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Chief Operating Officer

• Over 25 years in Transportation Infrastructure
• Design, Manufacturing, Distribution, Construction and Maintenance experience
• Involved in several P3 projects in the US
Innovative strategies for financing Infrastructure projects
OUTLINE

✔ Why are we here?
✔ How do we pay for Infrastructure today?
✔ Public Private Partnerships
✔ How to move forward?
The problem
The problem
America's Infrastructure Scores a D+
Bridges C+
9.1% of bridges rated structurally deficient

Roads D
6.9 billion hours delayed in traffic - 42 hours per driver

Source: ASCE
Total Cost of Congestion
2014 Dollars

$ in Billions

Year

Source: ASCE
1 in 9 bridges in the U.S. is structurally deficient, requiring significant repairs, maintenance or replacement.

This is the same categorization as the Minneapolis I-35W bridge that collapsed suddenly in 2007.

Source: Transportation for America
Now, **just 10%** of structurally deficient bridges are eligible for repair under the largest highway program.

The **remaining 90%** will have to **compete** more than ever for all the most pressing needs in your community: investments in a regional transit system, streets safe for walking and biking, projects to reduce congestion, and many others.
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Solutions?
Show me the money!
# How do we pay for Infrastructure today?

## Federal
- Highway Trust Fund
- Vehicle Tax
- General Fund

## State
- Motor Fuel Excise Tax
- Motor Vehicle Registration Fees
- General Revenue Fund
- State Lottery
- Rental Car Taxes
- Licenses, permits, fees

## Local
- Property Taxes
- Local Option Sales Taxes
- Vehicle Registration Fees
- Income/Payroll/Employer Taxes

**PAY AS YOU GO**
Federal Highway Trust Fund Faces Growing Shortfalls
Actual and projected revenue and outlays, 2000-25

- Revenue
- Actual outlays
- Actual end-of-year balance
- Projected revenue
- Projected outlays
- Projected end-of-year balance
- Transfers from general fund
Federal and State Governments Rely Heavily on Gas Tax Revenue to Fund Highways

Resources used for highways, by level of government, 2012

Note: Local vehicle tax revenue includes a small amount of fuel revenue as well. Federal revenue is in federal fiscal years; revenue of state and local governments is in their own fiscal years or calendar years, depending on how they report their data to the Federal Highway Administration.

Source: Pew’s analysis of Federal Highway Administration 2012 data (Tables HF-10, SDF, LDF, FE-210). Local data are estimated by the Federal Highway Administration.

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Federal share of total funding for highways and transit, all levels of government, 2008-12

25% U.S. average
### Highway / Road Infrastructure

<table>
<thead>
<tr>
<th>Activity</th>
<th>State / Local</th>
<th>Federal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction</td>
<td>$48.3 B</td>
<td>$43.5 B</td>
</tr>
<tr>
<td>Operations and Maintenance</td>
<td>$70.0 B</td>
<td>$2.7 B</td>
</tr>
</tbody>
</table>

Source: ASCE 2014
29 states authorize local option sales taxes.

16 states authorize local option fuel taxes.

26 states authorize local option motor vehicle registration fees.

32 states authorize public private partnerships.

27 states have state infrastructure banks.

Source: National League of Cities
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Local Option Sales Taxes

- Authorized in 29 states
- The option is used by cities in all 29 states
- Voter approval required in 18 states

Source: National League of Cities
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Local Option Fuel Taxes

- Authorized in 16 states
- The option is used by cities in eight states
- Voter approval required in eight states

Source: National League of Cities
Local Option Motor Vehicle Registration Free

- Authorized in 26 states
- The option is used by cities in 21 states
- Voter approval required in eight states

Source: National League of Cities
But it’s just not enough.
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P 3
Public Private Partnerships

- Trump Administration is pushing for $1 Trillion to be spent on Infrastructure – 10% Public – 90% Private
- Over $100 Billion ready to invest in the US
- Over 45 funds started and ready to invest in American Infrastructure
- 32 states have P3 enabling legislation
<table>
<thead>
<tr>
<th>Infrastructure Systems</th>
<th>Total Needs</th>
<th>Estimated Funding</th>
<th>Funding Gap</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface Transportation¹</td>
<td>$2,042</td>
<td>$941</td>
<td>$1,101</td>
</tr>
<tr>
<td>Water/Wastewater Infrastructure¹</td>
<td>$150</td>
<td>$45</td>
<td>$105</td>
</tr>
<tr>
<td>Electricity¹</td>
<td>$934</td>
<td>$757</td>
<td>$177</td>
</tr>
<tr>
<td>Airports¹</td>
<td>$157</td>
<td>$115</td>
<td>$42</td>
</tr>
<tr>
<td>Inland Waterways &amp; Marine Ports¹</td>
<td>$37</td>
<td>$22</td>
<td>$15</td>
</tr>
<tr>
<td>Dams²</td>
<td>$45</td>
<td>$5.6</td>
<td>$39.4</td>
</tr>
<tr>
<td>Hazardous &amp; Solid Waste³</td>
<td>$7</td>
<td>$4</td>
<td>$3</td>
</tr>
<tr>
<td>Levees⁴</td>
<td>$80</td>
<td>$10</td>
<td>$70</td>
</tr>
<tr>
<td>Public Parks &amp; Recreation⁵</td>
<td>$114.4</td>
<td>$12.1</td>
<td>$102.3</td>
</tr>
<tr>
<td>Rail⁶</td>
<td>$154.1</td>
<td>$124.7</td>
<td>$29.4</td>
</tr>
<tr>
<td>Schools⁷</td>
<td>$870</td>
<td>$490</td>
<td>$380</td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td><strong>$4,590</strong></td>
<td><strong>$2,526</strong></td>
<td><strong>$2,064</strong></td>
</tr>
</tbody>
</table>

Source: ASCE

$2.06B Needed
P3 – How do we get started?

- Legislation has to be in place
- Find the right project
- Strong public support
- Complex project – share the risk with private sector
- Reliable revenue sources
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Public Private Partnerships

- Authorized in 32 states
- Thirteen states are authorized for P3s for all types of infrastructure

[Map of the United States with states in yellow indicating authorized and gray indicating not authorized.]

Source: National League of Cities
Project Delivery Team

- Owner / Developer
- Finance
- Design
- Build
- Operations and Maintenance
## P3 Structure

<table>
<thead>
<tr>
<th>Type</th>
<th>Benefit to Public</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Design + Build</td>
<td>• Encourage Innovation</td>
</tr>
<tr>
<td></td>
<td>• lower cost (no worries of construction claims, budget overruns)</td>
</tr>
<tr>
<td></td>
<td>• transfer some risk to private sector</td>
</tr>
<tr>
<td>2 Design + Build +</td>
<td>• Access to additional funding – leverage public funds</td>
</tr>
<tr>
<td>Finance</td>
<td>• On-time delivery</td>
</tr>
<tr>
<td></td>
<td>• Protection from cost overruns</td>
</tr>
<tr>
<td>3 Design + Build +</td>
<td>• Better built asset (developer has long-term risk)</td>
</tr>
<tr>
<td>Finance + Operate and</td>
<td>• Control long-term costs (budget)</td>
</tr>
<tr>
<td>Maintain</td>
<td>• Consistent level of service</td>
</tr>
</tbody>
</table>
P3’s made simple

Money & Risk
Funding and Financing Approach
($ in millions)

Virginia

- PABs $589
- TIFIA $589
- Private Equity $350
- VA Grant $409
- Interest Income $47
- VDOT Funding $86

- Tax-Exempt Private Activity Bonds $589
- TIFIA Loan $589
- Commonwealth of Virginia grant $409
- VDOT change-order funding $86
- Interest income $47
- Private Equity $350

Total $2,070

Virginia

- PABs $253
- TIFIA $907
- Private Equity $280
- VA Grant $83
- Commonwealth of Virginia grant $83
- VDOT Funding $280

Total $923
### Table 1. Types of P3s by risks and activities assumed by private partners.

<table>
<thead>
<tr>
<th>Project Type</th>
<th>Design</th>
<th>Build</th>
<th>Finance</th>
<th>Operate</th>
<th>Maintain</th>
<th>Traffic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional Design-Bid-Build</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Design-Build</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Design-Build-Finance</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Design-Build-Finance-Operate (Availability Payment Concession)</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Design-Build-Finance-Operate (Toll Concession)</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

Source: FHWA
Example of Retained Risk: Interstate 595, Florida

On the Interstate 595 project in Florida, the public sector decided to retain the toll revenue risk for a number of reasons. According to the project’s value for money analysis, the primary goal of the project was to maximize throughput in the corridor, whereas the analysis showed that if the toll revenue risk were transferred, the concessionaire would focus on increasing toll revenues, not throughput. The State was also concerned that lenders would provide less favorable terms and require more equity investment if the private sector were allocated toll revenue risk. The State felt that the higher cost that this would incur would not be worth it, given that toll revenues were likely to provide only half of the funding over the life of the concession.¹
Success

Example of Risk Allocation: Port of Miami Tunnel

Undisclosed and unforeseeable soil conditions in Biscayne Bay could lead to substantial delays and increased costs in the construction of the Port of Miami Tunnel. Under the public-private partnership agreement, the Florida Department of Transportation (FDOT) shares this risk with the concessionaire. The first $10 million of additional costs due to changed geotechnical conditions will be paid by the concessionaire, the next $150 million by FDOT, and the next $20 million by the concessionaire. If more costs are incurred, either party may terminate the agreement. This is not a transfer of risk to the private sector, but instead it is an allocation between the public and private sectors that ensures that the private sector will be motivated to minimize costs but will not be exposed to unlimited risks.4

Source: FHWA
Failures

✓ SH 130 – Austin, TX
✓ Indiana Toll Road
✓ Chicago Skyway
✓ Pocahantess Parkway - Virginia

Toll Concession = Revenue Risk = Overly optimistic Traffic Projections

Important Note. All these projects were started before the 2008 recession
How does Developer get paid back?

**Toll Concessions**
- Toll the users
- Revenue risk is carried by developer
- Recent US failures

**Availability Payments**
- More common recently
- Less risk for developer
- Better allocation of risk for both sides

- Indiana Toll Road
- Chicago Skyway
- SH 130 (Seg. 5&6) - Austin, TX
- I-595 - Ft. Lauderdale, Fl
- I-4 Ultimate - Orlando, Fl
- Port of Miami Tunnel - Miami, Fl
## Availability Payments

| Feature                                                        | Benefit                                      |
|                                                               |                                             |
| Developer only gets payment when project is completed          | On-budget + On-schedule                     |
| Developer responsible for long-term O&M                       | Life Cycle Cost Benefit of 10-20%           |
| Developer is penalized for not meeting standards               | Public gets a consistent level of service   |
| Public takes revenue risk                                      | Lower risk = lower cost                     |
Objectives of Innovative Financing

- Maximize States ability to leverage Federal capital
- Attract new sources of funds
- Accelerate project completion dates
- Utilize existing funds more effectively
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Priced Managed Lanes Operating or in Construction, February 2017

Source: BATIC Institute
So what’s the problem?

- Only so many projects that have enough road revenue or approved taxes to support the investment
- Lack of public or political support
- Too many regulations
- Aligning risk with the right side
Where do we go from here?
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THANK YOU

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