P3 EVIDENCE PROJECT
Phase 1 & 2
Briefing

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Presentation to the Utah Transportation and Tax Review Task Force

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SCHAR School of Policy and Government
GEORGE MASON UNIVERSITY
Center for Transportation Public-Private Partnership Policy

What are Public – Private Partnerships (P3s)?

- Procurement tool to deliver services and infrastructure

- P3s: long-term contractual agreement between public and private partners to provide services traditionally done by the governments
    - Bundling of project delivery stages
    - Allocation of some project risks to the private partner

Infrastructure Risks – What can be shared?

- Operations & Maintenance (O&M)
  - Performance risk
  - Operating cost overrun
- Financing
  - Refinancing risks
  - Spread between O&M and revenue growth rates
- Capital Expenditures
  - Project schedule
  - Commodity prices/availability
  - Construction cost
- Political
  - Changes in law
  - Delays
- Revenue (contribution or availability payments)
  - Insufficient income from fares or tolls
  - Insufficient income from other operations
  - Insufficient traffic

Source: Nima, Attar. Infrastructure Business Models: Research and Analysis, ASCE Membership & Community

Who should bear the risk when transportation infrastructure is delivered?

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Risk	Design-Bid-Build (DBB)	Design-Build (DB)	DBFOM-P3 Availability payment	DBFOM-P3 Demand risk
Scope changes (owner requested)	Public	Public	Public	Public
Environmental approvals	Public	Public	Public	Public
Permits and Approvals	Public	Shared	Shared	Shared
Right of way	Public	Public	Shared	Shared
Utility relocation	Public	Shared	Shared	Shared
Design (errors & omissions)	Public	Shared	Private	Private
Ground conditions	Public	Public	Shared	Shared
Environmental contamination	Public	Shared	Shared	Shared
Construction (cost/schedule overruns)	Shared	Private	Private	Private
Labor disputes	Public	Private	Private	Private
Quality assurance/control	Public	Shared	Private	Private
O&M + Lifecycle	Public	Public	Private	Private
Financing	Public	Public	Private	Private
Changes in law	Public	Public	Shared	Shared
Force majeure	Public	Shared	Shared	Shared
Traffic & revenue	Public	Public	Public	Private
Toll collection	Public	Public	Public	Private

Source: adapted from Virginia Office of Public-Private Partnership & CINTRA

Universe of projects

State	Fin. Close	Project	Type	Contract	Status June 2017
California	2012	**Presidio Parkway Phase II**	Road	DBFOM	Operating
Colorado	2010	Eagle P3	Commuter Rail	DBFOM	Under Construction
Colorado	2014	**US-36 and I-25 Managed Lanes Phase II**	Road	DBFOM	Operating
Florida	2009	I-595 Managed Lanes P3	Road	DBFOM	Operating
Florida	2009	**Port of Miami Tunnel**	Tunnel	DBFOM	Operating
Florida	2014	I-4 Ultimate Improvements	Road	DBFOM	Under construction
Indiana	2013	**Ohio River Bridges Project, East End Crossing**	Bridge	DBFOM	Under construction
Indiana	2014	I-69 Section 5	Road	DBFOM	Under Construction
Maryland	2016	Maryland Purple Line	Commuter Rail	DBFOM	Procurement
NY-NJ	2013	Goethals Bridge	Bridge	DBFM	Under Construction
North Carolina	2015	I-77 HOT Lanes	Road	DBFOM	Under construction
Ohio	2015	Portsmouth Bypass	Road	DBFOM	Under Construction
Pennsylvania	2016	Pennsylvania Rapid Bridge Replacement Project	Bridge	DBFM	Under Construction
Texas	2008	**State Highway 130, Segments 5 & 6**	Road	DBFOM	Operating
Texas	2009	North Tarrant Express Segments 1 & 2A	Road	DBFOM	Operating
Texas	2010	**I-635 LBJ TEXpress Managed Lanes**	Road	DBFOM	Operating
Texas	2013	North Tarrant Express Segment 3A, I-35	Road	DBFOM	Under Construction
Texas	2014	State Highway 183 Managed Lanes	Road	DBOM	Under Construction
Virginia	2007	**I-495 Capital Beltway HOT Lanes**	Road	DBFOM	Operating
Virginia	2012	**Elizabeth River Tunnels, Midtown Tunnel**	Tunnel	DBFOM	Operating
Virginia	2012	**I-95 HOV/HOT Lanes, Express Lanes**	Road	DBFOM	Operating

Heterogeneity of projects selected

Category	Presidio Parkway	US 36 ph2	Port of Miami Tunnel	I-635 LBJ TEXpress	I-495 HOT Lanes	I-95 HOV/HOT	Ohio River Bridges	Midtown Tunnel	SH 130
State	California	Colorado	Florida	Texas	Virginia	Virginia	Indiana	Virginia	Texas
Type	Highway	Highway	Tunnel	Highway	Highway	Highway	Bridge	Tunnel	Highway
Unsolicited	No	No	No	No	Yes	Yes	No	No	Yes
Fin. Close	2012	2014	2009	2010	2007	2012	2013	2012	2008
Open traffic	2017*	2016	2014	2015	2012	2014	2016	2016	2012
Duration O&M	30	50	30	48	75	73	35	58	50
Total value	$365 M	$258.6 M	$1,073 M	$2,645 M	$2,068 M	$923 M	$1,319 M	$2,088 M	$1,327 M
Funding	AP	DR	AP	DR	DR	DR	AP	DR	DR
Managed lanes	No	Yes	No	Yes	Yes	Yes	No	No	No
Toll type	N/A	Time of day	N/A	Dynamic	Dynamic	Dynamic	Fixed toll	Time of day	Fixed variable

Findings: congestion & financing

Project	Congestion	Financing + Project acceleration
I-495	Reduced congestion + commute certainty	Up to 6 years
I-95	Reduced congestion + commute certainty	Up to 6 years
US36	Increased peak hour travel speeds 20-29%	Up to 20 years
Miami Tunnel	Reduced 77% truck traffic in downtown Miami	
Presidio Parkway		Project accelerated – unclear by how many years.
LBJ	Reduced congestion + commute certainty	Up to 15 years
Midtown	Too early to tell (<1 year)	
Ohio River Bridge	Too early to tell (<1 year)	Reduction in state contribution
SH130	Increased access Demand below projections	No state/local resources + $125 million to the state

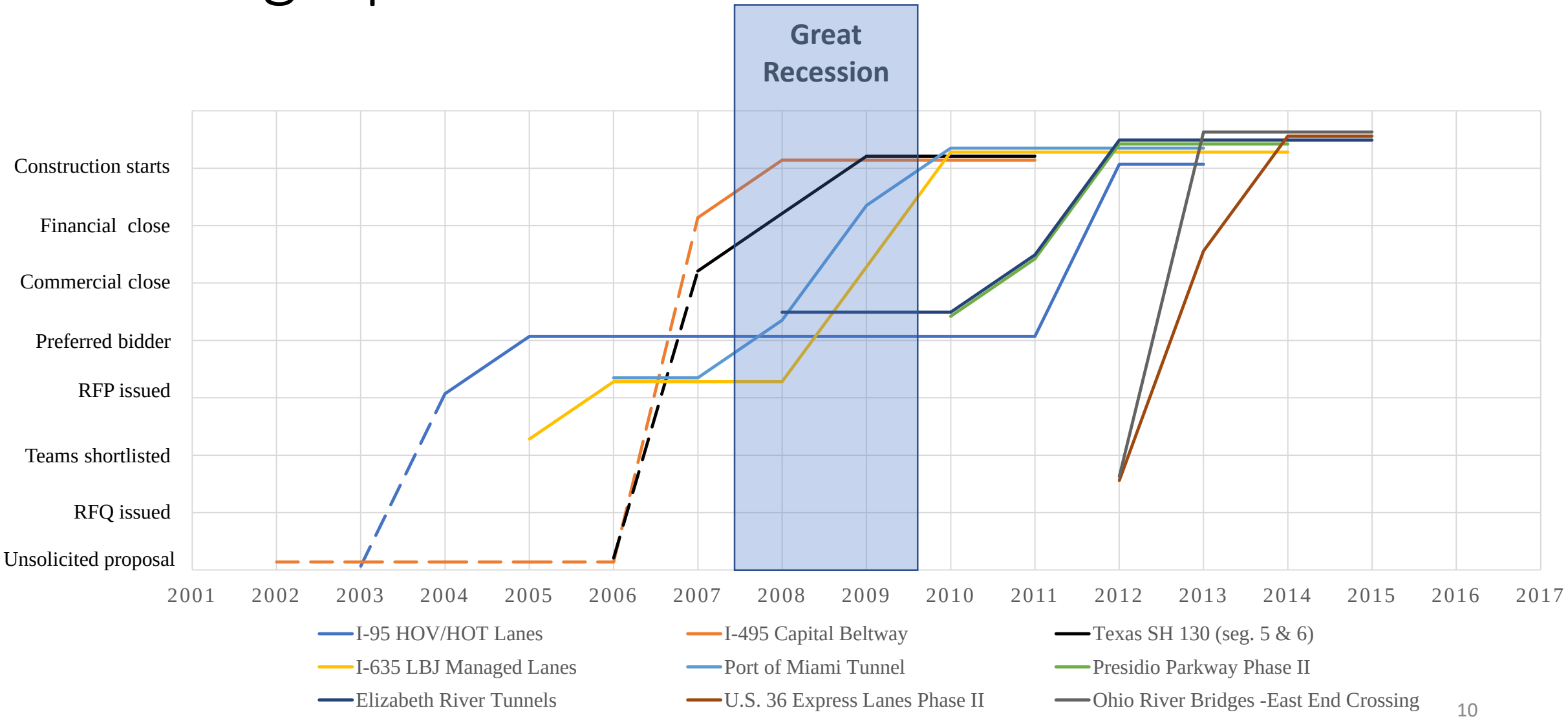
Findings: cost & schedule certainty

Project	Within budget	On-time
I-495	Yes	2 months earlier
I-95	Yes	Yes
US36	Yes	2 week delay (force majeure under review)
Miami Tunnel	Yes	3 months delay ($42 million penalty)
Presidio Parkway	19% cost-overrun (76% similar projects)	Yes: phases 5-7. Public sector delay on phase 8
LBJ	Yes	3 months earlier
Midtown	Yes	14 months earlier
Ohio River Bridge	2% change orders	1.5 month delay (force majeure)
SH130	Yes	1 month earlier

Findings: risk management & expertise

Project	Risk management	Private sector expertise
I-495	Demand risk –capital infusion $210 million	Redesign to diminish ROW conflict & tolling
I-95		
US36		
Miami Tunnel	Geotechnical risk Construction risk (community impact)	Bored tunnel technology
Presidio Parkway		
LBJ		Trench and cantilever saved over $900 million
Midtown		
Ohio River Bridge		ATCs, etc., diminished DB cost by 23%
SH130	Demand risk -bankruptcy	

Findings: procurement



How to increase P3 benefits

- Introduce the private sector earlier in the design to adopt alternative technical concepts (ATCs)
  - New technologies
  - Reduce DB costs
- Introduce broader transit goals to increase benefits & diminish opposition
  - Multi-modal design
  - Fund transit projects
- Consider value capture opportunities to diminish opposition to tolling

Q&A

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For more information:

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Additional slides

What happens when things don´t go the way we expected?

Renegotiations and Bankruptcy of P3s

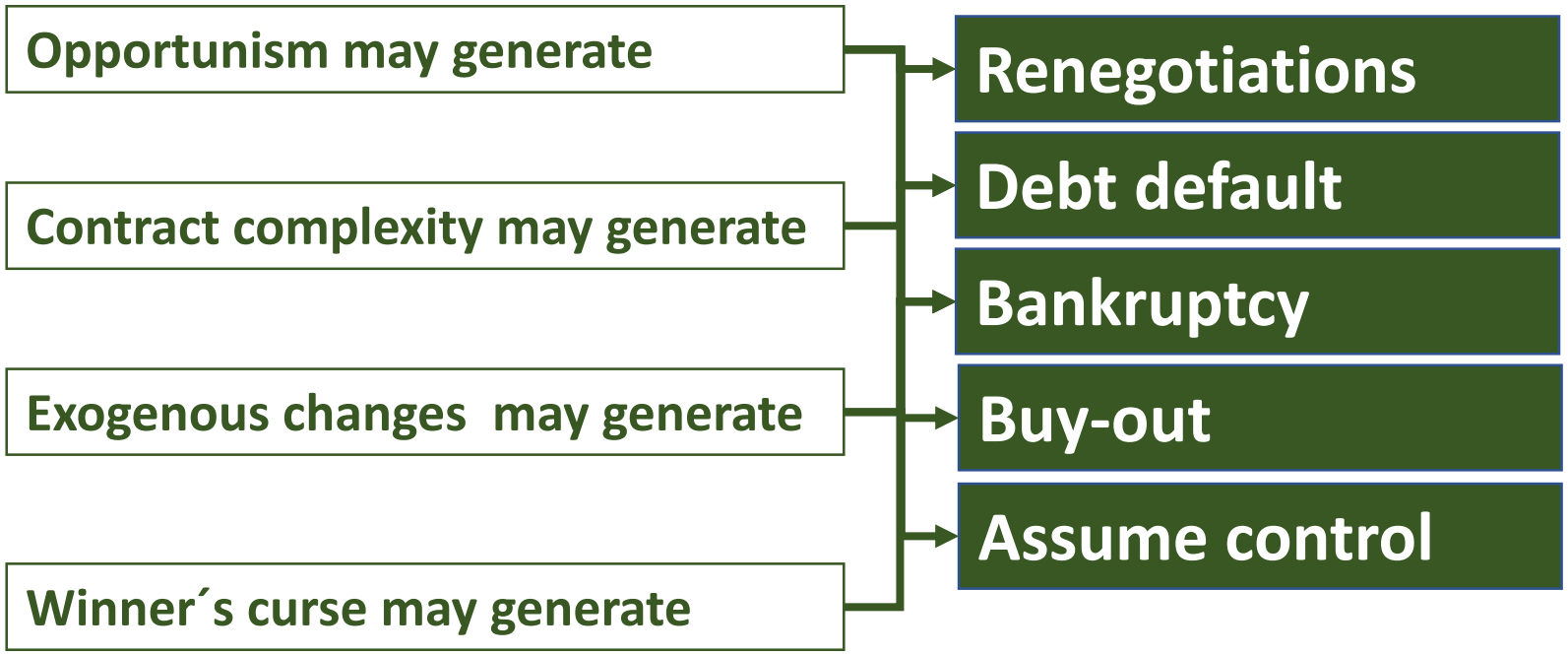
Renegotiations and Bankruptcies

- It is important to acknowledge that bankruptcies and renegotiations are not intrinsically “bad”

- Renegotiations allow adaptation to bad environment, like it usually occurs in private sector contracts
  - See: Rich and Tracy (2013); Tirole (1999); Saussier et al. (2009)

- Bankruptcies allow for resource reallocation away from sub-par firms or failed innovations
  - See: Hayek (2002); Becchetti et al. (2003)

Different events and consequences



Renegotiation analysis

- 6 case studies of renegotiations were undertaken
  - SR 91 Express Lanes
  - South Bay Expressway
  - Indiana Toll Road
  - Dulles Greenway
  - Pocahontas Parkway
  - Elizabeth River Crossings

- What can be learned from P3 renegotiations in the U.S.?
  - Main explanations for renegotiations in the U.S. P3 highways
    - Exogenous shocks: Great Recession and policy response
    - Contract complexity: novelty, civil rights concerns, risk transfer

How can renegotiations be used wisely?

- Renegotiations can help avoid problems
  - Dulles Greenway did not go bankrupt.
  - Opposition to Elizabeth River Crossings diminished
- Renegotiations can be useful
  - Condition to sell Pocahontas Parkway & South Bay Expressway
- Renegotiations do not “solve” all design problems
  - Indiana Toll Road went bankrupt
- Renegotiations should be considered as an alternative
  - To change the scope of the non-compete clause of SR91
  - To change SBX project scope

Bankruptcy analysis

- 17 case studies comparing U.S. and Europe
  - Bankruptcy filings between 2004 and 2014
  - 3 European countries (France, Spain, UK)
  - 6 U.S. states (Alabama, California, Indiana, Nevada, South Carolina, Texas)

- What can be learned from P3 bankruptcies?
  - Overestimation of future demand in most projects
  - Creditor compensation: UK and Spain (expected)
    - Government debt guarantee main culprit
  - France and U.S. did not bail out creditors
    - Merits of Chapter 11 and the Safeguard provision
  - US exception
    - Camino-Colombia foreclosure and holdup

How to deal with unavoidable bankruptcies?

- Debt restructuring legislation is key
  - It allows the project to continue providing services to citizens
  - It minimizes threats from the concessionaire, remember Camino-Colombia
- Avoid debt guarantees
  - A cost of subsidies are easier to quantify than the risk of default
- Officials are willing to let concessionaire absorb losses
- Officials should also let bondholders absorb losses
  - Las Vegas Monorail: bondholders lost 98% of the value after bankruptcy
  - Indiana´s I-69: bondholders will be compensated after state took over control of the project

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