FINANCE OVERVIEW & CASE STUDY FINDINGS
1 PROJECT FINANCE PRIMER
FINANCE STRATEGIES

Pledged Revenues

Financing Products

Public

Public Tax, Registration Fees etc.

User Fees, Tolls

Developer Balance Sheet

Private

Tax-Exempt Debt

Tax-Exempt Debt, Taxable Debt, Equity

Developer funds, Equity
- Historically, worst overruns on projects over $300M
- Figure illustrates Historical average cost overruns by project size (red)
- Range of likely cost overruns on future projects traditionally procured (blue)
2 PUBLIC-PRIVATE-PARTNERSHIP MODELS
FIRST P3’S IN THE U.S.

1792, Philadelphia – Lancaster Turnpike, PA
WHAT IS A P3?

Public-Private-Partnership (P3)

• P3s are long term contractual agreements between a public agency and a private entity that allow for greater private participation in the delivery, financing and asset management of projects

• More than Design-Bid-Build
P3’s are not:

- A funding mechanism, but a **PROJECT DELIVERY** technique
- Privatization of public infrastructure
- Privately owned or controlled toll roads
- Endless source of funds
- A suitable delivery method for all projects (typically >$100m with a healthy business case)
RANGE OF P3 MODELS

The Scale of Public–Private Partnerships: Risk Transfer and Private Sector Involvement

- Design–Build
- Operation and Maintenance
- Build–Finance
- Lease–Develop–Operate
- Design–Build–Operate
- Design–Build–Finance–Maintain
- Design–Build–Finance–Operate
- Design–Build–Finance–Operate–Maintain
- Build–Own–Operate–Transfer
- Long term-Lease
- Privatization

Degree of Private Sector Risk

Degree of Private Sector Involvement

PPP Models

The Canadian Council for Public–Private Partnerships
RISK TRANSFER

Design-Bid-Build Risk Allocation

PUBLIC
- Right of Entry
- Environmental
- Ownership of Asset
- Legislative Change
- Project Interface
- Financing
- Design
- Sustainability
- Contractor Failures
- Long Term O&M
- Change in Law
- Force Majeure
- Cost Overruns
- Existing Site Conditions

PRIVATE
- Site Construction

SHARED
- Quality
- Timely Completion
RISK TRANSFER

DBFOM P3 Risk Allocation

PUBLIC

Right of Entry
Environmental
Ownership of Asset
Legislative Change

PRIVATE

Financing
Design
Sustainability
Contractor Failures
Cost Overrun
Timely Completion
Quality
Long Term O&M
Site Construction
Existing Site Conditions
Environmental
Ownership of Asset
Force Majeure

SHARED

Project Interfaces
Change in Law
Force Majeure
Existing Site Conditions
RISK TRANSFER

Full Privatization Risk Allocation

PUBLIC

PRIVATE

SHARED
Right of Entry
Legislative Change
Change in Law
Project Interfaces

Financing
Design
Sustainability
Contractor Failures
Cost Overrun
Timely Completion
Quality
Long Term O&M
Site Construction
Existing Site Conditions
Environmental
Ownership of Asset
Force Majeure
## WHY USE P3?

<table>
<thead>
<tr>
<th>WHY USE P3?</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Schedule Acceleration &amp; Certainty</strong></td>
<td>• Complete construction as soon as possible and as planned, to meet urgent community need</td>
</tr>
<tr>
<td><strong>Cost Certainty</strong></td>
<td>• Minimize potential for cost overruns during construction and operation &amp; maintenance</td>
</tr>
<tr>
<td><strong>Incentivize Quality and Sustainability</strong></td>
<td>• Performance-based optimization to result in a high-quality, innovative, well-maintained facility that is well suited to public needs</td>
</tr>
<tr>
<td><strong>Innovative Design</strong></td>
<td>• Maximize potential for innovative designs that are context sensitive</td>
</tr>
<tr>
<td><strong>Long-term Functionality</strong></td>
<td>• Adaptable to technology advancement over time</td>
</tr>
<tr>
<td><strong>Optimal Risk Transfer</strong></td>
<td>• Reduce construction cost, schedule, financing and delivery risk for the public</td>
</tr>
<tr>
<td><strong>Maximized VFM</strong></td>
<td>• Deliver optimal quality facilities and performance for the best price</td>
</tr>
<tr>
<td><strong>Optimized Use of Public Funds</strong></td>
<td>• Leverage and optimize use of available funding to help deliver more projects with current resources</td>
</tr>
</tbody>
</table>
TYPICAL P3 STRUCTURE
U.S. P3 LEGISLATIVE MAP

- BROAD ENABLING LEGISLATION
- LIMITED LEGISLATION
- NO LEGISLATION
PROCUREMENT PROCESS

Policy:
- Enabling legislation
- Established procurement policy and approval process

Solicited or unsolicited proposals:
- Either way, a competitive process typically results in best value
- Publicize unsolicited proposals to invite competing bids

Selection options:
- Lowest Net Present Value (NPV) availability payment
- Best overall value
- Lowest public subsidy
- Largest upfront payment to project sponsor

Best value over the long term, NOT the lowest construction price
U.S. MARKET ACTIVITY

Deals Reaching Financial Close by Quarter from 2011 Q1 to 2015 Q4


- **Power**: 41% $78b
- **Renewables**: 31% $60b
- **Transport**: 21% $39b
- **Environment**: 4% $7b
- **Telecommunications**: 3% $5b
- **Other**: 0.5% $1.5b
- **Social Infrastructure**: 0.5% $1.5b

Source: InfraDeals 2016
## 2015 HIGHLIGHTS

<table>
<thead>
<tr>
<th>USD 900m</th>
<th>USD 554m</th>
<th>USD 655m</th>
<th>USD 40m</th>
<th>USD 275m</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pennsylvania Bridges</strong>&lt;br&gt;Financial close: 18 March 2015&lt;br&gt;Transaction launch to financial close: 464 days&lt;br&gt;Project: Comprises the replacement of 558 geographically dispersed, structurally deficient bridges across the Commonwealth.&lt;br&gt;Delivery model: DBFOM&lt;br&gt;Duration: 28 years&lt;br&gt;Total equity commitment: USD 62.7m&lt;br&gt;PABs: USD 721m</td>
<td><strong>Portsmouth Bypass</strong>&lt;br&gt;Financial close: 9 April 2015&lt;br&gt;Transaction launch to financial close: 665 days&lt;br&gt;Project: Comprises a four-lane, limited access highway - 16 miles of new freeway around the City of Portsmouth, designated as State Route 823.&lt;br&gt;Delivery model: DBFOM&lt;br&gt;Duration: 40 years&lt;br&gt;Financing: TIFIA USD 209m; PABs USD 227.36m; and Milestone payments USD 41m&lt;br&gt;Winning consortium: Grupo ACS (40%); InfraRed Infrastructure III (40%); Star America (20%); Dragados; Star America Fund; Jurgensen; and The Beaver Excavating Co.&lt;br&gt;Total equity commitment: USD 49.25m</td>
<td><strong>I-77</strong>&lt;br&gt;Financial close: 20 May 2015&lt;br&gt;Transaction launch to financial close: 1,065 days&lt;br&gt;Project: Development of 25 miles of High Occupancy Toll lanes over three sections of the I-77.&lt;br&gt;Procurung organisation: North Carolina Department of Transportation&lt;br&gt;Winning consortium: Cintra Infraestructuras (90%); and Aberdeen Infrastructure Partners II (10%)&lt;br&gt;Total equity commitment: USD 250m&lt;br&gt;Financing: USD 189m TIFIA loan; USD 91m Government Contribution; and USD 100m in PABs</td>
<td><strong>Michigan Freeway Lighting</strong>&lt;br&gt;Financial close: 24 August 2015&lt;br&gt;Transaction launch to financial close: 531 days&lt;br&gt;Project: Replacing approximately 13,000 freeway lights using high-pressure sodium or metal halide fixtures with energy-efficient LED lights.&lt;br&gt;Delivery model: DBFOM&lt;br&gt;Procurung organisation: Michigan Department of Transportation (MDOT)&lt;br&gt;Winning consortium: Aldridge Electric, Star America&lt;br&gt;Total equity commitment: USD 5m&lt;br&gt;Financing: Private placement priced on Aug 17 and was acquired by Allianz</td>
<td><strong>Kentucky Broadband</strong>&lt;br&gt;Financial close: 3 Sept 2015&lt;br&gt;Transaction launch to financial close: 239 days&lt;br&gt;Project: The project brings high-speed internet connectivity to every corner of the Commonwealth and will consist of 3,000 miles of fiber.&lt;br&gt;Procurung organisation: State of Kentucky&lt;br&gt;Winning consortium: First Solutions (10%), Leducor (15%); Macquarie NG-KIH Holdings (75%)&lt;br&gt;Total equity commitment: USD 21m&lt;br&gt;Financing: Capital market financing consisting of 1 public and 2 private placement bonds, with an average coupon of 4.65%</td>
</tr>
</tbody>
</table>

Source: InfraDeals 2016
# 2016 HIGHLIGHTS

## Highway, Bridges & Tunnels

<table>
<thead>
<tr>
<th>Transaction Name</th>
<th>State</th>
<th>Sub-Sector</th>
<th>Capex $(m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chicago Skyway Sale</td>
<td>Illinois</td>
<td>Bridges and Tunnels</td>
<td>$2,836</td>
</tr>
<tr>
<td>Corridor H</td>
<td>West Virginia</td>
<td>Highways</td>
<td>$209</td>
</tr>
<tr>
<td>Detroit River Tunnel Replacement</td>
<td>Michigan</td>
<td>Bridges and Tunnels</td>
<td>$400</td>
</tr>
<tr>
<td>I-285/SR 400 Improvements P3</td>
<td>Georgia</td>
<td>Highways</td>
<td>$1,056</td>
</tr>
<tr>
<td>I-395 Corridor P3</td>
<td>Florida</td>
<td>Highways</td>
<td>$620</td>
</tr>
<tr>
<td>I-70 East</td>
<td>Colorado</td>
<td>Highways</td>
<td>$1,170</td>
</tr>
<tr>
<td>SH 288</td>
<td>Texas</td>
<td>Highways</td>
<td>$820</td>
</tr>
<tr>
<td>State Street Redevelopment</td>
<td>Indiana</td>
<td>Highways</td>
<td>$80</td>
</tr>
<tr>
<td>Transform 66</td>
<td>Virginia</td>
<td>Highways</td>
<td>$2,100</td>
</tr>
</tbody>
</table>

**Total**: $9,291

Source: InfraDeals 2016
CASE STUDIES
1. South Bay Expressway, CA
2. U.S. 36 Managed Lanes, CO

Next meeting:
3. Presidio Parkway, CA
4. I-4 Ultimate P3, FL
5. South Norfolk Jordan Bridge, VA
6. President George Bush Turnpike Western Extension, TX
## PROJECT FEATURES

<table>
<thead>
<tr>
<th></th>
<th>COMPETITIVE PROCUREMENT PROCESS</th>
<th>TOLL REVENUE</th>
<th>AVAILABILITY PAYMENT</th>
<th>CONNECTOR ROAD</th>
<th>PRIVATIZATION</th>
<th>PUBLIC FINANCING</th>
<th>PRIVATE FINANCING</th>
<th>COMPLEX CONSTRUCTION</th>
<th>MANAGED LANES</th>
<th>CALIFORNIA PROJECT</th>
<th>TIFIA LOAN</th>
<th>&gt;$1 BILLION</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOUTH BAY EXPRESSWAY, SAN DIEGO</td>
<td>✔️</td>
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<td></td>
<td>✔️</td>
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<td></td>
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<tr>
<td>U.S. 36 MANAGED LANES, COLORADO</td>
<td>✔️</td>
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<tr>
<td>PRESIDIO PARKWAY, SAN FRANCISCO</td>
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<tr>
<td>I-4 ULTIMATE P3, FLORIDA</td>
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<tr>
<td>SOUTH NORFOLK JORDAN BRIDGE, VIRGINIA</td>
<td>✔️</td>
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<tr>
<td>PRESIDENT GEORGE BUSH TURNPIKE WESTERN EXTENSION, TEXAS</td>
<td>✔️</td>
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</tbody>
</table>
DESCRIPTION OF THE PROJECT

The SBX Project was the first P3 in California, developed pursuant to California’s AB 680 legislation passed in 1989. This is the first toll road in San Diego County and the first road P3 in California and a number of notable “lessons learned” were achieved during project construction and start-up in operations. The project was restructured via bankruptcy when the combination of protracted litigation between the borrower and contractor and the economic downturn made the project’s costs and revenue streams unsustainable.

**Interesting features of the delivery/financing**

- Under a franchise agreement, the private developer raised capital for the Project and constructed the road in exchange for a 35-year toll concession. Caltrans owns the highway, but leases the road back to the franchisee. Currently, the San Diego Association of Governments (SANDAG) has the franchise, under an amended agreement executed when the toll road was sold to SANDAG in December 2011. Control will revert back to Caltrans in 2042.

<table>
<thead>
<tr>
<th>Financial Close</th>
<th>23 May 2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opened to Traffic</td>
<td>Nov 2007</td>
</tr>
<tr>
<td>Delivery Method</td>
<td>DBFOM, 35 years</td>
</tr>
<tr>
<td>Capital Value</td>
<td>$635 million</td>
</tr>
<tr>
<td>Financing</td>
<td>Private – Toll Revenue</td>
</tr>
<tr>
<td>Project Type</td>
<td>New Build Highway</td>
</tr>
</tbody>
</table>
SBX: LESSONS LEARNED

Primary Lessons

1. Define project goals and objectives
2. Balanced and commercially reasonable risk allocation maximizes benefits of competitive process
3. High risk projects have higher equity return requirements
4. Allow flexibility for a range of project funding and financing sources
5. Effective stakeholder engagement throughout procurement and development processes
6. Advance environmental approvals to avoid surprise costs and delays
7. Adopt legislation that offers flexibility for alternative procurement approaches
DESCRIPTION OF THE PROJECT

The US 36 Express Lanes Project is a multi-modal project led by the Colorado Department of Transportation (CDOT) and the Regional Transportation District (RTD) to reconstruct US 36 from Federal Boulevard to Table Mesa Drive in Boulder.

The Project built an express lane in each direction on US 36, in addition to the two free general-purpose lanes. Additionally, the project replaced several bridges, built a commuter bikeway, added BRT improvements, and installed Intelligent Transportation Systems (ITS) for tolling, transit and traveler information, and incident management. The project opened to the public winter 2016.

**Interesting features of the delivery/financing**
- Phase 1 was delivered under a design-build contract while Phase 2 was delivered as a DBFOM.
- Phase 1 was transferred to the Phase 2 concessionaire after toll revenue had been established.

<table>
<thead>
<tr>
<th>Fiscal Year Approved</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opened to Traffic</td>
<td>Mar 2016</td>
</tr>
</tbody>
</table>
| Delivery Method      | Phase 1: Design-Build  
                      | Phase 2: DBFOM, 50 years |
| Capital Value        | $497 million |
| Financing            | Public / Private – Toll Revenue |
| Project Type         | Managed Lane |
US-36: LESSONS LEARNED

Primary Lessons

1. Ensure a dedicated project champion to drive process
2. Educate key decision makers early in the process
3. Adopt an independent and/or shared oversight function during planning and implementation
4. Document effective cooperation and funding agreements with multi-agency involvement
5. Engage all necessary stakeholders effectively and early in the process
6. Equitable revenue sharing mechanism that benefits the local agencies, critical for project support and approval
7. Enabling legislation and defined approval process
# SAMPLE OF COMMON THEMES

<table>
<thead>
<tr>
<th>Theme</th>
<th>SBX</th>
<th>US-36</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Delivery Performance</td>
<td>• 12 year delay</td>
<td>• On-time</td>
</tr>
<tr>
<td>Toll Rate Setting Control</td>
<td>• Private sector sets toll up to 18.5% cap on equity return</td>
<td>• Private sector sets dynamic toll to achieve specified service requirement</td>
</tr>
<tr>
<td>Revenue Control</td>
<td>• Shared with public sector beyond a defined limit</td>
<td>• Shared with public sector beyond a defined limit</td>
</tr>
<tr>
<td>Established Traffic History</td>
<td>• No</td>
<td>• Yes</td>
</tr>
<tr>
<td></td>
<td>• Greenfield</td>
<td>• Expansion</td>
</tr>
<tr>
<td>Competitive Procurement Process</td>
<td>• Partial (RFQ only)</td>
<td>• Yes</td>
</tr>
<tr>
<td>Environmental Approval Process</td>
<td>• Private sector, initiated post award</td>
<td>• Public sector, substantially completed prior to procurement</td>
</tr>
</tbody>
</table>
KEY SUCCESS FACTORS

- Well-defined goals/objectives + project positioning
- Clear communication + approval process
- “Bankable” + credit worthy structure
- Dedicated revenue + funding/finance alternatives
- Market appetite + balanced risk allocation
- Competitive + transparent procurement process
- Value-driven performance requirements
- Market-tested asset management costs
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