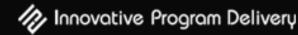


Financial Viability and Value for Money Analysis: *Homework Assignments Review* 

### P3-VALUE Webinar – April 25, 2014

#### Patrick DeCorla-Souza P3 Program Manager Office of Innovative Program Delivery







- This webinar is a follow-up webinar to review the homework assigned at the P3 Financial Assessment webinar presented on March 13
- Recordings for P3-VALUE webinars are available at: <u>http://www.fhwa.dot.gov/ipd/p3/toolkit/p3\_value\_webinars/index.htm/</u>





Part 1 Review of assigned Homework #3 on Financial Viability Assessment for Project with Tolls

# Part 2 Scenario analysis using P3-VALUE Financial Assessment Tool



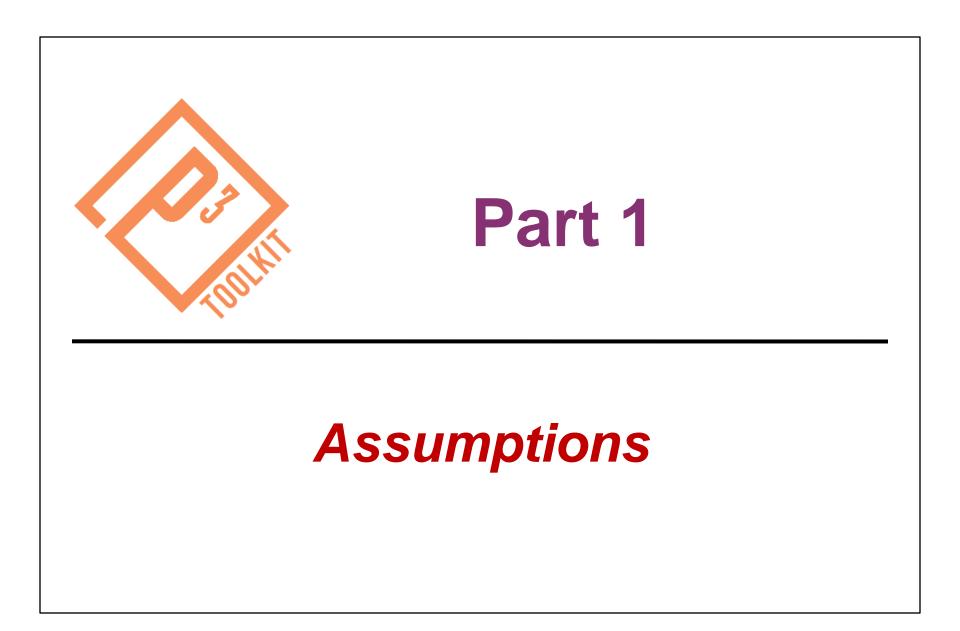


# After participating in this "office hours" webinar you should be able to:

- Explain the *financial viability* analysis results from runs of the P3-VALUE Financial Assessment Tool
- Use the P3-VALUE Financial Assessment Tool to test the impact of changes to key project variables







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- Design-Bid-Build (or Design-Build), with 30-year project life
- Base design/construction costs of \$30M in Year 1 and \$70M in year 2 in nominal dollars
- \$10 million (real dollars) per year O&M costs over 28 years, inflated at 3%
- Total risk cost estimates for design-build phase:
  - 10% probability (P10) that they will be at or below \$10 M
  - 70% probability (P70) that they will be at or below \$20 M
  - 90% probability (P90) that they will be at or below \$30 M
- Annual risk cost estimates for operations phase:
  - 10% probability (P10) that they will be at or below \$1 M
  - 70% probability (P70) that they will be at or below \$2 M
  - 90% probability (P90) that they will be at or below \$3 M
- Other project costs are assumed to be zero for simplicity





- Inputs for revenue estimation:
  - Average Annual Daily Traffic (AADT) in Year 3 = 21,600 vehicles, no growth over project life (for simplicity)
  - Average toll rate = \$2.00 in Year 0 dollars (increases with inflation)
- Adjustment for revenue leakage (i.e. uncollected tolls) = 5% reduction
- Ramp-up period (Year 3 and Year 4):
  - Year 3 = 67% reduction
  - Year 4 = 33% reduction

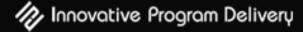




- Run a Financial Viability analysis using the P3-VALUE Financial assessment tool to estimate the public subsidy required for:
  - Scenario 1 = Toll Rate is \$2.00 (base case)
  - Scenario 2 = Toll Rate is \$2.50
  - Scenario 3 = Toll Rate is \$3.00
  - Scenario 4 = Concession Length of 35 years
  - Scenario 5 = Concession Length of 50 years
  - Scenario 6 = Concession Length of 75 years
- Use a 5% discount rate





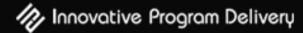








# **Scenario Analysis**

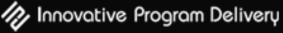






- Scenario 2 = Toll Rate is \$2.50
- Scenario 3 = Toll Rate is \$3.00

	\$2.00 Toll	\$2.50 Toll	\$3.00 Toll
P70 NPV of Revenues	\$290,082,714	\$362,603,393	\$435,124,071
P70 Net Project Cost (excluding financing)	\$60,493,021	(\$12,027,658)	(\$84,548,336)







Cash Flow Viability - NPC Summary (\$)					
Nominal Discount Rate	Initial Project Estimate	P10	<b>P</b> 70	P90	
5.00%	NPC	NPC	NPC	NPC	
Costs					
Construction Costs	88,762,142	88,762,142	88,762,142	88,762,142	
O&M	203,384,304	203,384,304	203,384,304	203,384,304	
Other Project Costs	-	-	-	-	
NPC of Life Cycle Costs	292,146,446	292,146,446	292,146,446	292,146,446	
Revenues and Funding					
Toll + Other Revenue	(362,603,393)	(362,603,393)	(362,603,393)	(362,603,393)	
Project Subsidy	-	-	-	-	
NPC of Revenues and Funding	(362,603,393)	(362,603,393)	(362,603,393)	(362,603,393)	
	NI/A				
NPC of Risk Impacts	N/A	29,214,645	58,429,289	87,643,934	
Net Project Cost (excluding financing)	(70,456,947)	(41,242,302)	(12,027,658)	17,186,987	
Cost of Financing (Interest & Fee)	-	-	-	-	
Net Project Cost (including financing)	(70,456,947)	(41,242,302)	(12,027,658)	17,186,987	





## **Scenario 3 - Outputs**

Cash Flow Viability - NPC Summary (\$)					
Nominal Discount Rate	Initial Project Estimate	P10	P70	P90	
5.00%	NPC	NPC	NPC	NPC	
Costs					
Construction Costs	88,762,142	88,762,142	88,762,142	88,762,142	
O&M	203,384,304	203,384,304	203,384,304	203,384,304	
Other Project Costs	_	_	-	-	
NPC of Life Cycle Costs	292,146,446	292,146,446	292,146,446	292,146,446	
	1	T			
Revenues and Funding					
Toll + Other Revenue	(435,124,071)	(435,124,071)	(435,124,071)	(435,124,071)	
Project Subsidy	-	-	-	-	
NPC of Revenues and Funding	(435,124,071)	(435,124,071)	(435,124,071)	(435,124,071)	
NPC of Risk Impacts	N/A	29,214,645	58,429,289	87,643,934	
		,,	,	,,	
Net Project Cost (excluding financing)	(142,977,625)	(113,762,981)	(84,548,336)	(55,333,692)	
Cost of Financing (Interest & Fee)	-	-	-	-	
Net Project Cost (including financing)	(142,977,625)	(113,762,981)	(84,548,336)	(55,333,692)	





- Scenario 4 = Concession Length of 35 years
- Scenario 5 = Concession Length of 50 years
- Scenario 6 = Concession Length of 75 years

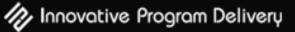
	35 Years	50 Years	75 Years
P70 NPV of	\$329,234,659	\$426,440,270	\$537,400,831
Revenues			
P70 Net Project	\$ 52,705,287	\$33,370,069	\$11,298,846
Cost (excluding			
financing)			





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VfM Viability - NPC Summary (\$)					
Nominal Discount Rate	Initial Project Estimate	P10	P70	P90	
5.00%	NPC	NPC	NPC	NPC	
Costs					
Construction Costs	88,762,142	88,762,142	88,762,142	88,762,142	
O&M	229,521,146	229,521,146	229,521,146	229,521,146	
Other Project Costs	-	-	-	-	
NPC of Life Cycle Costs	318,283,289	318,283,289	318,283,289	318,283,289	
Revenues and Funding					
Toll + Other Revenue	(329,234,659)	(329,234,659)	(329,234,659)	(329,234,659)	
Project Subsidy	-	-	-	-	
NPC of Revenues and Funding	(329,234,659)	(329,234,659)	(329,234,659)	(329,234,659)	
NPC of Risk Impacts	N/A	31,828,329	63,656,658	95,484,987	
Net Project Cost (excluding financing)	(10,951,370)	20,876,958	52,705,287	84,533,616	
Cost of Financing (Interest & Fee)	-	-	-	-	
Net Project Cost (including financing)	(10,951,370)	20,876,958	52,705,287	84,533,616	

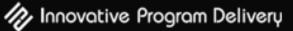




Cash Flow Viability - NPC Summary (\$)					
Nominal Discount Rate	Initial Project Estimate	P10	<b>P</b> 70	P90	
5.00%	NPC	NPC	NPC	NPC	
Costs					
Construction Costs	88,762,142	88,762,142	88,762,142	88,762,142	
O&M	294,413,140	294,413,140	294,413,140	294,413,140	
Other Project Costs	-	-	-	-	
NPC of Life Cycle Costs	383,175,283	383,175,283	383,175,283	383,175,283	
			r		
Revenues and Funding					
Toll + Other Revenue	(426,440,270)	(426,440,270)	(426,440,270)	(426,440,270)	
Project Subsidy	-	-	-	-	
NPC of Revenues and Funding	(426,440,270)	(426,440,270)	(426,440,270)	(426,440,270)	
NPC of Risk Impacts	N/A	38,317,528	76,635,057	114,952,585	
Net Project Cost (excluding financing)	(43,264,988)	(4,947,459)	33,370,069	71,687,597	
Cost of Financing (Interest & Fee)	_	-	-	_	
Net Project Cost (including financing)	(43,264,988)	(4,947,459)	33,370,069	71,687,597	



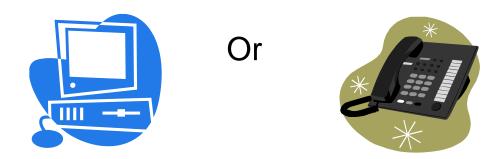
Cash Flow Viability - NPC Summary (\$)					
Nominal Discount Rate	Initial Project Estimate	P10	P70	P90	
5.00%	NPC	NPC	NPC	NPC	
Costs					
Construction Costs	88,762,142	88,762,142	88,762,142	88,762,142	
O&M	368,487,588	368,487,588	368,487,588	368,487,588	
Other Project Costs	-	-	-	-	
NPC of Life Cycle Costs	457,249,731	457,249,731	457,249,731	457,249,731	
Revenues and Funding					
Toll + Other Revenue	(537,400,831)	(537,400,831)	(537,400,831)	(537,400,831)	
Project Subsidy	-	-	-	-	
NPC of Revenues and Funding	(537,400,831)	(537,400,831)	(537,400,831)	(537,400,831)	
NPC of Risk Impacts	N/A	45 724 072	01 440 046	127 174 010	
		45,724,973	91,449,946	137,174,919	
Net Project Cost (excluding financing)	(80,151,100)	(34,426,127)	11,298,846	57,023,819	
Cost of Financing (Interest & Fee)	-	_	-	_	
Net Project Cost (including financing)	(80,151,100)	(34,426,127)	11,298,846	57,023,819	







#### Submit a question using the chat box



#### Dial \*1 to call in your question by phone







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