INTERNATIONAL PERSPECTIVES ON TRANSPORTATION PUBLIC-PRIVATE PARTNERSHIPS

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INTRODUCTION

• The US is accustomed to being innovative pioneers, but it is the last major industrialized country to look seriously at the PPP model
  – Ironically, PPPs began in Europe, a continent where the inclination toward public sector solutions is generally much higher than in the United States.
  – Europe began to utilize the PPP model as traditional sources of finance fell short of meeting increased requirements for public services – something that is happening now in the United States.

• Today’s Discussion
  – Brief overview of international highway PPPs
  – Introduction to key learnings and best practices of international PPPs.
A BRIEF OVERVIEW

- Spanish road concessions began in the Franco era (1960s, early 70s)
- The “Modern Era” of PPPs began in the UK in the early 1990s
- The PPP model spread to Canada, Australia, Western Europe, and is now global – both in the developed and developing world
- Currently PPPs are used for a wide variety of infrastructure
  - Highways
  - Transit (rail)
  - Social infrastructure
    - Hospitals
    - Schools
    - Prisons
- For today, we focus on highways, primarily in the developed world (though principles of sound management remain the same the world over)
### TOP 30 PPP ROAD PROJECTS BY DOLLAR VALUE (OUTSIDE THE US OR CANADA)

TOTAL $84 BILLION

<table>
<thead>
<tr>
<th>Country</th>
<th>Project</th>
<th># Contracts</th>
<th>Type</th>
<th>US$</th>
<th>Term (years)</th>
<th>Green/Brown</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazil</td>
<td>Autopista Regis Bittencourt, BR-116, Sao Paulo-Curitiba,</td>
<td>1</td>
<td>Toll Motorway</td>
<td>1,820</td>
<td>25</td>
<td>Brown</td>
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<tr>
<td>Brazil</td>
<td>Autopista Fluminense, BR-101, Rio de Janeiro-Espirito Santo state border</td>
<td>1</td>
<td>Toll Motorway</td>
<td>1,000</td>
<td>25</td>
<td>Brown</td>
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<tr>
<td>Brazil</td>
<td>Sao Paulo Ring Road, Mario Covas Oeste/West</td>
<td>1</td>
<td>Toll Motorway</td>
<td>1,500</td>
<td>30</td>
<td>Green</td>
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<tr>
<td>Brazil</td>
<td>Sao Paulo State: Rehab-Operate-Transfer Motorways</td>
<td>22</td>
<td>Toll Motorway</td>
<td>4,730</td>
<td>20</td>
<td>Mix</td>
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<td>France</td>
<td>SANEF, Autoroutes du Nord et de l'Est de la France</td>
<td>1</td>
<td>Toll Motorway</td>
<td>5,200</td>
<td>22</td>
<td>Brown</td>
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<tr>
<td>France</td>
<td>ASF, Autoroutes du Sud de la France</td>
<td>1</td>
<td>Toll Motorway</td>
<td>11,800</td>
<td>n/a</td>
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<tr>
<td>France</td>
<td>APRR, Autoroutes Paris-Rhin-Rhone</td>
<td>1</td>
<td>Toll Motorway</td>
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<td>26</td>
<td>Brown</td>
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<tr>
<td>France</td>
<td>Paris A86 West Tunnels</td>
<td>1</td>
<td>Toll Tunnel</td>
<td>2,200</td>
<td>70</td>
<td>Green</td>
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<tr>
<td>Germany</td>
<td>A1, A-Modell, Bremen-Rhin-Hamburg</td>
<td>1</td>
<td>Motorway</td>
<td>1,000</td>
<td>30</td>
<td>Mix</td>
</tr>
<tr>
<td>Mexico</td>
<td>Mexican Motorway Concessions 1989-1997</td>
<td>53</td>
<td>Toll Motorway</td>
<td>13,000</td>
<td>various</td>
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<tr>
<td>Mexico</td>
<td>Mexico City Beltway, phases 2, 3, 4</td>
<td>1</td>
<td>Toll Motorway</td>
<td>1,300</td>
<td>30</td>
<td>Green</td>
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<tr>
<td>Mexico</td>
<td>Mexico City-Queretaro Viaducto Elevado Bicentenario</td>
<td>1</td>
<td>Toll Motorway</td>
<td>1,100</td>
<td>30</td>
<td>Green</td>
</tr>
<tr>
<td>Mexico</td>
<td>FARAC 1 - Mexico Reprivatized Toll Roads Package</td>
<td>4</td>
<td>Toll Motorway</td>
<td>4,000</td>
<td>30</td>
<td>Mix</td>
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<tr>
<td>Poland</td>
<td>A1, Nowe Marzy-Toruń section</td>
<td>1</td>
<td>Toll Motorway</td>
<td>1,500</td>
<td>n/a</td>
<td>Green</td>
</tr>
<tr>
<td>Portugal</td>
<td>Douro Interior Shadow Toll</td>
<td>1</td>
<td>Motorway</td>
<td>1,265</td>
<td>n/a</td>
<td>Mix</td>
</tr>
<tr>
<td>Portugal</td>
<td>Transmontana Toll/Shadow Toll, east of Porto</td>
<td>1</td>
<td>Motorway</td>
<td>1,265</td>
<td>30</td>
<td>Green</td>
</tr>
<tr>
<td>Portugal</td>
<td>SCUT Norte Litoral, Grande Porto Shadow Toll</td>
<td>1</td>
<td>Motorway</td>
<td>1,000</td>
<td>30</td>
<td>Green</td>
</tr>
<tr>
<td>Portugal</td>
<td>Lusoponte: Tagus River, Vasco da Gama/25 de abril</td>
<td>1</td>
<td>Toll Bridge</td>
<td>1,100</td>
<td>33</td>
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<tr>
<td>Portugal</td>
<td>Douro Litoral Highway/Porto Ring Road</td>
<td>1</td>
<td>Toll Motorway</td>
<td>1,800</td>
<td>27</td>
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<tr>
<td>Portugal</td>
<td>Litoral Centro A17</td>
<td>1</td>
<td>Toll Motorway</td>
<td>1,000</td>
<td>30</td>
<td>Green</td>
</tr>
<tr>
<td>Spain</td>
<td>Madrid Calle 30 (M-30) Upgrade</td>
<td>1</td>
<td>Toll Motorway</td>
<td>5,400</td>
<td>35</td>
<td>Mix</td>
</tr>
<tr>
<td>Spain</td>
<td>Aumar, AP-7, AP-4</td>
<td>1</td>
<td>Toll Motorway</td>
<td>1,828</td>
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<tr>
<td>Spain</td>
<td>Accesos de Madrid, R-3/ R-5 and M-50, Madrid</td>
<td>1</td>
<td>Toll Motorway</td>
<td>1,200</td>
<td>50</td>
<td>Green</td>
</tr>
<tr>
<td>Spain</td>
<td>Avasa, AP-68, Bilbao-Zaragoza</td>
<td>1</td>
<td>Toll Motorway</td>
<td>1,370</td>
<td>53</td>
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<tr>
<td>Spain</td>
<td>Audasa, AP-9, Ferrol - Tuy</td>
<td>1</td>
<td>Toll Motorway</td>
<td>1,750</td>
<td>45</td>
<td>Mix</td>
</tr>
<tr>
<td>UK</td>
<td>North Lanarkshire, Roads and Street Lights</td>
<td>1</td>
<td>Motorway</td>
<td>1,212</td>
<td>10</td>
<td>Brown</td>
</tr>
<tr>
<td>UK</td>
<td>M6 Toll Motorway</td>
<td>1</td>
<td>Toll Motorway</td>
<td>1,400</td>
<td>53</td>
<td>Green</td>
</tr>
</tbody>
</table>

Source: *Public Works Financing*
OTHER NOTABLE ROAD PPPS

- Westlink M7
- Cross City Tunnel
- Lane Cove Tunnel
- Melbourne CityLink
- EastLink
- Edmonton Orbital
- Sea to Sky Highway
- ETR 407
- N4 (Pretoria-Maputo)
- Autopista Central
- Trans Israel Hwy
MAJOR PPP PROVIDERS

<table>
<thead>
<tr>
<th>Rank</th>
<th>Company</th>
<th>Country</th>
<th>Projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ACS/Iridium</td>
<td>Spain</td>
<td>57</td>
</tr>
<tr>
<td>2</td>
<td>Macquarie Group</td>
<td>Australia</td>
<td>44</td>
</tr>
<tr>
<td>3</td>
<td>Sacyr/Itinere</td>
<td>Spain</td>
<td>40</td>
</tr>
<tr>
<td>4</td>
<td>Ferrovial-Cintra</td>
<td>Spain</td>
<td>38</td>
</tr>
<tr>
<td>5</td>
<td>Global Via (FCC-Caja Madrid)</td>
<td>Spain</td>
<td>33</td>
</tr>
<tr>
<td>6</td>
<td>Abertis</td>
<td>Spain</td>
<td>32</td>
</tr>
<tr>
<td>7</td>
<td>OHL</td>
<td>Spain</td>
<td>28</td>
</tr>
<tr>
<td>8</td>
<td>NWS Holdings</td>
<td>China (Hong Kong)</td>
<td>24</td>
</tr>
<tr>
<td>9</td>
<td>Hochtief</td>
<td>Germany</td>
<td>23</td>
</tr>
<tr>
<td>10</td>
<td>Vinci/Cofiroute</td>
<td>France</td>
<td>22</td>
</tr>
<tr>
<td>11</td>
<td>Road King</td>
<td>China (Hong Kong)</td>
<td>22</td>
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<tr>
<td>12</td>
<td>Acciona/Necso</td>
<td>Spain</td>
<td>19</td>
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<tr>
<td>13</td>
<td>Bouygues</td>
<td>France</td>
<td>17</td>
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<tr>
<td>14</td>
<td>EGIS Projects</td>
<td>France</td>
<td>16</td>
</tr>
<tr>
<td>15</td>
<td>Alstom</td>
<td>France</td>
<td>15</td>
</tr>
<tr>
<td>16</td>
<td>Cheung Kong Infrastructure</td>
<td>China (Hong Kong)</td>
<td>15</td>
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<tr>
<td>17</td>
<td>Bilfinger Berger</td>
<td>Germany</td>
<td>13</td>
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<tr>
<td>18</td>
<td>BRISA</td>
<td>Portugal</td>
<td>9</td>
</tr>
<tr>
<td>19</td>
<td>John Laing</td>
<td>UK</td>
<td>9</td>
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<td>20</td>
<td>Transurban</td>
<td>Australia</td>
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</tr>
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<td>21</td>
<td>CCR Group</td>
<td>Brazil</td>
<td>8</td>
</tr>
<tr>
<td>22</td>
<td>KBR Brown &amp; Root</td>
<td>US</td>
<td>8</td>
</tr>
<tr>
<td>23</td>
<td>Siemens</td>
<td>Germany</td>
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<tr>
<td>24</td>
<td>Fluor</td>
<td>US</td>
<td>7</td>
</tr>
<tr>
<td>25</td>
<td>Strabag</td>
<td>Austria</td>
<td>6</td>
</tr>
<tr>
<td>26</td>
<td>Bombardier</td>
<td>Canada</td>
<td>6</td>
</tr>
<tr>
<td>27</td>
<td>Bechtel</td>
<td>US</td>
<td>6</td>
</tr>
<tr>
<td>28</td>
<td>Balfour Beatty</td>
<td>UK</td>
<td>6</td>
</tr>
<tr>
<td>29</td>
<td>Alfred McAlpine</td>
<td>UK</td>
<td>6</td>
</tr>
<tr>
<td>30</td>
<td>Skanska</td>
<td>Sweden</td>
<td>5</td>
</tr>
</tbody>
</table>

*projects operating or under construction

Source: Public Works Financing, October 2008
THE PROJECT TYPE CONTINUUM

Pure Greenfield

New Asset Created

Improvement or Rehabilitation of Existing Asset

Monetize Existing Asset

Pure Brownfield

SH 130 (Texas)

EastLink (Melbourne)

Chicago Skyway

Indiana Toll Road
CONTINUUM OF PRIVATE SECTOR INVOLVEMENT AND RISKS

- Private Sector Risks
  - Cost risk transferred to private sector
  - Cost & operational risks are transferred to private sector
  - Traditional model – government bears all risks

- Private Sector Involvement
  - Government Owns-Operates (Design-Bid-Build)
  - Design-Build
  - Design Build Finance Operate Maintain
  - Build Own Operate Transfer
  - Build Own Operate
  - Private Sector Owns and Operates

- State retains full ownership (Concession Model)
- Cost, operational & financing risks transferred to private sector

- Privatization

- Some private ownership

PRIVATE SECTOR INVOLVEMENT AND RISKS
TYPICAL ROAD PPP COST/REVENUE TIMELINE

Source: PricewaterhouseCoopers
ADVANTAGES OF USING PPPS

• Expands the scope of resources available to fund highway construction by bringing in new money.

• Lower life cycle costs
  – DBFOM (Design, Build, Finance, Operate, Maintain) allows participant to develop the project as a unified system, eliminating inefficiencies
  – Lengthy contractual obligations reduce the temptation to go for the lowest up-front costs. Design for maintainability can reduce future costs of lane closures.

• Greater Time and Budgetary Certainty
  – private capital has a better record of delivering projects on time and within budget

• Project Management, Risk Management and Risk Transfer
A study of 21 PPP and 33 traditional projects in Australia also found that PPPs were significantly better at completing projects within budget. Scope creep proved especially insidious with traditional projects.

**TIME & COST CERTAINTY: PPP VS. TRADITIONAL PROCUREMENT**

**Sources:** Performance of PPPs and Traditional Procurement in Australia: Final Report, Allen Consulting Group & The University of Melbourne, 30 November 2007.
Studies from the UK and the Netherlands show similar results. Partnerships BC (Canada) also asserts that their projects have a 100% record of coming in on time and within budget.

**PPP TIME AND COST SAVINGS – UK AND THE NETHERLANDS**

- N31 – 27% greater value for money and shorter building time
- A59 – 14% value for money


Rijkswaterstaat (Netherlands)
PROJECT MANAGEMENT – BEST PRACTICES & RISK MITIGATION

• PPPs drive the use of project management best practices, which carry over to all infrastructure development, *including the decision of whether a project should be a PPP at all*, or whether traditional procurement makes more sense in that particular case.

• Prior Planning Prevents Poor Performance
  – Clearly defined responsibilities
  – Greater accountability for specific, measurable results
  – Up-front consideration of project risks allows for less costly and more timely mitigation of those risks.

• Requires
  – Organization
  – Skilled Personnel
  – Budget
NO NEED TO RE-INVENT THE WHEEL

- Other jurisdictions have developed an extensive set of best practices
  - Partnerships Victoria
  - Partnerships BC
  - Partnerships UK
EXAMPLE OF AN EFFECTIVE MANAGEMENT PROCESS

Source: Partnerships Victoria (www.partnerships.vic.gov.au)

Other well developed processes include Partnerships UK, Partnerships BC and the European Union’s “Competitive Dialogue”
THE PUBLIC SECTOR COMPARATOR PROCESS

Figure 3.1 The PSC process

- Formulate output specification
- Define Reference Project
- Identify all Raw PSC components
- Assign direct costs
- Assign indirect costs
- Calculate Raw PSC [A]
- Calculate Competitive Neutrality iiclusions [B]
- Identify all material risks
- Quantify consequences of risk
- Estimate probability of risk
- Calculate value of all risks
- Identify desired risk allocation
- Calculate Transferable Risk [C]
- Calculate Retained Risk [D]
- Calculate PSC = [A] + [B] + [C] + [D]

Source: Partnerships Victoria

Figure 2.3 Value for money and bid evaluation

- Expected Cost
- Transferable Risk
- Competitive Neutrality
- Raw PSC
- Retained Risk
- NPC of service payments
- NPC of service payments
- Procurement Option

Bid 1
PSC
Bid 2
The Public Sector Comparator / Value for Money process aims to reflect the full and true cost to government of a particular project so that this cost can be compared to private sector bids

THE PUBLIC SECTOR COMPARATOR AND VALUE FOR MONEY

• Public Sector Comparator began in the UK and has evolved as the global best practice

• The PSC performs the following central roles:
  – promotes full cost pricing at an early stage in the procurement process;
  – acts as a key management tool during the procurement process,
  – focuses attention on the output specification, and risk allocation and development of a comprehensive costing of the project;
  – provides a reliable means of demonstrating value for money;
  – encourages bidding competition by creating confidence in the financial rigor and probity of the evaluation process.

• PSC is a multiple step process leading to a Value for Money conclusion, consisting of:
  – Base Cost (cost under public procurement, including all capital and operating costs)
  – Competitive Neutrality (Adjustments for factors unique to public sector, such as tax
  – Transferable Risk to Private Sector
  – Retained Risk (i.e., if private bid = $100m and retained risk is $10m, real value = $110m)

• The PSC model offers a way to partially de-politicize PPP decisions (especially when the analysis is carried out by an agency unrelated to the line agency), though public employee unions have asserted that PSC process is rigged in favor of PPP

Source: Partnerships Victoria
The Public Sector Comparator is the first step in determining overall Value for Money.

# EXAMPLE OF PSC/VALUE FOR MONEY ANALYSIS

<table>
<thead>
<tr>
<th>COMPARISON OF THE NET PRESENT COST OF THE PSC AND DBFO ($2005 MILLIONS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
</tr>
<tr>
<td>------------------------------------------</td>
</tr>
<tr>
<td><strong>PSC</strong></td>
</tr>
<tr>
<td>Capital Costs (MoT) (1)</td>
</tr>
<tr>
<td>Operations &amp; Maintenance Costs (MoT) (2)</td>
</tr>
<tr>
<td>Rehabilitation Costs (MoT) (2)</td>
</tr>
<tr>
<td>Risk Adjustment (4)</td>
</tr>
<tr>
<td>Competitive Neutrality Adjustment (5)</td>
</tr>
<tr>
<td>Total Costs - Risk Adjusted</td>
</tr>
<tr>
<td><strong>DBFO Option</strong></td>
</tr>
<tr>
<td>Capital Costs (MoT) (6)</td>
</tr>
<tr>
<td>Operations &amp; Maintenance Costs (MoT) (7)</td>
</tr>
<tr>
<td>Rehabilitation Costs (MoT) (8)</td>
</tr>
<tr>
<td>Payment to S2S (9)</td>
</tr>
<tr>
<td>Total Costs</td>
</tr>
</tbody>
</table>

Though the cost of the PPP contract exceeded the PSC cost, the analysis concluded that the benefits from the additional improvements provided by the PPP (listed at right) provided the highest value for money.

Source: Partnerships British Columbia

Additional highway improvements, beyond baseline, provided in the DBFO:
- 20 km additional passing lanes;
- 16 km additional median barrier;
- Additional highly reflective pavement markings to enhance safety;
- 30 km additional shoulder and centre-line rumble strips where most effective;
- Improved lighting and roadside reflectors for additional safety;
- Improved earthquake resistance and lighting on bridges;
- 10 km additional wider shoulders for improved safety and accommodation of cyclists;
- Improved rock fall and debris catchment;
- Additional highway straightening and improved sightlines;
- Safer and more effective intersections, particularly in urban settings;
- Improved signage signifying community entrances and recreational and tourism features;
- Improved recreational trail facilities in Squamish; and
- Improved highway maintenance response to weather conditions (three road/weather information sites).
PRIMARY RISKS IN ALL TOLLED HIGHWAY PROJECTS

• **Operating Risks** (these mostly occur in the construction phase)
  – Natural (unexpected soil conditions, bad weather, etc.)
  – Legal/Political (difficulty securing necessary permits, environmental clearances, etc.)
  – Ordinary Business (strike at key supplier, concrete prices double, etc.)
  – Force Majeure (China invades Taiwan; OPEC embargoes the US, etc.)

• **Financial and Performance Risks** (universal)
  – Traffic and revenue forecasts overly optimistic.
  – Public resistance to toll rate increases

• **Financial Risks** (market & credit)
  – Public entities often finance projects with bond issues. The municipal bond market has not escaped the general financial upheaval of the past two years.
  – Financial risk involves both individual credit risk and changed perceptions by the investment community of an entire asset class.
The party bearing the risk should be the party best able to manage the risk and the most motivated to do so.

**ADDITIONAL RISKS IN PUBLIC-PRIVATE PARTNERSHIPS**

- **Risk to Private Party**
  - “Bankability” of Project
    - Changes in credit markets as project progresses (“bridge” becomes “pier” financing)
  - Shareholder/Financial Structure/Secondary Market
  - Country/Political Risk

- **Additional Risks to the State**
  - Private party incapable of fulfilling contractual duties (inadequately capitalized or does not possess the requisite skill or experience to complete and operate project)
  - Risks not truly shifted to private concessionaire
  - Poor transaction structure leads to bad outcomes and losses to the taxpayer.
    - Interrelated Projects & System Finance
  - Lack of transparency and/or bad project design and management discredit the PPP concept in the minds of the voting public.

- How do state legislators manage these risks?
RISK ALLOCATION SUMMARY – SEA TO SKY HIGHWAY (BRITISH COLUMBIA)

<table>
<thead>
<tr>
<th>Risks relating to:</th>
<th>Public (MoT)</th>
<th>Private (S2S)</th>
<th>Owner/underwriter</th>
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</thead>
<tbody>
<tr>
<td>Design of highway and structures.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction of highway and structures (risk of time and cost overruns experienced by S2S).</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Majority of the risks associated with environmental factors including changes to restrictions and permitting(with the exception of permits that are to be acquired by MoT).</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>A significant number of the operations and maintenance risks including the risk of latent defects in the upgraded sections which are undertaken by S2S.</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Increases in operations and maintenance costs as a result of changes in the composition of traffic (for example, if heavier use of highway by heavy trucks was to cause more damage to the highway).</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Protest or trespass actions related to S2S construction activities (up to a predetermined limit).</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Geotechnical (for example, soil below the highway surface) site conditions except for specified sections.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acquisition of property required for highway construction — including risks related to cost and timeliness to acquire such property.</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Responsibility for repairing any latent defects in work which was completed prior to the contract commencement date or for works undertaken by other MoT contractors (for example, the work on Sunset Beach to Lions Bay).</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Bringing the highway back into agreed-upon condition after the occurrence of significant natural events (such as landslides).</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Changes in certain types of laws (generally relates to those laws which are targeted at S2S or the contractor’s industry and can be characterized as discriminatory).</td>
<td></td>
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</tr>
<tr>
<td>Requirement to undertake soils or other remediation as a result of the discovery of undisclosed contaminated soils.</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>The adequacy of geotechnical information regarding matters such as conditions below the highway surface. (MoT is responsible for the accuracy of some of the data that it provides, and S2S is responsible for interpretation of all of the data provided).</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Unexpected site conditions at locations where MoT has provided a benchmarking mechanism.</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Requirements for moving utilities to construct the highway and structures and the risk that utility companies will not move quickly enough to meet S2S’s schedule or that they will levy higher than expected charges for the relocation work.</td>
<td></td>
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</tr>
<tr>
<td>Impact of delay in proceeding with construction schedule caused by the discovery of archaeological findings during construction.</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Increases in the future of general insurance premium cost charged by the insurance industry (or the insurance required by the contract (benchmarking for future insurance premium increases).</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Changes in certain types of laws which are not characterized as discriminatory or targeted at S2S or S2S’s industry.</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
</tbody>
</table>

Source: Partnerships BC
OPTIMISM REGARDING TOLL REVENUE IS UNIVERSAL

• Standard & Poor's has conducted studies of traffic forecasts and concluded that there can be an optimism-bias of, on average, about 30% embedded in the base-case financial model, meaning that actual traffic volumes might only be 70% of expected volumes.

• Applying this research to volume-based road and transportation projects, it becomes clear that projects subject to full or partial volume risk incorporate more uncertainty in their underlying revenue assumptions.

Source: Standard and Poors PPP Credit Survey 2005
Not all PPPs utilize motorist-paid tolls as their primary source of revenue.

**TOLLING MECHANISMS**

- **Traditional Tolling**
  - Motorists pay tolls which cover the full construction and operating costs of the road

- **Shadow Tolling**
  - Government pays the road operator a toll-equivalent (revenue depends on traffic volume).

- **Availability Payments**
  - Government pays the road operator based on traffic lanes being available. Revenues are not tied to traffic volume

- **Hybrid Systems**
  - Certain toll roads incorporate a mix of these mechanisms
  - Some penalize the road operator if traffic speeds fall below a specified level
TOLLING MECHANISMS IN THE UK AND PORTUGAL

- In PFI transport transactions, the position between availability- and volume-based projects is more mixed.
- The trend, in U.K. road and tram projects for example, has been a move away from volume-based payment mechanisms to those that look to asset availability or performance, or both, to determine the reimbursement due to concessionaires.
- Portugal has relied extensively on shadow tolling.
- The government recently concluded that its liabilities for shadow tolls were unaffordable, but it has flip-flopped re charging motorists via electronic tags.
- 2008 concessions proposed funding via a mix of shadow tolls and availability payments.

Source: Standard and Poors PPP Credit Survey 2005; Reason Foundation, Annual Privatization Report 2008
The measure used to calculate toll rate increases can cause wide variations, especially toward the latter years of a project’s expected life span.

**IMPACT OF TOLL RATE INCREASE MECHANISMS**

*(BASED ON US DATA 1955-2007)*

Sources: GDP and CPI from the Department of Commerce (Bureau of Economic Analysis).
A study of 23 US toll projects found a marked difference in forecasting accuracy depending on the type of area in which the project was located.

**ACTUAL TOLL REVENUES VS FORECAST REVENUES**

Examples

- High Congestion Suburban \((n=3)\)
  - George Bush Pkwy (Texas)

- Metro Outlying \((n=7)\)
  - Seminole Expressway (FL)

- Developed Parallel \((n=5)\)
  - Sam Houston (Texas)
  - Hardy (Texas)

- Least Developed \((n=8)\)
  - Pocahontas Parkway (VA)

MEXICO TOLL RATES AND CONCESSION TERMS – 1990S VS 2000S

Early 1990s
• Projects awarded on the basis of shortest concession term (~ 10 years)
  – Concessionaires had less interest in long term operations (life cycle costs)
  – To recover investment over such a short time frame, concessionaires raised toll rates to unsustainably high levels, driving traffic away

Late 2000s
• Concession term extended to 30 years
  – Lower toll rate
  – Companies also have significant equity stakes, making defaults less likely if initial traffic falls below projections.
TRAFFIC SHORTFALLS – RECENT PROJECTS IN SYDNEY, AUSTRALIA

- Cross City Tunnel
  - Forecast: 90,000/day
  - Reality: 35,000/day

- Lane Cove Tunnel
  - Forecast: 100,000/day
  - Reality: 70,000/day

- Harbour Tunnel revenues declined 10% from 2007-08

Source: Sydney Morning Herald
RISK SHIFTED PROPERLY – CROSS CITY TUNNEL (SYDNEY, AUSTRALIA)

• Tunnel under Sydney’s CBD designed to facilitate flow of traffic from western to eastern suburbs. Opened August 2005.
  – Construction Cost: A$1 billion.
• Original Projections: 90,000 vehicles per day after two years
• Reality: traffic counts maxed out at 35,000 vehicles per day.
• CCT placed in receivership December 2006.
  – Receivers auctioned CCT to another consortium for A$700 million
  – Lenders received money back in full
  – Equity investors recovered 10 to 20 cents on the dollar
  – Road continues to operate

• Bank leading consortium that bid in the bankruptcy auction had declined to participate in the original venture. “We couldn’t make the traffic numbers stack up …” “We were criticized at the time because 16 other banks went in, but our decision has been vindicated.”
• T&R forecasts also off because of popular resistance to high tolls, local grievances against surface street changes and poor community outreach

Sources: Sydney Morning Herald; Parliament of New South Wales
DOING IT WRONG – LONDON’S METRONET

- Key factor – risk supposedly transferred did not stay transferred

- In 2003, Transport for London (TfL) signed a £15.7 billion (over the life of the contract) PPP agreement with Metronet (a consortium of five engineering firms) to upgrade roughly 2/3 of the London Underground.

- Cost overruns had reached £1 billion by 2007

- Metronet was placed in administration (bankruptcy) in July 2007. Debts were £1.7 billion.

- The problems
  - TfL agreed to guarantee 95% of Metronet’s loans, leaving taxpayers exposed.
  - Each of the consortium’s five members had only £70 million equity in the project, not enough to properly align incentives

  - “There simply wasn’t enough equity at risk to give incentives for Metronet to perform”
    -- Stephen Glaister, TfL Board Member

MANAGING THE PPP PROCESS

- Critical Issues include:
  - High bid costs
  - Long tendering periods (2-4 years)
  - Complicated contracts (SH 130 in Texas over 1000 pages)

- “Project teams have continued to plan less well than they should for the amount of professional advice needed for a PFI deal.”
  - Average cost of external advice was 2.6% of the capital value of the projects (average of £3 million per project).

- Need for Skilled Personnel and Dedicated Organization
  - “Authorities should ensure that they can draw on staff with experience of complex capital procurement …”
  - “Recycling of existing skills in complex procurement across the public sector.”

- Organizations will take several years to ramp up, and face issues related to civil service pay scales and employee retention (now made easier due to banking meltdown!).

Source: *Improving the PFI Tendering Process*, National Audit Office (UK), 5 March 2007;
# PROJECT DEVELOPMENT PROCESS – BRITISH COLUMBIA

## COMPETITIVE SELECTION PROCESS AND TIMELINES

<table>
<thead>
<tr>
<th>Stage</th>
<th>Timing</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registration of Interest (ROI)</td>
<td>January 15, 2004 to March 3, 2004</td>
<td>The project was marketed internationally and 90 companies responded to the ROI.</td>
</tr>
</tbody>
</table>
| Request for Qualifications (RFQ)           | March 3, 2004 to May 13, 2004  | Submissions from five proponents were evaluated and three short-listed teams were announced May 13, 2004:  
  - Black Tank Highway Group  
  - Sound Highway Development Consortium  
  - SES Transportation Group  
  To be short-listed, proponents were required to demonstrate experience, capability and financial capacity to meet construction schedule objectives while managing traffic flow, and operating and maintaining the highway over the contract term. |
| Request for Proposals (RFP) and Proposal Collection Process | May 26, 2004 to January 17, 2005 | The three short-listed teams submitted proposals. |
| Selection of Preferred Proprietor          | March 2, 2005                  | After evaluation of the proposals, SES Transportation Group was selected as the preferred proponent. |
| Contract Finalization                      | After negotiations between MoT and SES, financial close was reached on June 3, 2005 | A contract was signed by MoT and SES Transportation Group. |

## RFP EVALUATION PROCESS

<table>
<thead>
<tr>
<th>Stage 1: Mandatory Submission Requirements</th>
<th>Stage 2: Baseline Improvements</th>
<th>Stage 3: Scored Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>All proponents’ submissions were evaluated for completeness as described in the RFP.</td>
<td>MoT established the baseline improvements for new construction, operations, maintenance and rehabilitation to be delivered under the project and described them in the RFP. Baseline improvements were evaluated in the following categories: 1. Project Management, Consultation &amp; Communications 2. Design 3. Construction 4. Environment 5. Operations, Maintenance &amp; Rehabilitation 6. First Nations Commitments 7. Quality Management System Requirements 8. Financial &amp; Commercial</td>
<td>Submissions were evaluated for their ability to deliver additional highway improvements beyond the baseline improvements to move MoT toward its long-term corridor objectives. For the scored evaluation, proposals which could deliver all of the baseline improvements, and were within the AAC, were evaluated in the following scoring categories: 1. Safety 2. Mobility 3. Construction Traffic Management 4. Hatchback Value 5. Environmental 6. Commercial &amp; Financial</td>
</tr>
</tbody>
</table>

Source: Partnerships BC
EMERGING ISSUES

• Bidding Cost
  – Traditional practice in the UK has been for financial advisory mandates to be structured on a “no win, no fee” basis or at best a token remuneration.
  – More extensive procedures (PSC, Competitive Dialogue) require a greater investment of time and resources, even though the private company may not win the project.

• Confidentiality
  – There is a natural tension between non-disclosure and the objective of the contracting authority to find the best value for money.

• Short list of firms; objections raised in British Columbia that $100m minimum size excludes local contractors.
Transparency and adequate public disclosure are imperative (but must be balanced against the need for private bidders to protect trade secrets).

## RECOMMENDED DISCLOSURE GUIDELINES FOR PPPS

<table>
<thead>
<tr>
<th>MILESTONE</th>
<th>DISCLOSURE GUIDANCE AND RATIONALE</th>
</tr>
</thead>
</table>
| Request for Expressions of Interest document (REOI) | - Disclosure is recommended. Generally the REOI should be publicly available such as on a project website.  
  - There is strong public interest in making this document public given that the REOI generally outlines the values and objectives of a project. |
| Name & number of parties who respond to EOI | - Disclosure of the number of respondents is recommended to provide a public update of the level of interest in the project from prospective proponents.  
  - Disclosure of names is generally not advised, but should be determined based on the specific project and its circumstances. The ability to attract qualified respondents may be affected by disclosing names at this stage; as such, names should generally be disclosed only when shortlists are established or qualifying stages are reached. Further, disclosure of names may not be meaningful as respondents may choose not to continue in the competitive process, and have not yet been qualified to proceed to the next stage of procurement.  
  - It is recommended that the nature of respondents be characterized and that context about the number be provided. (i.e., if teams are expected to consolidate in later stages). |
| Name & number of parties who are short listed at EOI stage | - Disclosure of the number of shortlisted or prequalified proponents is recommended.  
  - Disclosure of names is also recommended, but should be determined based on the specific project and its circumstances. In some cases, competitive tension may be better maintained by not disclosing shortlisted proponent names. Depending on the nature and intent of the REOI process, however, projects may want to publicize names to encourage proponent team formation. |
| Request for Qualifications document (RFQ) | - Disclosure is recommended. Generally the RFQ should be publicly available such as on a project website or through a link to the BC Bid site. In addition, addenda to the RFQ will be made available to proponents who register through the BC Bid process. |
| Name & number of parties who respond to RFQ | - Disclosure of the number of respondents is recommended.  
  - Disclosure of names should be determined based on the specific project and its circumstances, consistent with the guidance provided on the EOI stage, above. |

Source: Partnerships BC
## RECOMMENDED DISCLOSURE GUIDELINES FOR PPPS

**PROCUREMENT RELATED DISCLOSURE GUIDELINES FOR PUBLIC PRIVATE PARTNERSHIPS**

<table>
<thead>
<tr>
<th>MILESTONE</th>
<th>DISCLOSURE GUIDANCE AND RATIONALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name &amp; number of parties who are short listed at RFQ stage and receive RFP</td>
<td>Disclosure of the number and names of successful parties is recommended.</td>
</tr>
<tr>
<td>Request for Proposals (RFP)</td>
<td>Disclosure of RFP is recommended.</td>
</tr>
<tr>
<td>Draft Project / Concession Agreement</td>
<td>Disclosure of the draft Project/Concession Agreement is not recommended given that this contract is the basis for commercial negotiations, is subject to change and could harm the negotiating interests of the province, and of proponents, in future projects.</td>
</tr>
<tr>
<td>Name of preferred proponent</td>
<td>Disclosure of preferred proponent is recommended, however, the timing of this disclosure needs to be such that the government’s negotiating position will not be harmed. Disclosure of a preferred proponent may be best at a stage when evaluation and decision making are sufficiently advanced, so that the information reflects the likely outcome of the procurement process.</td>
</tr>
<tr>
<td>Fairness Opinion (if applicable)</td>
<td>Disclosure of the final report is recommended at or soon after financial close.</td>
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<tr>
<td></td>
<td>There may be interim opinions issued at earlier stages in the process.</td>
</tr>
</tbody>
</table>
| Value for Money Report (following conclusion of an agreement) | Disclosure of a final Value for Money Report for the project soon after financial close is recommended. This is the stage when a commitment is made.  
  - Final value for money assessment should include a Multi-Criteria Analysis for the project; a value for money analysis of final agreement achieved versus a base case, such as a public delivery option for the project if one was considered, and any further innovations/savings captured during the procurement process. This report will also include the objectives, costs and benefits, and risks of the project. |
| Final agreement                                     | Disclosure is recommended within 30 – 60 days of financial close, protecting information that is personal, proprietary or commercially confidential.                                                                              |
| Proposals from Proponents                           | Disclosure of proposals from proponents and respondents is not recommended because disclosure of these documents could significantly harm the commercial and competitive interests of the proponents, and the ability of the government to attract the best possible project at the best cost. |

Source: Partnerships BC
• Public Private Partnerships are partnerships, and must be managed like any other
  – The Spanish government has relied almost exclusively on the market and private
    initiative to achieve the benefits of PPP ... it shows little evidence of having accepted its
    role as an active public manager and partner ...

• “The Spanish bidding process has been characterized by fierce competition for projects,
  which often results in aggressive pricing and discounts of up to 30% over initial projected
  cost.”
  – The implicit risk in awarding a contract to an underpricing bidder is that if the offer is
    too low and the company cannot cover its costs, it will either deliver a lower quality
    service ... or pressure the government to renegotiate the contract at a higher price.”

• Spanish government does not maintain an official project register available to the public, nor
  are details of biddings publicly available.

ADDITIONAL PITFALLS – RECENT LESSONS FROM SPAIN

• In a decentralized country like the United States, state and local governments must take care to learn from the best practices (and mistakes) of other entities
  – “As [Spanish] PPP activity decentralizes ... at regional and local levels of government, authorities entering into complex negotiations may be doing so without the tools that are necessary to guarantee that projects deliver value for money.”

• “Final users who do not begin to see the benefits of private-sector provision may begin to voice their opposition to PPP.”
  – Previous “bailouts” of failed PPPs around the globe can discredit the entire model, especially in today’s political environment.

FINAL POINTS

• Policy choices reflect local conditions
  – Not a “right or wrong” answer; relates to cross subsidization issue, which is a policy choice.
  – Tolls in Melbourne vs. Sydney are a good international comparison
    • Melbourne EastLink – 11 cents/km (~12.5 US cents/mile)
    • Sydney Westlink M7 – 33 cents/km (~37.0 US cents/mile) (“toll fatigue”)

• It is critically important to get the first project right
  – PPP transactions will receive intense public scrutiny
  – The first project will set a precedent: either as an example of wise stewardship or as ammunition for those critics who want to kill the entire concept.
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