Evaluating P3 Options: An Overview

P3-VALUE 2.0 Webinar

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Instructor

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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

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  FWHA’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

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

**Financial Evaluation**
- Financial Viability Assessment
- Value for Money (VfM) Analysis

* Cash flow analysis

**Economic Efficiency Evaluation**
- Project Delivery Benefit-Cost Analysis (BCA)

** 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

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

- 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

True or False

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

Submit a question using the chat box
Lesson 2

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.
Detailed Evaluation

- **Technical Studies**
  - Traffic and revenue
  - Cost estimates
  - Risk assessment
  - VfM and BCA
  - Affordability

- **Market outreach**
  - Market analysis
  - Market outreach

**P3 Evaluation**

- Benefit-Cost Analysis
- Value for Money
- Affordability

**Innovative Program Delivery**

U.S. Department of Transportation
Federal Highway Administration
P3-VALUE 2.0 Tool Structure

- Project Assumptions (Inputs)
  - Cost, timing, revenues
  - Risk values & allocation
  - Cost, timing, benefits

- Financial Viability Assessment
  - Subsidy, bid

- Risk Assessment
  - Risk values & allocation

- Value for Money Analysis

- Project Delivery Benefit-Cost Analysis
Test Your Knowledge

True or False

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

Submit a question using the chat box
Lesson 3

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

1. Develop PSC
2. Develop P3 Option
3. Compare PSC and P3
4. Refine P3 contractual terms for RFP
5. Compare PSC with actual bids
6. Compare PSC with actual P3 experience

Project Development → Procurement → Implementation
VfM: PSC vs. Availability Payment P3

Conventional Delivery

- Competitive neutrality
- Other costs
- Risks
- Financing fees
- Base cost

Availability Payment P3

- Other costs
- Retained risks*
- Retained costs*
- P3 financing fees
- Base cost & risk transferred to P3 concessionaire

* 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

- 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

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?

Submit a question using the chat box
Lesson 4

Project Delivery Benefit-Cost Analysis
Benefit-Cost Evaluation Process

Step 1
Project BCA

Step 2
Impacts of Funding Constraints

Step 3
Impacts of P3 Delivery
- Timing impacts
- Cost impacts
- Quality impacts
- Scope optimization
Project Delivery BCA Framework

Step 1
Evaluate Project Benefits/Costs

Step 2
Evaluate Impacts of Funding Constraints

Step 3
Evaluate P3 Delivery Effects

Cost and benefit comparison between No Build and Delayed PSC

Cost and benefit comparison between Delayed PSC and PSC

Cost and benefit comparison between PSC and P3
Step 1: Project Benefits/Costs

Delayed Conventional Delivery compared to No Build

Costs
- Lifecycle Costs
- Risks
- Procurement, oversight and monitoring costs

Benefits
- User Benefits
- Externalities

Project Benefits & Costs
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

Timing Impacts
- Delayed Start
- Shorter Construction Period

Cost Impacts
- \( \Delta \) Public transaction costs
- \( \Delta \) Private transaction costs
- \( \Delta \) Lifecycle costs

P3 Delivery Effects

Quality Impacts
- Pavement quality
- Lane unavailability
- Incident response
- Outreach (ramp-up)

Scope Optimizations
- Scope optimizations
In P3-VALUE, all three options are compared to No Build

- Delayed Conventional Delivery
- Conventional Delivery
- Public-Private Partnership

- Costs
- Benefits
### Perspective Considerations

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<th>Economic Analysis (PDBCA)</th>
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<tr>
<td>Agency</td>
<td>Costs to Agency’s balance sheet</td>
<td>Agency costs plus societal benefits</td>
</tr>
<tr>
<td>State</td>
<td>Costs to State</td>
<td>State costs plus societal benefits</td>
</tr>
<tr>
<td>National</td>
<td>Societal costs</td>
<td>Societal costs and benefits (true BCA)</td>
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</table>
Test Your Knowledge

True or False

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

Submit a question using the chat box
Lesson 5

Risk Valuation
 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*
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.
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?

Submit a question using the chat box
Lesson 6

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

- 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 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

True or False

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

Submit a question using the chat box
Lesson 7

FWHA’s P3 Toolkit
**FHWA P3 Toolkit**

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*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

Value for Money Analysis

- Conventional Delivery
  - VfM
  - P3

Inputs

- Costs
- Risks
- Revenues
- Financing & Tax
- Benefits

Project Delivery Benefit-Cost Analysis

- Conventional Delivery
- Delayed Conventional Delivery
- PDBCA

P3 Efficiencies

- Costs/Risks
- Benefits
Training Modules

- Risk Assessment
- Financial Viability Assessment
- Value for Money Analysis
- Project Delivery Benefit-Cost Analysis
Tool and References

- P3-VALUE 2.0 Excel Spreadsheet
- User Guide
- Primers & Guidebooks
# Webinar Recap

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Upcoming P3-VALUE Training

- 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

FHWA’s Office of Innovative Program Delivery Website:
http://www.fhwa.dot.gov/ipd/

P3 Website:
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Questions?

Submit a question using the chat box