Public-Private Partnerships (PPPs) and Pricing

Jim Hatter
Office of Innovative Program Delivery
Federal Highway Administration
Outline of Presentation

1. Why PPP & Pricing
2. Overview of PPPs
3. Case Studies
4. Tolling & Pricing
5. Federal Programs
Public Private Partnerships and Pricing

“We cannot solve our problems with the same thinking we used when we created them.”

Albert Einstein
PPP}s and Pricing Address Resource Scarcity

- All governments in the U.S. are short of Transportation resources
  - Turning to taxes and fees

- PPPs and pricing provide access to vast amounts of private capital
  - *The Financial Times* reported at the end of 2007 that estimates of equity raised for investment in global infrastructure run from $50 billion to $150 billion
  - *The McKinsey Quarterly* in February 2008 reported that the world’s 20 largest infrastructure funds now have nearly $130 billion under management, 77 percent of which was raised in 2006 and 2007

1. Source: FY08 President’s Budget Projections.
PPP and Pricing Address Congestion

- While we spend record amounts on highways and transit, congestion and system unreliability continue to increase.
- The gas tax is poorly suited to regulate road use and reduce congestion.
- PPPs and Pricing use innovative technologies and market forces to manage congestion providing high quality projects and better performance.

1. Texas Transportation Institute 2007 Urban Mobility Report for urban U.S. highways
PPP and Pricing Address Resource Misallocation

- The political nature of the transportation funding process can make it difficult to fund priorities:
  - Revenues are often deposited in centralized trust funds and allocated to political or special purpose projects
  - SAFETEA-LU has more than 6000 earmarks worth more than $23B
  - Annual budgetary pressures can leave major projects undercapitalized, increasing long-term O&M costs

- Many highway investments are made without cost-benefit analysis and outcomes are rarely evaluated

- PPPs and Pricing tend to be research-based and follow demand, not political considerations
PPP and Pricing Help Align National Policies

• National, bi-partisan consensus to reduce gasoline consumption for energy security & environmental reasons

• Yet, our primary transportation funding mechanism – a charge per gallon of fuel purchased – relies on the use of more gas

• PPPs and Pricing help align energy, environmental and transportation policies by substituting private capital and direct user fees for gas taxes
PPPs and Pricing Accelerate Project Delivery

• Advancing a project can take well in excess of ten years

• Delays increase overall project costs
  – Construction costs increases exceed CPI

• PPPs and Pricing can significantly accelerate project delivery
  – providing upfront financing
  – transferring the risk of cost and schedule overruns
PPPs: An Overview
PPPs: An Overview

- PPPs are contractual arrangements between the public and private sector pursuant to which the private partner is responsible for a facility’s:
  - design
  - construction
  - financing
  - operation and/or
  - maintenance

- Private debt and equity can be used to leverage public resources; alternatively, PPPs can be 100% privately financed

- The private partner collects revenues from direct user fees (or other dedicated revenue sources)
  - operate the facility
  - repay project debt
  - recoup a reasonable return on its investment
PPP: Benefits and Efficacies

- **Efficiencies in Delivery:**
  - Reduce costs and accelerate project delivery
  - PPPs provide direct incentives for private partners to limit costs and accelerate delivery

- **Allocation of Risk:**
  - Significant portion of the project risk can be transferred to the private partner
  - Public sector retains risk it can control
  - Reduced costs and accelerated delivery

- **Innovation and Life-cycle Design:**
  - Private investors have incentives to fully capitalize a project and incorporate innovations upfront to reduce long-term O&M costs
  - PPPs encourage the private sector to come forward with creative ideas by rewarding innovation
A December 2007 study of 21 PPPs and 33 traditional projects in Australia found that traditional projects experienced significant cost overruns and schedule delays while PPPs were generally delivered on time and on budget.

Source: Allen Consulting Group/University of Melbourne
PPP Challenges

• Sub-optimal Allocation of Risk
  – Unknown, uncontrollable, disproportionate

• Asset Undervaluation
  – Transparent competition

• Loss of Direct Control
  – Contract compliance and monitoring

• Loss of Future Revenue
  – Negotiate sharing

• Exposure to Concessionaire’s Financial Condition
  – Safeguards must be established
PPPs: Operating Efficiencies

- GAO reported the private partner was held to a higher level of performance on Indiana toll road.

- GAO also found that there was greater accountability for operations and maintenance of the Chicago Skyway under private control.
PPP contract structure is generally determined by project specific analysis, state law and negotiation.

<table>
<thead>
<tr>
<th>PPP Model</th>
<th>Design Risk</th>
<th>Const. Risk</th>
<th>Finan. Risk</th>
<th>O&amp;M Risk</th>
<th>Traffic Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional Design-Bid-Build</td>
<td></td>
<td>X</td>
<td></td>
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<tr>
<td>Design-Build</td>
<td>X</td>
<td></td>
<td></td>
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<tr>
<td>Design-Build-Operate-Maintain</td>
<td>X</td>
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<tr>
<td>Availability Payments</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
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<tr>
<td>Toll Concession</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>
PPPs: Procurement Process

1 These are the components of a typical procurement process, but particular projects may require adjustments to this process.
**PPP: Contents of RFQ**

### Description of Project
- Status of development activities, environmental approvals, ROW acquisition, utilities and other crossings
- Cost estimates, traffic and revenue forecasts
- Available public funding
- Procuring agency’s legal authority
- Bonding, DBE, and other requirements

### SOQ Contents
- Identify concessionaire, equity members, lead construction contractor, lead operations contractor
- Management approach and structure
- Experience and track record (including safety and legal issues)
- References
- Financial statements, credit ratings, surety and bank letters
- Conceptual approach to project

### Procurement Process
- Tentative schedule for RFQ, RFP
- Date for submitting SOQs
- Industry forum/pre-SOQ workshop
- Procedure for questions and requests for clarification

### SOQ Evaluation Process
- Pass/fail items and responsiveness
- General experience (financial and technical) vs. conceptual project approach
- Protest Procedures
The concession agreement typically includes the following:

- Grant of concession and the right to collect tolls;
- Length of concession;
- Toll rate structure;
- Concession payments;
- Design and construction obligations; planning and approvals;
- Detailed operation and maintenance standards;
- Procuring agency oversight responsibilities;
- Change orders and other modifications;
- Competing facilities;
- Financing obligations and lender’s rights;
- Insurance and bonding requirements; indemnity provisions;
- Force majeure and other relief/compensation events;
- Default, remedies and termination rights (including buy-back);
- Reps and warranties; conditions to closing; and covenants;
- Dispute resolution provisions; and
- Other miscellaneous provisions.
## PPPs Are Happening –
Long-Term Concessions for Existing Facilities in the U.S.

<table>
<thead>
<tr>
<th>PPP</th>
<th>Location</th>
<th>Status</th>
<th>Facility</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Chicago Skyway</td>
<td>Illinois</td>
<td>Closed</td>
<td>7.8-mile toll road in Chicago</td>
</tr>
<tr>
<td>2. Indiana Toll Road</td>
<td>Indiana</td>
<td>Closed</td>
<td>157-mile toll road in northern Indiana</td>
</tr>
<tr>
<td>3. Pocahontas Parkway</td>
<td>Virginia</td>
<td>Closed</td>
<td>14-mile toll road outside of Richmond</td>
</tr>
<tr>
<td>4. Northwest Parkway</td>
<td>Colorado</td>
<td>Closed</td>
<td>9-mile toll road outside of Denver</td>
</tr>
<tr>
<td>5. Dulles Greenway</td>
<td>Virginia</td>
<td>Closed</td>
<td>14-mile toll road between Leesburg and Dulles International Airport</td>
</tr>
<tr>
<td>6. Pennsylvania Turnpike</td>
<td>Pennsylvania</td>
<td>Winning Bidder Selected</td>
<td>531-mile turnpike system (PPP requires legislative approval)</td>
</tr>
<tr>
<td>7. Alligator Alley</td>
<td>Florida</td>
<td>RFQ Issued</td>
<td>78-mile toll road in south Florida</td>
</tr>
<tr>
<td>8. Greenville Southern Connector</td>
<td>South Carolina</td>
<td>RFQ Issued</td>
<td>16-mile toll road in Greenville</td>
</tr>
</tbody>
</table>
### PPPs Are Happening – Long-Term Concessions for New Capacity in the U.S.

<table>
<thead>
<tr>
<th>Project</th>
<th>Location</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. TTC-35</td>
<td>Texas</td>
<td>Concession Awarded</td>
</tr>
<tr>
<td>2. SH-130 Segments 5&amp;6</td>
<td>Texas</td>
<td>Closed</td>
</tr>
<tr>
<td>3. I-69/TTC</td>
<td>Texas</td>
<td>Winning Bidder Selected</td>
</tr>
<tr>
<td>4. I-635</td>
<td>Texas</td>
<td>RFP Issued</td>
</tr>
<tr>
<td>5. North Tarrant Express</td>
<td>Texas</td>
<td>Bidders Shortlisted</td>
</tr>
<tr>
<td>6. DFW Connector</td>
<td>Texas</td>
<td>Bidders Shortlisted</td>
</tr>
<tr>
<td>7. Capital Beltway HOT Lanes</td>
<td>Virginia</td>
<td>Closed</td>
</tr>
<tr>
<td>8. I-95/I-395 HOT Lanes</td>
<td>Virginia</td>
<td>Interim Agreement Executed</td>
</tr>
<tr>
<td>9. US Route 460</td>
<td>Virginia</td>
<td>Bidders Shortlisted</td>
</tr>
<tr>
<td>10. Midtown Corridor Tunnel</td>
<td>Virginia</td>
<td>Request for Solicitations</td>
</tr>
<tr>
<td>11. Mid-Currituck Bridge</td>
<td>North Carolina</td>
<td>RFQ Issued</td>
</tr>
<tr>
<td>12. Jackson Airport Parkway</td>
<td>Mississippi</td>
<td>RFQ Issued</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Project</th>
<th>Location</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>13. Port of Miami Tunnel</td>
<td>Florida</td>
<td>Preferred Bidder Selected</td>
</tr>
<tr>
<td>14. I-595 Improvements</td>
<td>Florida</td>
<td>Bidders Shortlisted</td>
</tr>
<tr>
<td>15. First Coast Outer Beltway</td>
<td>Florida</td>
<td>RFQ Issued</td>
</tr>
<tr>
<td>16. Northwest Corridor</td>
<td>Georgia</td>
<td>Development Agreement Executed</td>
</tr>
<tr>
<td>17. I-285 Northwest TOT Lanes</td>
<td>Georgia</td>
<td>Evaluation of Proposers</td>
</tr>
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<td>18. GA-400 Crossroads Region</td>
<td>Georgia</td>
<td>Evaluation of Proposal</td>
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<tr>
<td>19. I-20 Managed Lanes</td>
<td>Georgia</td>
<td>Pre-Solicitation</td>
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<tr>
<td>20. Missouri Safe &amp; Sound Bridge Program</td>
<td>Missouri</td>
<td>Preferred Bidder Selected</td>
</tr>
<tr>
<td>21. Oakland Airport Connector</td>
<td>California</td>
<td>RFP Issued</td>
</tr>
<tr>
<td>22. Knik Arm Crossing Project</td>
<td>Alaska</td>
<td>Bidders Shortlisted</td>
</tr>
<tr>
<td>23. Denver RTD</td>
<td>Colorado</td>
<td>RFQ Expected</td>
</tr>
<tr>
<td>24. I-73</td>
<td>South Carolina</td>
<td>Request for Conceptual Proposals</td>
</tr>
</tbody>
</table>

List of projects in various stages of procurement, may not be exhaustive
States With Legislation Authorizing PPPs

- **CA, NV, WA, CO, UT, OR**: Authorized to use PPPs for toll roads or other transportation facilities.
- **TN, NC, SC, GA, FL, MD, IN, DE, VA, AK**: Authorized to use PPPs for certain transportation projects, but not toll roads.
- **TX, LA, MS, AL, WI**: Authorized to use PPPs for specific toll road or bridge projects, for a pilot program, or where a project receives specific legislative approval.
Public Private Projects

• Case Studies
Capital Beltway HOT Lanes Project

- On December 20, 2007, the Virginia DOT and a private sector consortium reached commercial and financial close on the Capital Beltway HOT Lanes Project.
- 80-year concession to design, build, finance, operate and maintain HOT lanes on portion of the Beltway around southwest Washington, DC – one of the busiest corridors in the country.
- Concessionaire will construct two new lanes and convert the two innermost existing lanes into HOT lanes.
- Toll rate will be based on demand and will fluctuate to reflect real-time traffic conditions and maintain free flow traffic on the HOT Lanes.
- Private consortium led by Transurban, an Australian toll road operator, and Fluor, an American contractor and developer.
T495: Capital Beltway HOT Lanes

- 14 mile segment of beltway
- Two HOT lanes each direction
- Variable tolls HOV-3 free
- Replacement of ageing infrastructure (50 bridges)
## Sources & Uses of Funds

<table>
<thead>
<tr>
<th>Source</th>
<th>Amount ($000s)</th>
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<tbody>
<tr>
<td>PABs</td>
<td>530,943</td>
</tr>
<tr>
<td>TIFIA*</td>
<td>526,939</td>
</tr>
<tr>
<td>VDOT Contribution</td>
<td>408,895</td>
</tr>
<tr>
<td>Equity**</td>
<td>339,440</td>
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<tr>
<td><strong>Total Sources</strong></td>
<td><strong>1,806,217</strong></td>
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*Includes $19.2 M Contingency Used  
**Includes $45.8 M Contingency Used

<table>
<thead>
<tr>
<th>Uses</th>
<th>Amount ($000s)</th>
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<tr>
<td>Construction Costs</td>
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<tr>
<td>Construction Drawdown***</td>
<td>1,493,572</td>
</tr>
<tr>
<td>TIFIA/FHWA Transaction Costs</td>
<td>430</td>
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<tr>
<td>Operations Start Up Costs</td>
<td>32,932</td>
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<tr>
<td>SPV Cost during Construction</td>
<td>16,262</td>
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<tr>
<td>Development Costs</td>
<td>39,800</td>
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<tr>
<td>Due Diligence &amp;Advisory Fees</td>
<td>19,273</td>
</tr>
<tr>
<td><strong>Total Construction Costs</strong></td>
<td><strong>1,602,269</strong></td>
</tr>
<tr>
<td>Net Financing Costs</td>
<td>51,854</td>
</tr>
<tr>
<td>Ramp up Reserve</td>
<td>30,000</td>
</tr>
<tr>
<td>General Project Reserve</td>
<td>50,000</td>
</tr>
<tr>
<td>Capex Reserve</td>
<td>19,000</td>
</tr>
<tr>
<td>Debt Service Reserve</td>
<td>53,094</td>
</tr>
<tr>
<td><strong>Total Uses</strong></td>
<td><strong>1,806,217</strong></td>
</tr>
</tbody>
</table>

Funded 5 yrs. Post Construction

***Includes $65M Contingency Used from TIFIA and Equity
T495 Debt Service & Equity Distributions

- Distribution Reserve Release
- Assurety Replacement

[Bar chart showing debt service and equity distributions over time with specific labels for years and categories such as Capitalized Interest, Mandatory Interest, Scheduled Interest, Scheduled Amortization, and Equity Distribution.]
Missouri Safe & Sound Bridge Program

- Public Private Partnership $400-600 million
  - Replacement or rehabilitation of 802 bridges
  - 30 year D-B-O-M-F
  - 25 year availability payments

- MoDOT Federal aid bridge funds

- Missouri Bridge Partners
  - Zachry American Infrastructure
  - Parsons Transportation Group
  - Fred Weber Inc.
  - Clarkson Construction
  - HNTB
  - Infrastructure Corporation of America
# Missouri Safe & Sound Bridge Program

## Responsibilities

<table>
<thead>
<tr>
<th>Missouri Bridge Partners</th>
<th>MoDOT</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Construction, maintenance, finance</td>
<td>• Makes availability Payments</td>
</tr>
<tr>
<td>• Pays ROW purchase price</td>
<td>• Negotiate ROW price</td>
</tr>
<tr>
<td>• Pays utilities relocation costs</td>
<td>• Review/approve third-party agreements</td>
</tr>
<tr>
<td>• Obtains temporary easements</td>
<td>• Obtain environmental permits</td>
</tr>
<tr>
<td>• Draft third-party agreements</td>
<td>• Verifies completion of milestones</td>
</tr>
<tr>
<td>• Performs public information</td>
<td>• Performs program wide Public relations</td>
</tr>
<tr>
<td>• Provides design &amp; design</td>
<td>• Conducts bridge inspections ratings</td>
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<tr>
<td>• Computations</td>
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<tr>
<td>• Participates in bridge ratings</td>
<td></td>
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</tbody>
</table>

[Missouri Safe & Sound Bridge Program](#)
Port Access Project: The Port of Miami Tunnel
Port Access: Truck traffic will increase

- Nearly **5,500 trucks & buses** travel to/from POM through downtown streets

- By 2030, estimated truck traffic will nearly double
Port Access: Option Selected

- Tunnel under main channel of Government Cut
- Roadway work on Dodge and Watson Islands
- MacArthur Causeway Bridge widening
Port of Miami Tunnel PPP

- Total Capital Cost $865m
  - $150m Geology Reserve
  - $50m project inspection
  - FDOT cost estimate $1.2b

- Private D-B-O-M-F
- Availability payments (no tolls)
  - FDOT 50%
  - Local Partners 50%
- Term 30 years
Port Access: Funding the POMT

- **Cash Flow:**
  - $100 million during construction
  - $350 million upon POMT completion
  - Remaining in annual “availability payment”
    - Covers both remaining capital and annual operations and maintenance costs
    - Proposal at $33 million in 2007 dollars (FDOT estimate at $68 million)
    - Amount will adjust based on annual inflation
Port Access: Construction Schedule

2008
• Final design / Permitting
  ▪ Utility relocation

2009
▪ Excavation for tunnels
  ▪ POM roadways & bridges

2010
▪ U-Walls / Approaches

2011
▪ Tunnel finishes
  ▪ Support facilities

2012
▪ Complete tunnel & roadways
  ▪ Tunnel systems, testing and startup
SH-130 Segments 5 & 6

• The Texas DOT granted a private sector consortium a 50-year concession to design, build, finance, operate and maintain Segments 5 & 6 of SH-130

• The $1.36 billion, 40-mile project provides two segments of SH-130, a new highway between San Antonio and Austin

• The private sector consortium consists of Cintra, a Spanish developer, and Zachry American Infrastructure, an American contractor and developer

• The project reached financial close in March 2008

• The consortium paid $25.8 million upfront to be used for other projects in the region

• Revenue sharing provision gives Texas a yearly share in the toll revenues

• Financing package includes almost $200 million in private equity; a senior bank debt facility, and a $430 million secured loan from the USDOT’s TIFIA program
South Bay Expressway

- New 9.3 mile, $635 million toll road in San Diego, California, opened in November 2007
- Concessionaire designed, built, and financed the toll road, and will operate and maintain it until 2042
- Northern 3.8 mile “gap” segment is publicly financed
- Timeline
  1959: Part of planned freeway system
  1989: Legislation to develop as a PPP
  1991: Concession awarded to Parsons Brinckerhoff-led consortium
  2002: Macquarie purchased a majority interest in the concession
- Financing Package:
  $321 million senior bank facility
  $154 million TIFIA subordinated loan
  $160 million private equity
FHWA Resource: PPP Toolkit – WWW.ppptoolkit.fhwa.dot.gov

- **Tools and Resources**
  - Library of PPP documents:
  - RFPs, Concession agreements, guidelines, policies, etc.
- **Your State’s Story:**
  - State-Specific Info
- **Learn with Others:**
  - Training Opportunities
- **A PPP Illustrated:**
  - Case Study in Detail
TOLLING
Interstate Tolling Programs

- **Interstate System Construction Toll Pilot Program**: Authorizes tolling on three Interstate facilities for construction of new Interstate highways

- **Interstate System Reconstruction and Rehabilitation Pilot Program**: Authorizes tolling on three existing Interstate facilities for reconstruction or rehabilitation

- **Value Pricing Pilot Program**: Authorizes tolls and provides grants for value pricing pilot projects that manage congestion

- **High Occupancy Toll (HOT) Lanes Program**: Authorizes the conversion of high occupancy vehicle (HOV) lanes into high occupancy toll (HOT) lanes

- **Express Lanes Demonstration Program**: Authorizes variably-priced tolls for demonstration projects on Interstate facilities to manage congestion

- **Section 129 Toll Agreements**: Authorizes tolling for five types of highway construction, including reconstruction of Interstate bridges and tunnels
An “Expression of Interest”

- Received by the Tolling and Pricing Team
- Presents the Who, What, Where, When, How, and Why
- Helps the Public entity briefly articulate project request and understand all opportunities
- Helps “Team” manage programs and available slots
- Can be prepared and submitted electronically using template
Tolling Website

  – Programs
  – Resources
  – Tolling and Pricing Team
  – Questions and Comments
  – Submit an Expression of Interest
Pricing: An Overview
Ways to Reduce Congestion

• Increase capacity:
  – Physical capacity
  – Management and operations

• Reduce demand
  – Provide attractive “substitutes” for driving during rush hours
  – Congestion pricing

• What is congestion Pricing?
  – concept that uses monetary incentives to manage congestion.
Why Congestion Pricing?

- **“Tolling”**
  - Purpose to generate revenue
  - “Flat” tolls

- **“Congestion pricing”**
  - Purpose to manage demand
  - Tolls vary
  - Results in a range of benefits
Small Traffic Reduction Leads to Large Delay Reduction

Los Angeles, CA

- AM Peak: 47.7%
- PM Peak: 37.1%
- Entire Day: 39.4%

Sep. 10 2007 (Worst Monday) vs. Oct. 8 2007 (Columbus Monday)
Primary Benefits of Pricing

• *Manages demand:* Balances demand with supply

• *Generates revenue*

• *Signals* where additional capacity will maximize benefits to travelers
Market Signals for Investment

Encourages efficient investment

- Congestion-based toll rates measure people’s value of the service
- Higher toll rates signal the need for investment in additional capacity
New Travel Options

Pricing stimulates the development of viable alternatives:

- Transit – better service reliability and frequency
- Carpooling/vanpooling – monetary incentives to share the ride
- Employers encouraged to offer telecommuting/ flexible hours
How Congestion Pricing Works

- **Variable toll** makes the cost borne by user reflect the actual social cost of driving

- **Willingness to pay** – people will choose to drive as long as the benefit they get is equal to the cost they face

- Others will shift to using **substitutes**
Substitutes

• **Alternative modes** with *traveler information*
  – Transit
  – Ridesharing

• **Alternative destinations**
  – Telecommuting

• **Alternative times**
  – Flextime, staggered work hours
Summary of Key U.S. Road Pricing Projects Operating or Under Development

Operational
1. HOV to HOT Lanes
   A. I-15 San Diego, CA
   B. I-394 Minneapolis, MN
   C. I-25 Denver, CO

2. Express Toll Lanes
   D. SR 91 Orange County, CA

3. Variable Tolls on Toll Facilities
   E. New York area, NY and NJ
   F. Fort Myers, FL

Under Construction
1. New HOT Lanes
   G. I-15 San Diego, CA
   H. I-10 Houston, TX

2. New Express Toll Lanes
   I. I-635 Dallas, TX
   J. I-95 Baltimore, MD

Under Development
1. HOV to HOT Lanes
   K. SR 167 Seattle, WA
   L. I-680 San Francisco, CA
   M. I-15 Salt Lake City, UT (Variable Tolls)

2. New HOT Lanes
   N. I-495 Washington, DC and Northern VA
   O. I-95 Washington, DC and Northern VA
Types of Congestion Pricing

- Managed lanes
- Managed highways
- Area or cordon pricing
- Region-wide pricing
## Managed Lanes

<table>
<thead>
<tr>
<th>Fixed peak vs. off-peak toll differential</th>
<th>Toll rates set to maintain high performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Houston I-10 and US 290</td>
<td>• SR 91 in Orange Co., CA</td>
</tr>
<tr>
<td></td>
<td>• I-15, San Diego</td>
</tr>
<tr>
<td></td>
<td>• I-394, Minneapolis</td>
</tr>
<tr>
<td></td>
<td>• I-25, Denver</td>
</tr>
<tr>
<td></td>
<td>• SR 167, Seattle</td>
</tr>
</tbody>
</table>
HOV to HOT Conversion

San Diego, I-15
- 8 miles, two reversible lanes
- Tolls vary dynamically
- Ensures free-flowing traffic
- Opened 1998
- 15,600/day, 66% increase
- 11,600/day carpool, 66%
- $7 mill given to transit
- 2006 Revenues $1.5 mill
- Expenses $1.1 mill
### Maximum Toll Rates: San Diego
### Evening Period Northbound

<table>
<thead>
<tr>
<th>Time</th>
<th>$4.00</th>
<th>$3.00</th>
<th>$2.00</th>
<th>$1.00</th>
<th>$0.75</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:00 - 3:30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3:30 - 4:00</td>
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<td></td>
</tr>
<tr>
<td>4:00 - 4:30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4:30 - 5:00</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>5:00 - 5:30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5:30 - 6:00</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>6:00 - 6:30</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>6:30 - 7:00</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Maximum Toll Schedule for I-15 HOT Lanes, San Diego, California
Managed Toll Lanes

SR 91 Orange County, Ca

- Four new lanes in median, 10 miles
- Tolls are $1.20 to $10.00
- 14.1 mill trips 2006 up 11%
- 2006 revenues $44.2 mill
- 2.8 mill HOV 3 trips up 13%
Lessons: We Waste As Much As Half Our Highway Capacity

SR 91 Express Toll Lanes:
- Higher peak hour throughput per lane
- Speed 3 to 4 times higher
Variable Tolls on Toll Facilities

- Examples:
  - New York’s water crossings
  - Ft. Myers bridges
Lessons: Travelers Have Flexibility

Midpoint Bridge
Ft. Myers, FL

Percent Change in Traffic During Each Half-Hour

Time of Day

-20% -15% -10% -5% 0% 5% 10% 15% 20%

6:00 AM 6:30 AM 7:00 AM 7:30 AM 8:00 AM 8:30 AM 9:00 AM 9:30 AM 10:00 AM 10:30 AM 11:00 AM 11:30 AM 12:00 PM 12:30 PM 1:00 PM 1:30 PM 2:00 PM 2:30 PM 3:00 PM 3:30 PM 4:00 PM 4:30 PM 5:00 PM 5:30 PM 6:00 PM 6:30 PM 7:00 PM
Managed Highways

- Variable pricing on the State Route 520 floating bridge, Seattle
  - Tolls on the existing bridge
  - Will help pay for the new expanded bridge.
Area or Cordon Pricing

<table>
<thead>
<tr>
<th>Fixed peak vs. off-peak toll differential</th>
<th>Toll rates set to maintain high performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>• London (flat fee)</td>
<td>• Singapore CBD cordon</td>
</tr>
<tr>
<td>• Stockholm (variable fees)</td>
<td></td>
</tr>
</tbody>
</table>
Stockholm Toll Rates

<table>
<thead>
<tr>
<th>Time Period</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>6:30-6:59 a.m.</td>
<td>$1.38</td>
</tr>
<tr>
<td>7:00-7:29</td>
<td>2.07</td>
</tr>
<tr>
<td>7:30-8:29</td>
<td>2.76</td>
</tr>
<tr>
<td>8:30-8:59</td>
<td>2.07</td>
</tr>
<tr>
<td>9:00 a.m.-3:29 p.m.</td>
<td>1.38</td>
</tr>
<tr>
<td>3:30-3:59</td>
<td>2.07</td>
</tr>
<tr>
<td>4:00-5:29</td>
<td>2.76</td>
</tr>
<tr>
<td>5:30-5:59</td>
<td>2.07</td>
</tr>
<tr>
<td>6:00-6:29</td>
<td>1.38</td>
</tr>
<tr>
<td>6:30 p.m.-6:29 a.m.</td>
<td>Free</td>
</tr>
</tbody>
</table>
### Regional or Nationwide Pricing

<table>
<thead>
<tr>
<th>Trucks only</th>
<th>All vehicles</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Germany</td>
<td>• Singapore (expressways)</td>
</tr>
<tr>
<td>• Switzerland</td>
<td>• Netherlands (beginning 2011)</td>
</tr>
<tr>
<td>• Austria</td>
<td>• Pilot tests: Oregon, Seattle, Minnesota, Atlanta, and SAFETEA-LU (VMT fee)</td>
</tr>
<tr>
<td>• Hungary</td>
<td></td>
</tr>
</tbody>
</table>
Area wide Pricing Technology Test: Oregon

Successes

Zones
- Mileage counting accuracy
- Integration with gas tax
- Pump data transmission
- User acceptance

Further Development

- Transaction speed
- Data transfer at pump

Lessons Learned

- Vehicle standardization
- Fuel station assistance
Public Acceptance

– Double-Taxation
  • Roads Already paid for
– Equity
  • Affordability for low-income groups
– Feared traffic diversion
  • If only freeways are priced
Concluding Thoughts

• Pricing is a congestion mitigation tool first
  – Also can produce revenue

• Pricing has worked:
  – Facility-based in the U.S.
  – Area-wide abroad

• “Seeing is believing” -- Public opinion can change after pricing is experienced

• Public acceptance issues can be addressed
Federal Programs
Private Activity Bonds

- SAFETEA-LU amended Section 142 of the Internal Revenue Code to permit the issuance of private activity bonds ("PABs") to finance privately developed and operated highway and freight transfer facilities
  - Tax-exempt bonds for projects developed, designed, financed, constructed, operated and maintained by the private sector
  - Public entity acts as a conduit issuer for the private developer
  - $15 billion national volume cap
  - Secretary of Transportation responsible for allocation of cap
  - Not subject to the state volume caps that typically apply to other types of private activity bonds
## PABs Allocations

<table>
<thead>
<tr>
<th>Approved Allocations</th>
<th>Amount of Allocation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Port of Miami Tunnel, Florida</td>
<td>$980,000,000</td>
</tr>
<tr>
<td>Safe &amp; Sound Bridge Improvement Program, Missouri</td>
<td>$700,000,000</td>
</tr>
<tr>
<td>Knik Arm Crossing, Alaska</td>
<td>$600,000,000</td>
</tr>
<tr>
<td>Capital Beltway HOT Lanes, Virginia <em>(issued 6-12-08)</em></td>
<td>$589,000,000</td>
</tr>
<tr>
<td>IH-635 (LBJ Freeway), Texas</td>
<td>$288,000,000</td>
</tr>
<tr>
<td>Pennsylvania Turnpike Capital Improvements</td>
<td>$2,000,000,000</td>
</tr>
<tr>
<td>Ambassador Bridge Gateway Project – Phase I</td>
<td>$212,600,000</td>
</tr>
</tbody>
</table>

**Total Approved Allocations**  

$5,369,600,000
Transportation Infrastructure Finance and Innovation Act (TIFIA)

- The TIFIA program provides credit assistance in the form of direct loans, loan guarantees, and standby lines of credit (rather than grants) to projects of national or regional significance.

- The primary goals of the TIFIA program are to leverage limited Federal resources and stimulate private capital investment in transportation infrastructure.

- Key Objectives
  - Facilitate projects with significant public benefits
  - Encourage new revenue streams and private participation
  - Fill capital market gaps for secondary/subordinate capital
  - Be a flexible, “patient” investor willing to take on investor concerns about investment horizon, liquidity, predictability and risk
  - Limit Federal exposure by relying on market discipline
Major Requirements of TIFIA Program

- Large surface transportation projects ($50 million; $15 million for ITS)
- TIFIA contribution limited to 33 percent
- Senior debt must be rated investment grade
- Dedicated revenues for repayment
- Applicable Federal requirements (Titles 23/49, NEPA, etc.)
- Public or private highway, transit, rail and port projects are eligible
TIFIA Projects (in millions of dollars)

Total TIFIA Assistance: $4.8 Billion
Total Project Investment: $18.6 Billion
Special Experimental Project #15 (SEP-15)

Allows waivers of Title 23 statute, regulation, or policy to facilitate innovative project delivery

- Allows experimentation in four areas:
  - Contracting
  - Right-of-way Acquisition
  - Project finance
  - NEPA Compliance (Title 23 only)
US DOT’s Congestion Initiative
Go to: www.fightgridlocknow.gov

FHWA PPP Go to: www.fhwa.dot.gov/PPP

FHWA Innovative Finance
Go to: www.fhwa.dot.gov/innovativefinance/

Educate the public