North Carolina Select House Committee
U.S. Toll Road Projects
Successes, Failures and the Reasons Why

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Agenda

Introduction
Brief History of Tolling in US
New Methods for Delivering toll projects
The Decision to Toll
Reasons for Success and Failure
Case studies
Lessons Learned
Summary and discussion
History of Tolling in the US

- First toll roads – colonial era – Cumberland Road
- 1st Federal Highway Act 1916 – anti toll provision
- Tolling by states/public authorities for Bridges & Tunnels
- Golden Age of Tolling - 1940 to 1955
- Passage of Interstate Highway Act Act - 1956
- Infrastructure funding needs grow- Old & New Projects
- Tolling Revisited with New Project Delivery Models
How are toll projects delivered today

Use of Non-traditional Deliver models
### Increasing role of the private sector

<table>
<thead>
<tr>
<th>Delivery Model</th>
<th>Design Risk</th>
<th>Construction Risk</th>
<th>Operations / Maintenance Risk</th>
<th>Finance Risk</th>
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<tbody>
<tr>
<td>DBB (Traditional)</td>
<td>Public</td>
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<tr>
<td>DB (Short Term)</td>
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<td>Public</td>
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<td>DBOM/AP (Medium Term)</td>
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<td>DBFOM (Long Term)</td>
<td>Private</td>
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</table>
Tolling one of many other revenue producing strategies

Factors to be considered:
Statewide transportation delivery priorities
Ability to use tolling to leverage limited revenue
The economic impact of various revenue models
Procurement process and selection criteria
Possible benefits of P3 project delivery method
Eligibility for Federal Pilot or other Innovative programs under the new FAST Act
Case Studies

Successful and Failed Public & Private Tolling Projects
Why Toll projects succeed

• Good project economics
• Accurate traffic and revenue forecasts
• Provide congestion relief, travel time savings & certainty
• Drivers will use the road & willing to pay a toll
• Well defined project scope and cost estimates
• Adequate legal foundation - toll violations etc.
• Early & frequent engagement with all impacted stakeholders in planning phase
• Strong stakeholder, state & local political support and project champion
Examples of successful public and private toll road projects

- SR 91  San Diego CA  ML - Public
- I-595 Express & Port of Miami Tunnel FL Toll – Pvt.
- I-95 Express Lanes FL  ML - Public
- I-95 and 495 Express Lanes VA  MLs - Pvt.
- I-85 & I-75 GA Toll/MLs –Public Pvt. mix
- Texas – NTTA, HCTRA, TxDOT, CTRMA – Public-Pvt. mix
95 & 495 Express Lanes - DC regional Network

- **I-495 / Transurban**
  - 14 miles – 2x2 NB & SB Express Lanes
  - 9 tolling points
  - Trip-based tolling

- **I-95 / Transurban**
  - 29 miles – 3 Reversible Express Lanes
  - 14 tolling points
  - Trip-based tolling, multiple pricing sections

- Projects form a 40+ mile ML network
- Predictable travel, toll rates locked upon entry, and
- Safety for customers
I-95 Express Lanes - Florida
FL I-95 Express State-wide

- Two facilities currently open (95X, 595X)
- 95X Phase 2 to open this year
- Several others under construction, design, or planning

Issues:
- Expanding to longer corridors
- Interconnecting systems
- Consistency
  - Roadway design / signage
  - Customer perspective
  - Management software
  - Tolling system
  - Customer service
Georgia SRTA

- I-85: Double white line separated HOT lane
  - 15.5 miles
  - Signage concept: “Next” and “Last” destinations are displayed.
- I-75: Barrier separated reversible express lane
  - 12 miles Entry/Exit tolling scheme
  - Signage concept: “Next” and “Last” destinations are displayed.
- Northwest Corridor: Barrier separated reversible express lane
  - 30 miles Entry/Exit tolling scheme
  - Signage concept: “Next” and “Last” destinations are displayed.
- Scalable signing solution for future extensions, regional consistency
● I-25 (multi-segment tolling strategies)
  – 7 Segments
  – Segment 1, reversible in operation (5 miles, 1 TP)
  – Segment 2, directional, under construction (5.5 miles, 3 TP)
  – Segment 3, directional, planning/design (~6 miles, 3 TP)
  – Zone-based tolling concept, TOD, HOV2+, AVI & LPT
● I-70 West
  – 10 Miles, peak-tolled shoulder lane, ends in Twin Tunnel
  – Only eastbound, directional, under construction
  – Zone-based tolling strategy, TOD, AVI & LPT
  – Three tolling points, two ingress points, one egress
● US-36
  – 10 Miles, directional, connection with I-25 ML
  – Under construction
  – Segment-based tolling strategy, TOD, AVI & LPT
TX/NTTA/Cintra

- Multiple Express Lanes corridors
- Segment-based tolling
- Signing only for next segment before egress option
- Rates displayed for SOV and HOV 2+
- Each corridor opens as fixed TOD price then transitions to congestion pricing
- Higher rates for no tag (called ZipCash)
MTC: I-689/I-880 corridors

- 130 lane miles
- 75 tolling points
- 52 VTMS Signs
- 75 TMS (MVDs)
- 5 Hubs
- Corridor/Segment/Zone

Overall ML tolling comments:
- Legislation to convert HOV to Express Lanes
- Various number of zones make up segments based on geometry
- Segments are sized based on exit locations and traffic volumes
Funding Sources for Toll Roads
Examples of other project capital ($B) Sources

Toll revenue bonds, State/Local, TIFIA & Private Equity

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<thead>
<tr>
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<th>CENTRAL TX</th>
<th>TRIANGLE EXP.</th>
<th>N. TARRANT</th>
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<tr>
<td>Toll Rev. Bonds</td>
<td>1.3</td>
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<td>0.4</td>
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<td>State/Local</td>
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<tr>
<td>TIFIA</td>
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<td>0.387</td>
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<tr>
<td>Private Equity</td>
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495 Express Lanes VA

P3 Purchasing Power
I-495 Returns on State Investment

- **State Contribution**: 409 million
- **Total Project Benefits**
  - Direct returns >29 times State investment
  - Indirect returns >8 times State investment

  - **Public Subsidy**: $409M
  - **Construction**: $1.9B
  - **O&M**: $7.3B
  - **Major Maintenance**: $2.8B

**Economic Benefits**
- Generated $3.5B in economic activity

**Risk Transfer Benefits**
- No public sector risk of construction cost overruns
- Private partner incurs significant penalties for late completion
- Full apportionment of technology, delivery, integration, testing, commissioning and opening risk to private partner
- Full apportionment of revenue risk to private partner with revenue sharing opportunities

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1. Operations, Maintenance and Major Maintenance values represent sum of budgeted future expenditures (nominal) over the remaining Concession term.
2. Dr. Stephen Fuller, George Mason University, "The Impact of Construction Outlays for the Capital Beltway HOT Lanes on the Economics of Fairfax County, the Washington Metropolitan Area and the Commonwealth of Virginia", November 2008.
P3 Purchasing Power
I-95 Returns on State Investment

**State Contribution**

- **Total Project Benefits**
  - Direct returns >110 times State investment
  - Indirect returns >18 times State investment

**Economic Benefits**
- Generated $1.8B in economic activity

**Risk Transfer Benefits**
- No public sector risk of construction cost overruns
- Private partner incurs significant penalties for late completion
- Full apportionment of technology, delivery, integration, testing, commissioning and opening risk to private partner
- Full apportionment of revenue risk to private partner with revenue sharing opportunities

1. Operations, Maintenance and Major Maintenance values represent sum of budgeted future expenditures (nominal) over the remaining Concession term.
2. Dr. Stephen Fuller, George Mason University, “Economic Impact of Construction Outlays for the 95 Express Lanes on the Commonwealth of Virginia, the Washington Metropolitan Area, and the Local Jurisdictions”, August 2012.
Why Some Toll Projects Fail

Contributing Factors

Overly optimistic Traffic & Revenue Projections

Overvalued or unrealized local real estate & business development

Overleveraged Financial Structure – Debt to Equity ratio too high

Lack of compelling need for project – desirable but not essential

Higher than expected costs – Lack of diligence on cost analysis

Underestimated environmental impacts

Demand forecasting is a key vulnerability
Public & Private Toll Roads that have Failed

SH 130 Austin TX – Owner SH 130 Concession Co. LLC
41 mile section of SH 130 corridor  Financed 2008, Opened 2012
File for bankruptcy 2016 $1.1B debt

Indiana Toll Road – owner ITC Co.
157 mile roadway – Northern Indiana  $4B concession entered into 2005
Filed for Bankruptcy 2014 Debt $6B  Purchased by IFM $5.71B

South Bay Expressway – owner South Bay Expressway LP
9.2 miles Filed for bankruptcy 2010 Debt $510M  Purchased by SANDAG For $341M

Pocahontas Parkway – owner 63-20 non-profit corp.
8.8 miles – Richmond, VA  99 year Concession 2006 – $450M debt assumed by Transurban
Transfer made in lieu of bankruptcy 2013, Concession sold again in 2014

Dulles Greenway VA owner – Macquarie
2005 purchased by Macquarie  - $615M debt assumed

Greensville Southern Connector SC owner 63-20 non-profit corp.
Debt $500M Filed for Bankruptcy 2010

Foley Beach Express Toll Bridge – Owner American Roads
5 Assets -Filed for bankruptcy 2013  Debt $830M
Why Consider a P3?
Benefits of public private partnerships

- Leverage private investment to enable major projects
- Accelerate delivery of major transportation improvements
- Shift key risks to private sector, away from taxpayers
- Deliver on-time, on-budget at rates higher than traditional projects
- Access private sector skills, innovation
- Preserve state debt capacity and protect credit rating
- Shift long-term operations and maintenance responsibilities
- Create jobs and boost the economy
- Public retains the benefit of the project even if Concessionaire defaults
Lessons Learned

- Toll Projects and particularly P3’s need to be considered on a project by project basis
- Tolling and P3s are not a means of delivering non-feasible projects
- The P3 model is an effective, value for money procurement method but only for the right projects
- Most successful recent toll and P3 projects require and have included:
  - Good project economics based on sound screening factors
  - Some public assistance typically in the form of TIFIA loans, PABs or availability payments
  - A fair protection of the public % while giving a reasonable return to the private sector
  - A proper allocation of risks
  - Delivery of “good value” to each side with a focus on long term mutual goals
  - Knowledgeable participants on both sides of the transaction
Questions

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