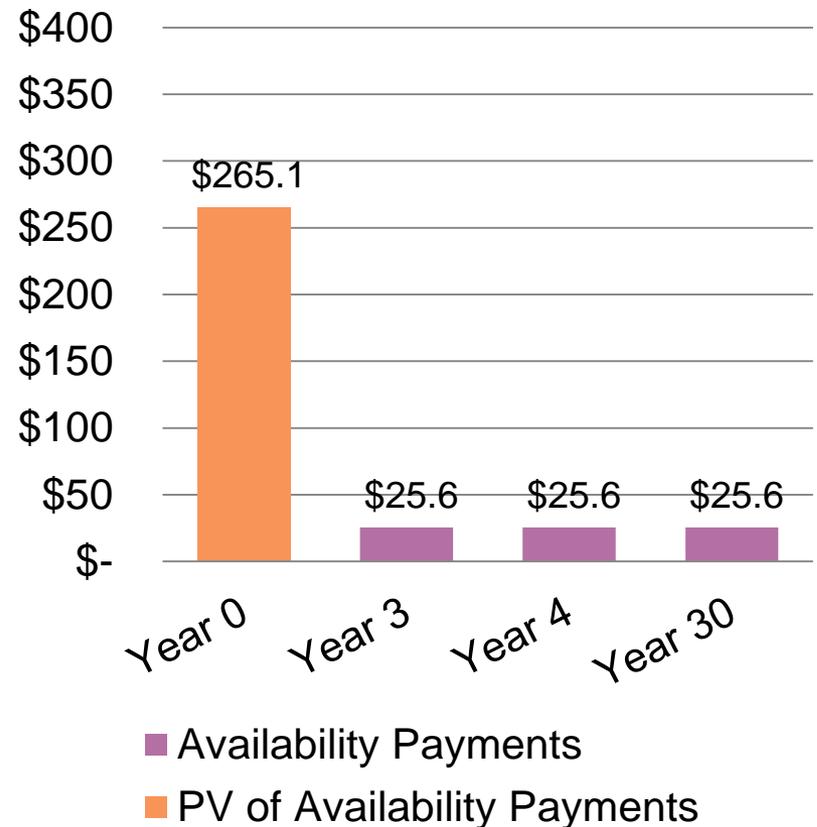
Effect of the Discount Rate

- The same annual payment (\$25.6 M) appears to be much smaller with a higher discount rate

PV at 5% discount rate



PV at 7.2% discount rate

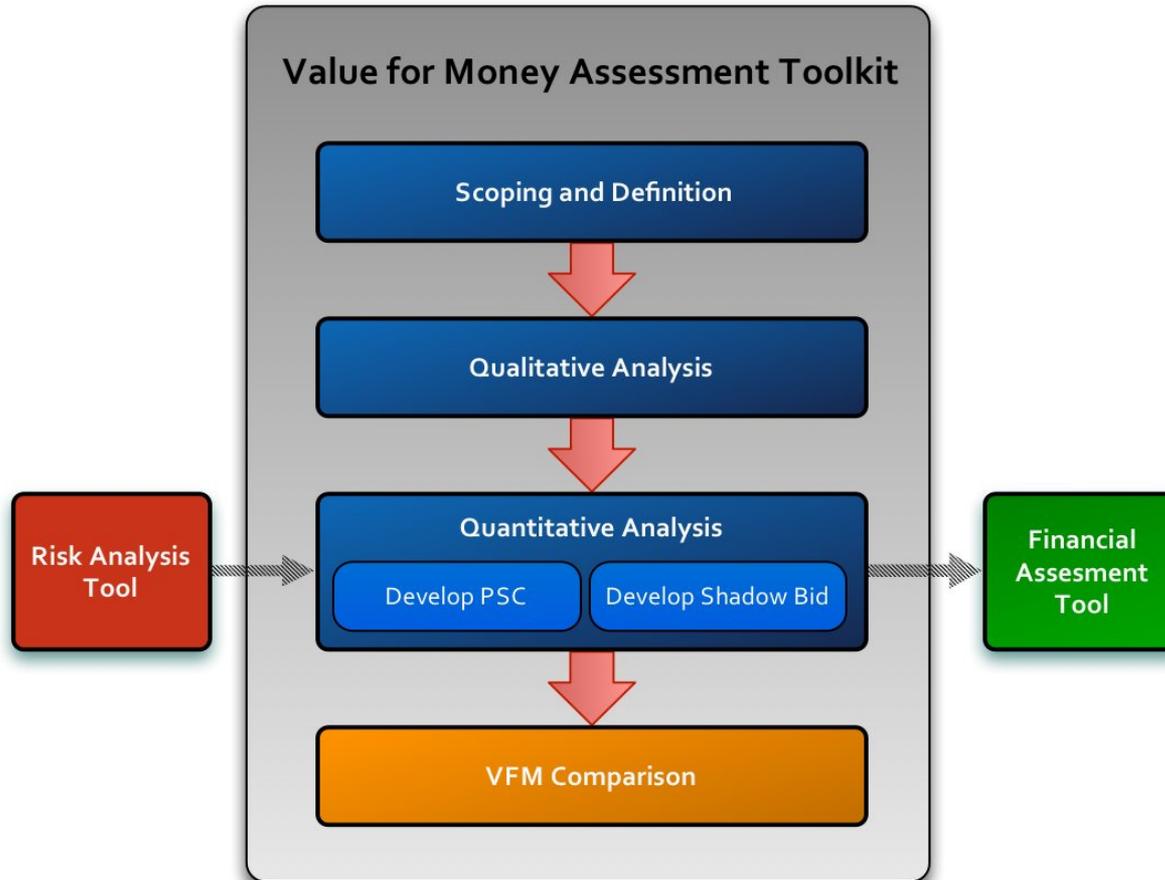




Part III

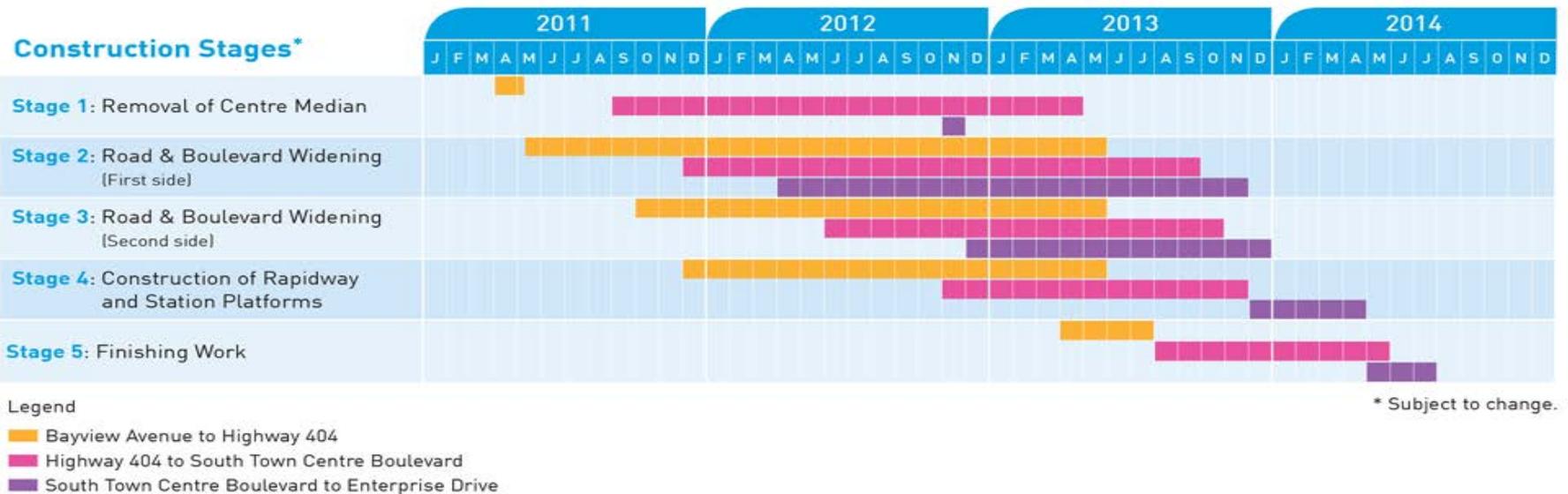
Scoping and Defining Alternatives

The Steps in a VfM Assessment



Scoping

- Defining the scope is the starting point of a fair VfM comparison
Start with the Raw PSC. This requires explicitly defining:
 1. The geographical scope
 2. The functional scope
 3. The temporal scope



Geographical Scope

- Most transportation projects will interact with – and sometimes encroach upon – other built environments.
 - Intersections with other forms of infrastructure (road, rail, pipelines, etc.)
 - Entrances and exits
 - Construction synergies



Functional Scope

- Determine which tasks should be included in the VfM assessment
- These include all of the tasks that might be allocated to the private entity in the P3 delivery method
 - Functions that remain within the realm of the public entity, regardless of the delivery method, do not need to be included unless they result in differences between delivery methods when the comparison is made
 - However, all tasks must be included in a financial viability assessment



Functional Scope Example

Activity	Contractor	PDOT	Remarks
Preliminary and final design	X		
Construction	X		
Oversight		X	
Relocation cables and pipes	X		Relocation is straightforward, no excessive risks
Right-of-way acquisition		X	PDOT already started acquisition and will probably finish before financial close
Archeological findings		X	Unmanageable by private entity
Permits	X	X	Most permits need to be acquired by the contractor, one specific environmental permit is unmanageable by the contractor and remains with PDOT
Communication with users and general public	X	X	This will largely be a joint effort, the communication plan will describe a more precise allocation of responsibilities
Snow and ice removal	X		The scale of project is large enough, therefore subcontracting with contractors in the same region is allowed

Temporal Scope

- An important third step in scope definition is the duration of the contract
 - This is an especially acute issue because maintenance and/or operation are included in the contract
- Issues affecting the duration of the project:
 - Major maintenance cycles and contracts
 - Expected environmental changes
 - Availability payment and toll revenue schemes



Defining P3 Delivery Alternatives

- After the project scope is defined, it is necessary to determine the exact definition of the delivery alternatives
- Most importantly, there is the distinction to be made between toll concession P3s and availability payment P3s



The Fall-Back Option: Conventional Option

- The conventional approach is usually the most reasonable fall back option in any decision
- The conventional delivery method can be:
 - Design-Bid-Build (DBB),
 - Design-Build (DB) or
 - Another contracting model



Example Contracts for Conventional Approach

Activity	Contract #	Remarks
Preliminary and final design	1	Contracted out to an engineering firm
Construction	2	Contracted out to a consortium of local contractors through a DBB contract
Oversight	3	Contracted out to an engineering firm
Relocation cables and pipes	2	Contracted out to a consortium of local contractors through a DBB contract
Right-of-way acquisition		Carried out by PDOT
Archeological findings	4	If necessary, contracted out to a specialized firm
Permits	1	Carried out by PDOT, with some support from an engineering firm
Communication with users and general public		Carried out by PDOT
Snow and ice removal	5	Contracted out in a larger scale contract for entire region
Major maintenance	6	Contracted out to a construction company
Regular maintenance	7	Contracted out to a construction company, specializing in maintenance, in 3-year blanket fee-for-service agreements (risk remains with PDOT)
Traffic information systems	8	Contracted out to a construction company, specialized in maintenance
Incident management		Carried out by PDOT
Traffic management		Carried out by PDOT
Imposing, collecting, and enforcing tolls	9	Contracted out to toll operator

Risk Allocation is Key in Definition of Alternatives

- Crucial element in describing the alternative delivery methods
- The definition of delivery methods already determines the risk allocation on a high level:

Risk	Design - Bid - Build	Availability Payment P3	Toll Concession P3
Design errors	Public	Contractor	Contractor
Change in scope	Public	Public	Public
Delay in permits	Public	Shared	Shared
Delay in right-of-way acquisition	Public	Public	Public
Construction cost overruns	Contractor	Contractor	Contractor
Construction risks	Contractor	Contractor	Contractor
Archeological findings	Public	Public	Public
Delay in relocation of cables and pipes	Public	Contractor	Contractor
Unknown ground conditions	Public	Contractor	Contractor
Hazmat	Public	Shared	Shared
Security	Public	Contractor	Contractor
Major maintenance cost overruns	Public	Contractor	Contractor
Snow and ice removal cost overruns	Public	Contractor	Contractor
Regular maintenance	Public	Contractor	Contractor
Traffic information systems	Public	Public	Public
Incident management	Public	Contractor	Contractor
Toll revenue risk	Public	Public	Contractor
Financing risks	Public	Contractor	Contractor
Force majeure	Public	Shared	Shared

Market Input

- Part of the scoping and definition phase is engaging in a market consultation or a request for information
- Depending on the specific issue at hand, private experts and companies can be interviewed to provide their view on the definition of scope of the project, the feasibility of delivery methods, and risk allocation



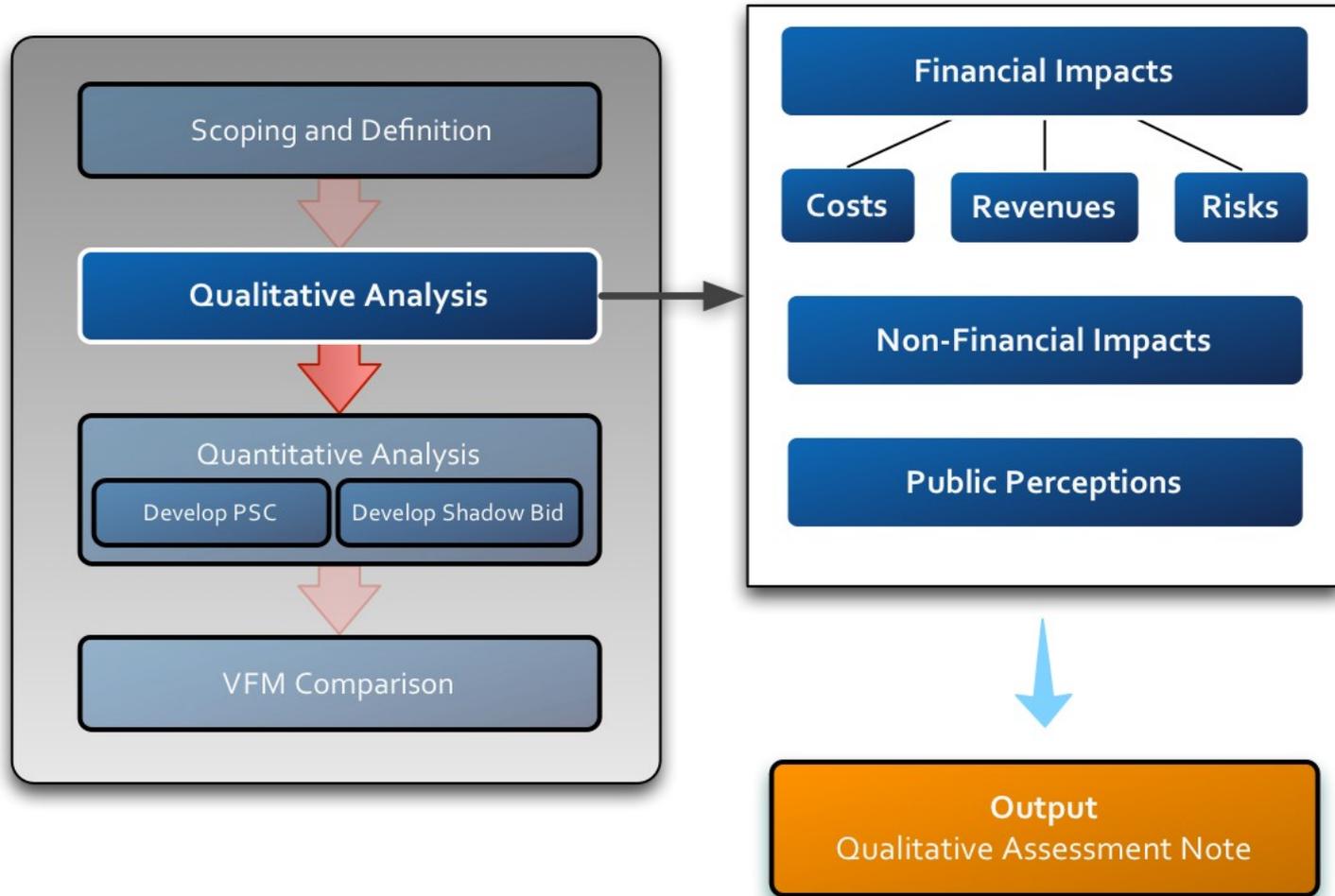
Part IV

Qualitative Analysis

Purpose of Qualitative Analysis

- The purpose of the qualitative analysis is:
 - To identify the expected differences between a P3 solution and the conventional approach
 - To prepare for the monetization of these differences in the quantitative analysis
- Typically, the differences are linked to costs, revenues, and risks

The Qualitative Analysis



Assessing Qualitative Differences

- The qualitative differences between delivery methods addressed during brainstorming sessions are typically broader than those related only to financial cash flows
- It is important to distinguish between:
 1. **Financial impacts:** these are directly related to or can be directly reflected in the financial cash flows
 2. **Non-financial impacts:** these are not related to financial cash flows, but are relevant for the comparison between delivery methods, e.g., benefits to highway users from accelerated project delivery
 3. **Public perceptions:** these are not actually differences, but stem from unfamiliarity with the P3 concept, e.g., a perception that “long-term contracts do not work”

Drivers of Financial Impacts

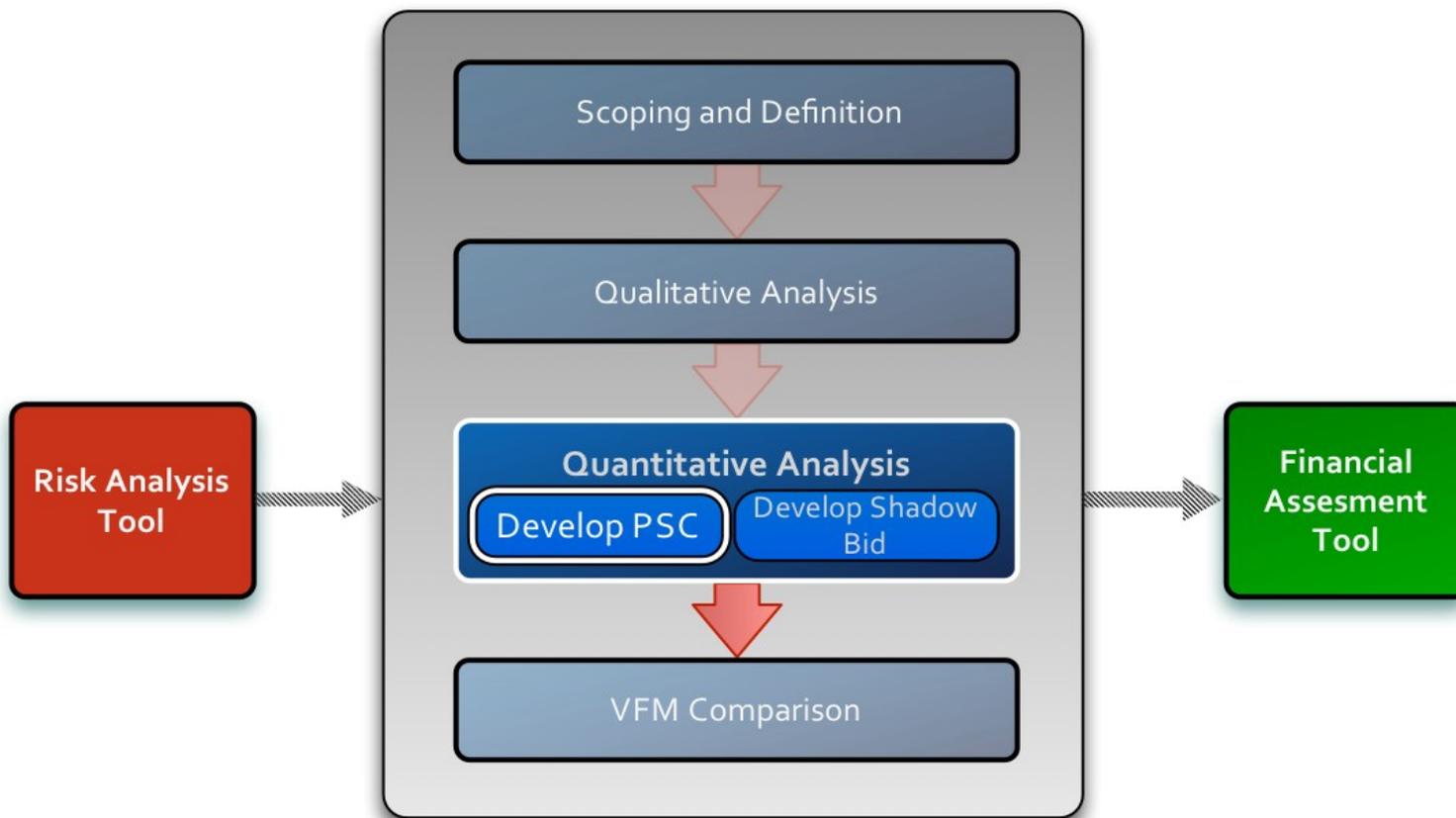
Governance mechanism	Conventional delivery	P3 delivery
Integration	Multiple contracts, public entity is integrator	One contract, private entity is integrator
Specification	Input specification, determining design and engineering solutions in detail	Output specification, allowing for creative solutions and life cycle costing
Financial incentives	The payment mechanism usually follows the cost structure of the contractor; milestone payments are an example of this	The payment mechanism is related to the output specifications and payments are therefore related to performance.
Competition	Depending on the public entity, portions of the project can be insourced and are therefore not subject to a competitive bidding process	Competitive bidding for the entire contract
Risk management	Traditionally risks are not always explicit; most risks are retained by the public entity	Risks are explicit and allocated according to the principle of “whoever is best able to manage the risk” will be responsible
Complexity	Contracts are standardized and relatively simple	Contracts are more complex and require financial and legal expertise from both the public and private entity



Part V

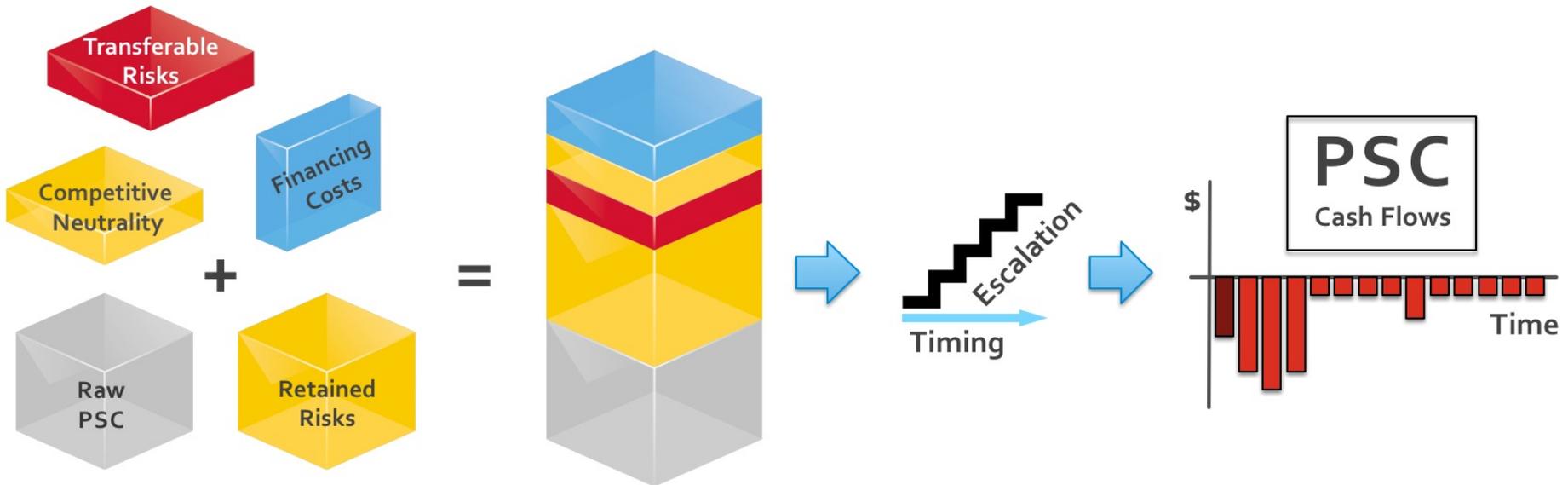
Developing a Public Sector Comparator

The Analysis Process



What is a PSC

- What is the PSC?
 - The PSC estimates the overall cash flows of the conventional approach, both for costs and revenues, including adjustments for the value of risks.



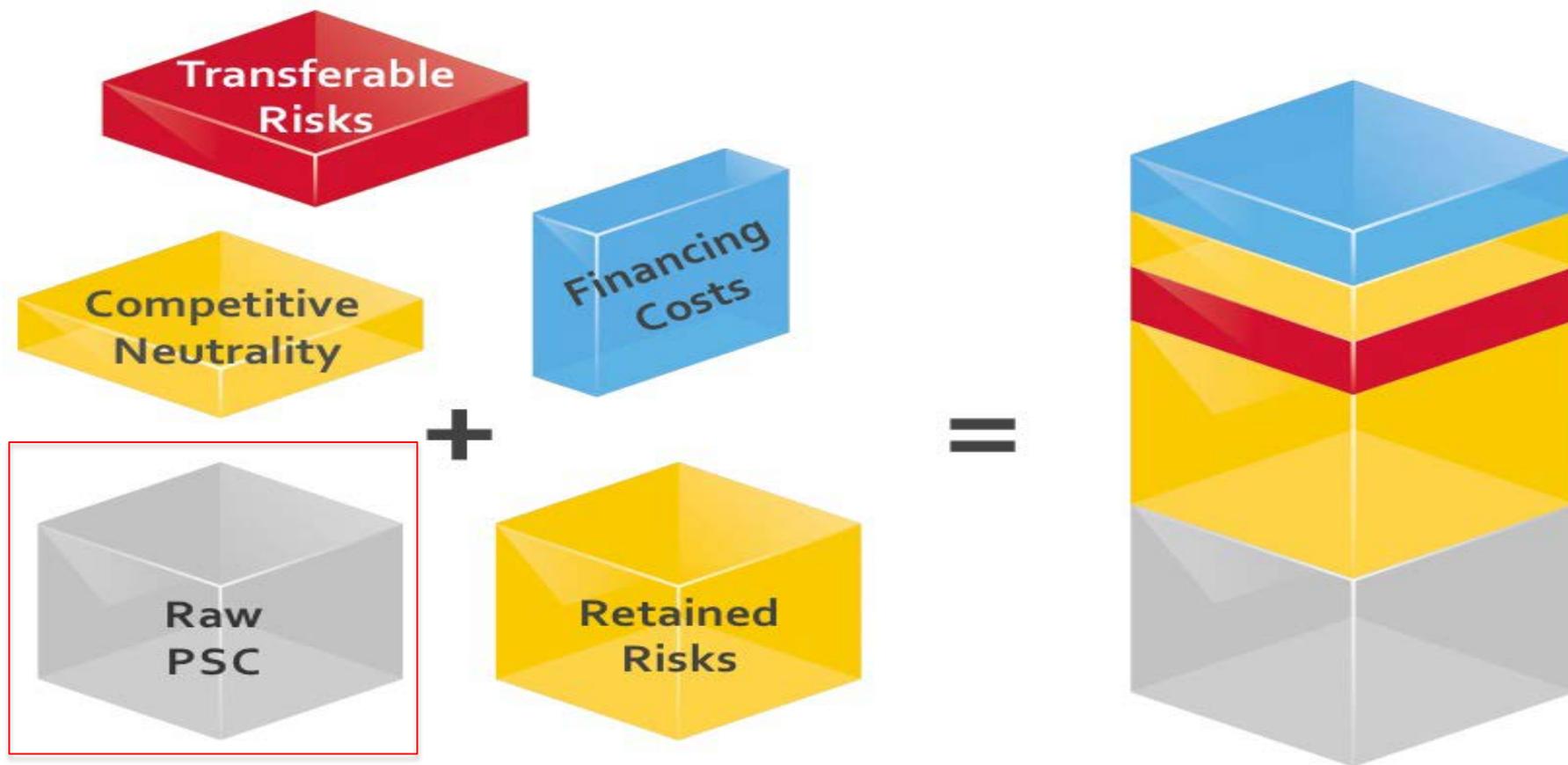
Key Assumptions

- Project can be completed to the same standards anticipated by P3 delivery
- Project can be completed over the same timeframe (e.g., funding or financing issues will not delay conventional procurement)
- Discount rate – all future cash flows are converted to “present value” terms, including:
 - Costs
 - Revenues
 - Financing (e.g., debt and equity receipts and payments)

Developing the PSC

- Steps for Developing the PSC
 1. Start with the Raw PSC
 2. Efficient and realistic risk allocation for retained and transferred risks
 3. Adjust for competitive neutrality
 4. Examine financing costs
 5. Adjust cash flows for timing and escalation

The Raw PSC

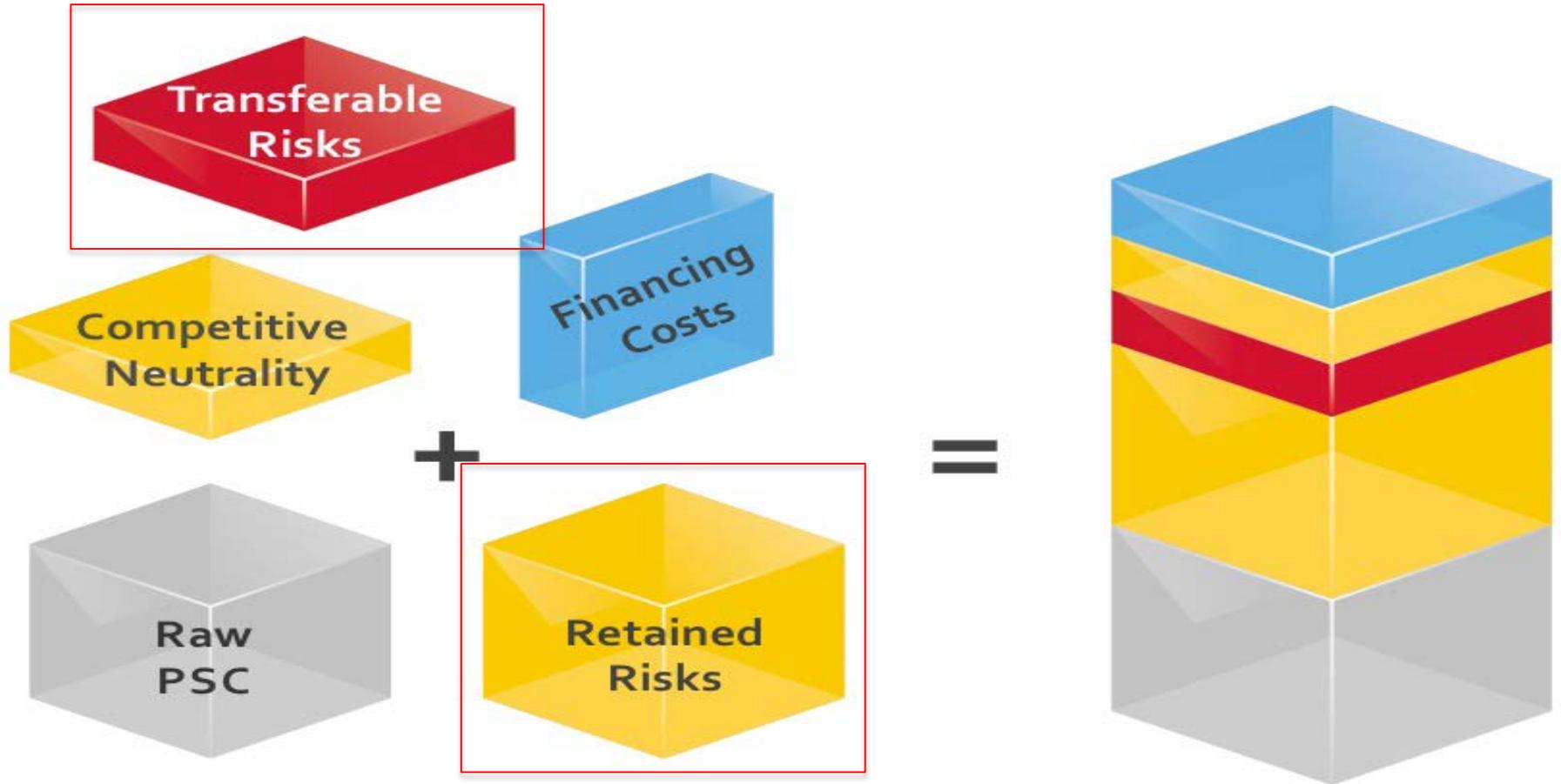




Components of the Raw PSC

- Cost Estimates Include:
 - Planning and Permitting
 - Project Administration
 - Procurement
 - Design and Engineering
 - Construction
 - Maintenance (short and long-term)
 - Operations
 - Contract Management and Oversight
- Revenues Include:
 - Toll revenues
 - Easement fees
 - Service plaza concessions, rental, and lease revenues
 - Development rights, including cell towers and fiber optics

PSC Risks





Retained, Transferable and Shared Risks

- **Retained** risks are those risks that the government bears itself and does not transfer to the market
- **Transferable** risks are those that the government explicitly transfers to a private entity
- Some risks may not be fully transferred to the private entity, but are instead **shared** to a certain degree
- Some risks may not be identified, quantified or valued in a risk assessment, such as “**systematic**” risks and risks related to the integrated and long-term character of the P3 contract

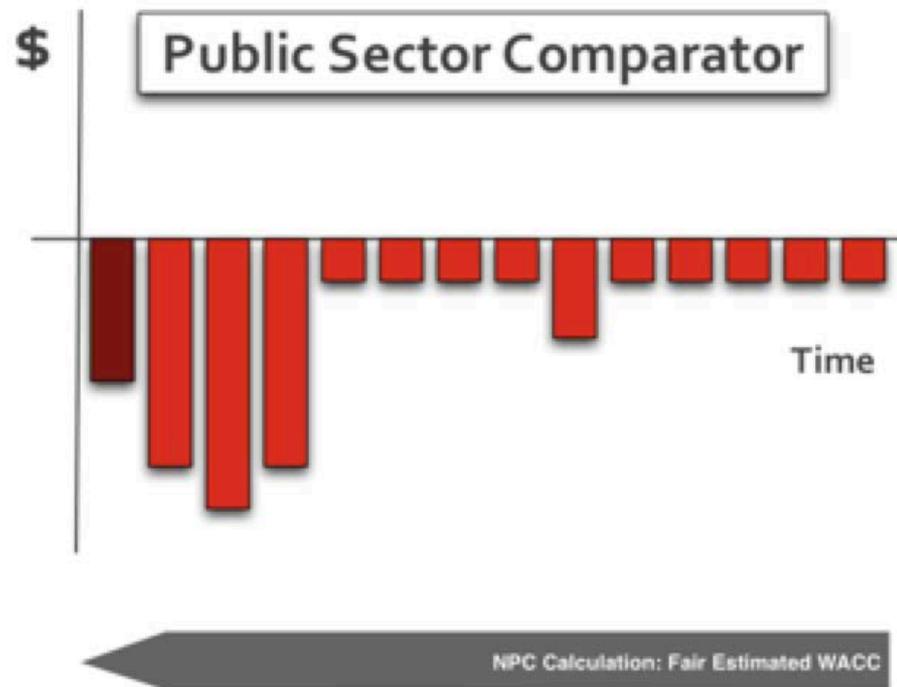


Systematic Risks and Discount Rates

- In the PSC, among other risks, the following risks are typically retained by the public agency, but may not be covered in the risk assessment:
 - Systematic risks
 - Long-term-performance risks
 - Project coordination risks.
- *Two ways to deal with these risks in practice:*
 1. Value them in market-based discount rate
 2. Value them in virtual insurance premium

Approach 1: Market-Based Discount Rate

- Value the risks in this category in the PSC by applying a *market-based discount rate* for the NPV calculation





Determining a Market-Based Discount Rate

- Market based discount rate can be based upon the WACC of a (non recourse) project finance P3
- The Weighted Average Cost of Capital (WACC) formula is:

$$WACC = [E/V \times Re] + [D/V \times Rd (1 - Tc)]$$

where:

Re = cost of equity.

Rd = cost of debt.

E = market value of the firm's equity.

D = market value of the firm's debt.

$V = E + D$.

E/V = percentage of financing that is equity.

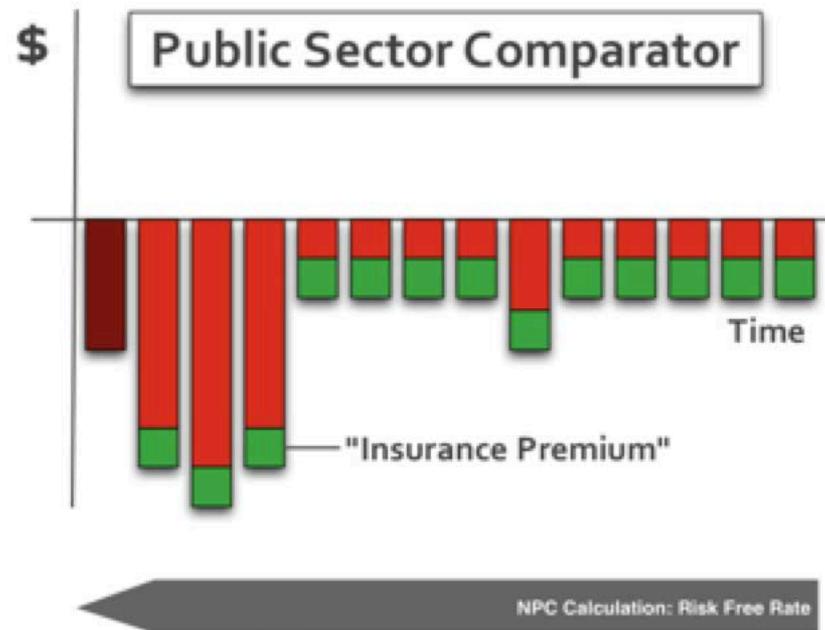
D/V = percentage of financing that is debt.

Tc = corporate tax rate.

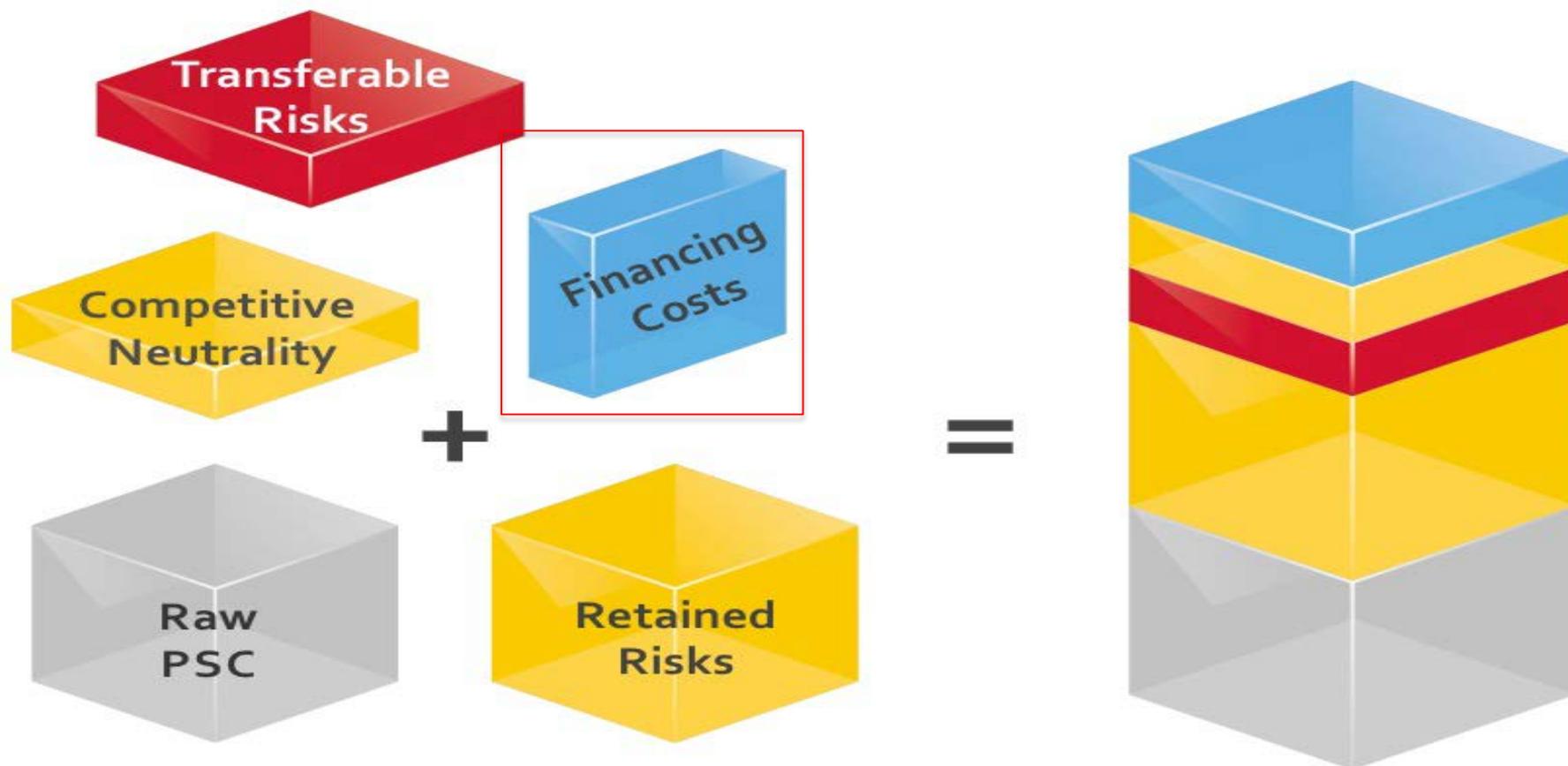


Approach 2: Virtual Insurance Premium

- Value the risks in this category in the cash flows of the **PSC** by applying a “virtual insurance premium”
- The NPV of both cash flows – the PSC and the shadow bid – are calculated on the basis of a risk-free discount rate



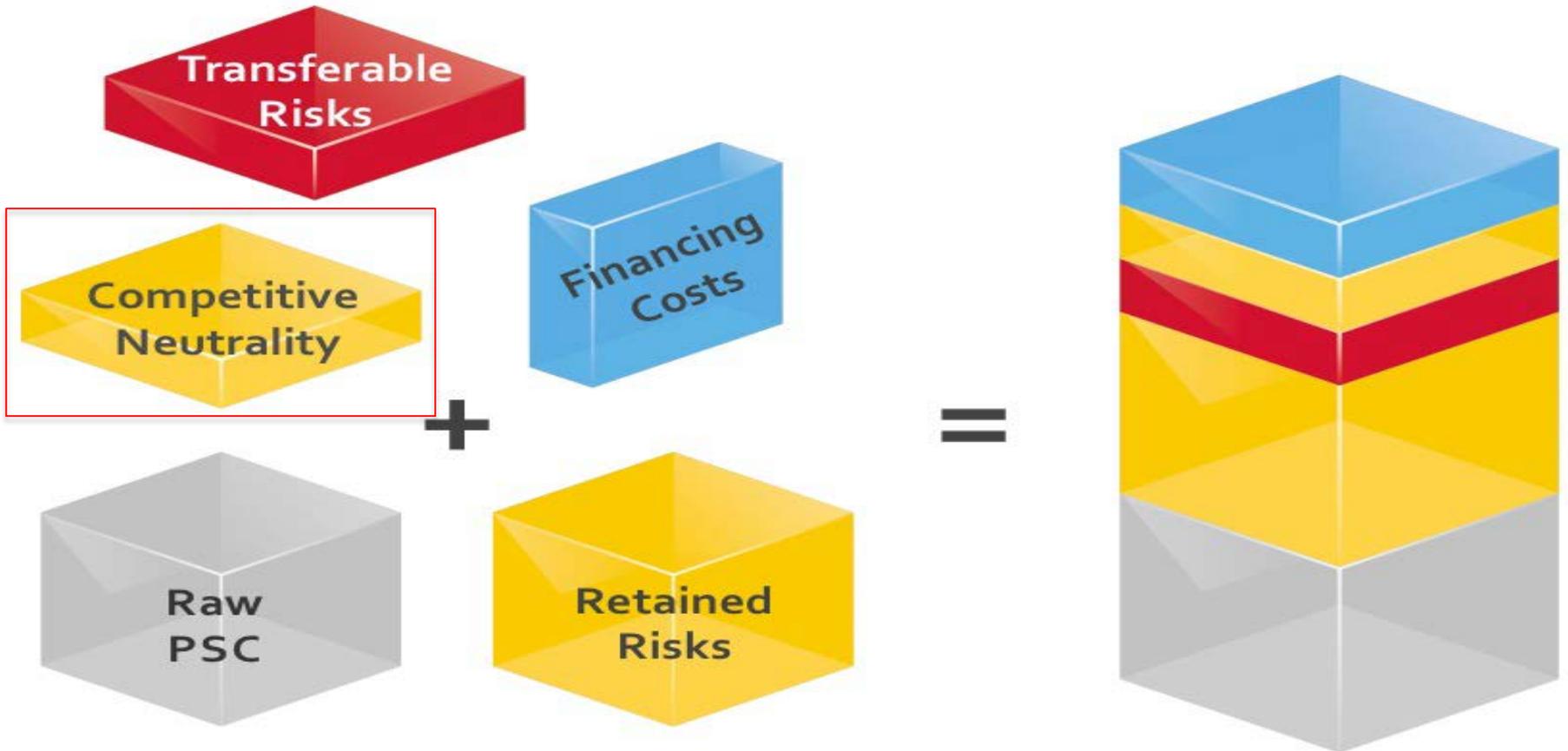
Financing Costs



Financing Costs

- Analysis based on financing cash flows
 - Provides insight into budgetary consequences and ensures that most necessary inputs for the financial assessment are collected
- Inputs Include:
 - Financing structure (direct loan, bonds)
 - Interest rates and required return on capital employed, where appropriate
 - Drawdown and repayment schedules
 - Transaction fees (arrangement and advisory fees)
 - Other financing conditions including:
 - Annual Debt Service Coverage Ratio (ADSCR)
 - Loan Life Coverage Ratio (LLCR)
 - Project Life Coverage Ratio (PLCR)

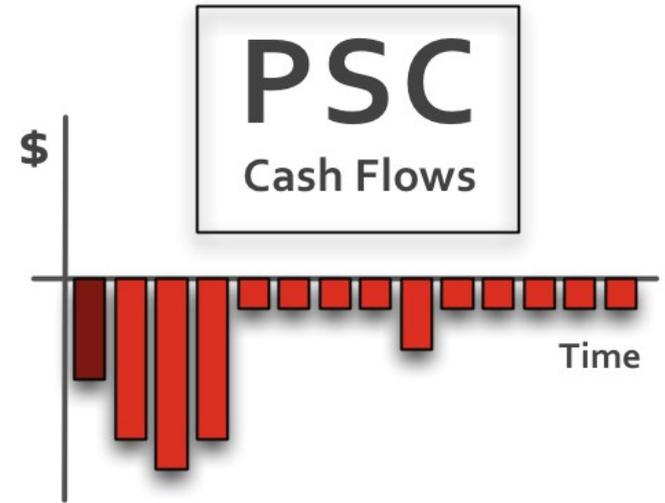
Competitive Neutrality



Competitive Neutrality

- Competitive neutrality is the adjustment for the:
 - Tax advantages or disadvantages of the conventional approach over P3 approaches, and
 - Net competitive advantages or disadvantages accruing to a government business by virtue of its public ownership
- Examples of tax differences are:
 - Land or property taxes
 - Local government rates exemptions
 - Payroll taxes
 - Corporate taxes
- Examples of differences related to public ownership are:
 - Increased administrative requirements
 - Reporting requirements

Timing and Escalation



Timing and Escalation

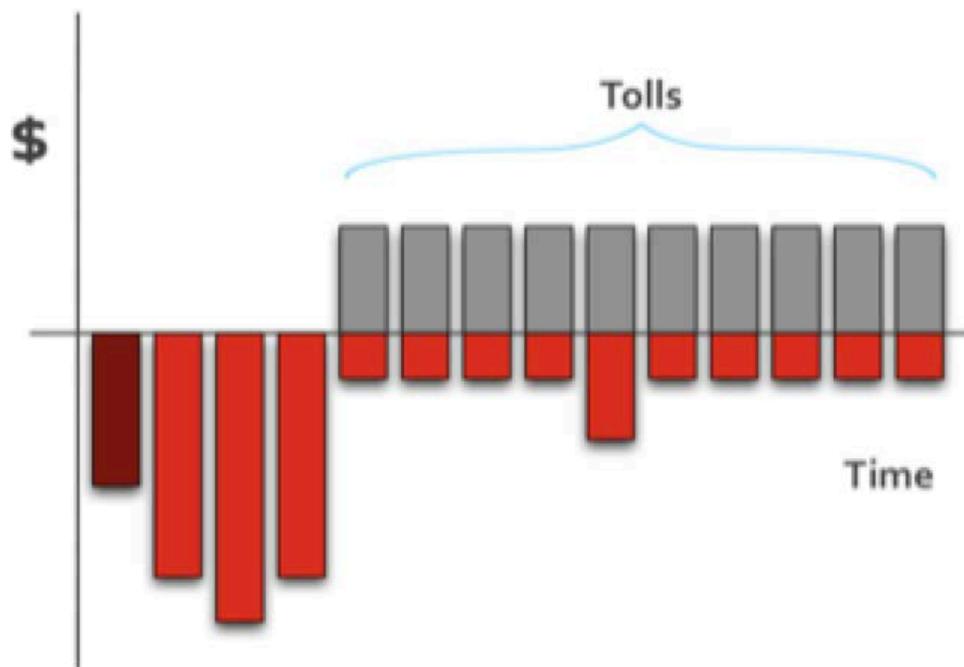
- Transform all inputs into cash flows
- Place all costs, revenues, and risks on a **timeline**
- Inputs:
 - Construction schedule
 - Timing of major maintenance
 - Growth factor of toll revenues



Guidance on Indices

- Use forecasts if available
- Rule of thumb: 10-year historical average
- Not too many indexation categories
- Indexation of revenues \leq Indexation of costs
- Sensitivity analysis to reflect uncertainty

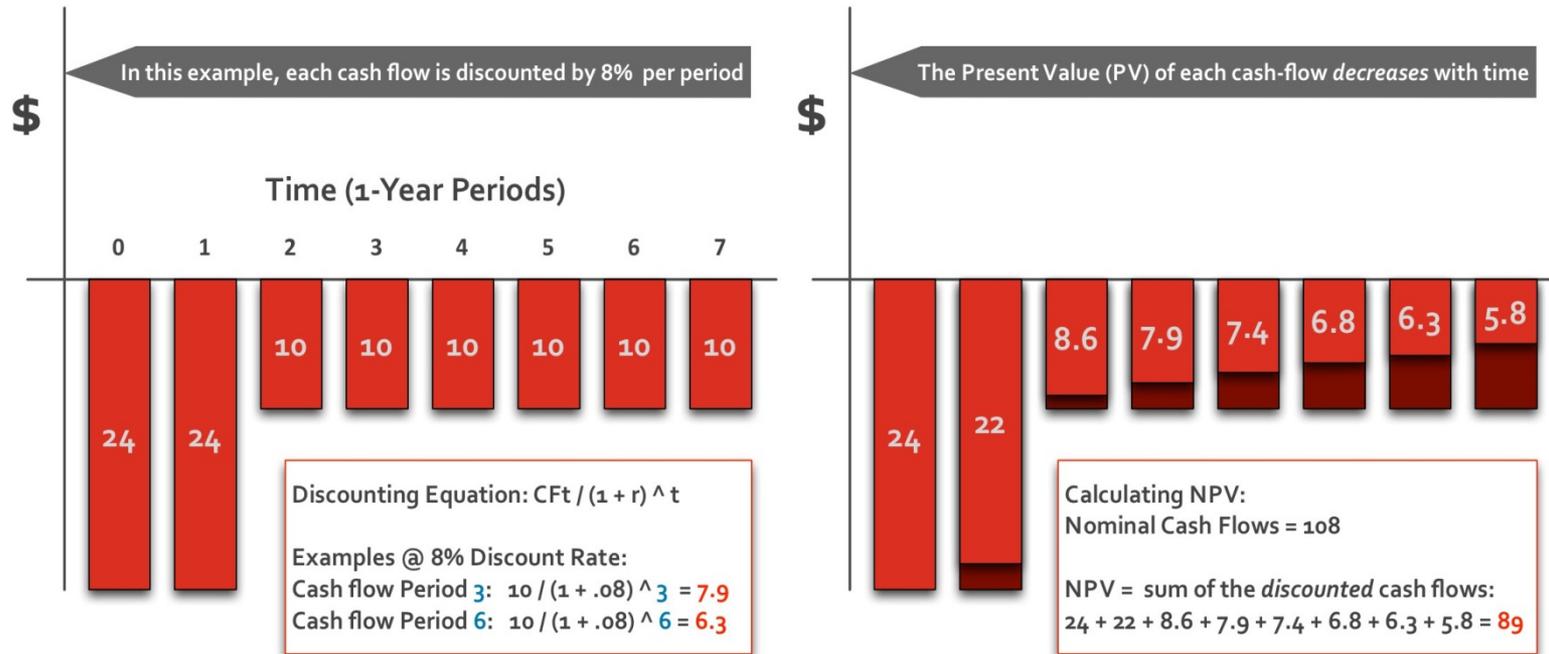
The End Product: PSC Cash Flows



Calculating the NPV

- NPV = Net Present Value, t = time, CF_t = cash flow at a certain point in time (t), r = discount rate

$$NPV = \sum_{t=0}^T \frac{CF_t}{(1+r)^t}$$



Sensitivity Analysis

- Present output as a bandwidth rather than a precise outcome
- Use Sensitivity Analysis to generate range of outcomes

Variable	Min	Max
Inflation	-0.5%	+0.5%
Discount rate	-0.5%	+0.5%
Construction costs	-10%	+10%
Maintenance costs	-25%	+25%
Pure risks	-20%	+20%
Revenues	-10%	+10%

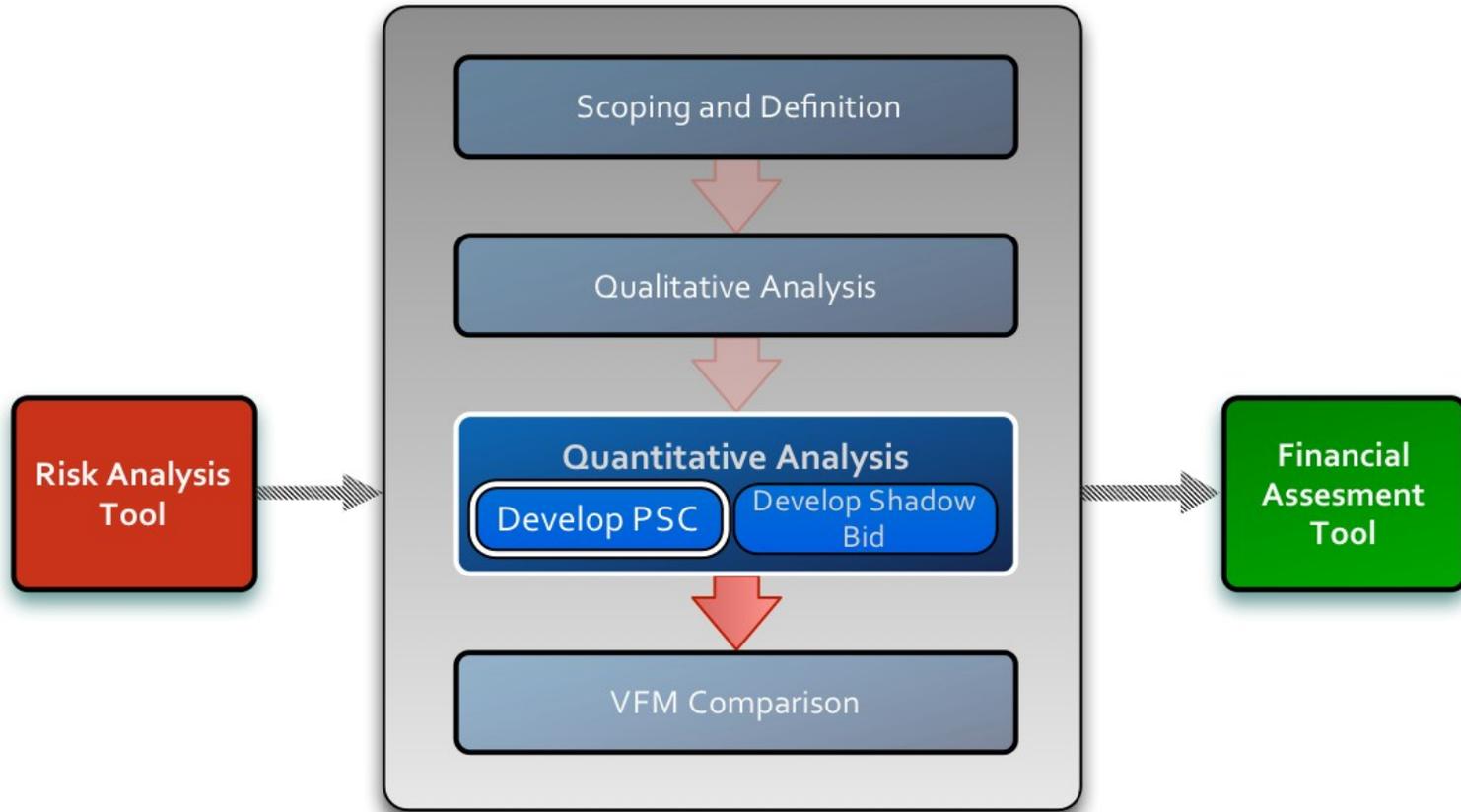
- SA does not replace risk assessment, since PSC and shadow bid should still reflect valuation of all risks and uncertainties
- SA does demonstrate robustness of PSC to potential errors in the estimation of key input variables



Part VI

Developing a Shadow Bid

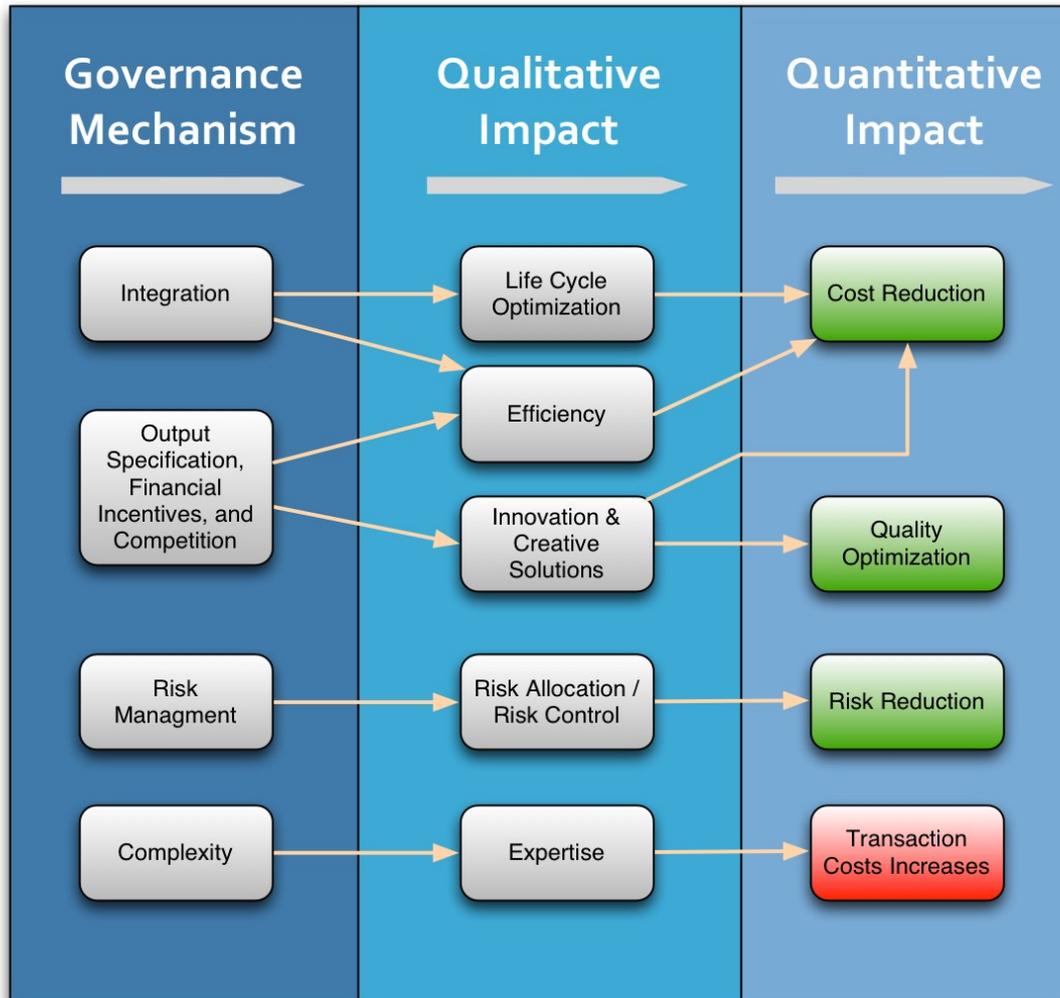
Analysis Process



The Shadow Bid

- What is it?
 - The estimated cost to the public agency if the project would be delivered under a P3
- The cost, revenue, and risk estimates in the PSC are used as starting points for the inputs in the shadow bid
- The shadow bid should cover the same scope as the PSC

Qualitative to Quantitative Translation

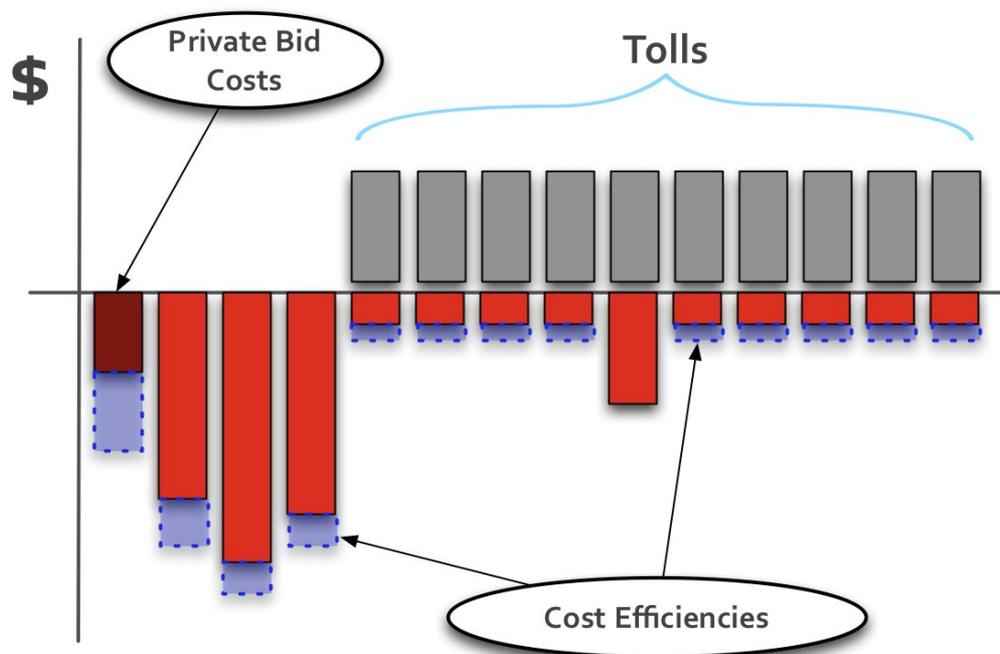


Start with the PSC

- And adjust for these differences:
 1. Private sector efficiencies
 2. Risk adjustments
 3. Higher toll revenues
 4. Higher transaction costs
 5. Different tax structures
 6. Different financing structure

1. Private Sector Efficiencies

- The project specific qualitative analysis is now used to estimate the quantitative difference between the P3 and the conventional approach



2. Risk Adjustments

- P3 features larger risk transfer to private entity
- Allocation and valuation changes
 - Expected lower valuation from better risk management
 - This is due to financial incentives
- Start with **all** risks transferred
- Then address retained risks:
 - Scope changes initiated by the public agency
 - Delays caused by the government
 - Right-of-way acquisition
 - Force Majeure

2. Higher Toll Revenues

- Start with the PSC
- Understand extent private entity sets tolls
 - Generally little control here
- P3 may lead to smaller innovations
 - Improved access
- Improvements *may* lead to a difference in cash flows

4. Higher Transaction Costs

- Public transaction costs:
 - Determining Output Specifications for Project
 - Developing a P3 contract
 - Procurement of contract is more complex as well
 - Oversight costs may increase due to more active monitoring

- Private transaction costs
 - Project finance costs are higher than traditional procurements
 - Lengthy process and more complicated bid
 - Oversight costs increase due to more active monitoring

- Costs depend on: Maturity of P3 market, complexity, and duration

5. Different Tax Structure

- SPVs take on additional tax liabilities
- Subcontractors are subject to taxation as well, but this may be the same as under conventional delivery
- Tax estimation requires a financial model
 - Benchmarks can be used to approximate

6. Different Financing Structure

- Portion of project risk reflected in WACC
 - Systematic and long-term/contract risks
- Financing Cash Flows approach using WACC is a fair proxy and avoids need to build a sophisticated financial model
- P3-VALUE uses a single equity source/rate of return and a single debt tranche.



Example Private Sector Efficiencies - Construction

Construction phase	Δ	Resp.	Justification
Planning and permitting	0	Shared	On the basis of previous projects, the team concludes there is no reason to assume significant differences between P3 and a conventional approach with respect to planning and permitting.
Project administration	+ \$ 2 M	Both	Because this is one of the first P3s, the team expects higher monitoring and contract management cost. The team expects this number to be lower for future projects.
Procurement	+ \$ 7.5 M	Both	On the basis of previous projects, the additional procurement costs due to the complexity of the P3 contract and the additional design activities during procurement, are estimated at \$ 3.5 M for PDOT and \$ 4 M for the private entity.
Design and engineering	0	Private	The team expects innovative design solutions, not much lower design costs.
Construction	-10%	Private	On the basis of experiences in previous projects, the team expects significantly lower construction costs, because of the financial incentives in the procurement and de P3 contract in combination with output specifications, leading to design innovations and life cycle optimizations.
Pure risks	-7.2%	Private	The team expects slightly lower pure risks, because 1) the private entity is better able to manage some of the risks that are now transferred and 2) the financial incentives will lead to better risk management by the private entity.



Example Private Sector Efficiencies - Operation

Operations phase	Δ	Resp.	Justification
Maintenance	-10%	Private	On the basis of experiences in previous projects, the team expects significantly lower operations and maintenance costs, because of the financial incentives in the procurement and de P3 contract in combination with output specifications, leading to design innovations and life cycle optimizations.
Long term maintenance	-10%	Private	
Operations	-10%	Private	
Contract management and oversight	+\$ 2 M	Both	The team expects additional contract management and oversight costs due to the complexity of the P3 contract of about \$ 2 M per year.
Revenues	0	Private	The team does not have any reason to assume differences in revenues between the conventional approach and the P3 approach.
Pure risks	-4.7%	Private	The team expects slightly lower pure risks, because 1) the private entity is better able to manage some of the risks that are now transferred and 2) the financial incentives will lead to better risk management by the private entity.



Calculating Components of a Shadow Bid

- Estimate the total costs *to the public agency* for delivering the *same* project as a P3 (instead of conventional delivery)
- Components include:
 - **P3 contract payment:** Amount that would be required by private sector to deliver the project based on its costs and desired rate of return
 - **Retained risks:** Value of risks retained by the public sector in P3 delivery structure
 - **Other project costs:** Costs incurred by the public agency to facilitate project delivery and oversight
- **Note:** the term “shadow bid” as used in Value for Money analysis includes both the estimated private bid cost *as well as* additional public costs



Estimating the P3 Contract Payment

Payments to Private Partner cover:

1. Base life-cycle costs borne by private partner

- Capital Costs (Design and Construction)
- Annual Operations and Maintenance Costs
- Periodic Maintenance Costs (Reconstruction and Rehabilitation)

2. Costs of transferred risks

3. Financing costs:

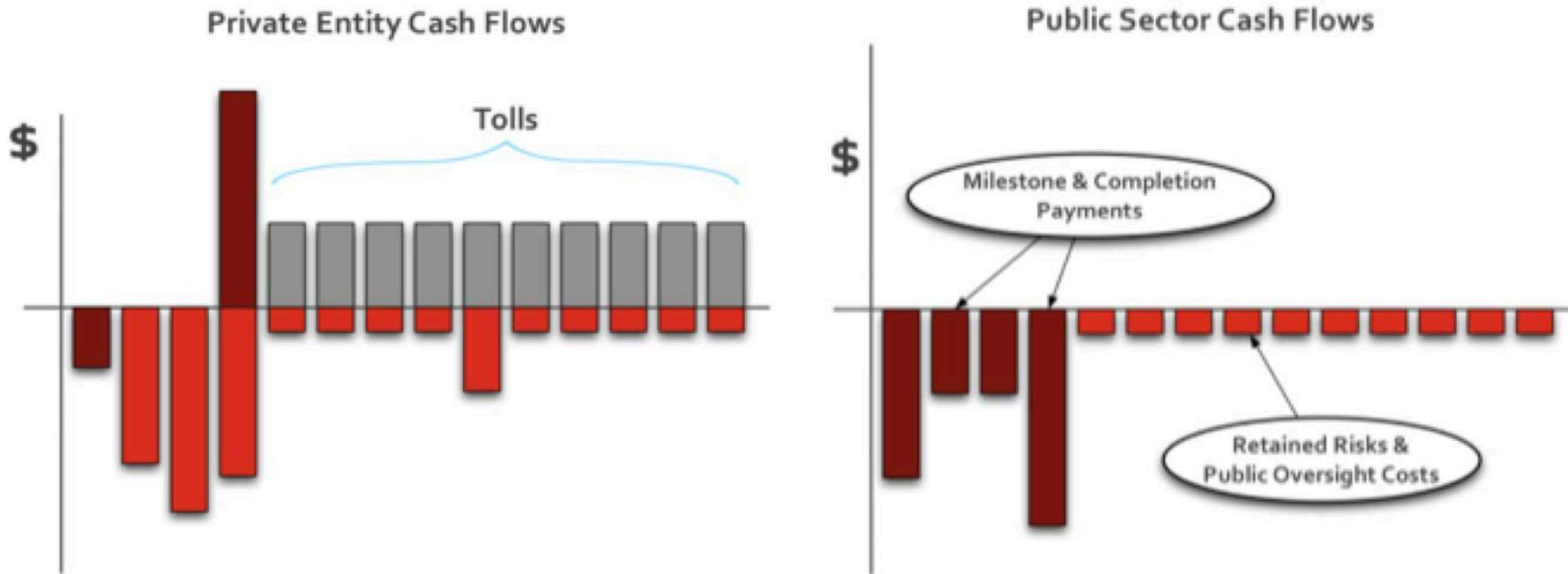
- Interest on debt
- Equity returns, including consideration of taxes to be paid by concessionaire



Calculating Payments to Concessionaire

- Focuses on scope and risks of private entity
- Determine payments needed to meet entity's cost of capital requirements. Two methods are using "goal seek" in Excel spreadsheet to find payments which will result in:
 - The project IRR equal to the WACC
 - NPV of zero with use of WACC as discount rate

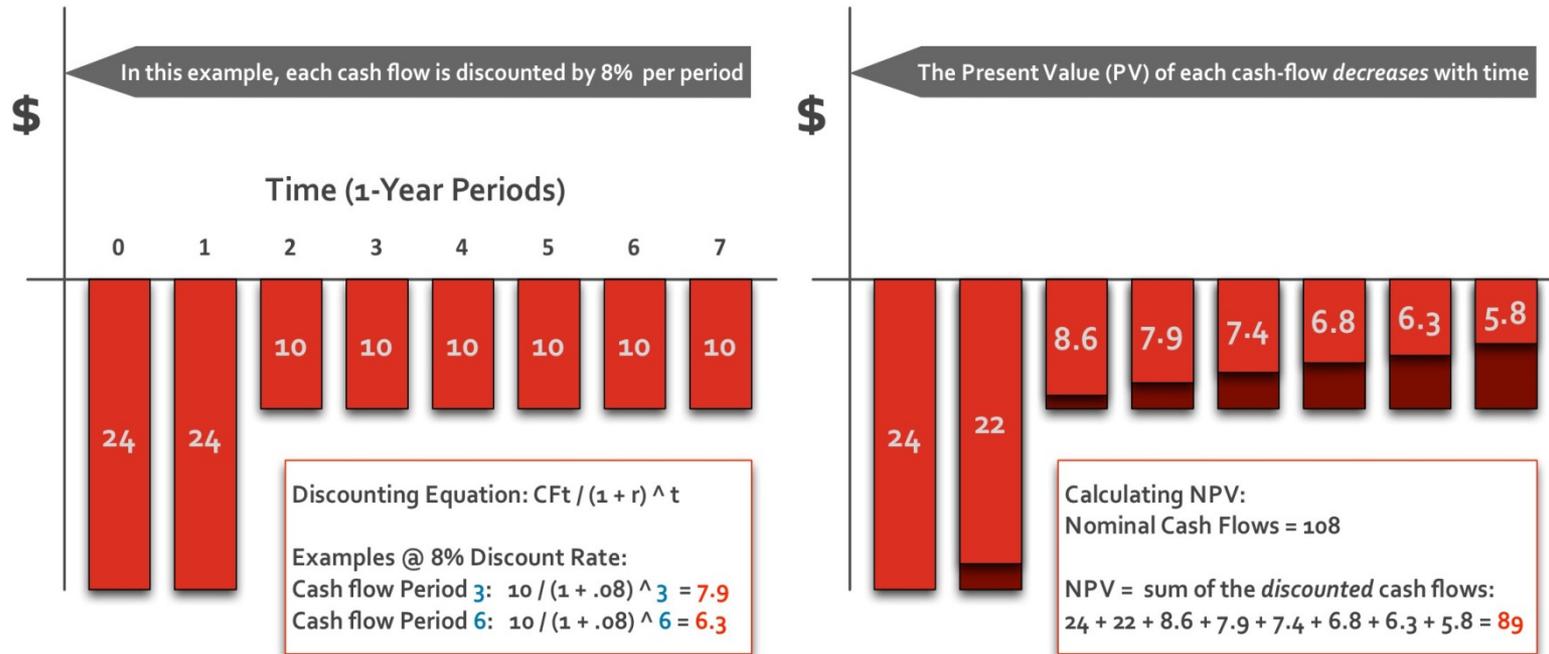
- Private Entity Cash Flows transformed to Public Sector Cash Flows, and other public agency costs are added:



Calculating the NPV

- NPV = Net Present Value, t = time, CF_t = cash flow at a certain point in time (t), r = discount rate

$$NPV = \sum_{t=0}^T \frac{CF_t}{(1+r)^t}$$



Sensitivity Analysis

- Present output as a bandwidth rather than a precise outcome
- Use Sensitivity Analysis to generate range of outcomes, also focusing on (often very uncertain) expected differences between P3 and conventional approach

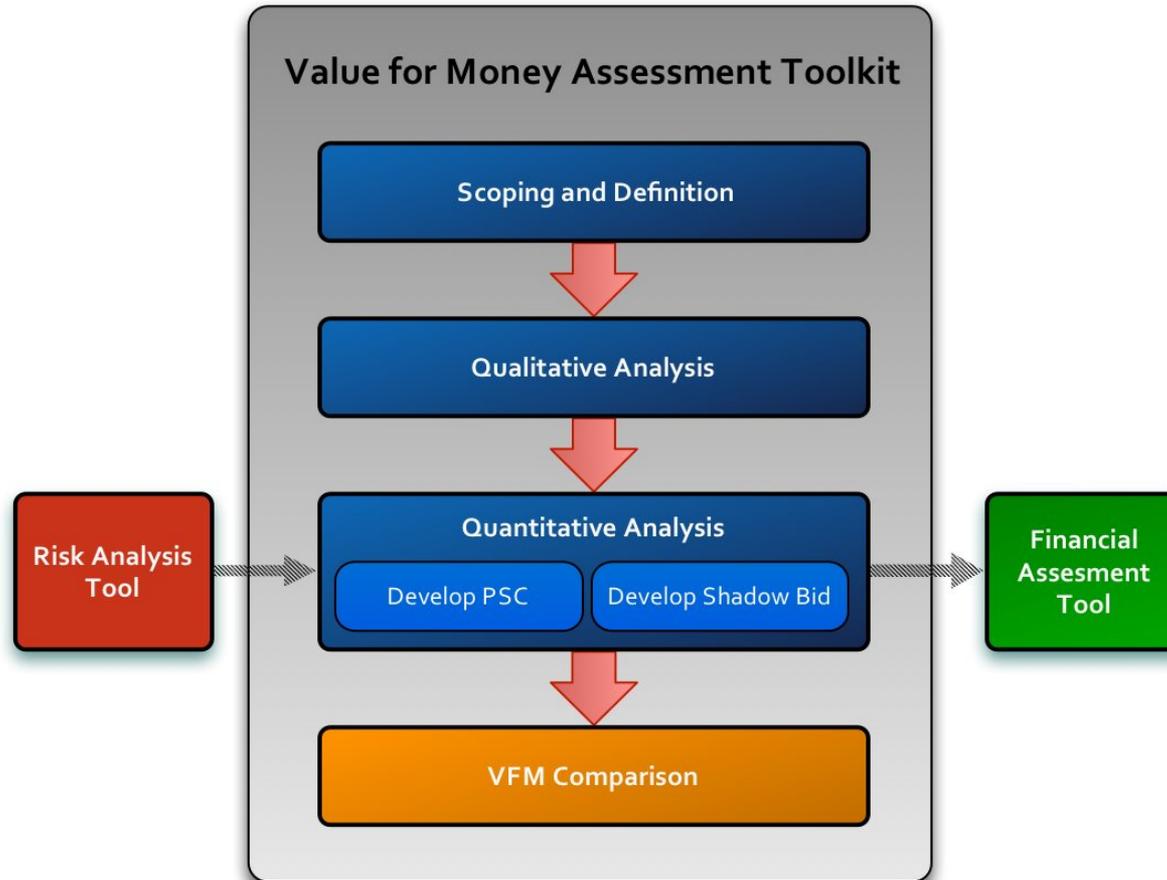
Variable	Min	Max
Inflation	-0.5%	+0.5%
Discount rate	-0.5%	+0.5%
Additional procurement costs P3	-\$ 2.5 M	+\$ 2.5 M
Additional monitoring costs P3	-\$ 0.5 M	+\$ 0.5 M
Construction costs	-10%	+10%
Construction costs efficiencies P3	-5%	+5%
Maintenance costs	-25%	+25%
Maintenance costs efficiencies P3	-10%	+10%
Pure risks	-20%	+20%
Pure risks efficiencies P3	-5%	+5%
Revenues	-10%	+10%



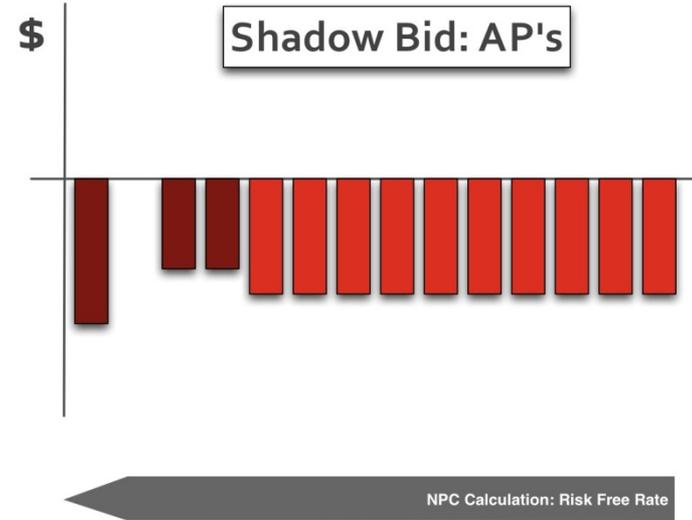
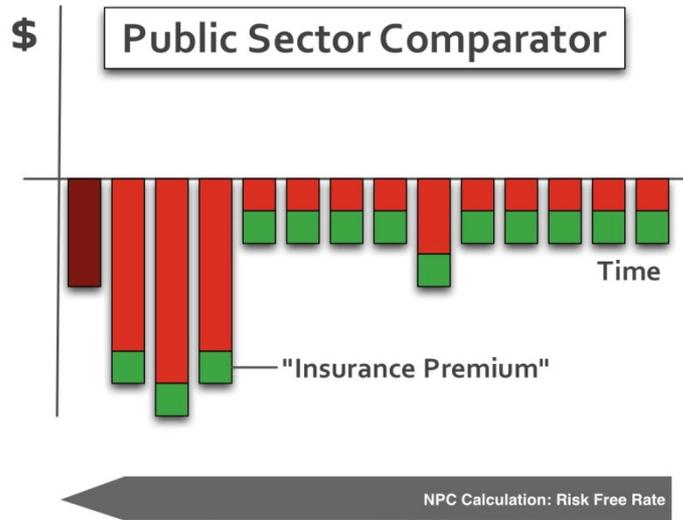
Part VII

Comparing the PSC to the Shadow Bid

Comparison of PSC and P3 Options



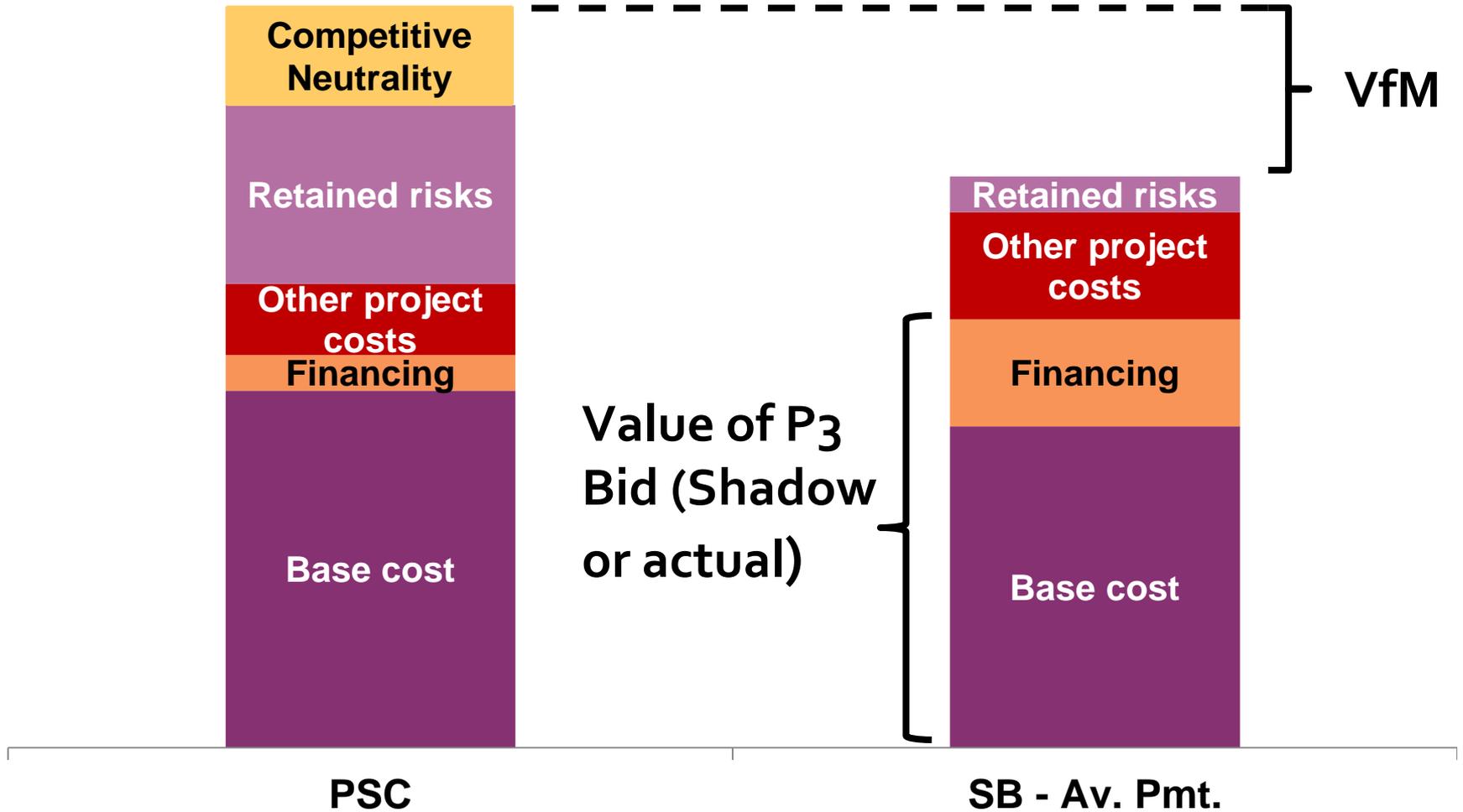
Comparison Outcome



Comparison of Availability Payment P₃ to PSC using virtual insurance premium method

- The Output of the comparison is included in the final chapter of the VfM report
- Facilitates the decision making process moving forward

Comparing PSC to Shadow Bid





Important Issues

- Shadow Bid must be adjusted for risks and costs retained by the public agency
- Competitive neutrality adjustments apply
- Timing
 - Comparison at a specific point
 - Comparison at any general time



Consistency Important

- PSC and Shadow Bid should be based on same discount rate methodology
- Be as transparent as possible for outreach and decision making purposes
- Present outcome in bandwidth
 - A range of outcomes is more “accurate” than one precise number
 - This is because there is always uncertainty in the outcome

Non-Financial Effects

- Non-Financial considerations complement this quantitative outcome
 - Not all differences are shown in the cash flows (e.g., non-financial effects)
 - Some financial effects are too difficult to monetize (i.e., non-monetized financial effects)
- Examples:
 - Accounting for higher quality roads
 - First time P3 contracts
 - Inflexibility of contracts and lack of competition in long run