P3 O&M Performance Measures

ACS Infrastructure Development Inc. Operations and Maintenance

Presentation to IBTTA

October, 2011
Some background

P3 Scope Variations
Some background

Who is ACS?
ACS Infrastructure Development Inc. at a Glance

ACS Infrastructure Development is a fully owned by IRIDIUM, the concessions arm of ACS Group.

Consistently Ranked Number 1 since 1994 in the promotion, financing, construction and operations of transport infrastructure projects for over 10 years (Public Works Financing Magazine).

Our Experience

<table>
<thead>
<tr>
<th></th>
<th>Highways</th>
<th>Railroads and subways</th>
<th>Tunnels</th>
<th>Airports</th>
<th>Ports</th>
<th>Concession Projects (FC reached)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Miles</td>
<td>3608</td>
<td>973</td>
<td>45</td>
<td>16</td>
<td>15</td>
<td>76</td>
</tr>
</tbody>
</table>

Key factors

- Know How
- Risk Management
- Innovation / Optimization
The ACS Group

Global Developer – Understanding client needs

Promotion - Financing - Construction - Operation - Refinancing - Extension - Renovation
ACS Infrastructure Development and ACS Infrastructure Canada have been awarded 5 Projects in the last 3 years in North America.

- Presidio Parkway, California (Unsuccessful Bidder)
- Goethals Bridge, New York and New Jersey (RFP Process)
- Autoroute 30, Quebec (Awarded)
- Port of Miami Tunnel, Florida (Unsuccessful Bidder)
- Windsor Essex Parkway, Ontario (Awarded)
- Mid Currituck Bridge, North Carolina, (PDA)
- I-69 Corridor, Texas (Conditionally Awarded)
- Port of Miami Tunnel, Florida (Unsuccessful Bidder)
- I-75/I-20 "WxNW", Georgia (RFP Process)
- Hampton Roads Bridge Tunnel, Virginia (Submitted Conceptual Proposal)
- Fredricton-Moncton Highway (Awarded)
- Airport Rail Link Spur, Ontario (RFP Process)
- Saint Justine Hospital, Quebec (Submitted SOQ)
- Edison Ring road, Alberta (RFP Process)
- South Fraser Perimeter Road, British Columbia (Awarded)
- Sheppard East Maintenance Facility, Ontario (Cancelled during RFP process)
- Airport Parkway, Mississippi (Cancelled during RFP process)
- Autoroute 30, Quebec (Awarded)
- I-595 Express Lanes, Florida (Awarded)

<table>
<thead>
<tr>
<th>Project Awarded</th>
<th>Date of Award</th>
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<tbody>
<tr>
<td>Autoroute 30, Quebec</td>
<td>Jun 2008</td>
</tr>
<tr>
<td>I-595 Express Lanes, Florida</td>
<td>Oct 2008</td>
</tr>
<tr>
<td>Mid Currituck Bridge, North Carolina</td>
<td>Dec 2008</td>
</tr>
<tr>
<td>South Fraser Perimeter, British Columbia</td>
<td>Apr 2010</td>
</tr>
<tr>
<td>Windsor Essex Parkway, Ontario</td>
<td>Nov 2010</td>
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</tbody>
</table>
Shared Challenges

Unique Challenges
Shared challenges and commitments... Performance Based Maintenance and P3

- **Improved Measurable Performance**
  - Higher expectations (Level of service, response time, inspection/reporting, etc)

- **Cost and Pricing uncertainty**
  - Higher risk involved with long term contracting and price commitments (escalation, availability of resources, subcontracts, etc.)

- **Performance measures and reasonableness**
  - Difficulty in changing or modifying performance measures that are unreasonable or beyond average performance requirements.
Shared challenges and commitments…
Performance Based Maintenance and P3

Mobilization costs
• Instant mobilization and transfer of operations typically requires a full staff, resources, workspace, and materials in short order.

Staffing and Management Resources
• Need for strong management and trained skilled labor to ensure proper execution of Maintenance.

Capital investments
• Heavy up front capital costs including warehouse, office, vehicles, heavy equipment, replacement parts, labor, etc.
Operations and Maintenance Challenges of P3 Projects

Challenges Unique to P3

Increased Cost Uncertainty
• Major impact from Life Cycle costs.
• Impact of full replacement and Handback requirements for long term contracts.

Length of Term
• Long term contracts (20, 30, 60, 99+ year terms) inclusive of O & M, rehabilitation, full replacement, and other factors.

Traffic Risk
• Availability and proper maintenance ensures free flow of traffic and projected revenue income.
• Revenue loss due to incidents and response times.
Operations and Maintenance Challenges of P3 Projects

► Additional Challenges for P3

► Changes in Standards
  • Non-discriminatory standards
  • NBIS rating standards
  • Noise and Environmental Issues

► Project Certainty
  • Length of Pursuit
  • Procurement cancellation after long term commitment and resources already utilized
Reaction 1
Reaction 2
Reaction 3
Procurement Cancelled
Reaction 1
Procurement Cancelled
Reaction 1
Performance Measures

Maintenance Condition Performance Criteria

- Detailed tables containing response times, penalties, inspection criteria, etc.
- Self monitoring, audits, and inspections.
- Based on typical state wide standards or new systems made by consultants for specific project.
Typical Performance Measures in P3 Contracts

Performance Measures

Handback Requirements

• DOT’s expect viable useful life beyond the term
• DOT’s expect useful life beyond design life (Full replacement or major rehab needs)
Typical Performance Measures in P3 Contracts

Performance Measures

Self Monitoring Self Reporting

- Complicated penalty systems (both default points and monetary penalties)
Typical Performance Measures in P3 Contracts

Performance Measures

Level of Service

- Expectations beyond typical DOT work
- Inflated response times
- Unrealistic goals
- Availability of resources (winter maintenance)
Typical Performance Measures in P3 Contracts

Performance Measures

Traffic Flow Criteria

- Traffic speed requirements on toll roads
- Reversible lane optimization
- Revenue loss for Concession
Complicated Unavailability Deduction Example:

Unavailability Adjustments Calculation Factors you will need...

- Quarterly Unavailability Adjustment
- Hourly Unavailability Adjustment
- Hourly Unavailability Factor
- Segment Weighting Factor
- Time Weighting Factor
- Maximum Availability factor

\[ QUA_{q,y} = \sum_{h=1}^{6} HUA_{h} \]

Where:

\[ HUA_{h} = \sum_{s=1}^{n} [HUF_{h,s} \times SWF_{h,s} \times TWF_{h,s}] \times \frac{MAP_{y}}{(365 \times 24)} \]

- \( QUA_{q,y} \) = Quarterly Unavailability Adjustment for the Quarter “q” in year “y;”
- \( HUA_{h} \) = Hourly Unavailability Adjustment for the hour “h;”
- \( HUF_{h,s} \) = Hourly Unavailability Weighting Factor for Segment “s”, Hour “h;”
- \( SWF_{h,s} \) = Segment Weighting Factor for Segment “s”, Hour “h;”
- \( TWF_{h,s} \) = Time Weighting Factor for Segment “s”, Hour “h.”
- MAP\( _y \) is the Maximum Availability Payment for that Fiscal Year indexed for inflation

<table>
<thead>
<tr>
<th>Lane Type</th>
<th>Express Lanes and Express Lanes Ramps</th>
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<tr>
<td>%</td>
<td>0.3</td>
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Thank you.

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