Infrastructure Opportunities in PPP with the United State Army Corps of Engineers

Presentation to Waterways Conference

September 18, 2014

Richard Ornitz
P3 Activity Global Snapshot

New Trends: Design-Build, Performance Based Contracts

- **UK**: Largest schooling P3 program: more than 105 educated PFI deals with value of £3.6 billion. Transport accounts for 7% of PFI deals with 50% capital value of PFI projects. Defense accounts for 9% of signed PFI deals; 56 deals by 205.
- **Netherlands**: World leader in P3 for social housing/urban regeneration.
- **France**: $1.25B in prison projects.
- **Italy**: 25% of P3 projects undertaken in transportation sector.
- **Spain**: $1.13B or 1/3 of investment in roads and rail to be done through P3s by 2020.
- **India**: $35.5B in highway P3 projects.
- **Australia**: Transport sector – first to use P3, 25% of P3s are related to transport.

- **Brazil**: P3 investment opportunities - $6.3B of investment in transport, waste and water and prison.
- **Texas**: One of the world’s largest transportation P3 programs.
- **Illinois and Virginia**: Market innovations in P3.
- **Ontario**: 30 hospital infrastructure P3s over the next 5 years.
- **British Columbia**: 20% of new infrastructure done through P3s.
- **Ireland**: Over 100 P3 projects in wastewater.
- **Portugal**: 31 hospitals to be privatized under P3 – value of $28B.
- **Africa**: 14% of energy, transport, and water projects through private infrastructure firms during 1990-2004; higher than rest of developing world.
Governments should look at the sectors where P3s have been especially successful in other countries:

**UK**: schools, hospitals, prisons and defense facilities and roads.

**Canada**: energy, transport, environment, water, waste, recreation, information technology, health and education.

**Greece**: transport projects: airport and roads.

**Ireland**: road and urban transport systems.

**Australia**: transport and urban regeneration.

**Netherlands**: social housing and urban regeneration.

**Spain**: toll roads and urban regeneration.

**U.S.**: projects, which combine environmental protection, commercial success and rural regeneration.
## U.S. Infrastructure Needs: American Society of Civil Engineers Report Card

### Estimated 5-Year Investment Needs in Billions of Dollars 6 years ago

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>5-YEAR NEED (BILLIONS)</th>
<th>ESTIMATED ACTUAL SPENDING*</th>
<th>AMERICAN RECOVER AND REINVESTMENT ACT (PL 111-505)</th>
<th>FIVE-YEAR INVESTMENT SHORTFALL</th>
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<tbody>
<tr>
<td>Aviation</td>
<td>87</td>
<td>45</td>
<td>1.3</td>
<td>(40.7)</td>
</tr>
<tr>
<td>Dams</td>
<td>12.5</td>
<td>5</td>
<td>0.05</td>
<td>(7.45)</td>
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<tr>
<td>Drinking Water and Wastewater</td>
<td>255</td>
<td>140</td>
<td>6.4</td>
<td>(108.6)</td>
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<tr>
<td>Energy</td>
<td>75</td>
<td>34.5</td>
<td>11</td>
<td>(29.5)</td>
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<tr>
<td>Hazardous Waste and Solid Waste</td>
<td>77</td>
<td>32.5</td>
<td>1.1</td>
<td>(43.4)</td>
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<tr>
<td>Inland Waterways</td>
<td>50</td>
<td>25</td>
<td>4.475</td>
<td>(20.5)</td>
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<tr>
<td>Levees</td>
<td>50</td>
<td>1.13</td>
<td>0</td>
<td>(48.87)</td>
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<td>Public Parks and Recreation</td>
<td>85</td>
<td>36</td>
<td>0.835</td>
<td>(48.17)</td>
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<td>Rail</td>
<td>63</td>
<td>42</td>
<td>9.3</td>
<td>(11.7)</td>
</tr>
<tr>
<td>Roads and Bridges Discretionary grants for surface transportation</td>
<td>930</td>
<td>351.5</td>
<td>27.5 1.5</td>
<td>(549.5)</td>
</tr>
<tr>
<td>Schools</td>
<td>160</td>
<td>125</td>
<td>0**</td>
<td>(35)</td>
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<tr>
<td>Transit</td>
<td>265</td>
<td>66.5</td>
<td>8.4</td>
<td>(190.1)</td>
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<tr>
<td>**2.122 trillion ***</td>
<td>903 billion</td>
<td>71.76 billion</td>
<td>(1.176 trillion)</td>
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<tr>
<td>Total Need ****</td>
<td>$2.2 trillion</td>
<td></td>
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</table>

*Today even after stimulus, 3.6 trillion by 2020*
## Top 10 U.S. P3 Deals 2011-2013

<table>
<thead>
<tr>
<th>#</th>
<th>Transaction Name</th>
<th>Type</th>
<th>Sector</th>
<th>Subsector</th>
<th>Date</th>
<th>Year</th>
<th>Amount USD (M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Midtown Tunnel Project (Virginia)</td>
<td>Greenfield</td>
<td>Transport</td>
<td>Bridges and tunnels</td>
<td>4/13/2012</td>
<td>2012</td>
<td>2,100</td>
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<tr>
<td>2</td>
<td>Goethals Bridge P3</td>
<td>Greenfield</td>
<td>Transport</td>
<td>Bridges and tunnels</td>
<td>11/8/2013</td>
<td>2013</td>
<td>1,500</td>
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<tr>
<td>3</td>
<td>US Route 460 Corridor Improvements (Virginia)</td>
<td>Greenfield</td>
<td>Transport</td>
<td>Roads</td>
<td>12/20/2012</td>
<td>2012</td>
<td>1,400</td>
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<tr>
<td>4</td>
<td>North Tarrant Expressway Segments 3A and 3B</td>
<td>Greenfield</td>
<td>Transport</td>
<td>Roads</td>
<td>9/19/2013</td>
<td>2013</td>
<td>1,350</td>
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<tr>
<td>5</td>
<td>Puerto Rico Highway Package Phase One (PR-22, PR-5)</td>
<td>Brownfield</td>
<td>Transport</td>
<td>Roads</td>
<td>9/21/2011</td>
<td>2011</td>
<td>1,136</td>
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<tr>
<td>6</td>
<td>I-95 HOV/HOT Lanes Projects (Virginia)</td>
<td>Greenfield</td>
<td>Transport</td>
<td>Roads</td>
<td>7/31/2012</td>
<td>2012</td>
<td>923</td>
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<tr>
<td>7</td>
<td>Georgia Northwest Corridor (NWC) P3</td>
<td>Greenfield</td>
<td>Transport</td>
<td>Roads</td>
<td>11/14/2013</td>
<td>2013</td>
<td>840</td>
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<tr>
<td>8</td>
<td>Louisville-Southern Indiana Ohio River Bridges Project (East End, Indiana)</td>
<td>Greenfield</td>
<td>Transport</td>
<td>Bridges and tunnels</td>
<td>3/28/2013</td>
<td>2013</td>
<td>763</td>
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<tr>
<td>9</td>
<td>Luis Munoz Marin International Airport</td>
<td>Greenfield</td>
<td>Transport</td>
<td>Airports</td>
<td>2/27/2013</td>
<td>2013</td>
<td>615</td>
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<tr>
<td>10</td>
<td>Ohio State University (OSU) Parking Facility</td>
<td>Greenfield</td>
<td>Transport</td>
<td>Car parks</td>
<td>9/21/2013</td>
<td>2012</td>
<td>535</td>
</tr>
</tbody>
</table>

**Other notable P3 projects**

- Tappan Zee Bridge (New York) | Greenfield | Transport | Bridges and tunnels | 10/31/2013 | 2013 | 3,140 |

Sources: Infra-deals.com, viewed December 17, 2013, and PwC analysis
Tide may be rising

- Illiana Expressway (Illinois portion)
- Illiana Expressway (Indiana portion)
- Indianapolis Justice Facility
- Rapid Bridge Replacement Project Pennsylvania
- Purple Line LRT
- Project Neon (i-15)
- La Guardia Central Terminal Building
- California University
THE WHITE HOUSE
Office of the Press Secretary

FOR IMMEDIATE RELEASE
July 17, 2014

FACT SHEET: Building a 21st Century Infrastructure: Increasing Public and Private Collaboration with the Build America Investment Initiative

Investing in a 21st century American infrastructure is an important part of the President’s plan to build on the progress our economy is making by creating jobs and expanding opportunity for all hardworking Americans. Modern and efficient infrastructure – whether moving goods to our harbors and ports or connecting people to services or gigabits to our offices and homes – helps small businesses to expand, manufacturers to export, investors to bring jobs to our shores, and lowers prices for goods and services for American families.

The President has been very clear that we need to do more to improve our infrastructure in order to create jobs, provide certainty to states and communities, help American businesses, and grow our economy. He has put forth a long-term proposal that would do just that and pay for it by closing unfair tax loopholes and making commonsense reforms to our business tax system, while providing the certainty of reliable federal funding to states and communities.

And while the President is encouraged that Congress is heeding these calls by taking action in the short-term to prevent transportation projects across the country from grinding to a halt, the President will continue to act on his own to promote American economic growth where there is need or opportunity. And right now, there is a real opportunity to put private capital to work in revitalizing U.S. infrastructure.

That is why today, the President will sign a Presidential Memorandum to launch the Build America Investment Initiative, a government-wide initiative to increase infrastructure investment and economic growth by engaging with state and local governments and private sector investors to encourage collaboration, expand the market for public-private partnerships (PPPs) and put federal credit programs to greater use. Starting with the transportation sector, this initiative will harness the potential of private capital to complement government funding.

➤ As part of the Initiative, the Administration is launching the Build America Transportation Investment Center. Housed at the Department of Transportation, this center will serve as a one-stop shop for state and local governments, public and private developers and investors seeking to utilize innovative financing strategies for transportation infrastructure projects. Additional details are below.
Risk Transfer

- Project Development Agreement
- Design / Build
- Design / Build / Finance
- Design / Build / Finance / O&M
- Concession

Risk Transfer
Risk Transfer in Value for Money

**Model #1**
Public Sector Comparator (PSC)

Total estimated costs to the public sector of delivering an infrastructure project using traditional procurement processes

**Model #2**
Adjusted Shadow Bid (ASB)

Total estimated costs to the public sector of delivering the same project to the identical specifications using AFP
USACE PPP Emergence

- 60 Billion $ backlog of projects
- 4.8 billion $ annual appropriation
- Assets / Responsibilities / Opportunities
  - Dams/hydropower
  - Locks
  - Waterways/Dredging
  - Parks
- Senior command willingness to explore public private partnership
- 3 + 15
- WRDA incentive
The Current Federal Environment for P3s and Alternative Financing

• GAO Report to the Chairman, Committee on Homeland Security and Governmental Affairs, U.S. Senate entitled: CAPITAL FINANCING - Alternative Approaches to Budgeting for Federal Real Property, March 2014
• WRRDA 2014
• Water Infrastructure Finance and Innovation Act of 2014
USACE P3 Game Plan

Goal 1 – Develop P3 program framework
Goal 2 – Identify and execute P3 pilot projects
Goal 3 – Communicate the need for and advantages of P3s
Goal 4 – Build USACE P3 Capacity for Long-Term

USACE Traditional project finance and delivery

P3 project finance and delivery
Standardizing P3 Business Processes

- Establish project needs
- Structure P3
  - Revenue generation opportunities?
- Evaluation
  - Viability
  - Qualitative
  - Quantitative
- Test market interest
  - Project prospectus
  - RFI
- New legal authority needed?
- OMB scoring impacts?
- Issue RFP, negotiate & close P3
- Manage P3 (if desired)
- Improve P3 Program Framework
P3 Pilots

- P3 Framework Complete
- Strategic Communication Plan Complete
- Organizational Capacity Plan Complete
- Transitional ARD Office In Place
- 2 X P3 Pilot RFIs Ready for Release
- 1 X P3 Pilot RFI Ready for Release
- Release 3 X P3 Pilot RFQs
- 3 X P3 Pilot RFPs Ready for Release
- WRRDA Implementing Guidance Approved
- WIFIA Program Launch
- P3 Organization in place

P3 Procurement Starts with 1st RFI
## Existing Authorities (Short Term) P3 Pilots

<table>
<thead>
<tr>
<th></th>
<th>Existing Authorities</th>
<th>Strong Economics</th>
<th>Revenue Stream</th>
<th>Stakeholder Support</th>
<th>Clear Transaction</th>
<th>Replicable</th>
<th>Budget Impact</th>
<th>Score</th>
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<tr>
<td><strong>MVD</strong></td>
<td>Illinois River L&amp;D</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>Fargo-Moorhead FDR</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>18</td>
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<tr>
<td></td>
<td>639 Recreation Facilities</td>
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<td><strong>LRD</strong></td>
<td>Low-Head Hydro Existing Dams</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>Package of Recreation Facilities</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>Recap+O&amp;M Ohio River L&amp;D</td>
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<td></td>
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<td></td>
<td>Private CDF in Great Lakes</td>
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<td></td>
<td></td>
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<td><strong>SWD</strong></td>
<td>Deepening TX GIWW to 12 Feet</td>
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<td></td>
<td></td>
<td>15</td>
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<td></td>
<td>Recap+O&amp;M Brazos Lock</td>
<td></td>
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<td></td>
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<td></td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>Depening Sabine-Neches to 48 Feet</td>
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<td></td>
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<td>18</td>
</tr>
<tr>
<td></td>
<td>Red River Chloride Control Solar</td>
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<td></td>
<td></td>
<td></td>
<td>✓</td>
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<tr>
<td></td>
<td>Low-Head Hydro Existing Dams</td>
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<td></td>
<td>Package of Recreation Facilities</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
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<tr>
<td></td>
<td>Wind Farm at Lake Optima</td>
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<td></td>
<td></td>
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<td>✓</td>
</tr>
</tbody>
</table>
Potential P3 Business Model

Private Sponsors (Equity Investors)
- Equity Financing
- Debt Financing

Creditors / Lenders

Private Partner (SPV)
- Insurance, Reserves
- Guarantees

P3/P4 Contract

Public Partner
- Federal Sponsor
- Local Sponsor(s)

Finance

Construction & Operations

Design / Construction
- EPC Contract
- O & M Contract

Operations & Maintenance
Conceptual Structure of a PPPP
• Project Cost (Traditional delivery): $1.2 billion
• Project Cost (PPPP): $1.0 B (assume conservatively, 15% savings to account for risk associated with first-time transaction)
• Cost of Annual Maintenance Dredging: $30 million
• Financing Assumptions:
  - Equity: 30% ($300 million)
  - Debt: 70% ($700 million) @ 4.5%; coverage ratio = 1.15
  - Required IRR on Equity: 12%
  - Project term: 30 years
• Annual Levelized Revenue Requirement (per model): $111 million
• Potential Revenue Sources (notional; others in addition or in lieu also possible):

<table>
<thead>
<tr>
<th>Source</th>
<th>Base</th>
<th>Rate</th>
<th>Year 15 Annual Revenue (millions)</th>
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</thead>
<tbody>
<tr>
<td>Ad Valorem Cargo Fee</td>
<td>$4,320</td>
<td>.015</td>
<td>$65</td>
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<tr>
<td>Real Property Tax Increment</td>
<td>$47</td>
<td>40%</td>
<td>$19</td>
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<tr>
<td>Wetlands/C Banking Fees</td>
<td>2,000</td>
<td>$30,000</td>
<td>$2</td>
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<tr>
<td>USACE Appropriations</td>
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<td>$25</td>
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<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td>$111</td>
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</table>
US Corps Engineers
Great Lakes Dredging and Deepening Public Public Private Partnership
Regional Dredging and Deepening
Total Project = (TBD)

Port Debt Financing

Port of Cleveland

US Corps Engineers OSACE

Private Investors Equity

Other Ohio Cities/Harbors
Toledo, etc.

Project Sandy SPV
Regional Dredging

100$ million

10$ million

15% sales

Tipping\ Fees

Private Sector Users

Private Operator

Private Operator

Private Operator

Site/Private Operator

CDF Operations

CDF Harvest

Bed Loader Integration

O&S Agreement

Service Contract

Cooperation Agreement

RFI

Recovery Fee

Private Debt $

Private Debt $

Land Bank

DOT

Sales

Tipping Fees

Tipping Fees

$2.05 million$

$1.25 million$

$4 million$

P1

P2

P3

Private Operator

Private Operator

Private Operator

Ohio and Fed Grant $

Governor

Users Fees

Tipping Fees

Tipping Fees

Sales

DOT

OEPA

OPA

*Corps Tipping fees at existing federal level
USACE P3/P4 Revenue Generation Models

- Private partner investment and operating capital
- Public partner contribution/benefit
- User payments
- Availability payments
- Secondary revenues
- Creative solutions
- Upstream/downstream ancillary businesses
Critical Success Factors

- Proper enabling legislation/framework
- Political leadership
- Stakeholder analysis/support
- Fair and balanced procurement process
- Public vision
- Open mindedness/value of private money
- Best value financing vehicle
- Comprehensive but simple documentation
- One size does not fit all
- Definable project
- Knowledgeable/experienced advisors
- Progressive critical path
- Reasonable expectations on all sides
- Reasonable project economics
- Fair risk allocation
- Leadership and focus
ANNEXES
Some Authorities

CORPS CONSTRUCTION:
1. Contributed Funds (33 USC 701h)
2. Contributed Funds (33 USC 560)
3. Advanced Funds (33 USC 561, 33 USC 701h-1)
4. Work-in-Kind (Section 221 of the Flood Control Act of 1970, as amended)

SPONSOR CONSTRUCTION:
1. Section 204 of WRDA 1986, as amended
2. Section 204(f) of WRDA 1986, as amended
3. Section 1043(b) of WRRDA 2014
4. Section 5014 of WRRDA 2014
WRRDA and WIFIA

• **WRRDA 2014**
  – Private investment in federal infrastructure
  – Innovative financing pilot projects
  – Real estate divestiture

• **WIFIA 2014**
  – Joint USEPA/USACE
  – Federal loan program
  – Requires extensive internal program management
  – Funding authorized
    • FY 2015 – 2019
    • $20M - $50M each agency
    • Different from TIFIA
Related WRRDA Sections

• Section 5014 (Public Private Partnership Pilot Program)
  – Applies to new construction starts only
  – Upfront financing by non-federal interest permitted
  – Not clear how federal reimbursement of federal cost share to non-federal interest will be scored
  – Requires a Public Benefit (Value for Money) Study
  – Requires specific appropriation to enable pilot project program to proceed

• Sections 5021 to 5035
  – Water Infrastructure Finance and Innovation Act of 2014 (WIFIA)
  – Eligible entity must submit to the Secretary an application containing information the Corps of Engineers require (unsolicited proposals)
  – Specifically excludes O&M
  – Credit assistance priority for
    • F&CSDR projects that address significant flood risk
    • projects that provide greatest reduction in federal assistance to the project
    • readiness of project construction
  – Secretary shall establish a uniform system to service federal credit instruments and establish regulations necessary to implement the program
  – Section 5033 establishes discretionary appropriations to be used to carry out this subtitle ($20M in FY15 up to $50M in FY19)
Related WRRDA Sections

• Section 6002
  – Mandates development and publishing of an interim list of projects or separable elements, authorized prior to November 8, 2007, that have not had funds obligated during the current FY or over the preceding 6 FYs.

• Sections 6002
  – USACE must develop an inventory of all properties that are not needed for Corps missions
  – Criteria to be assessed:
    • alignment with mission
    • local economic impact
    • utilization conformity to industry standards
    • reduction in O&M costs
    • reduction in energy consumption
  – No real process spelled out after the inventory is provided
OMB Scoring Background

- WRRDA authorizes USACE to explore alternative (non-traditional) finance and delivery modalities through a Public-Private-Partnership Pilot Program in order to accelerate water-related infrastructure and service provision;
- The legislative intent is clearly to enable USACE to consider “new” modalities that were previously not available under prior legislation;
- This appeal for innovative approaches also requires budget authorities to consider new approaches to scorekeeping, as the P3 pilot program does not reflect traditional lease arrangements contemplated under appendix A and B of OMB Circular A-11

Existing Guidelines

- Existing OMB Scorekeeping Guidelines are loosely based on FASAB, FASB and GASB basic lease accounting requirements.
- Current OMB scorekeeping does NOT fully reflect subsequent amendments made by FASAB, FASB and GASB, nor does it account for other forms of contracts, such as service level agreements and concessions.
- In accordance with IPSAS and other global accounting principles, P3 are not given the same accounting treatment as leases as they exhibit entirely different risk and incentive profiles.

Considerations

- The financial lease approach to P3 is generally only used when risk transfer to a private partner is clearly limited.
- Under both IPSAS 32 and GFSM 2001, P3 assets and liabilities are accounted for in the government’s balance sheet only if the government bears most of the project’s risks and rewards (which is uncommon).
- Most jurisdictions apply accounting and scorekeeping guidelines based on real risk allocation (i.e., EUROSTAT guidelines)
- Treatment of P3 continues to evolve
A public-private partnership (PPP) is usually defined as:

A form of collaboration or joint endeavor between the public and private sectors for the purpose of developing, constructing or operating an infrastructure project through a series of interrelated agreements between public and private participants which define their respective rights and responsibilities.
## Public-Private Partnership Options

<table>
<thead>
<tr>
<th>Form</th>
<th>Asset Ownership</th>
<th>Operations &amp; Maintenance</th>
<th>Capital Investment</th>
<th>Commercial Risk</th>
<th>Typical Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service Contract</td>
<td>Public</td>
<td>Public and Private</td>
<td>Public</td>
<td>Public</td>
<td>1-2 years</td>
</tr>
<tr>
<td>Management Contract</td>
<td>Public</td>
<td>Private</td>
<td>Public</td>
<td>Public</td>
<td>3-5 years</td>
</tr>
<tr>
<td>Lease</td>
<td>Public</td>
<td>Private</td>
<td>Public</td>
<td>Shared</td>
<td>8-25 years</td>
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<tr>
<td>Concession</td>
<td>Public</td>
<td>Private</td>
<td>Private</td>
<td>Private</td>
<td>25-30 years</td>
</tr>
<tr>
<td>BOT/BDO</td>
<td>Private and Public</td>
<td>Private</td>
<td>Private</td>
<td>Private</td>
<td>20-30 years</td>
</tr>
<tr>
<td>Divestiture/Privatization</td>
<td>Private or Private and Public</td>
<td>Private</td>
<td>Private</td>
<td>Private</td>
<td>Indefinite (may be limited by license)</td>
</tr>
</tbody>
</table>
U.S. Deal Volume by Sector (2011-2013)

- Power: 35%
- Renewables: 32%
- Transport: 22%
- Environment: 7%
- Social Infrastructure: 3%
- Environment: 1%
- Other: 1%
Finance Elements: Private Capital Sources

- Equity from Concessionaires, Private Equity, Infrastructure Funds, High Net Worth Families, Finance Institutions—Lots of Money
- Debt from Lending Banks, Public Finance Markets, Hybrid Funds
- International Finance Institution Participation
- Equity from Subordinated Debt from Contractors
- Long-Term Capital Markets/Private Placements
- Structured Products Like Insurance Company Annuities and Sale-Leaseback Pension Funds
A typical project takes a minimum of 18 months to financial closing. Basic phases of the overall project are:

- **Phase 1: Project conceptualization**
- **Phase 2: Enabling framework**
- **Phase 3: Project development, bidding and negotiation**
- **Phase 4: Financing and financial closing**
- **Phase 5: Construction**
- **Phase 6: Operation & maintenance**
Key Features of Infrastructure Investments
An Asset Class for Today's Economic Turmoil

• Long Term Investments
  – Asset lives often exceed 30 years
  – Often long term support for off-take of output or service

• Stable Cash Flows
  – Low volatility and steady dividend streams arising from:
    • Regulated prices or long term off-take contracts
    • Essential services
    • Predictable operating and maintenance costs
    • Concessions often limit competition
    • High cost, physical and regulatory barriers to entry

• Supplementary to Other Asset Classes
  – Long term development and planning horizons
  – Expenditure by users is less discretionary