



# Evaluating P3 Options: An Overview

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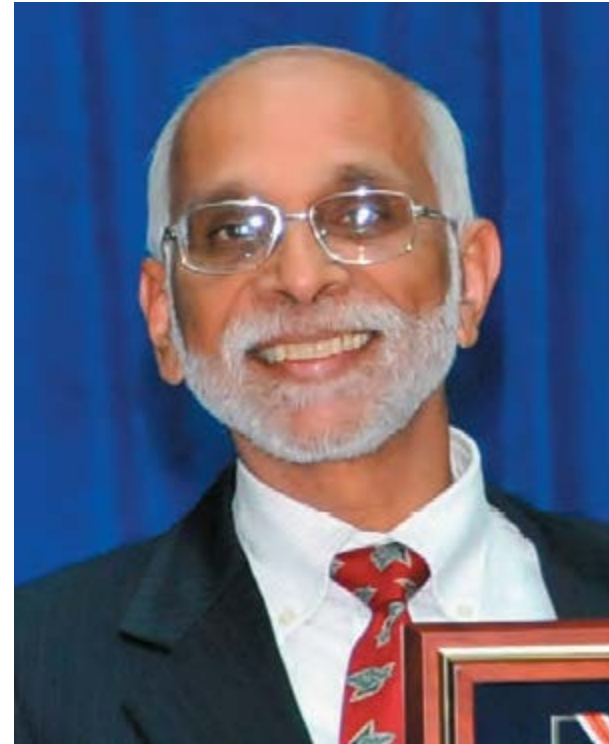
**P3-VALUE 2.0 Webinar**

***January 25, 2016***

# Instructor

## **Patrick DeCorla-Souza**

P3 Program Manager  
Office of Innovative Program Delivery



# P3-VALUE 2.0 Webinars

- **P3:** Public Private Partnership
- **P3-VALUE 2.0:** Analytical tool to help practitioners understand processes used to quantitatively evaluate P3 options
- This is the first of five webinars on P3-VALUE
  - **P3 Evaluation Overview (today)**
  - Value for Money Analysis
  - Project Delivery Benefit-Cost Analysis
  - Risk Valuation
  - Financial Viability Assessment





# Webinar Outline

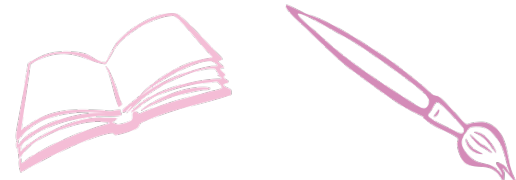
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- Lesson 1**      Types of Project Delivery Evaluation
- Lesson 2**      Timing of Project Delivery Evaluation
- Lesson 3**      Value for Money Analysis
- Lesson 4**      Project Delivery Benefit-Cost Analysis
- Lesson 5**      Risk Valuation
- Lesson 6**      Financial Viability Evaluation
- Lesson 7**      FHWA's P3 Toolkit
- Recap**          Summary of Webinar

# Webinar Objectives

**After this webinar you should be able to:**

- Describe various types of P3 evaluation
- Identify their key limitations
- Explain the types of tools available in FHWA's P3 Toolkit





# Lesson 1

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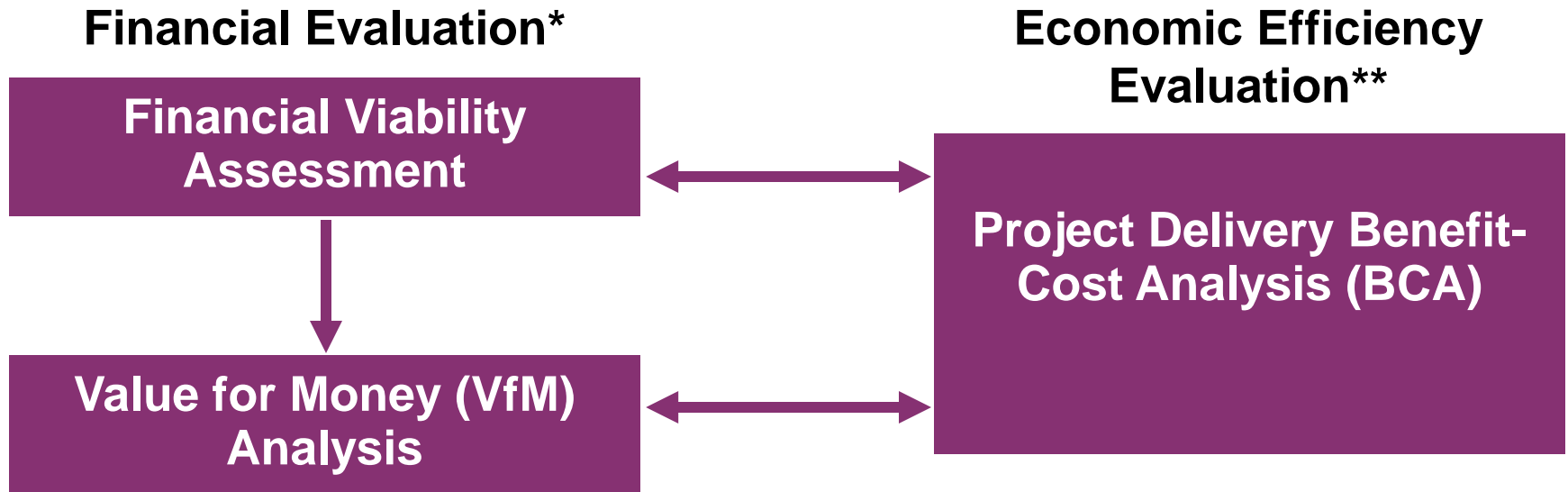
## Types of Project Delivery Evaluation

# Delivery Method Evaluation

- Project Evaluation:
  - Is the project worthwhile for society?
- Project Delivery Evaluation:
  - Is the project financially viable under conventional or P3 delivery?
  - Would P3 procurement add value relative to conventional procurement?
  - Which P3 options would add most value?



# Types of Project Delivery Evaluation



\* Cash flow analysis

\*\* Net economic benefits excludes transfers and financing cash flows



# Financial vs. Economic Evaluation

## ■ Financial Evaluation

- Considers financial elements only, i.e., “cash flows”
- Perspective is that of the procuring agency

## ■ Economic Efficiency Evaluation

- Considers full range of costs and benefits to society
- Perspective is that of society as a whole



# Financial Evaluation Questions

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- Is the project affordable to the public agency?
- Will P3 procurement enhance the financial position of the public sponsor?



# Economic Efficiency Questions

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- Does the project yield benefits to society that exceed the costs to society?
  - What is the best project design alternative?
  - When should a project be undertaken?
- Will P3 delivery increase net benefits to society compared with conventional procurement?





# Test Your Knowledge

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## True or False

- Financial evaluation considers the full range of costs and benefits to society.

# Questions?

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Submit a question using the chat box





## Lesson 2

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# Timing of Project Delivery Evaluation

# Timing of Project Delivery Evaluation

## 1. Planning

- High level preliminary screening

## 2. Project Development

- Quantitative and qualitative assessment
- Market sounding

## 3. Procurement

- Revisit VfM analysis as cost estimates are refined and bids are received

# Screening

- Project characteristics
- Legal framework
- Institutional capacity
- Market interest







# FHWA's P3-SCREEN Screening Tool

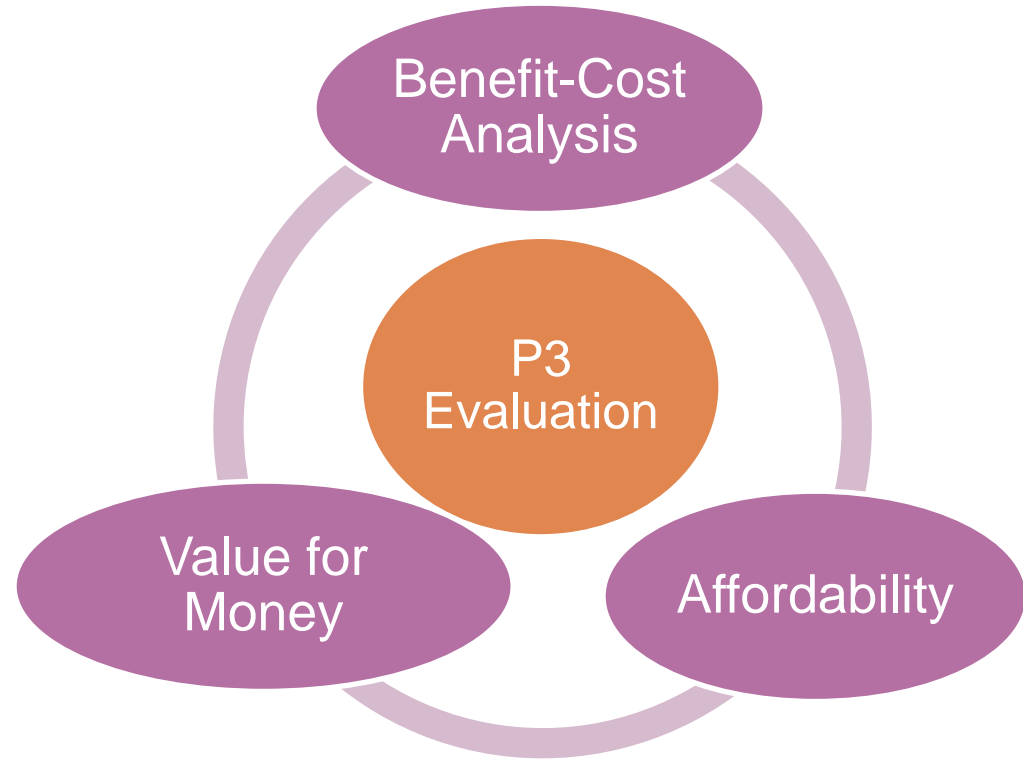
May be used in conjunction with the development of an Initial Financial Plan for major projects

CRITERIA	QUESTION
<b>LEGAL</b>	
<b>SPONSOR AUTHORITY</b>	Does the project sponsor have legal authority to pursue delivery of the project as a P3?
<b>PLANNING &amp; ENVIRONMENTAL</b>	
<b>LONG-RANGE PLANNING</b>	Is the project consistent with the project sponsor's and regional long-term transportation goals?
<b>ENVIRONMENTAL REVIEW</b>	Will the required NEPA decision document be completed within two to three years?
<b>PUBLIC SUPPORT</b>	
<b>LOCAL SUPPORT</b>	Is there consensus among local and regional stakeholders to pursue the project?
<b>POLITICAL SUPPORT</b>	Is there political support for delivering the project?
<b>ORGANIZATIONAL CAPACITY</b>	
<b>TECHNICAL CAPACITY</b>	Does the sponsor have access to sufficient internal and external technical resources to successfully manage all phases of the P3 delivery option (development, procurement, negotiation and long-term contract oversight) in the public interest?
<b>POLICY GUIDELINES</b>	Has the project sponsor established guidelines and regulations for procuring and managing P3 projects?

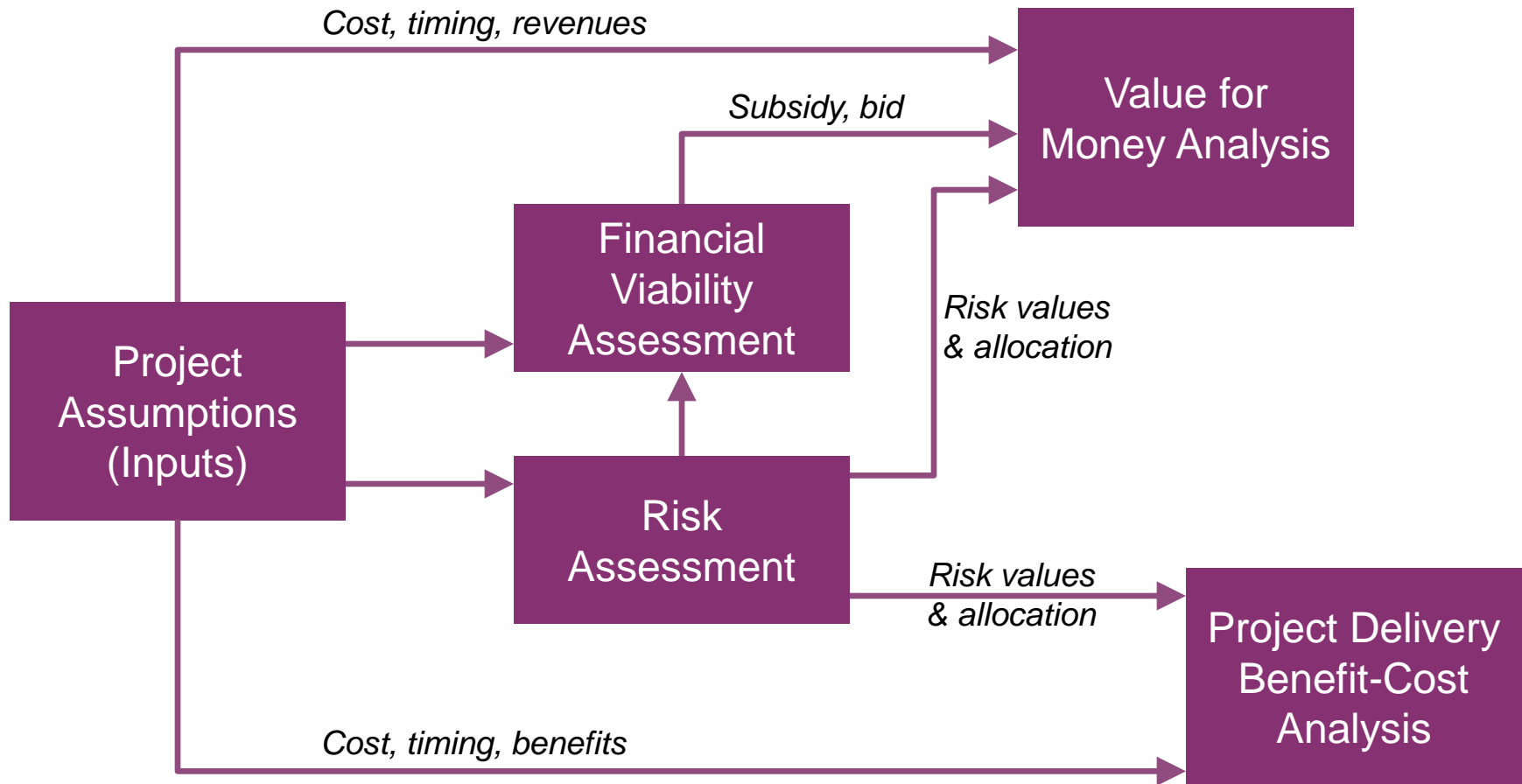
CRITERIA	QUESTION
<b>PROJECT SCOPE &amp; COMPLEXITY</b>	
<b>SIZE</b>	Is the project size and scope suitable for delivery via P3 (generally costing more than \$100 million)?
<b>RISK ALLOCATION</b>	Is there potential to allocate risks to the party most capable of managing those risks by delivering the project as a P3?
<b>INNOVATION</b>	Is there potential to derive benefits from technological or other types of innovation through private sector delivery of the project?
<b>EFFICIENCY</b>	Is there potential to achieve cost/schedule savings by delivering the project as a P3?
<b>QUALITY</b>	Is there potential for higher quality product/service delivery with a P3?
<b>LIFE-CYCLE COSTS</b>	Have the life-cycle costs of the proposed project been determined?
<b>AFFORDABILITY</b>	
<b>NEAR- &amp; LONG-TERM FINANCIAL CAPACITY</b>	Does the project sponsor have the financial capacity to meet the project's life-cycle costs using conventional public funding and financing sources?
<b>REVENUE POTENTIAL</b>	Does the project have the revenue generation potential to repay substantial project costs?
<b>INDUSTRY INTEREST</b>	
<b>INDUSTRY CAPACITY</b>	Do three or more private sector firms have the capability to deliver the project as a P3?
<b>INDUSTRY INTEREST</b>	Have three or more private entities demonstrated interest in the project to suggest the opportunity exists for a competitive process?

# Detailed Evaluation

- Technical Studies
  - Traffic and revenue
  - Cost estimates
  - Risk assessment
  - VfM and BCA
  - Affordability
- Market outreach
  - Market analysis
  - Market outreach



# P3-VALUE 2.0 Tool Structure



# Test Your Knowledge

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## True or False

- Value for Money analysis may only be conducted in a project's procurement phase.

# Questions?

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Submit a question using the chat box





## Lesson 3

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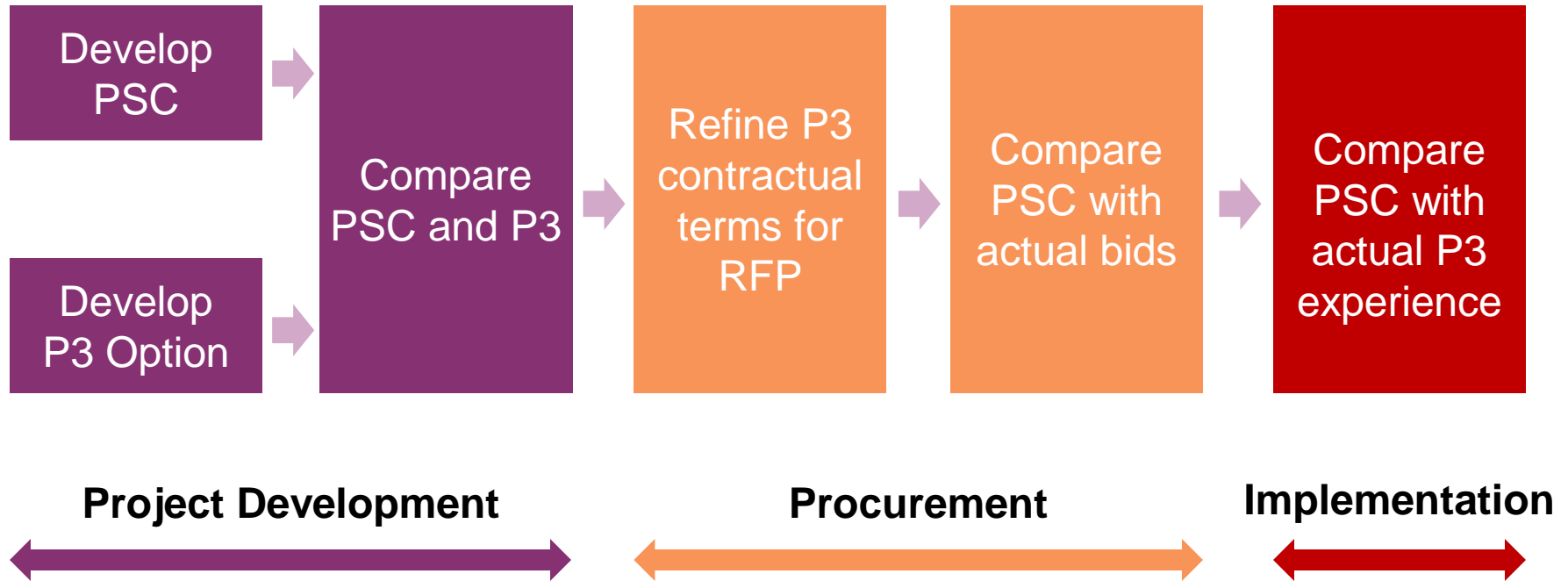
# Value for Money Analysis

# Definitions

- **Value for Money (VfM)**  
The optimum combination of life cycle costs and quality of a good or service to meet the user's requirements
- **VfM Analysis**  
Quantitative analysis, expressed as dollar or % difference
- **Public Sector Comparator (or PSC)**  
Conventional procurement's baseline cost against which P3 option will be compared
- **P3 Shadow Bid (or P3)**  
Net cost of P3 option to Agency, including estimated payments to private partner as well as other costs incurred by public sponsor

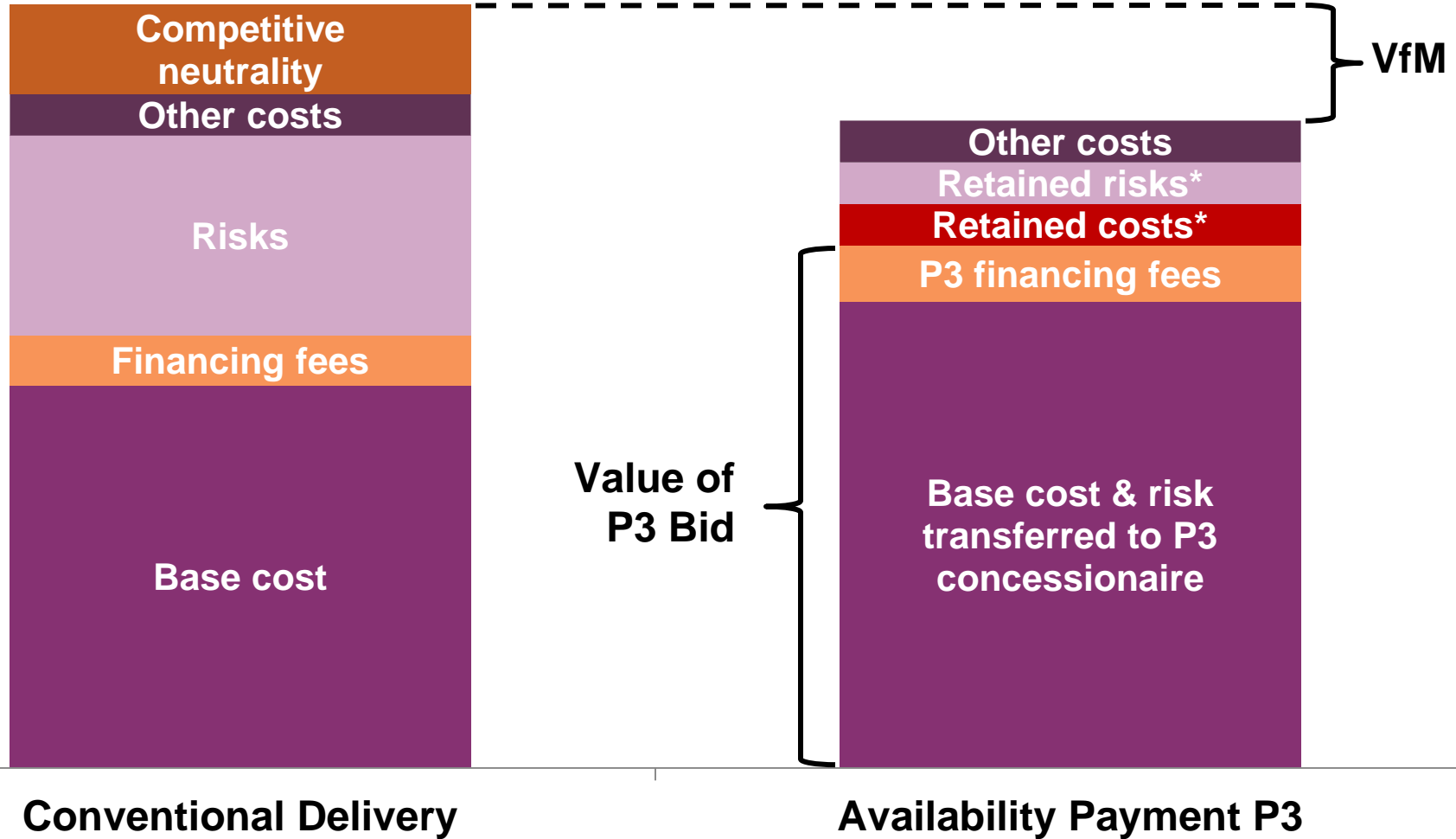


# Timing of VfM Analysis





# VfM: PSC vs. Availability Payment P3



\* Retained by Agency

# VfM Analysis Challenges

- Estimating cost differences between P3 and conventional delivery
- Identifying and pricing risk
- Sensitivity of results to discount rates



# VfM Analysis Limitations

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- Non-financial costs and benefits?
- PSC possible in the same time frame as P3?
- Project scope changes proposed by a P3 bid?



# Test Your Knowledge

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## True or False

- VfM analysis assumes that, under conventional project delivery, the project can be delivered and operated in the same time frame as the P3 option.

# Questions?

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Submit a question using the chat box



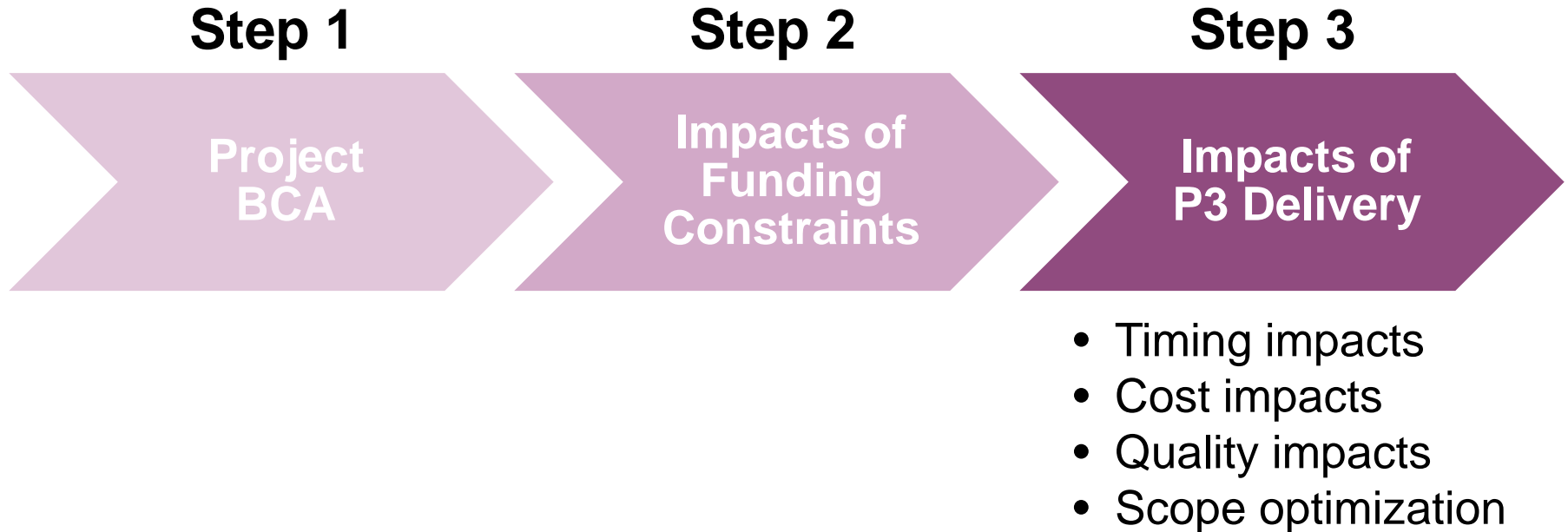


## Lesson 4

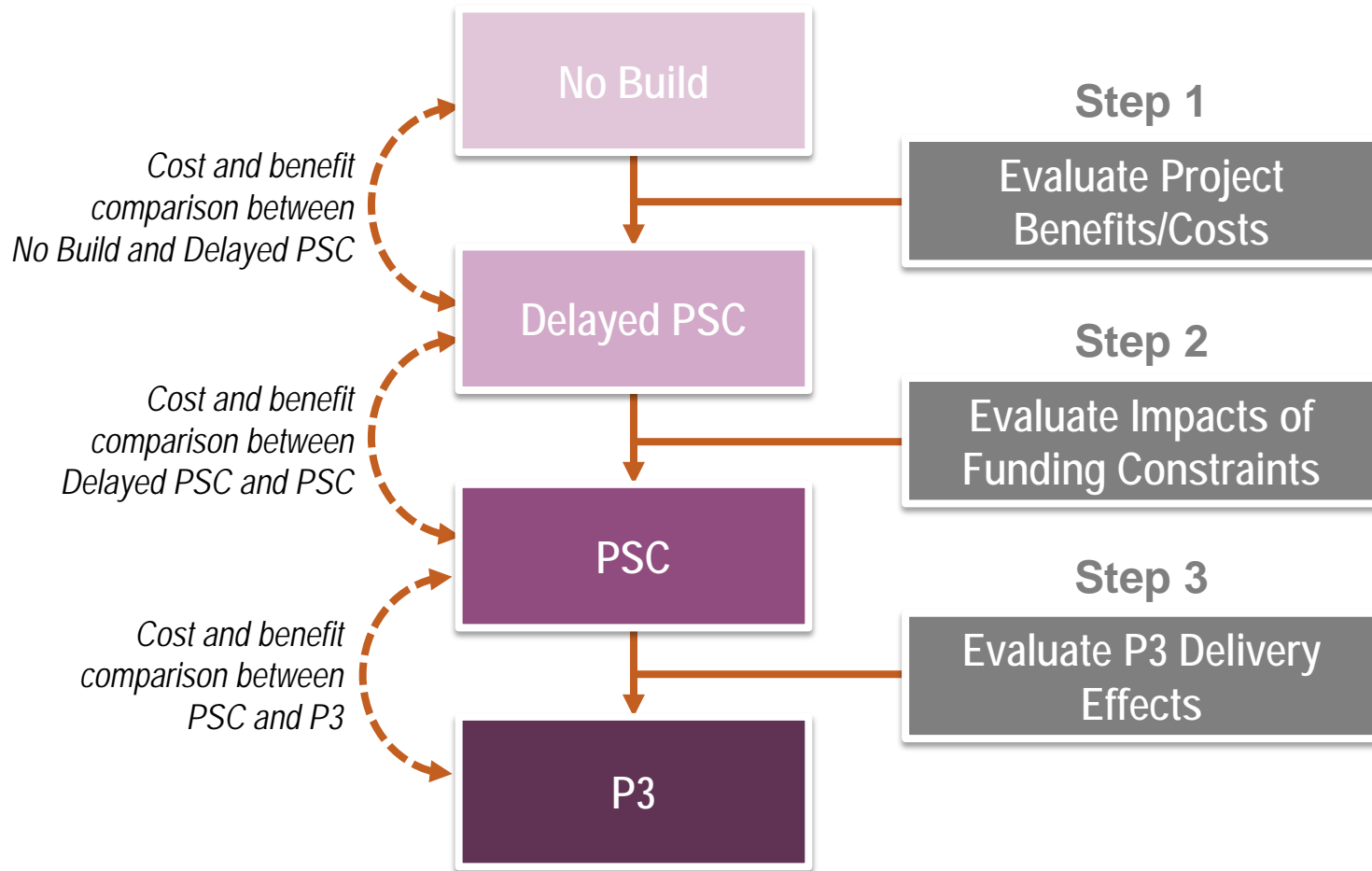
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# Project Delivery Benefit-Cost Analysis

# Benefit-Cost Evaluation Process



# Project Delivery BCA Framework





# Step 1: Project Benefits/Costs

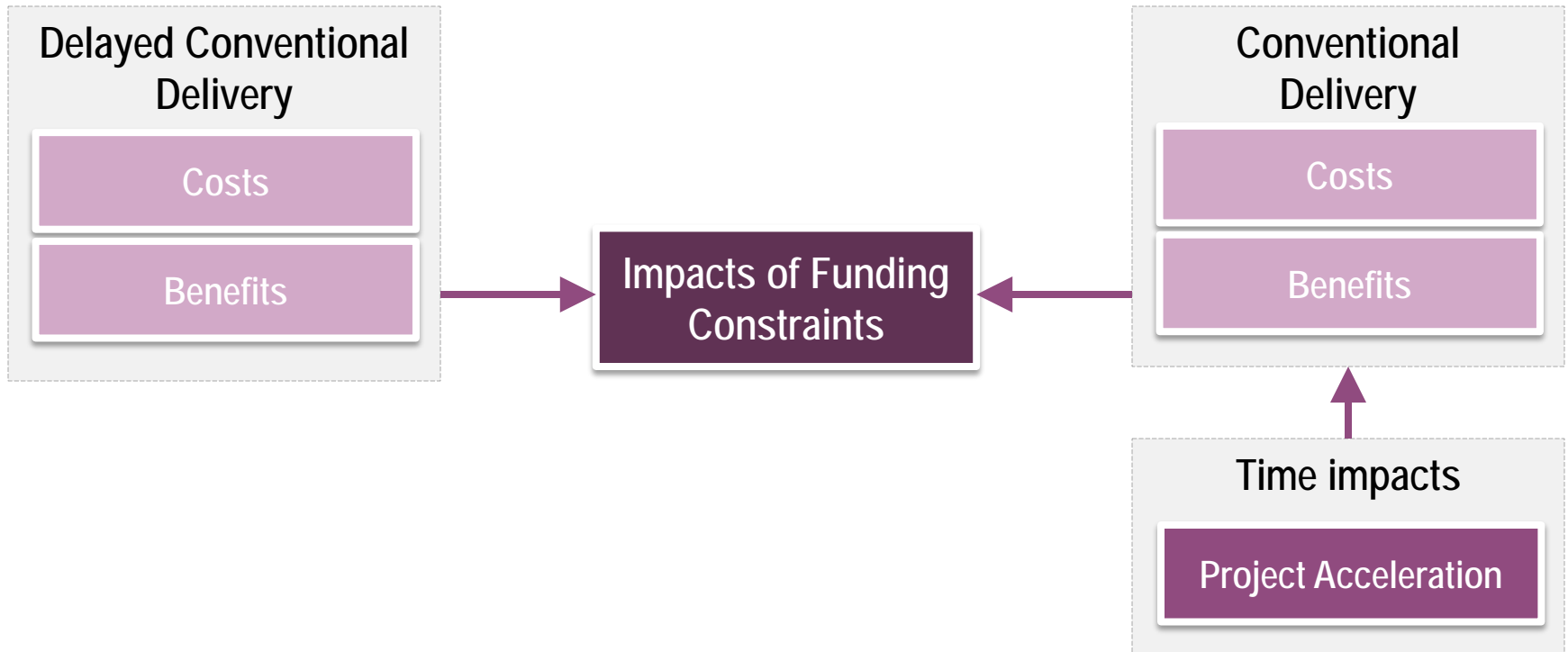
## Delayed Conventional Delivery compared to No Build





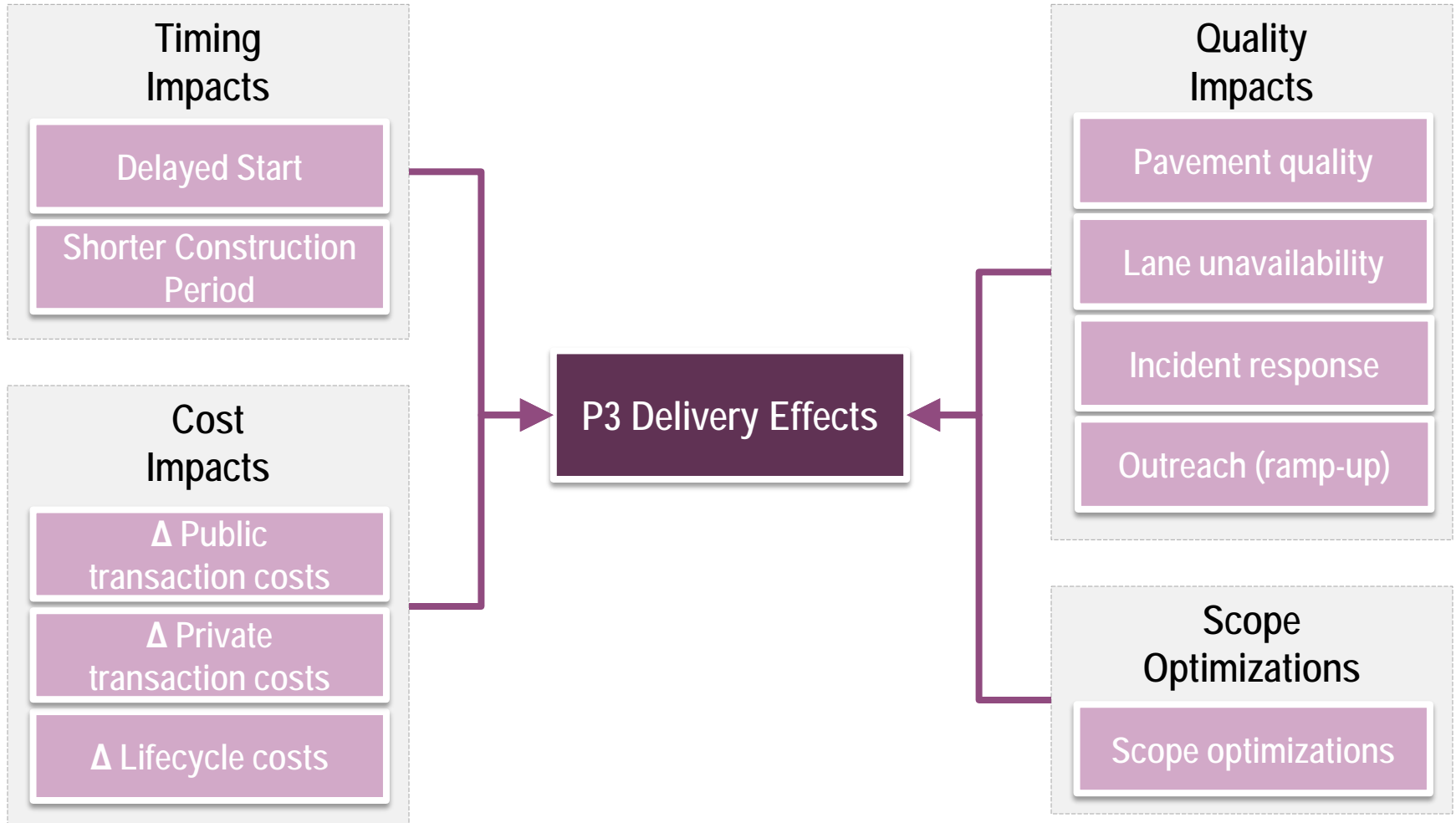
# Step 2: Impacts of Funding Constraints

## Delayed Conventional Delivery (Delayed PSC) compared to Conventional Delivery (PSC)



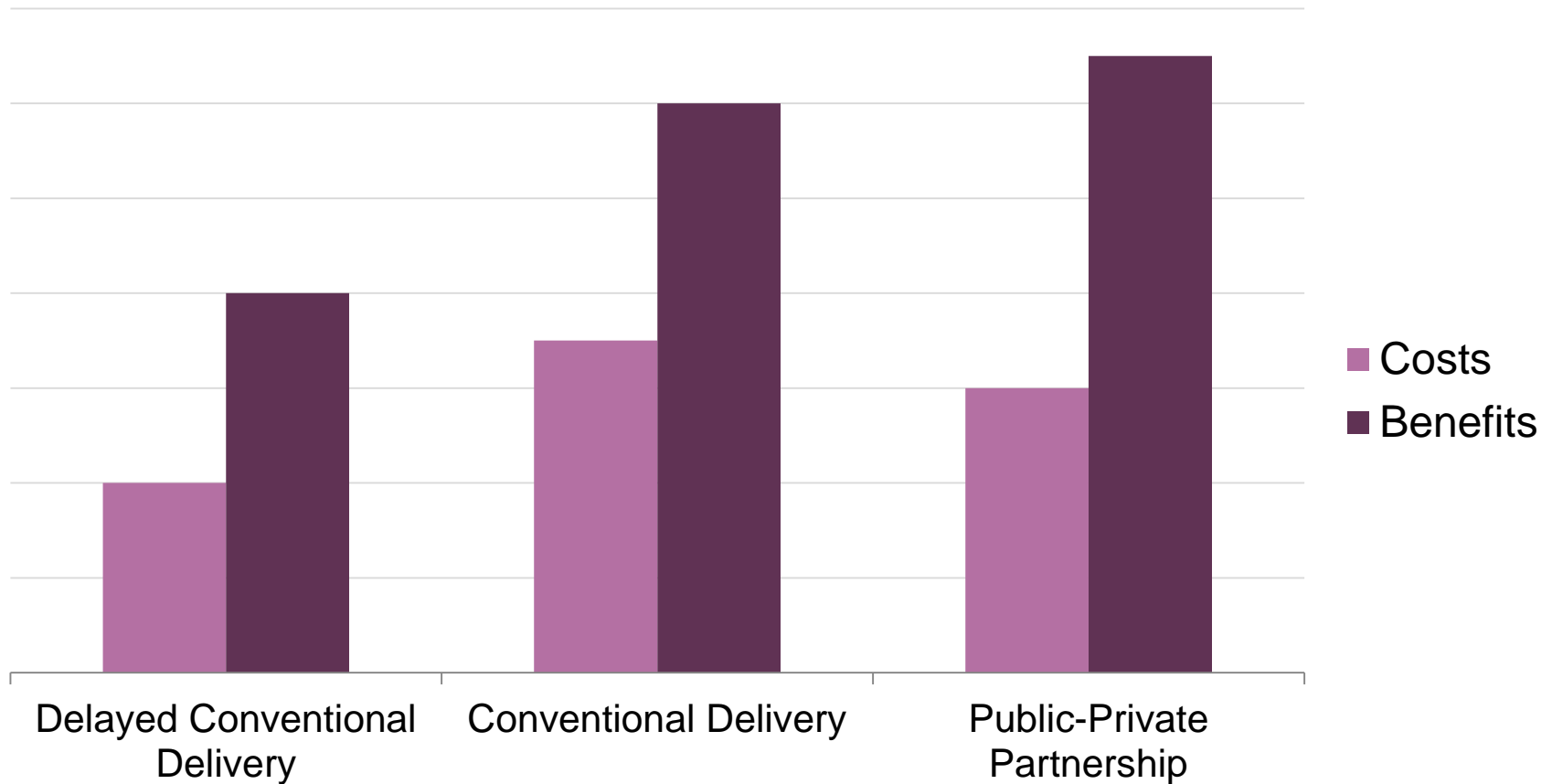
# Step 3: P3 Delivery Effects

## Conventional Delivery (PSC) compared to P3



# Project Delivery BCA Output

**In P3-VALUE, all three options are compared to No Build**



# Perspective Considerations

Perspective	Financial Analysis (VfM Analysis)	Economic Analysis (PDBCA)
Agency	Costs to Agency's balance sheet	Agency costs plus societal benefits
State	Costs to State	State costs plus societal benefits
National	Societal costs	Societal costs and benefits (true BCA)

# Test Your Knowledge

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## True or False

- Benefits from project acceleration should always be attributed to P3 delivery.

# Questions?

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Submit a question using the chat box





# Lesson 5

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## Risk Valuation



# P3-VALUE 2.0 Risk Approach

- **Costs:** Costs are adjusted for risk and uncertainty
- **Revenues:**
  - **PSC:** If tolled, toll revenues are adjusted for uncertainty based on P3 toll risk premium included in P3 financing
  - **P3:** No uncertainty adjustment is made to toll revenues, but costs and revenues are discounted based on P3's weighted average cost of capital (WACC)
- **Benefits:** P50 (i.e., most likely) traffic forecasts are used without any uncertainty adjustment. A sensitivity factor is included to facilitate sensitivity testing.



# P3-VALUE 2.0 Risk Cost Categories

- **Base Variability**

*Example: Uncertainty in volume of asphalt*

- **Pure Risks**

*Example: Accident at construction site, causing cost overrun and/or delays*

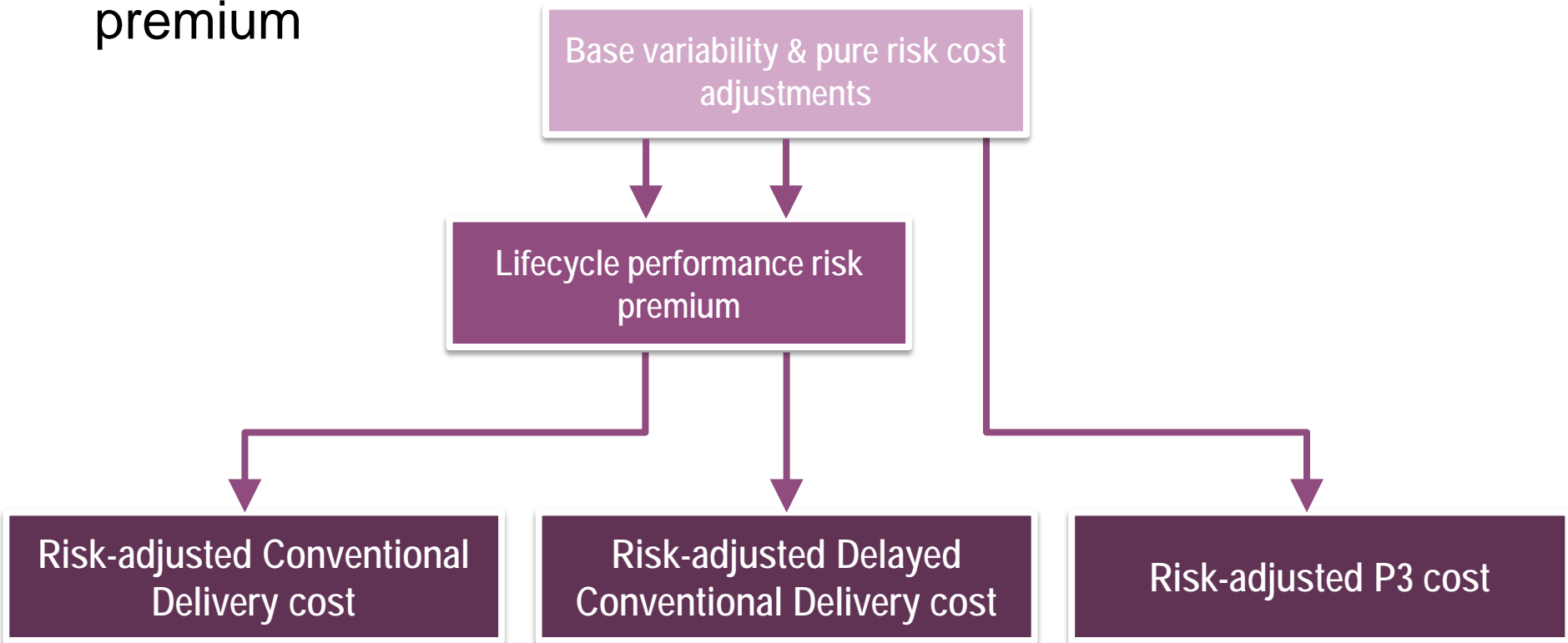
- **Lifecycle Performance Risks**

*Example: Conflicts between DB and O&M contractors, supervening events exceeding liability caps, inflation*



# Risk Adjustments in P3-VALUE 2.0

For VfM analysis, no lifecycle performance risk adjustments are made to P3 costs, since lifecycle performance risk is already included in the P3 financing premium



# Test Your Knowledge

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## True or False

- For VfM analysis, an estimate for lifecycle performance risk should be included in the Conventional Delivery and Delayed Conventional Delivery cost estimates.

# Questions?

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Submit a question using the chat box





## Lesson 6

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# Financial Viability Assessment

# Financial Calculations

## *Sources of Funds*

- Equity & debt
- Subsidies
- Toll revenues

## *Uses of Funds*

- Capital expenses
- Operating expenses
- Debt service
- Tax & dividends



## P3-VALUE 2.0 Financial Model



- Capacity of project revenues to repay debt
- Capacity to attract equity
- Required public subsidy payments

# Key Metrics for Public Agency

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- Concession fee – for “revenue positive” projects
- Public subsidy – for “revenue negative” projects
- Toll rates
- Concession term





# Key Metrics for Financiers

- Debt service coverage ratio (DSCR)
- Gearing or leverage (debt/equity ratio)
- Equity IRR = Equity Internal Rate of Return
- WACC = Weighted Average Cost of Capital
- Project IRR = Project Internal Rate of Return





# Debt Service Coverage Ratio (DSCR)

- Debt service coverage ratio (DSCR) =  
$$\frac{\text{Cash Flow Available for Debt Service (CFADS)}}{\text{Annual debt service}}$$

**Higher minimum debt service coverage ratio requirement reduces debt capacity**

# Leverage of Gearing

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- Leverage or Gearing (i.e., debt-to-equity ratio) =  
$$\frac{\text{Debt percentage}}{\text{Equity percentage}}$$

**Higher gearing can increase debt capacity (if minimum required DSCR can be met)**

# Test Your Knowledge

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## True or False

- A higher DSCR will allow a project to obtain a higher amount of debt.

# Questions?

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Submit a question using the chat box





# Lesson 7

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## FWHA's P3 Toolkit



# FHWA P3 Toolkit

Fact Sheets	Primers	Guidebooks	Analytical Tools
<ul style="list-style-type: none"><li>▪ FHWA P3 Toolkit</li><li>▪ Risk Valuation &amp; Allocation</li><li>▪ Value for Money Analysis</li><li>▪ Financial Structuring</li><li>▪ Analytical Studies</li><li>▪ Conducting Procurements</li><li>▪ Monitoring &amp; Oversight</li></ul>	<ul style="list-style-type: none"><li>▪ Establishing a P3 Program</li><li>▪ Risk Assessment</li><li>▪ Value for Money Assessment</li><li>▪ Financial Structuring &amp; Assessment</li></ul>	<ul style="list-style-type: none"><li>▪ Risk Assessment</li><li>▪ Value for Money Assessment</li><li>▪ Benefit-Cost Analysis for P3 Delivery</li><li>▪ P3 Project Financing</li></ul>	<p>P3-SCREEN</p> <ul style="list-style-type: none"><li>▪ P3 viability evaluation prior to project development</li></ul> <p>P3-VALUE</p> <ul style="list-style-type: none"><li>▪ Risk Assessment</li><li>▪ Value for Money</li><li>▪ Benefit-Cost Analysis</li><li>▪ Financial Viability Assessment</li></ul>

***Webinar recordings on P3 evaluation are also available on the web.***

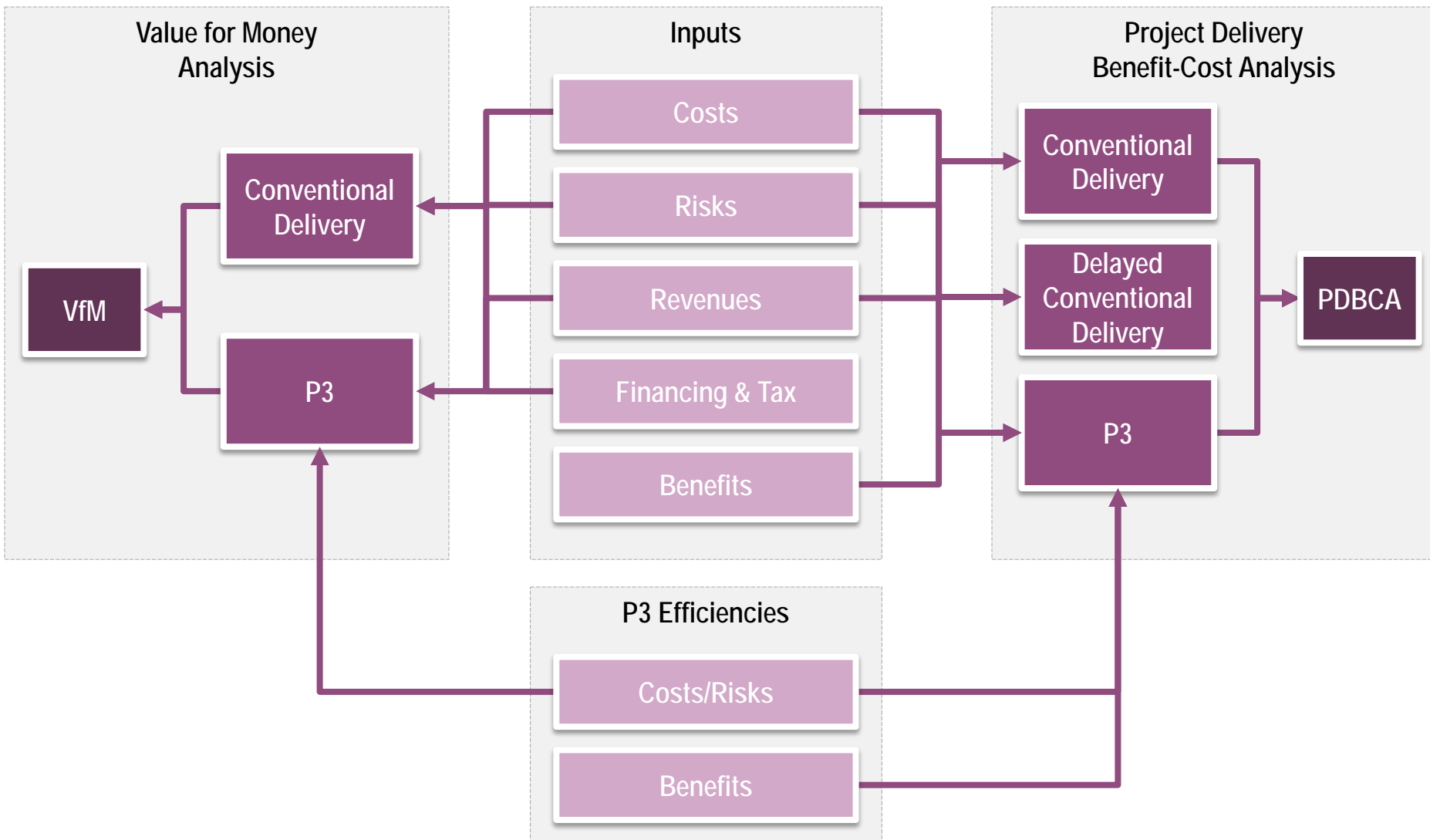
# What is P3-VALUE 2.0?

- An analytical tool
- Educates users
- A component of FHWA's P3 Toolkit

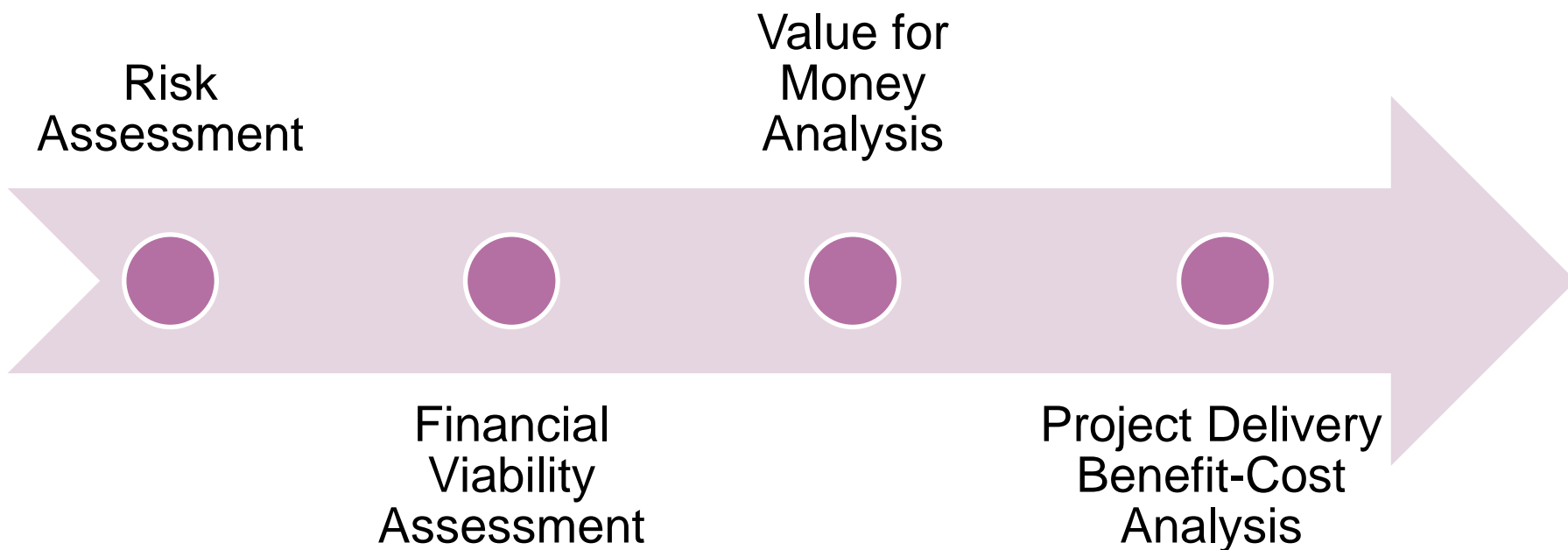




# FHWA's P3-VALUE 2.0



# Training Modules





# Training Navigator User Interface

Training Navigator

Welcome

Welcome to the P3-VALUE 2.0 Training Navigator!  
Please select one of the four training modules below.

If you would like to access the full P3-VALUE 2.0 model,  
click the "Go to Model Navigator" button on the right.

**Go to Model Navigator**

Training Module Selection

<b>Module 1</b> <b>Risk Assessment</b>	<b>Module 2</b> <b>Financial Viability Assessment</b>
<b>Module 3</b> <b>Value-for-Money Analysis</b>	<b>Module 4</b> <b>Project Delivery Benefit-Cost Analysis</b>

Inputs

InpRisk: Risk inputs

Outputs

Risk Output for VfM: Risk outputs related to VfM  
Risk Output for PDBCA: Risk outputs related to PDBCA

Training Module selection

Input sheet selection

Output sheet selection

# Tool and References

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P3-VALUE 2.0 Excel  
Spreadsheet

User Guide

Primers &  
Guidebooks



# Webinar Summary

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# Webinar Recap

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- Lesson 1**      Types of Project Delivery Evaluation
- Lesson 2**      Timing of Project Delivery Evaluation
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# Upcoming P3-VALUE Training

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- **February 8** Value for Money Analysis
- **February 22** Project Delivery Benefit Cost Analysis
- **March 7** Risk Valuation
- **March 21** Financial Viability Assessment

***To register for the P3-VALUE webinars, please visit:***

**<https://www.eventbrite.com/e/p3-value-webinar-series-registration-19955277773>**



# Resources

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**FHWA's Office of Innovative Program Delivery Website:**

<http://www.fhwa.dot.gov/ipd/>

**P3 Website:**

<http://www.fhwa.dot.gov/ipd/p3/>





# Contact Information

## P3 Program Manager

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# Questions?

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Submit a question using the chat box

