Bridging the Gap
What Everybody Needs to Know About Public-Private Partnerships

December 11, 2013
Bridging the Gap: What Everybody Needs to Know About Public-Private Partnerships

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**Program Agenda**  
**December 11, 2013**

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| 8:00 a.m.  | Welcome and Introduction  
            Kent Rowey                         |
| 8:15 a.m.  | Speaker Presentations                      |
| 8:45 a.m.  | Panel Discussion on P3  
            Moderated by Kent Rowey              |
| 9:45 a.m.  | Conclusions                                |
Allen & Overy P3 Experience

Chicago Metered Parking

– Allen & Overy represent Chicago Metered Parking LLC (owned by Morgan Stanley Infrastructure Partners, Allianz Capital and the Abu Dhabi Investment Authority) in the acquisition of the 75-year concession of the City of Chicago’s Metered Parking System, including ongoing work on its Rule 144A financing and amendment and restructuring negotiations with the City of Chicago.
Bayonne Water and Wastewater Concession

— KKR and United Water will pay USD150m to the city of Bayonne for the rights to a 40-year concession, allowing them to collect water and wastewater revenues but also requiring them to pay another USD157m over the life of the contract to manage and upgrade the systems.

— The joint venture reached financial close December 2, 2012 on a USD175m debt-equity financing with two-thirds of that 20-year bank debt arranged by Royal Bank of Canada.

— The partnership among Bayonne, KKR and United Water is an innovative transaction that will pay off over USD130m in Bayonne’s debt, thereby cutting the municipal debt burden in half.

PR-22/PR-5


— The first toll road concession that was procured through a P3 as part of the Puerto Rico Government administration’s P3 initiative.
Luis Muñoz Marín International Airport

— Allen & Overy advised investors on USD350 million of senior secured notes in connection with the long term lease of LMM Airport in San Juan, Puerto Rico.

— Allen & Overy advised Royal Bank of Canada, UBS AG, Stamford Branch and FirstBank Puerto Rico on USD60 million in senior term and revolving loans in connection with the long term lease of LMM Airport.

— This transaction was the first major U.S. airport to use a privatization model following the 1996 law establishing the FAA’s Pilot Privatization Program.

— Recognized in the Finance section of the 2013 FT Innovative Lawyers U.S. Report

Goethals Bridge

— Tendered as a 35-year design, build, finance and maintain contract, the Goethals Project achieved financial close in November 2013. On behalf of the Port Authority of New York & New Jersey Allen & Overy:

— Established a new template for documentation of availability payment P3s in the U.S. — widely acknowledged as a breakthrough by the national infrastructure market and described by rating agencies as “credit enhancing.”

— Led the negotiations of the TIFIA financing of the Project on behalf of the Port Authority for delivery to the bidders. The procurement of the Goethals Project was the first to pursue TIFIA financing simultaneously with the bidding process under new procedures recently established by MAP-21.

— Assisted the Port Authority with its compliance of all Title 23 requirements in relation to the Project and documentation with the Federal Highway Administration.
Eagle P3 Project Overview

North American Transportation Deal of the Year
Project Finance Magazine 2010

Design-Build
– East Corridor, Gold Line and Northwest Rail Electrified Segment
– Commuter Rail Maintenance Facility
– DUS systems (e.g., power, signals)
– Commuter rail cars (including options)

Operate & Maintain
– East Corridor, Gold Line and Northwest Rail Electrified Segment
– Commuter Rail Maintenance Facility
– All commuter rail cars

Finance
– Certain Design-Build elements

“Eagle P3 is an example of how a project of this type can be completed successfully”
Infrastructure Investor
Overview of Transportation in Virginia

Virginia’s P3 Program

Current Projects

Future Projects
Overview of Transportation in Virginia

- The Secretary of Transportation’s Office is responsible for the direction, management and oversight of seven executive branch agencies with combined annual budgets in excess of $5 billion (US) and over 9,700 employees

- **Virginia Department of Transportation** – responsible for building, maintaining and operating Virginia’s 57,867 mile system of state-maintained roads, bridges, and tunnels, the third largest system in the United States

- **Department of Rail and Public Transport** – provides oversight and funding for 59 Transit Systems, 55 Human Service Operators, 1 Commuter Rail Operator (VRE), 18 Transportation Demand Management Agencies, 9 Short-line Railroads, and 1 Intercity Passenger Rail Operator (Amtrak) and works closely with freight railroads

- **Department of Motor Vehicles** - responsibilities include vehicle titling and registration, driver licensing, maintenance of driver and vehicle records, collecting Virginia’s fuel tax, monitoring the state’s trucking industry, and serving as Virginia’s Highway Safety Office.

- **Virginia Port Authority** – operates Virginia’s three state owned cargo terminals (NIT, NNMT, and PMT), an inland multimodal facility, and the privately owned APMT

- **Department of Aviation** – responsible for the oversight of Virginia’s 66 public use airports and cultivating an advanced aviation system that is safe, secure, and provides for economic development and providing executive flight services for the Commonwealth leadership.

- **Motor Vehicle Dealer Board** – responsible for licensing and regulating Virginia’s ~ 3,500 new and used motor vehicle dealers

- **Virginia Commercial Space Flight Authority** – responsible for overseeing the growth and development of the commercial aerospace industry in Virginia through the Mid-Atlantic Regional Spaceport on Wallops Island, one of only four facilities licensed to launch rockets into lunar orbit in the U.S.
Commonwealth Transportation Fund Fiscal Years 2014 – 2019 Six-Year Financial Plan Allocations

- The Six-Year Financial Plan (SYFP) identifies the planned funding for allocation to Highways, Transit, Ports and Aviation.
- The Fiscal Years 2014 – 2019 SYFP allocates $33.2 billion over the period.
  - 24 percent increase from the FY 2013 – 2018 SYFP
- 36% or $11.9 billion is dedicated to highway maintenance
- 28% or $9.2 billion is for construction
- 10% or $3.2 billion dedicated to Regional Transportation
- Debt service is $2.4 billion or 7%

Procurement In Virginia

- Over 80% of all construction and maintenance work is outsourced to the private sector
- Key procurement mechanisms and opportunities include:
  - Public-Private Transportation Act (P3s)
  - Design-Bid-Build
  - Design-Build
  - Professional Services (environmental, engineering, design, etc.)
  - Maintenance and Operations contracts
- For example, in FY '13 the following amounts were allocated through these procurement mechanisms:
  - Design-Bid-Build: ~$30 million
  - Design-Build: ~$600 million
  - Professional Services: ~ $180 million on engineering
- To see a current list of procurement options and opportunities, as well as view guidelines and other criteria, please visit http://www.virginiadot.org/business/default.asp
Virginia’s P3 Program

P3 Program

- A key element of creating a more efficient transportation program has been and will continue to be better utilization of Virginia’s P3 laws
- To improve our P3 process, a 2010 audit of Virginia’s program recommended:
  - Streamlining the P3 guidelines to create a more business friendly approach
  - Creating a new Office of Transportation Public Private Partnerships (OTP3)
  - Implementing a more programmatic approach rather than addressing P3s on a project-by-project basis
- As a result of these reforms, in 2012, the Commonwealth executed contracts for three long stalled projects and ranked second globally by Inspiratia among the most active P3 markets
  - Through a state investment of less than $600 million (US), Virginia is leveraging over $3 billion (US) in infrastructure
- Additionally, OTP3 was recognized as “the Best Central Government PPP Organization” at the 2013 partnership awards
Current Projects
Dulles Metrorail

• Nearly $6 billion (US) 23 mile extension of Metrorail from East Falls Church to Washington Dulles International Airport and beyond into Loudoun County

• Phase 1
  • 11 new stations between East Falls Church and Whiele Avenue (west of Tyson’s Corner)
  • Cost: $2.9 billion
  • Estimated completion late 2013

• Phase 2
  • 11.4 mile section from Whiele Avenue to Dulles Airport and into Loudoun County
  • Cost: $2.8 billion
  • Contract awarded to Capital Rail Constructors April 2013

I-95 Express Lanes

• Project includes:
  • 9 miles of new express lanes in Stafford County
  • Expanding 14 miles of existing HOV lanes from two to three lanes in Prince William and Fairfax counties
  • Seamless connections to 495 Express Lanes

• Project will utilize open road tolling and congestion pricing to manage congestion

• Partners: Fluor/Transurban

• Cost: $925 million (US)
  • $71 million state contribution
  • $845 million private sector debt/equity
Route 460 Corridor Improvement Project

- New 55 mile, four-lane, limited access highway between Suffolk and Petersburg
- Project will improve emergency preparedness and provide new economic development corridor to help grow the Port of Virginia
- Project undertaken as Design, Build, Finance with new 63-20 Corporation – Route 460 Funding Corporation – created to issue tax exempt debt
- Private Partners: 460 Mobility Corporation, which includes Cintra Infraestructuras and Ferrovial Agroman
- Cost: $1.3 billion (US)
  - $1.15 billion state investment (VDOT and VPA)
  - Remainder financed through tax exempt bonds and tolls

Downtown/Midtown Tunnel/MLK Extension

- Project will improve existing Downtown and Midtown Tunnels, construct second tube at Midtown Tunnel, and construct MLK Freeway Extension
- Downtown Tunnel is currently most congested facility east of the Mississippi
- Project was awarded North American Toll Road Project of the Year 2012
- Partners: Macquarie/Skanska
- Cost: $2.1 billion (US)
  - $420 million state investment
  - $1.8 billion private sector debt/equity
Other Projects

• For the first time in 35 years, Virginia has restored Amtrak passenger rail service to Norfolk.

• Plans are underway to restore Amtrak Passenger rail service to Roanoke for the first time in 35 years.

• Virginia is the first state in the nation to create a dedicated funding stream to support Amtrak regional passenger rail service.

• Virginia’s Lynchburg regional service continues to serve as a model for profitability within the Amtrak system.

Other Projects

• In late 2012, the Virginia Commercial Space Flight Authority completed construction of a new $120 million launch pad at the Mid-Atlantic Regional Spaceport (MARS).

• The New Pad 0A will support Orbital Science’s 8 resupply missions to the International Space Station.

• The first test launch to the ISS was completed in September 2013.

• MARS is one of only four facilities licensed to launch into lunar orbit in the United States.
To create a more programmatic long-term approach to P3s, Virginia unveiled the first P3 Pipeline document in 2012.

The P3 Pipeline details current projects under construction or in procurement and discusses potential projects in an effort to receive feedback from private sector partners on future opportunities.

Projects are broken down into two categories: candidate projects and conceptual projects.

Candidate projects are those projects where the purpose, need and scope warrants evaluation as a P3 project under the Detailed-Level Screening process that occurs prior to procurement.

Conceptual projects are those projects where additional work must be done to determine whether or not a project is viable as a P3.
2013 P3 Pipeline – Candidate Projects

• I-66 Corridor Improvements
• Air Rights Development
• I-64 HOV to HOT Conversion
• Hampton Roads Crossing Improvements
• I-73 Corridor

• Route 460/58 Connector
• I-495 Express Lanes Extension
• Cell Towers/Fiber Optic within Right-of-Way
• Route 460/I-85 Connector
• Odd Fellows Road Interchange
2013 P3 Pipeline – Conceptual Projects

- Weigh-in-Motion Truck Validation System
- Availability Payments
- Advertising/Sponsorship Opportunities
- Parking Facility Enhancements
- New Park and Ride Facilities
- I-81 Managed Travel Lanes Systems
- Wallops Island Visitor Facilities
- Rest Area Enhancements
- Route 460 Business Improvements
- Super NOVA Transit and Transportation Demand Management

Panel Discussion

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What protects the consumer/user from excessive rates imposed by the private sector?

What are reasonable returns for infrastructure investors and how is the return regulated?

What does the public sector get in return for granting a concession over a revenue producing infrastructure asset?

Does the public sector give up too much?
Are P3s net job destroyers or creators?

How are P3s reflected on the public sector’s balance sheet?
Are availability payments just another form of borrowing albeit at higher rates?
What’s the track record? Construction costs and delays? Service delivery?

Are some infrastructure sectors better suited to P3s than others? Transportation? Social?
Municipal bankruptcies.
Are P3s a way out?

Questions?
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These are presentation slides only. The information within these slides does not constitute definitive advice and should not be used as the basis for giving definitive advice without checking the primary sources.

Allen & Overy means Allen & Overy LLP and/or its affiliated undertakings. The term partner is used to refer to a member of Allen & Overy LLP or an employee or consultant with equivalent standing and qualifications or an individual with equivalent status in one of Allen & Overy LLP’s affiliated undertakings.
Speeker Biographies

Kent represents investors, credit providers, public sector entities, contractors and other participants in infrastructure and natural resources transactions. His global experience is unique among natural resource and infrastructure lawyers. He’s been involved in major infrastructure financings in Asia, the Middle East, North America and the UK, including many first-of-their-kind transactions. He has also played a leading role in the development of private finance in the infrastructure sector in North America, having successfully closed many transactions now considered templates for infrastructure finance. He has been involved in the financial closing of more than 75 infrastructure and natural resources transaction worldwide.

"Kent Rowey is a leading light of the US PPP legal market and is described as 'one of the truly great project finance deal attorneys: he has great knowledge and always achieves his goal.'" Chambers USA 2011

Kent’s experience highlights include advising:

- Kohlberg Kravis Roberts and United Water on the concession based privatization of water and waste water systems in the City of Bayonne, New Jersey.
- Investors' counsel in connection with the tax exempt (PABs) financing of the USD1bn Poseidon desalination project in Carlsbad, California, the first desalination project of its kind to close in California.
- The funders to Grupo Aeroportuario del Sureste and Highstar Capital in connection with their successful bid for the Luis Muñoz Marín International Airport, Puerto Rico.
- Goldman Sachs Infrastructure Partners and Abertis Infraestructuras S.A. in connection with the USD1.3bn long-term concession of the PR-22 and PR-5 toll roads in Puerto Rico.
- Regional Transportation District in relation to the USD1.2bn Eagle P3 commuter rail project in Denver, Colorado.
- Morgan Stanley Infrastructure Partners in connection with its acquisition of a 75-year concession for the City of Chicago’s Metered Parking System for USD1.15bn and the subsequent 144A bond financing of the Chicago Metered Parking System by Chicago Metered Parking LLC.
Sean T. Connaughton is Secretary of Transportation for the Commonwealth of Virginia serving in the cabinet of Governor Bob McDonnell. As Secretary, he oversees seven state agencies with more than 9,700 employees and combined annual budgets of $5 billion.

Sean was named U.S. Maritime Administrator by President George W. Bush in 2006. As Maritime Administrator, he was head of the Maritime Administration, U.S. Department of Transportation, and responsible for the daily management of that agency and its promotional programs for the marine transportation industry. This included advising and assisting the Secretary of Transportation on commercial maritime matters, operation of over 50 ships in the Ready Reserve Force, supervision of the U.S. Merchant Marine Academy, oversight of the six State Maritime Academies, and administration of various shipyard and cargo programs. Sean was appointed by the President and confirmed by the Senate.

Prior to joining the McDonnell administration, he served as Corporate Vice President, Government Affairs for the American Bureau of Shipping, one of the world’s leading ship and marine classification societies.

Sean is a graduate of the U.S. Merchant Marine Academy and served the U.S. Coast Guard as both a commissioned officer and as a civil servant in the Office of Marine Safety, Security, and Environmental Protection. After gaining a Master’s degree from Georgetown University, he joined the American Petroleum Institute, representing companies involved in the energy and marine transportation industries, during which time he also earned a law degree from George Mason University.

As a lawyer in private practice he specialized in maritime and international law. He has appeared before the United States Supreme Court and is a member of the Virginia Bar Association and the District of Columbia Bar Association. He served in the U.S. Naval Reserve from 1986 until retiring in 2006. He is a graduate (with honors) of the U.S. Naval War College.

Sean was elected Chairman At-large of the Prince William County (Va) Board of Supervisors in 1999 and overwhelmingly reelected in 2003. Under his chairmanship, the Prince William County Department of Transportation was created to manage, develop and update the county’s transportation system. Sean served on numerous regional boards and commissions, including the Metropolitan Washington Council of Governments and the Northern Virginia Transportation Authority. In 2004, he was recognized by the National Association of Counties with its Distinguished Service Award for his efforts on workforce development.
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He was selected to receive the 2009 Vincent T. Hirsh Maritime Award for Outstanding Leadership by the Navy League of the United State, named the "2007 Maritime Person of the Year" by the Propeller Club of the United States and was awarded the "2007 Government Man of the Year" by the Maritime Port Council of Greater New York and Vicinity. In 2007, he was awarded an honorary doctorate in Public Administration from the Massachusetts Maritime Academy. The Journal of Commerce named him to its 2008 "JOC Leadership Roll" and in 2009 he was presented with the "Maritime Samaritan Award" from the Apostleship of the Sea of the United States. George Mason University named him their Outstanding Alumnus of the Year in 2012.

Sean serves as chairman of both the Standing Committee on Water Transportation and the Special Committee on Intermodal Transportation and Economic Expansion for the American Association of State Highway and Transportation Officials (AASHTO). He currently is a Trustee of the Joe Gibbs Youth for Tomorrow home, a residential program for at-risk adolescents of the Greater Washington area and serves on the Board of Directors of the Hylton Performing Arts Center.

Cherian George is a managing director and head of the Americas in Fitch Ratings’ global infrastructure and project finance group. He is based in New York and manages ratings and analysis on public-private partnership and project finance transactions in the Americas, including the transportation, public and social infrastructure, sports, power and industrial sectors.

Cherian has 20-plus years of corporate, public sector, and project finance experience. Until 2007, he was the head of transportation in Fitch’s U.S. public finance group. Prior to joining Fitch in 1999, Cherian was an assistant comptroller and head of finance for The Port Authority of New York and New Jersey’s tunnels, bridges, and terminals business segment. In the early 1980s, he was a purchase executive at Tea Manufacturing & Marketing Consultants, Private Ltd., Calcutta, India, with purchasing, materials management, and product costing responsibility for a new tea garden and two plants that manufactured tables and stands for Singer Sewing Machine Co.

Cherian earned a BA in economics from Madras Christian College in India. He received an MA in economics and an MS in management and policy from the State University of New York at Stony Brook.
Cate Long is the municipal bonds blogger for Reuters and leader of the open source financial reform project Riski. Her expertise lies in analyzing and clearly explaining complex financial topics.

Cate’s editorials focus on the retail fixed income markets including municipal bonds. Her primary interest is creating tools and systems to help retail investors understand bond markets. Cate has worked for a number of years with industry standards organizations, regulators and Congress to help craft a more transparent and fair framework for investors to participate in the fixed income markets.

Cate holds two U.S. patents for the standardization and visualization of fixed income market data which she is currently commercializing.

She worked with the SEC and Congress to help shape the rules and laws governing credit rating agencies and was successful having equivalent disclosure adapted for asset backed securities.

Prior to founding her firm she worked for ING Barings. She received a BA from Goddard College.
In defense of public-private partnerships

By KENT ROWEY
July 24, 2013

Pitchforks raised, a mob of critics pounced on an article I wrote recently for the New York Times in which I dared to assert that the city of Detroit could have benefited from selling or leasing some of its infrastructure assets to private investors in return for large, up-front payments, a reduced debt load and a chance to improve public services under a more efficient, business-minded operating model.

My essay advocated a new wave of public-private partnerships (P3s) for U.S. cities — and I cited several prominent success stories, among them the Chicago Metered Parking System, which transferred 36,000 on-street parking meters to a concession run by Chicago Parking Meters LLC (CPM), a company backed by private equity investors. The 75-year contract, commenced in 2010, delivered $1.15 billion to the city and has been cited as a model for how to run a municipal parking enterprise.

Not so fast, say the detractors, including Reuters’ MuniLand blogger Cate Long. They carped that the article did not mention that I represented investors in several of the P3 transactions described, including CPM (even though my professional bio highlights my role in each of the deals – the Times has since updated the piece accordingly). More seriously, they claim that the CPM partnership has been an abject failure. “The city got ripped off, and continues to get ripped off each day because of this travesty,” said one responder. MuniLand’s Long called it a “municipal scam.”

In fact, this “scam” helped Chicago rank number one in the world for on-street parking in a 2011 IBM Global Parking and Transportation Survey. Among 20 major cities surveyed worldwide, Chicago drivers needed the shortest time to find a space, had the fewest tickets and fewest disputes over spaces, and suffered the least emotional and economic pain over parking, which as any driver will attest, is high praise. In its 2011 Annual Privatization Report, Reason Foundation noted that CPM’s “state-of-the-art maintenance system makes it one of the most sophisticated operations in the U.S.” Reason added, “The Windy City is now an international leader” in parking.

How did such accolades occur in so short a time? Perhaps it’s because CPM invested $35 million in upgrades, replacing the old single-space meters with 5,000 pay stations that accept credit and debit cards, feature an online refund option and provide 24-hour customer service. Drivers will soon be able to digitally feed the meters with their smartphones. The advent of CPM also helped to expose what the Chicago Sun-Times called “widespread disability parking abuses,” with “able-bodied people using relatives’ placards, fake placards and even stolen placards to park for free,” sometimes for days. The practice caused both the city and CPM to lose millions of dollars in revenue, leading to passage of Public Act 097-0845, which established strict criteria for free parking and to reduce incidence of fraud. Reason Foundation noted that under CPM, local residents and small
business owners — including those in Chicago’s ethnic communities — reported a marked increase in available spaces in their neighborhoods.

Chicagoans have benefited in other ways from public-private partnerships, including those involving the Grant Park parking garages and Chicago Skyway toll bridge. A report entitled “Examining Parking Privatization as a Fiscal Solution” published in Government Finance Review stated, “The money received in these deals has been used to pay off debt associated with building Millennium Park, improving the infrastructure of neighborhood parks, funding programs for low-income residents, settling budget deficits, and establishing a long-term reserve fund.” Noting the enormous expenditures needed to renovate the city’s troubled parking system, the report concluded that “Maintaining these garages would have become a significant burden on the city. Leasing the garages allowed Chicago to place the repair obligations on the private operator and free up capital for other projects.”

The hue-and-cry over my article illustrates a fundamental fallacy of those who would bash P3 deals — that they dupe cities to hand over crown-jewel assets to Wall Street barracudas. Nothing could be further from the truth. Municipalities retain control over the assets they lease and over any payments owed to the concessionaire over the life of the concession. P3s are subject to strict procurement laws — and any increases in fees are governed by strict regulatory approval. Control over the underlying assets remains with the municipality. The concession contracts impose stringent performance standards on the operator which, if not performed, allow the municipality to terminate the concession. Many P3s also include a revenue share with the municipality.

What is certain is that most cities can’t provide the level of investment needed to create and maintain infrastructure and related services that are fit for 21st century usage. The professional management and innovative technology a private operator brings to public infrastructure is value enhancing. Meanwhile, it’s the investors who assume the risk in taking over delivery of services for many decades to come. Even then, returns on P3 investments are a far cry from the alpha earned on hedge funds, more in line with an investor-owned electric utility.

And there’s another point: P3 deals rehabilitate more than public conveniences. Often, the transactions deliver vital services for sanitation, transportation or healthcare. For a partnership structured to privatize the municipal water and waste systems of Bayonne, New Jersey — another deal in which I advised investors — the private capital used to fund the concession was critical in replacing decades-old pipes and meters. In this case, serious public safety concerns — including main breaks, contamination and boil water advisories — were addressed by a P3.

For Detroit, the die is cast. As a result of its Chapter 9 filing, the Motor City will have to sell some of its non-core assets to cover $18 billion in liabilities. Let’s hope that Detroit’s emergency manager is able to partner up with some patient, long-view investors willing to invest in the city’s future for generations. And may other strapped towns avert their own bankruptcies by welcoming more private investment in public infrastructure. For any U.S. city today not even to consider a P3 option would be the real scam.

**PHOTO: Parking meters run by LAZ Parking for Morgan Stanley are pictured in Chicago March 18, 2009. REUTERS/John Gress**
Bridging the Gap: What Everybody Needs to Know About Public-Private Partnerships

Public-Private Partnerships Could Be a Lifeline for Cities

This article originally appeared on The New York Times DealBook webpage.

By KENT ROWEY
July 15, 2013, 12:39 pm
Editors’ Note Appended

Kent Rowey is a partner in the energy and infrastructure practice at Allen & Overy in New York.

Detroit is fighting for its fiscal survival. Over the last four years, the city has spent $100 million more each year than it has collected. Long-term liabilities are estimated to be as high as $20 billion. Gov. Rick Snyder of Michigan installed an emergency manager, who most assume is preparing for a Chapter 9 filing, which would be the largest municipal bankruptcy in U.S. history.

In May, the manager, Kevyn Orr, was considering selling parts of the permanent collection at the Detroit Institute of Arts to pay creditors. Mr. Orr later backed off that threat, but no doubt he wanted to scare city fathers into getting serious about averting financial disaster. But new worries followed that he would have to unload the city’s collection of 62 classic cars.

Detroit’s plight may be extreme, but its problems are increasingly common in cities across the United States. Municipalities are struggling to make public payroll, maintain basic services or meet pension fund obligations. Many of the hard choices Detroit has to make will be repeated in towns in the Midwest, Rust Belt, California and throughout the Northeast.

In truth, Detroit does not have to part with its Diego Rivera murals or its vintage Mustangs and Cadillacs. Instead, it should be taking an inventory of revenue-producing public assets — including on-street and off-street parking systems, water systems, toll bridges, solid waste disposal plants, utilities and airports — to lease or divest with help from private partners willing to invest capital in improving them.

Public-private partnerships are the ideal solution for the fiscal problems plaguing many American cities. In a so-called P3 transaction, private equity investors make a large up-front payment to run a public service or utility — often for hundreds of millions of dollars. In return, they gain a concession to operate the service under a contract that can last for decades.

Gaining much needed cash and operating efficiency are prime incentives for municipalities to undertake such transactions. Chicago entered into a concession for 36,000 parking meters a few years ago through a 75-year contract valued at more than $1 billion, a deal I advised the investors on. Besides streamlining the costs of...
running the citywide program, the new concession exposed abuses of handicapped parking permits and led to the passage of a law preventing abuses. Today, the Chicago Metered Parking System is considered one of the world’s best.

Does Detroit’s lurch toward bankruptcy make it a less-desirable candidate for a public-private transaction? Not necessarily. A municipality that has already filed Chapter 9 may have greater impetus to privatize infrastructure assets to restructure its balance sheet just like any business trying to work through insolvency.

P3 deals are also effective for cities on the brink. Not only can they generate substantial revenue to stave off defaults, but they need not involve an outright sale of assets. Ownership of the services often remains with the city, avoiding the prospect of a fire sale. As for cities in good financial shape, they should consider private partnerships as a means of undertaking long-term civic improvements at a time when the fiscal roof isn’t leaking.

How does a city ensure that it’s receiving fair value in a P3? These deals are subject to external market forces. Bidders for public infrastructure assign a value based on prospects for long-term revenue collection — will there be enough drivers crossing a toll bridge or parking their cars on city streets? In reality, infrastructure assets are in general relatively straightforward to value and represent a long-term, income-producing annuity for the right investor.

Privatization often ignites fears of price-gouging by Wall Street. In fact, your corner grocery store or nail salon has more power to raise prices than a private equity fund operating a public service. The assets at the center of these deals — parking garages, utilities, toll roads — operate under tight regulatory regimes. Rates are adjusted according to inflation and can’t be raised without an arduous process of public hearings and agency approvals.

In another deal I advised on, Bayonne, N.J., contracted a 40-year concession for its water and waste system through a partnership with Kohlberg Kravis Roberts and United Water, which abides by a strict scheduled rate protocol.

Some people have a knee-jerk aversion to allowing private enterprise to manage public works. The truth is that cities have terrible track records in maintaining their bridges and roadways. Gas and electric utilities have long been run by private entities. If a city can trust private business to operate its nuclear power plant, it has nothing to fear in allowing an investment fund to manage its parking meters.

Privatizing municipal services is not a hand-off of the public trust. The assets in a P3 rely on millions of paying customers for their revenue stream, not city coffers. If the assets remain in the hands of near-bankrupt municipalities, crucial services and infrastructure will become melting ice cubes financed by a vastly shrinking tax base.

Harrisburg, Pa., has been teetering on the edge of bankruptcy for several years, having to service $370 million in debt tied to a trash incinerator built a decade ago. Had the incinerator been developed through a concession with a private investor, Harrisburg’s balance sheet would look a lot brighter today.

What about jobs? Don’t private operators of public infrastructure torch contracts with municipal unions? In fact, the jobs needed to run these services remain unionized after a P3, typically governed by collective bargaining terms. Yet private concessions frequently create jobs through capital programs that had been sidelined by broke city governments.

Public-private partnerships have gotten a bad rap because of some highly publicized failures. In 2008, when Gov. Ed Rendell of Pennsylvania tried to lease the state’s turnpike to an infrastructure fund, the legislature killed the $12.8 billion deal. In Pittsburgh, the city council rejected a $500 million bid for a municipal parking concession that would have more than covered a $350 million shortfall in parking revenue.

These failures did not reflect inherent problems with the P3 structure — the transactions were derailed because of political grudges and fear-mongering. The reality is that government agencies are so constrained they can’t meet their responsibilities to operate and maintain — much less build new — public infrastructure. P3s regularly replace aging infrastructure and provide state-of-the-art services. The private operator of the Chicago parking meter system replaced all coin operated meters with credit card devices, which will soon feature pay-by-cellphone options. This would not have been possible had the city continued to manage the meters.

This should be a golden age of public-private partnerships — the need exists in cities across the country. And the capital is there, from private investors seeking long-term returns. American infrastructure has fallen behind countries like France, Italy, Spain, Portugal, Poland, Hungary and countries that have long embraced
privatization of urban systems. Ironically, the United States has become an emerging economy when it comes to developing P3 projects — in which opportunity needs to be matched with political will and bold thinking to undertake.

Ultimately, Detroit and other stressed cities don’t have much choice. They must land on solid ground and use new revenue to pay off existing debt. The marvel of public-private partnerships is that a significantly reduced debt load and shift of responsibility to the private sector can allow a city to turn to other priorities, like buying more textbooks for students or enhancing local parks that are a city’s true public trust. Divesting noncore assets may be the best way for many towns — not just Motown — to regain their momentum.

Editors' Note: July 19, 2013

This column has been updated to note the author’s connection to the deals involving the parking meter concession in Chicago and the water system concession in Bayonne, N.J. Those connections should have been described in the original post.
Completion Risk in Project Finance

Special Report

Project Complexity and Scale: Project complexity and scale vary significantly and provide the context against which the contractor’s implementation plan and contractual arrangements will be assessed. High complexity or large scale projects can still achieve investment grade if these aspects are properly managed. However, projects using unproven technology are unlikely to achieve investment grade, unless associated completion and operation risks are assumed by investment-grade counterparties.

Contractors and Implementation Plan: A suitably qualified contractor and a well-developed implementation plan with adequate budget and schedule can help to alleviate project complexity whereas an insufficient package can amplify risk.

Ability to Replace Contractor: Projects using established technology in predictable conditions and with sufficient time and cost budgets are more likely to be able to replace the construction contractor if required, for example following contractor insolvency. In contrast, more specialised or challenging projects may be limited to a small number of replacement contractors, which is likely to prevent the debt rating from exceeding the contractor’s rating.

Core Contractual Terms: To support investment-grade ratings, construction contracts generally need to contain key provisions, such as fully passing cost and schedule risk to the contractor. There needs to be a clear scope of works, performance milestones and a dispute resolution mechanism and credit enhancement in the form of funded budget contingency, payment retention and, usually, performance bonding.

Focus on Credit Enhancement: Contractor liability levels are less important than liquidity and other credit enhancement (such as letters of credit or surety arrangements) in Fitch’s analysis because recovery of claims from an insolvent contractor may be protracted and limited. However, low liability limits may suggest that the contractor has concerns about completion risk and will therefore draw additional scrutiny in the analytical process.

Rating can Exceed Contractor: In projects using established technology, where the base cost budget and schedule are appropriately sized, where there are multiple replacement contractors available and where the level of credit enhancement available to the project company is sufficient to cover replacement cost in the appropriate horizon, then it is possible for the rating of the project’s debt to exceed that of the contractor. Depending on the circumstances, it is possible for a project to be rated two categories above the contractor.
Project Complexity and Scale

An early stage in the analysis of completion risk is to assess the project’s relative completion complexity and scale. Project financing spans a wide range of complexity and scale. Figure 1 shows Fitch’s assessment of the key characteristics along with typical examples from the energy, transportation and social infrastructure sectors.

A project will typically have a mix of factors within the attributes shown above and the overall assessment will not necessarily be aligned to the weakest factor. For example, solar PV installations may have costs exceeding USD1bn (a weaker attribute) but are low complexity (stronger), can be built in less than three years (midrange) and with a highly predictable cost profile (stronger). Overall the assessment would be midrange for project complexity and scale.

Contractor Expertise and Implementation Plan

The project’s complexity and scale need to be matched by the use of contractors, subcontractors and suppliers of key equipment with suitable experience and capacity or else the rating is likely to be constrained. Similarly, the project’s schedule, cost budget and related contingencies need to correspond to the potential for delay and cost overrun.

The higher the complexity of the works, the greater is the potential for increased costs and delays. These factors may be mitigated by adequate schedule and funded cost contingency, the use of contractors of higher credit quality, scale and experience and suitable levels of credit enhancement.

Technical Advisor Input is Important

Fitch will review the report provided by the third party technical advisor in assessing the relative complexity of a project’s construction and the adequacy of the contractors and the implementation plan. Typically, Fitch seeks special comment on the following areas.

- Contractor group’s experience.
- Suitability of design and ability to achieve required project parameters.
- Level of pass-through of project company’s responsibilities to contractors.
- Achievability of schedule and critical path items that could impact the schedule.

Related Criteria

Rating Criteria for Infrastructure and Project Finance (July 2012)

1 In general, ratings in project financings are unlikely to exceed ‘A’ category due to idiosyncratic risks associated with these single purpose transactions.
- Suitability and adequacy of implementation and team integration plans.
- Range of costs and delay scenarios including those related to utilities, geo-technical conditions, third party commitments (e.g. right of way realignment) and any other known interfaces.
- Suitability of cost budget and contingency.
- Comparison with cost benchmarks on comparable projects.
- Realistic downside scenarios for delay, cost and performance.
- Ability and likely cost to replace the contractor at different stages of the works.
- List of replacement contractors with comparable capabilities.
- Adequacy of buffers between expected schedule and technical performance with the delivery dates and required performance under the concession or offtake contracts.

### Figure 2
**Contractor Expertise and Implementation Plan**

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Characteristics</th>
<th>Rating implication</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stronger attributes</strong></td>
<td>Contractor, sub-contractors and suppliers of key equipment with successful track record in same project type, scale and region</td>
<td>No rating constraint</td>
</tr>
<tr>
<td></td>
<td>Cost &amp; time budget including above market contingency levels and able to withstand severe downside scenarios</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No material permitting risk</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No material external interface, connection or supply risks</td>
<td></td>
</tr>
<tr>
<td><strong>Midrange attributes</strong></td>
<td>Contractors and suppliers with track record in related project type</td>
<td>Constrained to higher of ’BBB’ category or to contractor / credit enhancement combination</td>
</tr>
<tr>
<td></td>
<td>Cost &amp; time budget including market standard contingency levels and able to withstand moderate downside scenarios</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Some minor permit conditions may exist but their impact on schedule, delay and costs have been adequately accounted for</td>
<td></td>
</tr>
<tr>
<td></td>
<td>External interface, connection or supply risks exist but have been adequately mitigated</td>
<td></td>
</tr>
<tr>
<td><strong>Weaker attributes</strong></td>
<td>Smaller or less experienced contractors or suppliers</td>
<td>Constrained to sub investment grade</td>
</tr>
<tr>
<td></td>
<td>Contractor history of delays or cost overruns</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ambitious project schedule with clear potential for delay</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Material permitting risk</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Significant external interface, connection or supply risks</td>
<td></td>
</tr>
</tbody>
</table>

Source: Fitch

### Availability of Replacement Contractors

Usually in project financing, the risks of construction cost and delay and asset performance are passed in the first instance to a specialist contractor or a group of contractors. A key part of Fitch’s analysis is to consider how easy it would be to replace the contractor(s) in case they did not perform adequately or became insolvent. This would determine in particular to what extent the rating of the project’s debt would be capped at the rating of the contractor(s). A weaker assessment is likely to constrain the rating at the level of the contractor unless there are completion guarantees from the sponsors, whereas a stronger or midrange assessment could allow the rating to exceed that of the contractor.

### Figure 3
**Contractor Replacement**

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Characteristics</th>
<th>Rating implication</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stronger attributes</strong></td>
<td>Many replacement contractors available</td>
<td>No rating constraint</td>
</tr>
<tr>
<td></td>
<td>Long stop date in concession / offtake contract adequate to replace contractor</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Some replacement contractors available</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Some volatility in availability of resources in local labour market</td>
<td></td>
</tr>
<tr>
<td><strong>Midrange attributes</strong></td>
<td></td>
<td>Maximum one category above contractor rating</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Weaker attributes</strong></td>
<td>No or very few replacement contractors available</td>
<td>Constrained to contractor rating</td>
</tr>
<tr>
<td></td>
<td>Uncertain availability of resources in local labour market</td>
<td></td>
</tr>
</tbody>
</table>

Source: Fitch
Contract Terms

Fitch will compare the project’s complexity and scale, the contractor and the implementation plan against the formal risk allocation specified in the construction contracts. The following provisions would be necessary to support an investment grade rating during the completion phase. These should be supported by the opinion of the technical adviser.

- Clear design and scope of work matching the requirements of the concession or offtake contract. Clear risk allocation. In the event that the grantor or offtaker requests design or scope changes, then the impact of these changes on construction costs and schedule should be fully compensated under the concession or offtake agreement.

- Fixed price and date. The absence of fixed price or date provisions may suggest that the works or schedule are particularly risky and may also leave the contractor inadequately incentivised to perform. Sponsor completion guarantees can be a substitute for fixed price contracts.

- Adequate dispute resolution and arbitration arrangements to ensure that works continue even through contractual dispute.

- Reasonably achievable milestones and other performance thresholds.

- Credit enhancement from funded contingency and payment retention. This provides credit enhancement to cover events that do not involve performance breach by the contractor, for example changes in scope of works and leave some room for settlement of disputes within the resource of the project company.

- Some level of liquidated damages as a performance incentive and sufficient to cover lost revenues and additional interest and other costs resulting from delays passed the budgeted completion date.

Projects using target price construction contracts may still achieve investment grade ratings if the cost and delay risks are adequately mitigated through other means. For example, the project’s tariff structure may allow for the pass through of a substantial portion of potential cost.
overtimes or delays to customers. Alternatively, there may be protection provided by the government against extreme delays or cost overruns. Fitch Ratings would assess these mechanisms on a case by case basis.

**Contractor Rating and Credit Enhancement**

Fitch assesses the contractor’s rating and whether the project company has sufficient credit enhancement to meet the forecast costs of replacing the contractor. Assuming that there are sufficient replacement contractors available, this credit enhancement will determine by how much the project’s debt rating during the completion phase can exceed that of the contractor(s).

The key inputs for this analysis are as follows.

- **The credit quality of the contractor(s):** The primary indicator of a contractor’s credit quality will be its Long-Term IDR. Contractors often work in groups and so, depending on the nature of shared liability amongst contractors, Fitch will decide which entity it is appropriate to assess.
- **The technical advisor’s (TA) assessment of likely replacement cost:** Depending on the rating of the contractor, the time horizon used by Fitch to analyse the likely cost of replacing the contractor will differ. For weaker rated contractors, there is a higher near term default risk and so Fitch will consider a near term replacement scenario, usually with higher replacement cost, whereas for a higher rated contractor, the replacement scenario would be later, resulting in a lower cost. Where such TA assessment is not available then Fitch will benchmark replacement cost ranges against closely comparable peer projects where available.
- **The overall credit enhancement level:** Credit enhancement would come from funded contingency, payment retention (to date of replacement) and by letters of credit (LCs) and surety bonds. To justify a project debt rating higher than that of the contractor (i.e. assuming the benefit of contractor replacement) on a project of midrange complexity and scale, there would need to be credit enhancement of at least 10% of the construction work’s value. LCs offer on demand liquidity but leave the task of replacing the contractor to the project company. Surety providers would take on the role of replacing the contractor but, apart from any on-demand features of the bond, offer less liquid support as they benefit from the same contractual provisions as the original contractor.

Where there is reliance on a surety bond, some liquidity is still necessary to cover near term losses to the project company caused by delay. Fitch will evaluate whether the on-demand aspects of the bond plus other sources of liquidity (LC, retention, funded contingency) are sufficient taken together to cover costs or lost revenues resulting from delays for a period of six months. Assuming this is the case, Fitch would not generally differentiate in its analysis of credit enhancement between LC and surety support.

Credit enhancement in the form of committed standby subordinated liquidity facilities with limited drawing conditions and from strongly rated counterparties would be included in Fitch’s analysis of completion phase liquidity.

**Evolution of Replacement Cost**

Figure 5 below depicts an example of a large infrastructure project with moderate complexity. The TA’s assessment of replacement cost would reflect a scenario of either contractor insolvency (cost premium to new contractor, some delays and fees) or performance breach (which would also include more severe delays, lost revenues and rectification costs). The replacement cost falls as time progresses due to remaining works value and reduced complexity. The cost values in Figure 5 and the percentage values in Figures 5 to 10 are illustrative only. Actual values would be project specific.
Figure 5 shows how Fitch would assess this profile. For example, in order to achieve a ‘BBB’ category rating, a project using a ‘BB’ category contractor would need sufficient credit enhancement to cover replacement cost in a scenario where the contractor became insolvent in two to three years’ time (15% in the example above). If the same project used instead a ‘B’ category contractor, then to achieve ‘BBB’ category ratings it would need credit enhancement to cover the higher cost of a near term replacement (23% in the example) due to the weaker credit quality of the contractor.

Figure 6 shows how Fitch would assess this profile. For example, in order to achieve a ‘BBB’ category rating, a project using a ‘BB’ category contractor would need sufficient credit enhancement to cover replacement cost in a scenario where the contractor became insolvent in two to three years’ time (15% in the example above). If the same project used instead a ‘B’ category contractor, then to achieve ‘BBB’ category ratings it would need credit enhancement to cover the higher cost of a near term replacement (23% in the example) due to the weaker credit quality of the contractor.

# Contractor Rating and Credit Enhancement Analysis

<table>
<thead>
<tr>
<th>Contractor rating</th>
<th>Project debt rating</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
</tr>
<tr>
<td>BBB</td>
<td>2 – 3 year horizon</td>
</tr>
<tr>
<td></td>
<td>(Minimum 10%*)</td>
</tr>
<tr>
<td>BB</td>
<td>Immediate</td>
</tr>
<tr>
<td></td>
<td>(Minimum 10%*)</td>
</tr>
<tr>
<td>B</td>
<td>Could not achieve ‘A’ category without guarantee</td>
</tr>
</tbody>
</table>

*Note: This is the minimum required for a project of midrange construction complexity and scale and may be adjusted upwards or downwards for projects of weaker or stronger complexity and scale respectively.

Source: Fitch

Worked Examples

The examples shown in Figures 7 to 10 show how steps 1 to 5 interact to result in the completion phase rating. It is possible for any one of the attributes to limit the outcome.

A weaker assessment for complexity and scale is likely to place more emphasis on the credit quality of the contractor and may also suggest that there may be few suitable replacement contractors available. A weaker assessment for contractors and implementation plan would likely constrain the rating to sub-investment grade as it would suggest that the project had been poorly conceived. A weaker assessment in contract terms would probably limit to sub-investment grade as it would leave the project exposed to price and schedule risk and provide inadequate incentives for the contractor. Alternatively, a weaker assessment for contractor replacement would then cap the rating during the completion phase to that of the contractor as few alternatives would be available following contractor insolvency or poor performance. Contractors of weaker credit quality may constrain the rating unless there are ample replacements and sufficient credit enhancement to fund replacement costs.
### Figure 7

**Case 1 – Schools Project**

<table>
<thead>
<tr>
<th>Assumptions</th>
<th>Assessment</th>
<th>Rating implication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complexity &amp; scale</td>
<td>Stronger: Small project; low technical complexity</td>
<td>No rating constraint</td>
</tr>
<tr>
<td>Contractor expertise and implementation plan</td>
<td>Stronger: Contractor has ample relevant experience; schedule and budget comparable to peers</td>
<td>No rating constraint</td>
</tr>
<tr>
<td>Contractor replacement</td>
<td>Stronger: ample replacements; non-specialised works</td>
<td>No rating constraint</td>
</tr>
<tr>
<td>Contract terms</td>
<td>Midrange: fixed price &amp; date; dispute resolution; clear scope</td>
<td>Up to two categories above contractor rating</td>
</tr>
</tbody>
</table>

**Contractor Rating & Credit enhancement**

| Contractor rating category | ‘B’ |
| Credit enhancement | 20% |
| Contractor rating / credit enhancement combination | ‘BBB’ |

**Achievable project debt rating category for completion phase**

| ‘BBB’ | Rating constrained by contractor rating/credit enhancement combination |

Source: Fitch

### Figure 8

**Case 2 – Complex Coal-Fired Power Plant**

<table>
<thead>
<tr>
<th>Assumptions</th>
<th>Assessment</th>
<th>Rating implication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complexity &amp; scale</td>
<td>Weaker: large project; proven but complex technology</td>
<td>Constrained to higher of sub investment grade or contractor / credit enhancement combination</td>
</tr>
<tr>
<td>Contractor expertise and implementation plan</td>
<td>Midrange: large experienced contractor; some critical schedule milestones</td>
<td>Constrained to higher of ‘BBB’ category or to contractor / credit enhancement combination</td>
</tr>
<tr>
<td>Contractor replacement</td>
<td>Weaker: quite specialised</td>
<td>Constrained to contractor rating</td>
</tr>
<tr>
<td>Contract terms</td>
<td>Midrange: fixed price &amp; date; dispute resolution; clear scope</td>
<td>Up to two categories above contractor rating</td>
</tr>
</tbody>
</table>

**Contractor Rating & Credit enhancement**

| Contractor rating category | ‘BBB’ |
| Credit enhancement | 20% |
| Contractor rating / credit enhancement combination | ‘A’ |

**Achievable project debt rating category for completion phase**

| ‘BBB’ | Rating constrained to contractor rating due to limited number of replacements |

Source: Fitch

Midrange or stronger assessments would tend to support ‘BBB’ or ‘A’ category ratings respectively, subject to any of the weaknesses outlined above.
### Figure 9
**Case 3 – Offshore Wind Farm**

<table>
<thead>
<tr>
<th>Qualitative assessments</th>
<th>Assessment</th>
<th>Rating Implication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complexity &amp; scale</td>
<td>Weaker: Large scale; offshore location</td>
<td>Constrained to higher of sub investment grade or contractor / credit enhancement combination</td>
</tr>
<tr>
<td>Contractor expertise and implementation plan</td>
<td>Midrange: challenging weather conditions</td>
<td>Constrained to higher of ‘BBB’ category or to contractor / credit enhancement combination</td>
</tr>
<tr>
<td>Contractor replacement</td>
<td>Midrange: some aspects specialised; replacement constrained by timing</td>
<td>Maximum one category above contractor rating</td>
</tr>
<tr>
<td>Contract terms</td>
<td>Weaker: multi contract; interface risk left with project company</td>
<td>Constrained to sub investment grade</td>
</tr>
</tbody>
</table>

**Contractor rating & credit enhancement**

| Contractor rating category                                  | ‘BB’ to ‘BBB’                                                             | Provides reasonable margin over 6 - 12 month replacement horizon (see Figure 6)                                                                   |
| Credit enhancement                                          | 20%                                                                       |                                                                                                                                                    |
| Contractor rating/credit enhancement combination            | ‘BBB’                                                                     |                                                                                                                                                    |

**Achievable project debt rating category for completion phase**

| ‘BB’                                                        | Rating constrained by lack of fixed price and date contract leaving project company exposed to cost overrun and delay risk |

Source: Fitch

### Figure 10
**Case 4 – Road Upgrade Project**

<table>
<thead>
<tr>
<th>Qualitative assessments</th>
<th>Assessment</th>
<th>Rating Implication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complexity &amp; scale</td>
<td>Stronger: Low complexity; established technology; highly predictable costs; medium scale and duration (midrange attribute)</td>
<td>No rating constraint</td>
</tr>
<tr>
<td>Contractor expertise and implementation plan</td>
<td>Stronger: Successful track record; no permitting or interface; cost and time budget can withstand moderate stresses (midrange attribute)</td>
<td>No rating constraint</td>
</tr>
<tr>
<td>Contractor replacement</td>
<td>Midrange: Some replacement contractors; longstop date includes sufficient buffer</td>
<td>Maximum one category above contractor rating</td>
</tr>
<tr>
<td>Contract terms</td>
<td>Midrange: fixed price &amp; date; dispute resolution; clear scope; Single contractor (Stronger attribute)</td>
<td>Up to two categories above contractor rating</td>
</tr>
</tbody>
</table>

**Contractor rating & credit enhancement**

| Contractor rating category                                  | ‘BB’                                                                     | Credit enhancement sufficient to cover early stage contractor default (see Figure 6)                                                             |
| Credit enhancement                                          | 30%                                                                     |                                                                                                                                                    |
| Contractor rating/credit enhancement combination            | ‘A’                                                                      |                                                                                                                                                    |

**Achievable project debt rating category for completion phase**

| ‘BBB’                                                       | Constrained by contractor replacement therefore negating full benefit of credit enhancement |

Source: Fitch
Completion Risk in Project Finance

October 2013

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Global PPP Lessons Learned
Special Report

Framework Provides Strength; Challenges Remain: The challenge is transferring risk associated with the financing, construction, operation and lifecycle maintenance of an asset or service while maintaining flexibility. The protection to all parties is built into a complex suite of legal provisions that allocate risks to the party, theoretically best able to handle those risks. However, the unique nature of each asset or service and the unpredictable nature of future events can make the risk allocation subject to criticism in hindsight.

Value Garnered When Risks Anticipated: The public sector makes the rules, but sometimes it has trouble living by those very rules. Transactions that have significant advance planning and meaningful public involvement to identify key long-term public policy objectives and acceptable tradeoffs create a better risk reward balance, benefiting both the public and private sectors in the long run, and consequently, debt investors.

Proper Risk Allocation Is Key: When risks are allocated to parties best able to manage them economically, then the incentives of all parties are better aligned towards successful execution. Key project risks in construction or operation from unanticipated or changed conditions do occur and can be managed. When all parties have appropriate levels of risk, they are better incentivized to work together to find an amicable solution.

Size and Complexity Affect Deliverability: The larger the project and the greater the technical complexity, the more important it becomes that constructors and operators have the technical and financial wherewithal to bear the risk they are taking. At some level of size and complexity, the pool of qualified players and the ability to allocate risk can be limited such that the risk of nonperformance falls back on the public sector and consequently on lenders. An independent, qualified technical assessment of risk is very important to understanding this risk.

Forecasting Demand Sometimes a Key Vulnerability: The probability of over-estimation remains high despite decades of experience with forecasting demand on transportation projects. Many greenfield projects over the years across many jurisdictions have suffered from this exposure. While other risks have been manifested in many cases, defaults on debt have largely been driven by underperformance relative to original projections.

Macro and Industry Risks Remain: A key assumption is that a normal environment will prevail. However, severe recessions prior to project opening, political risk from high tariff increases, changes in approach from new administrations, lack of fulfillment of third-party commitments, among others, can all have a meaningful effect on the performance of a PPP.

Concession Renegotiation Risk Must Be Addressed: As time progresses and the needs of the population and government evolve, it should not come as a surprise that key terms may be subject to debate and renegotiation. It is important that adverse changes to terms be subject to lender approval. The alternative is often optional grantor concession termination, which is often unaffordable. Concession termination scenarios should be understood. While most concessions tend to go to term, understanding the options available to government in the event of termination is important. For governments, very often this scenario is not a viable alternative given the lack of identifiable resources to pay compensation.

Related Research
U.K. Social Infrastructure Performance Update (April 2012)
High Speed Rail Projects: Large, Varied and Complex (April 2010)
Large Projects, Giant Risks? — Lessons Learned — Suez Canal to Boston Big Dig (May 2009)
U.S. Toll Road Privatizations: Seeking the Right Balance (March 2006)

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The PPP Landscape

PPPs have been a tool used by governments to deliver needed public infrastructure for centuries. Canals, rail, ferries, water systems, power networks and roads were built privately in exchange for tariff or toll-raising authority or government paid capacity-based revenue streams. Western governments following the Great Depression and post-World War II reverted to a public finance and procurement model for the development of large rail, road, port and airports. They used the public balance sheet and spread costs through the tax system.

The recent trend towards use of PPPs with public payment (availability-based) structures dates back to the Project Finance Initiative (PFI) of the U.K. government with more than 700 PFI transactions completed in the U.K. since the mid-1990s, concentrated in social infrastructure. Over the same period, a smaller but still substantial few hundred PPP projects, were financed in continental Europe. The World Bank, using a broad definition of PPP identified nearly 5,000 private infrastructure projects in low- and middle-income countries since 1984. These include management or lease contracts, concessions, greenfield projects and divestiture of public enterprises. These also include more than 800 water and sewerage projects, more than 1,400 transportation projects and more than 2,600 energy projects.

The track record has been mixed. Governments like Australia, Canada, Chile, Spain, France, Belgium, the Netherlands, Mexico and the U.K. have embraced the concept, and while problems have occurred, they have chosen to make changes and continue to pursue PPPs. The U.S. has been slow to embrace PPPs, but momentum finally seems to be building.

Although there have been many issues with PPPs, this is not necessarily an indictment on PPPs, but instead a reflection of the fact that the complexity of the assets and services presents challenges in finding the right public policy balance that fits within a business, legal and financial framework to bring best value to all parties, most importantly citizens. Further, local sentiments and conditions cause the public policy, business, legal and financial considerations to differ from jurisdiction to jurisdiction, asset type to asset type, and from project to project. Added challenges are layered on by the political imperatives and schedules of elected officials that can create less than ideal PPP frameworks, and the profit objectives of private parties that justify participation despite inappropriate levels of risk.

While one can view PPPs as a glass half full or as a glass half empty, it is Fitch’s view that the former is the better perspective. PPPs can provide public value, but need to be carefully crafted to address all stakeholder concerns. When PPPs are viewed to have failed, the issue is often inappropriate transaction design and application.

Responsibility Lies with Both Parties

Responsibility for problems with PPPs can be assigned to both the public sector (the grantor of the concession) and the private sector (the grantee of concession rights and responsibilities or the concessionaire). When issues of loss of control and too much profit arise, the responsibility lies squarely with the executive and legislative branches of the public sector (i.e. the grantor) that sets the rules of the game. When issues arise from project cost overruns, delays in completion, weaker demand, higher operating costs, lower profits, debt default and concessionaire bankruptcy, the responsibility lies largely with the private sponsor (i.e. the concessionaire).

A key tenet of a PPP is that most risks (permitting, land expropriation, preexisting site conditions, third-party commitments, unproven traffic and revenue, uninsurable event risks) that
cannot be commercially mitigated at reasonable cost should be borne by the grantor and those that can be commercially borne at reasonable cost (completion, predictable traffic and revenue, operations, lifecycle maintenance, financing, insurable event risks.) should be borne by the concessionaire. The nature of a PPP also requires considerable interfacing between the two parties given the inability to anticipate every eventuality as the infrastructure is built, operated and maintained during the life of the PPP. This can result in friction when actual conditions differ from what might have been expected.

**Success Demands Competence on Both Sides**

A well-structured grantor team and a competent concessionaire are better positioned to respond and minimize the adverse effects to both parties. That is not always the case and this unfortunately creates an asymmetrical risk. Grantors are exposed to government/political risk from unanticipated and unplanned obligations, which results in concessionaire delays and costs that may be further exacerbated with the possibility of being only partially compensated or not compensated at all.

The concessionaire is then in the precarious position of deciding each time whether its claim or dispute is worth declaring an event of default. Dispute resolution mechanisms agreed to by the parties can significantly reduce this asymmetry. Nonetheless, an experienced concessionaire would likely build this risk into its required return profile. Concessionaire inexperience and poor performance is also a concern and can result in misestimation of its risk and ability to perform. In this case, the grantor is not obligated and not likely (except in exceptional circumstances where there is mutual benefit) to bail out the concessionaire (and its lenders).

Lastly, there are instances when risks are asymmetrically borne by lenders and not the grantor or the concessionaire. In some cases, grantors reserve their right to change their mind about the nature of the original transaction, which can result in changed scope with a renegotiation between the parties. The incentives of equity and debt may not be properly aligned here. The equity sponsor may be willing to accept lower or even some negative returns on a single project to secure a broader and longer term relationship with the grantor across other profitable projects. Lenders do not often benefit in that equation. In the absence of a requirement for lender approval, changes may be crammed down on lenders.

**PPP Structures Have Proven to Be Resilient**

While risks abound, one must keep in mind that most risks can be anticipated and mitigated. Many projects have been implemented in many jurisdictions. While the market continues to face new pitfalls, governments and the market have learned from prior missteps. The issues that arise, while problematic, are not deal breakers and sensible minds often prevail with enough mutual benefit remaining for both parties to take the transaction to term.

Defaults in PPP transactions have largely been the consequence of weak project economics (e.g. overestimated demand or poorly estimated costs) rather than friction between the parties or outright default by the grantor. However, there have been instances of grantors retroactively altering the economics of the concession to the detriment of equity and lenders. On balance, Fitch notes that most governments have a large infrastructure deficit and they see PPPs as a way to facilitate progress. This puts much needed pressure on key decision makers to plan better and hold up their end of the bargain as much as possible.
Aggressive Leverage Is a Vulnerability

PPPs and publicly managed assets globally have been vulnerable to the risks of over-leverage. This is further exacerbated in periods of extreme economic or financial stress. In instances of high leverage, the credit decline was greatest when projects with traffic and revenue forecasting risk significantly underperformed their revenue projections. In the U.S., these include the San Joaquin Hills toll road, SouthBay Expressway, Southern Connector, Santa Rosa Bay Bridge, Dulles Greenway, Indiana toll road and Pocahontas Parkway. In Europe, they include the Madrid Radiales in Spain and toll projects in Portugal. The Tequila Crisis in the mid-1990s caused numerous projects to default on their debt in Mexico. In Australia, the Cross City and Lane Cove tunnel projects were also exposed to this risk.

Lessons Learned

Learning from the mistakes of the past is a good way to begin avoiding new ones in the future. *Fitch’s Rating Criteria for Infrastructure and Project Finance* (August 2012), together with specific-sector criteria addressing transportation and energy infrastructure, identify the major risks that projects face. When analyzing the project, Fitch considers factors such as project rationale, the sponsor and legal structure, completion risk, technology risk, operating and maintenance risk, plus risks to project gross revenue from volume, price or availability. Sovereign, political and industry risks are also considered together with future capital expenditure and information quality. Risk allocation is a key feature of project finance and Fitch assesses its impact on the project company, as appropriate for each risk factor, which in most cases will include a minimum level of creditworthiness consistent with the significance of the allocated risk.

The criteria lists typical stronger, midrange and weaker attributes associated with each major risk factor. Investment-grade ratings are typically associated with projects, structures and instruments displaying predominantly stronger or midrange attributes. The stronger attributes associated with the relevant risk factors and a select set of examples from lessons learned on PPPs that illustrates these risks in the following tables.
### Project Risk: Ownership and Sponsors

<table>
<thead>
<tr>
<th>Project</th>
<th>Country</th>
<th>Positive/Negative Developments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jarvis PLC Concessions</td>
<td>U.K.</td>
<td>Rapid growth from a small contractor to Britain’s largest engineering and construction firm in 10 years. It began with its role in the British Rail privatization, then pushed aggressively into PFI projects (motorways and social infrastructure) achieving preferred bidder status by underbidding the risks, even when its finances were strained. Problems in construction ensued as did operational and safety issues, subsequent investigations and financial stress culminated in it having to divest its concessions.</td>
</tr>
</tbody>
</table>

| Southbay Expressway         | U.S.    | Disputes with contractor in construction due to inadequate contract provisions. Sponsors contributed significant additional equity to complete.                                                                                     |

| Colombia Concessions        | Colombia | High dependence on toll revenue from ongoing operations during initial years of a concession to make the financial plan work. This permitted concessionaires to reduce upfront equity or have no real equity at risk while revenue underperformance and concession performance risks were borne squarely by lenders. To guarantee completion of the projects to minimum standards, payments to concessionaires are now subject to projects becoming operational and achieving service and quality standards. |

| Inversiones Alsacia        | Chile    | The state made changes to the concession framework post-financing to increase the exposure to demand risk and increase operational performance requirements. The equity sponsor was amenable to the changes to protect its market position to the detriment of lenders who face an elevated risk profile. |

| Las Vegas Monorail         | U.S.    | The project significantly underperformed traffic and revenue. Debt default was inevitable; however, as a not-for-profit corporation with no long-term private or public equity, it lacked any institutional commitment to the asset once it was built leaving it “orphaned” with few incentives to work constructively with lenders for a satisfactory resolution. The casinos were the primary beneficiaries, but had little skin in the game. |

Source: Fitch.

### Project Risk: Debt Structure

<table>
<thead>
<tr>
<th>Project</th>
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<tbody>
<tr>
<td>Indiana Toll Road</td>
<td>U.S.</td>
<td>Near zero interest rates caused the mark-to-market on the accreting swap (used to lower initial year debt service obligations) to spike well beyond expectations. The accreting liquidity facility increased rather than decreased the financial risk profile of the concession company.</td>
</tr>
</tbody>
</table>

| Chicago Skyway              | U.S.    | This financing has a similar risk profile to the Indiana Toll Road with accreting swaps, but without short-term bank loan maturities that exacerbated the ITR transaction’s risks. It does face refinance risk and is unlikely to benefit meaningfully from the monoline guarantee in place. |

| European Concessions        | Europe  | Exposure to refinance risk coupled with the timing of the recession caused high costs with material mark-to-market on swaps, which had longer maturities than the mini-perm debt. |

| Mexico Concessions (Pre-1994)| Mexico  | Toll rate increases on a few projects were linked to foreign exchange movements in order to justify U.S. dollar-based debt. The Tequila crisis caused significant devaluation of the Mexican peso, which could not be reasonably passed on to users. This underscored the importance of financing public assets largely in local currency. |

Source: Fitch.
Project Risk: Legal and Regulatory

Relevant Stronger Attributes

Structure based on standard contracts or specific legislation supported by legal opinions; allocation of project and financial risk unambiguously evidenced by contracts; relevant licenses, permits, or regulated status have been obtained and are valid to debt maturity; low structural complexity; legal framework includes financial rebalancing mechanisms in case of unforeseen events; strong track record of quick and fair resolution of litigation.

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<tr>
<td>407 ETR</td>
<td>Canada</td>
<td>The established tariff regime with no caps or restrictions and the 99-year concession came under considerable criticism a few years after the inception of the transaction. The province challenged the ability to raise tolls unilaterally under the concession and refused to deny license plate renewals for toll violators. The legal challenges by the province went through the full appellate process and the concessionaire won every round. There was a final settlement with the concessionaire making some improvements and setting aside some funds for toll discounts.</td>
</tr>
<tr>
<td>Chicago Concessions</td>
<td>U.S.</td>
<td>The city of Chicago executed a series of concessions over the past decade for its Skyway toll bridge, municipal parking garages and street parking. Long, 99 and 75-year concessions to maximize upfront payments to subsidize city operational deficits and very liberal tariff regimes have come under considerable criticism. Legal disputes in response to adverse city actions related to the garage and street parking transactions have resulted in an arbitration panel ruling against the city and requiring a $57.8 million compensation payment in the former case and a negotiated settlement with some give backs from both sides in the latter case.</td>
</tr>
<tr>
<td>Elizabeth River Crossings</td>
<td>U.S.</td>
<td>Legal challenge on Commonwealth’s authority to transfer right to toll crossings upheld in court. It is now under appeal and lenders are protected by concession terms placing the risks of this challenge on the grantor.</td>
</tr>
<tr>
<td>Spanish Concessions</td>
<td>Spain</td>
<td>Lawsuits were filed related to land acquisition resulting in large, unanticipated land expropriations costs several years after acquisition.</td>
</tr>
<tr>
<td>French Concessions</td>
<td>France</td>
<td>Land expropriation risk, while a concessionaire risk, is not a concern because the process relies on a robust legal framework for land valuation.</td>
</tr>
<tr>
<td>Perpignan-Figueras</td>
<td>France/Spain</td>
<td>The rail line between France and Spain was delivered on time, but Spanish authorities did not deliver the connection with the Spanish network. However, the concessionaire received compensation and was kept whole.</td>
</tr>
<tr>
<td>Portuguese Shadow Toll Roads</td>
<td>Portugal</td>
<td>Government converted shadow toll roads into real toll roads with traffic risk borne by the government. The concessions were converted to availability-based structures. On balance, a good outcome for concessionaires given a lower risk profile, but returns were also lower relative to initial business plans.</td>
</tr>
<tr>
<td>Hospital Sud Francilien</td>
<td>France</td>
<td>Litigation over delays and cost overruns mainly due to changes requested by the public sector. The main cause of disputes was driven by the political bias against PPPs and the fact that hospitals face chronic deficits, which is unrelated to the PPP. However, the size and complexity of the PPP affected its design and implementation making it a target for criticism; in retrospect not an ideal project for use of PPPs.</td>
</tr>
<tr>
<td>Chilean Concessions</td>
<td>Chile</td>
<td>The “Least Present Value Tender System” was created to protect public value by limiting concessionaire return while also incentivizing the concessionaire to perform and lower their risk by varying the length of the concession. Higher revenues than expected would shorten the concession and vice versa. While a good tool from a public policy standpoint, the public policy and credit framework was sound in that it insulated both the public and the private sector from the vagaries of revenue forecasting risk that neither party could control even though lenders faced some prepayment and delayed payment risk.</td>
</tr>
<tr>
<td>Inversiones Alsacia</td>
<td>Chile</td>
<td>The changes to the concession framework post-financing were not deemed to be adverse by the government so they were not accompanied by any compensation. Concession maturity was also unchanged. Lenders face a heightened risk profile in Fitch’s view.</td>
</tr>
<tr>
<td>SR 91 (Orange County)</td>
<td>U.S.</td>
<td>The high increase in toll rates in the first few years of the Managed Lanes operation was received poorly by users and increased the call by elected officials for the county to buy it back and lower the tolls. The county did buy it back in an amicable arrangement at what appears to still be a reasonable price 10 years later and even after the recent unexpected, deep recession. Elected officials in the county can be credited for understanding that the value of the asset is dependent on free flow traffic, which in turn is dependent on a de-politicized and systematic approach to tolling. The lanes continue to operate today with public acceptance that has resulted in a project to expand the lanes in neighboring Riverside County.</td>
</tr>
</tbody>
</table>

Source: Fitch.
### Project Risk: Completion

#### Stronger Attributes

International engineering, procurement and construction (EPC) contractor; direct experience of similar projects; involvement of major local contractor; midrange to strong financial strength; facility management team with a history of delivering projects on time. Fixed price contract; cost risk appropriately allocated; substantial contingencies in cost budget; committed funding incorporates contingencies; cost estimates based on detailed upfront designs; well-conceived project management approach at existing facility substantially mitigating cost and delay risks; step-in rights; all permits, etc., in place; generous project schedule; contingencies for unexpected delays; little ground for public opposition; major parties have history of on-time completion; clear, binding and standard dispute resolution process; regular onsite inspection and detailed reporting; no connecting infrastructure risk; contractor experienced with technology.

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<tr>
<td>Jarvis PLC Concessions</td>
<td>U.K.</td>
<td>Underbidding of contracts resulted in financial strain; construction schedules began to slip and Jarvis blamed its subcontractors for the problems and did not pay them in certain instances leading to further cost increases, delays and legal disputes. However, despite the severe stress, the projects were completed with additional funding from Jarvis divestitures and additional project debt. All major project parties were adversely affected.</td>
</tr>
<tr>
<td>Metronet</td>
<td>U.K.</td>
<td>Model did not bring efficiency to the procurement and capital investment process because risks were not shifted through the contracts, and possibly by their nature could not have been. A failed, large PPP for modernization work needed to remedy decades of underinvestment in the London underground transit system. The National Audit Office concluded that the concession was unable to manage the supply chain, which was controlled by shareholders. Suppliers had power over scope of works, required payments for extra works undertaken and had a superior vantage point in understanding costs. Management could not control scope of works or cost evolution and could not support claims for compensation from London Underground for “efficient and economic works.” Metronet went into receivership in 2007. Capital markets bondholders and monolines recovered fully, largely due to a 95% guarantee on certain debt amounts by London Underground supported by grants of 1.7 billion pounds from the department of transport.</td>
</tr>
<tr>
<td>East Lothian Schools</td>
<td>U.K.</td>
<td>The main contractor, Ballast PLC, went into receivership. Another contractor was engaged by the concession sponsors to step in and complete the project, which involved major refurbishment of the county’s six high schools. Although delayed, the project was completed and delivered to East Lothian with no increase in cost to the grantor. Replacement and increased completion costs were met by a combination of surety bond, guarantees, debt and equity.</td>
</tr>
<tr>
<td>Southbay Expressway</td>
<td>U.S.</td>
<td>Significant delays, but contractor JV completed project while disputes were ongoing. Inadequate contract left project company exposed to additional costs that were not allocated to either the contractor or the grantor.</td>
</tr>
<tr>
<td>Eurotunnel</td>
<td>U.K./France</td>
<td>Delays and cost overruns due to complexity, the challenge of tunneling from two sides. Significant size, interfaces, technical issues. Cost overruns were significant and not clearly allocated to either the public grantor or to the contractors through fixed price contracts.</td>
</tr>
<tr>
<td>National Physical Laboratory</td>
<td>U.K.</td>
<td>National Physical Laboratory was the first PFI to default in 2004. In 1998, the Department of Trade and Industry entered into a 25-year PFI concession to build and manage new measurement laboratory facilities. Planned cost was GBP96 million funded through bank loans. Design errors and additional costs led to failure of the project and cancelation of the PFI contract. It is believed senior lenders experienced a loss of GBP18 million and the contractor lost considerably more.</td>
</tr>
<tr>
<td>Dudley Group Of Hospitals</td>
<td>U.K.</td>
<td>The project encountered additional costs during construction due to additional works being required as part of the refurbishment process. The contractor disputed the costs with the concession grantor, but continued to complete the project as required under the concession documents and design-build agreements. The contractor reported losses nearing GBP100 million on completion in 2005. It subsequently sued to recover costs from the grantor and is reported to have settled for GBP23 million.</td>
</tr>
<tr>
<td>Taiwan High Speed Rail</td>
<td>Taiwan</td>
<td>Suffered cost overruns and delays due to the hilly terrain, many tunnels and largely elevated structures. This raised financing problems and further delays with risk ultimately borne by the government.</td>
</tr>
<tr>
<td>Lane Cove Tunnel</td>
<td>Australia</td>
<td>This tolled tunnel project encountered significant construction issues when a geological condition caused the collapse of its roof in 2005 and damaged a multifamily residential building requiring its temporary evacuation. Design and installation issues were identified. It highlights the uncertainty of tunneling and in-the-ground risks. The contractor made the needed repairs and completed the project.</td>
</tr>
</tbody>
</table>

Source: Fitch.
## Project Risk: Operations

### Relevant Stronger Attributes
- Management team with strong record of successfully managing asset; extensive experience with similar projects; international reach with local experience; multiple alternative operators available; ease of replacement; project is a “landmark” for the operator. No supply constraints for labor or materials; excellent transportation/utility infrastructure; connecting infrastructure in place multiple alternatives exist; commoditized nature of key supplies; low or no exposure to input costs.

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<tr>
<td>HSL Zuid</td>
<td>Holland</td>
<td>Operations were delayed due to required systems upgrades by the Dutch government.</td>
</tr>
<tr>
<td>Hospital Sud Francilien</td>
<td>France</td>
<td>Litigation over classification of expenditures as routine maintenance or vandalism. The former was required to be paid by the concessionaire while vandalism was a government/hospital risk under the agreement.</td>
</tr>
</tbody>
</table>

Source: Fitch.

## Project Risk: Revenue

### Relevant Stronger Attributes
- Availability-based revenue from counterparty with strong financial capacity; limited deduction risk; limited delivery risk; fixed tariff “take-or-pay” contracts exceeding rated debt life; currency hedging; minimal reliance on demand or resource forecasts; matched costs and revenues; low-cost producer; demand at market prices; strong historical evidence of revenue patterns; lower volatility user-based revenues; diverse customer base; proven ability to pass on inflationary price increases.

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<th>Positive/Negative Developments</th>
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<tbody>
<tr>
<td>Southbay Expressway</td>
<td>U.S.</td>
<td>Actual traffic and revenue significantly below projections. Forecasting error further complicated by mortgage crisis and deep recession.</td>
</tr>
<tr>
<td>Pocahontas Parkway</td>
<td>U.S.</td>
<td>Actual traffic and revenue significantly below projections. Forecasting error further complicated by deep recession.</td>
</tr>
<tr>
<td>Northwest Parkway</td>
<td>U.S.</td>
<td>Actual traffic and revenue significantly below projections. Forecasting error primarily.</td>
</tr>
<tr>
<td>SH 130 Segments 5 and 6</td>
<td>U.S.</td>
<td>Actual traffic and revenue significantly below projections. Forecasting error further complicated by deep recession.</td>
</tr>
<tr>
<td>Chicago Street Parking</td>
<td>U.S.</td>
<td>Public outcry from very high initial tariff escalations in the first few years.</td>
</tr>
<tr>
<td>Eurotunnel</td>
<td>U.K./France</td>
<td>Actual traffic and revenue significantly below projections. Forecasting error further complicated by emergence of low-cost airlines and a ferry war price.</td>
</tr>
<tr>
<td>Taiwan High Speed Rail</td>
<td>Taiwan</td>
<td>Actual traffic and revenue significantly below projections. Forecasting error.</td>
</tr>
<tr>
<td>High Speed 1 (Original)</td>
<td>U.K.</td>
<td>Actual traffic and revenue significantly below projections. Forecasting error and overestimation of socioeconomic benefits.</td>
</tr>
<tr>
<td>M1 Toll Road</td>
<td>Hungary</td>
<td>High toll rates for Hungarian standards while reasonable from a Western European standpoint.</td>
</tr>
<tr>
<td>Hospital Sud Francilien</td>
<td>France</td>
<td>The hospital is in dire straits and is struggling to pay the annual infrastructure charge. The private sponsor is seeking to renegotiate the scope and lower the charge with the government. Negotiations are in progress.</td>
</tr>
<tr>
<td>Lane Cove Tunnel</td>
<td>Australia</td>
<td>Optimistic traffic forecasts were made worse by high gas prices. The concession entered receivership in 2010. This default followed earlier PPP defaults on the AUD700 million Cross City Tunnel in Sydney and the AUD4.8 billion Brisbane Airport Rail Link also due to overly optimistic traffic expectations.</td>
</tr>
</tbody>
</table>

Source: Fitch.
## Other PPP-Related Lessons Learned

<table>
<thead>
<tr>
<th>Project</th>
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<tbody>
<tr>
<td>Colombia Concessions</td>
<td>Colombia</td>
<td>Artificially low bids with the goal of renegotiation a year or two after the concession is awarded and collusion among bidders. The government's inability to anticipate scope needs facilitated concession reopening and a return to profitability for the concessionaire. The government’s PPP program has evolved over the years to limit this risk by establishing 20% limits to extensions and increased public resources and maximum 30-year concession terms.</td>
</tr>
<tr>
<td>Las Vegas Monorail</td>
<td>U.S.</td>
<td>The primary beneficiaries of the asset were casinos on one side of the Las Vegas Strip. There was the perception that it provided little value to the local population and consequently little community buy-in and limited commitment from elected officials to find a resolution or enhance investor recovery.</td>
</tr>
<tr>
<td>Stewart Airport</td>
<td>U.S.</td>
<td>Privatized airport sought to attract new carriers, which it was unable to do even during the strong growth years of 2002–2007. Despite large catchment area, the strong competition from well-connected major regional airports was a huge barrier. This indicated that to deal with future demand risks new airports initially need considerable public equity investment to become viable. While constrained, the existing airport network remains a competitor and a barrier to service at the new airport.</td>
</tr>
<tr>
<td>Indiana Toll Road</td>
<td>U.S.</td>
<td>State subsidies planned and still continuing to minimize public impact of toll rate increases and get public buy in. Long-term though, the public subsidies will end and users will face above-average toll rate increases due to the permitted toll regime.</td>
</tr>
<tr>
<td>Early California Concessions</td>
<td>U.S.</td>
<td>Though not a practical issue today, the state sought to limit equity returns by restricting the total rate of return on capital to 18%, but by not recognizing the role played by leverage and clearly defining capital as equity. The concession agreement effectively had no limit on equity returns.</td>
</tr>
<tr>
<td>UK PFI Concessions</td>
<td>U.K.</td>
<td>The ‘value-for-money’ analysis done by the government to ensure that project finance initiative (PFI) was the most financially efficient procurement method, in retrospect, has been valid for only a small subset of projects. The problems included higher than expected equity returns and project scope that included the transfer of some risks that could have more efficiently dealt with by the grantor.</td>
</tr>
<tr>
<td>UK PFI Concessions</td>
<td>U.K.</td>
<td>To limit equity returns, Scottish Futures Trust (the authority responsible for procuring PFI projects in Scotland) has adjusted the PFI framework it uses with private sector equity investors earning a “reasonable” fixed return on their investment and with excess returns flowing back to the public sector.</td>
</tr>
<tr>
<td>UK PFI Concessions</td>
<td>U.K.</td>
<td>Newer PFI projects are notable for their significantly reduced scope with standardized and basic cookie-cutter designs (rather than state-of-the-art designs) for initial construction, the removal of “soft” facility maintenance (FM) services such as catering and security (which have been found to be extremely lucrative for contractors and equity sponsors) and leaving the only significant project responsibility post-construction as “hard” FM (i.e. building maintenance and renewal).</td>
</tr>
<tr>
<td>UK PFI Concessions</td>
<td>U.K.</td>
<td>Equity sponsors were observed flipping projects for significant capital gains post-construction, suggesting that the availability payment stream that the public sector grantor was locked into was overly lucrative once construction risks had been overcome. Later projects were notable for the inclusion of provisions allowing for the sharing of any realized capital gains in such a scenario with the public sector grantor.</td>
</tr>
<tr>
<td>DOIHI Hospital</td>
<td>Mexico</td>
<td>After almost two years of operations, the hospital is still operating at 15% of its capacity reflecting the lack of coordination in the public sector to direct patients to this much-needed facility. Meanwhile, the concessionaire benefits from a lower-cost profile and full contractual payments. Should this to continue, there is risk of political opposition to this transaction.</td>
</tr>
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Source: Fitch.
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Goethals Bridge Availability DBFOM Reaches Financial Close

In early November, NYNJ Link Partnership reached financial close on its 40-year DBFOM availability payment contract with the Port Authority of New York and New Jersey to replace the unsafe Goethals Bridge.

Coming three years after the procurement began, the project financing consisted of $935 million in fixed-rate debt, which was split between $460.9 million in tax- private activity bonds (PAB) and a $471-million TIFIA loan obtained following a common term sheet process. Assured Guaranty wrapped $101.4 million of the PABs, marking its first P3 in the U.S. (The monoline has insured a number of UK P3 projects).

The developers’ financial model has a base case equity internal rate of return of 13.8%. The equity was put in as Letters of Credit from NY NJ Link, comprising Macquarie (90%) and Kiewit Development (10%). Of the $106.8 million total, $96.1 million is Macquarie’s with lead contractor Kiewit putting in $10.7 million.

PANYNJ has agreed to make three separate availability payments over 40 years. One called “Developer Financing Arrangements” grows at 1.5% a year. The agreement says PANYNJ owes a lump-sum amount to the developer of the $1.03-billion project at substantial completion, but the developer is loaning that amount to PANYNJ which will pay it back over the term.

Two others, one for capital maintenance and another for operational payments, are indexed to regional CPI and 1ect to deductions for noncompliance events up to a monthly cap.

Whether availability payments will increase fast enough to cover the cost of labor and materials for O&M and major maintenance is a concern of rating agencies.

Lorne D. Potash, director of project finance and utilities for Assured Guaranty says his credit committee gained comfort from the presence of a sophisticated owner and the fact that the concession term is less than half the design life of the bridge. Goethals is Assured Guaranty’s first wrapped project financing in the U.S. since the financial collapse five years ago.

Goethals is the Port Authority’s first new bridge since 1931 and the first highway P3 in the Northeast. It also is Kiewit’s first U.S. P3 road project and its first with Macquarie.

The project agreement allows six years to complete the new bridge and demolish the old. The DB contract assumes the new bridge, using a “double V” pylon design very similar to the new Tappan Zee Bridge, will open in 4 ½ years, leaving 9 months for demolition of the existing bridge.

The design-build company includes Kiewit Infrastructure (70%), Weeks Marine (15%) and Massman Construction (15%). The 35% design used for setting the $937-million design-build price for the new bridge and demolition of the old was done by Parsons Transportation and others.

Brian F. Smith, an attorney with the Tunnels, Bridges and Terminals division of the Port Authority, managed the drafting of the concession agreement, which will not be made public.

Allen & Overy, Ernst & Young and Halcrow/CH2M Hill advised the Port Authority on the procurement and concession agreement. Gibson, Dunn & Crutcher advised the concession company. Gibbons advised on litigation and the EIS. Bank of America Merrill Lynch, Barclays and BMO sold the PABs. Arup was the lender’s technical advisor. ■
LONG BEACH COURTHOUSE A WIN FOR P3S

by William G. Reinhardt, Editor

As guaranteed late in 2010, the Gov. George Deukmejian Courthouse in Long Beach, Calif., was delivered on time and on budget this month under a 35-year DBFOM agreement negotiated with the state by equity investor Meridiam Infrastructure. Availability payments will begin soon under California’s first long-term pay-for-performance infrastructure contract, which requires that the 535,000-sq-ft building be turned over to the state in 2048 in 83% new condition. If at any point during that time the building and its 31 courtrooms are not in service due to private operator error, the penalty is $250,000 per day.

At this point, no one is questioning the performance of the tightly integrated building team—developer-investor Meridiam Infrastructure; Clark Design/Build of California, Inc., with AECOM as lead designer; Clarke’s real estate development arm, Edgemoor Infrastructure & Real Estate; and operating services provider, Johnson Controls, Inc. The project was delivered on time by this all-American team in “coffee cup condition,” within budget and with contested change orders of less than 1% on the $339-million design-build budget.

“I believe that the design-build-finance-operate-maintain contract provided . . . the right tools and incentives to deliver a court building which is inspiring, more than meets the Superior Court’s current needs, will be flexible, and simple to maintain and operate—all better than predicted, faster than predicted, and less expensive than the norm,” says Clifford Ham, principal architect for the State of California’s Administrative Office of the Courts (AOC).

Every P3 project needs a public champion to gain the cooperation and collaboration of his peers in pilot testing a substantially different delivery approach. Ham, who worked in the private sector for 21 years with HOK before joining AOC in 2002, was the “ultimate champion,” says Eric Petersen, a partner with Hawkins Delafield and Wood, legal advisors to AOC. “He was the indispensable ingredient.”

The political verdict is still out on whether the state’s first test of what it calls Performance-Based Infrastructure (PBI) will lead to more P3 courthouses, however.

The state’s Judicial Council budgeted its 2013-2014 construction spending on the assumption that the Long Beach courthouse availability payment obligation would be paid out of the state’s general fund. Instead, Gov. Jerry Brown lumped down on general fund spending in this year and moved the Long Beach obligation—about $54 million a year for 35 years (NPV $725 million)—onto AOC’s $1-billion construction account. The governor’s budget also moved $200 million from AOC’s capital budget to operations. In reaction to these actions, the Judicial Council indefinitely delayed construction of four large courthouses in Sacramento, Los Angeles, Fresno and Nevada.

The Judicial Council’s court fees have been raided repeatedly, losing a total of $1.7 billion since 2009. All court construction funds were swept into other programs in 2009, and the Judicial Council has sometimes had to bond to pay for O&M during that time. Locking in the Long Beach life-cycle savings over 35 years ultimately is right for taxpayers, but it takes some flexibility out of an already tight courts budget.

“We don’t know what to plan for, or what lies around the corner,” says Justice Brad Hill, who chairs the facilities group at the Judicial Council.

The next hurdle for expanding PBI in California is the legislature. By June 30, 2014 the Judicial Council must perform a detailed assessment of estimates and costs, including its own Long Beach project management expenses. It also is ordered to produce a detailed study of Long Beach and three other comparable courthouses delivered and operated using conventional approaches. A diligent review of cost, schedule and operational outcomes is likely to favor the PBI delivery approach on Long Beach. Whether that sways the legislature remains to be seen.
A big variable is the state’s powerful public engineers union, which opposed the Long Beach PPI pilot. But the Professional Engineers in State Government (PECG) has been weakened in the past year by delays and large budget overruns on major state transportation projects. That vulnerability recently led to a compromise between PECG and the state’s powerful regional transportation agencies on a wide-ranging design-build law, AB 401, which is now before the governor.

A reasoned approach by PECG in assessing the Long Beach analysis next year would help all sides understand the value-for-money benefits of the pilot project. Electoral changes in how candidates are selected in California are moving the legislature away from the polar extremes toward the middle. And Gov. Brown, who produced a budget surplus this year, is looking for ways to do more with less.

So, the Long Beach courthouse is a winner on design-build performance. Johnson Controls isn’t likely to fall down on its first U.S. P3. If the politics can be sorted out, then AOC’s decision to use a PPI approach to replace one of the state’s worst courthouses might finally open the door wide to P3s in California.

The U.S. Social Infrastructure P3 Market

The Long Beach Courthouse project, and public buildings in general, have a tight footprint when it comes to stakeholder interest. Where a highway touches dozens of interest groups who must be accommodated—witness San Francisco’s Presidio Parkway, which is still struggling to come to terms with the Presidio Land Trust—a building serves fewer masters. In Long Beach, it was only the wishes of a few dozen state judges that had to be met. And they were happy to move out of one of the state’s worst courthouses.

That helps to explain the high level of private sector interest in social infrastructure P3s, where dozens of well-qualified firms are pursuing the few early projects that have been announced by public agencies.

There have been early disappointments—the selection of a public design-build alternative rather than a P3 for the Travis County Courthouse in Austin, Tex.; cancellation this month of a DBFM juvenile detention center project in Puerto Rico; and a significant dispute over P3 plans by the Yonkers, N.Y., school district, are the most recent.

But at least these six projects are in the pipeline:

- **The City of Long Beach**, Calif., is expected to issue an RFP in the next few months for a taxable or tax-exempt approach for the redevelopment of its city hall, library and a historic park, plus other revenue-producing assets.

- Private development of the Long Beach City facilities, to be built on a large block near a complex of federal and state courts buildings, could be coupled with commercial buildings, 1,464 parking spaces, and a new 200,000-sq-ft headquarters for the Long Beach Port administration building.

- **Multnomah County, Oregon** plans to release an RFP in October and select an advisor in December for its plans to replace a 100-year-old courthouse in Portland, potentially using a P3 delivery approach. Partnerships BC has been advising the county, and the state legislature appropriated $15 million in July to start the project, which is estimated to cost $180 million to $200 million.

- **Michael Bowers**, Director of Facilities at Multnomah County, will manage the courthouse procurement, the county’s first. He previously ran a successful P3 procurement in 2011 for a small wastewater DBO project in Wilsonville, Ore.

- **The City of Houston**, Texas got SOQs from seven teams in September for P3 development of a new Municipal Courts Building that will also house some operations of the Police Dept. First Southwest is financial advisor and the city is interviewing legal teams now to advise on a 30-year DBFOM agreement. The city hopes to issue an RFP for a P3 developer in the next few months.

“A P3 to rebuild Yonkers’ schools would require the city and state to stop kicking the can down the road. Everybody would have to sit down in a room and figure out what the lifecycle cost cap is and the capex needed to replace those 20 old schools—and nobody is prepared to do that. P3 would be the best-value delivery option, but it requires everybody to step up." — a Yonkers, NY, resident
Submitting SOOs were: Hines; Plenary Edgemoor Justice Partners; Skanska/ AECOM Honeywell; Griffin Partners; KBR; CGL; Page Southerland Page.

> Florida’s new wide ranging P3 enabling law, HB 85, encompasses county and municipally owned buildings, of which there are many P3 candidates, says a financial advisor. A $210-million community college expansion awaiting approval by the state’s Dept. of Education could be one of the first. Unsolicited proposals are allowed in the new law, but approvals for all projects won’t be considered until after a uniform process for evaluating P3s is established by the legislature. A task force set up to recommend such a process will make its final report by July 1, 2014.

> The University of Florida, Gainesville is proceeding with its Innovation Square urban redevelopment project. A master plan done by architect Perkins + Will calls for 5 million sq ft of office, research, and hi-tech space with residences, retail, hotel and open space to connect the university with downtown Gainesville.

The Long Beach Deal At A Glance . . .

**The Project:** 535,000-sq-ft state courthouse in Long Beach, Calif., delivered on time in 32 months as the design-build component of a 35-year DBFOM concession that was bank financed in December 2010 under an availability payment agreement.

The Long Beach courthouse is California’s first Performance-Based Infrastructure project, the country’s first large P3 social infrastructure project financed with debt and equity, and the first U.S. P3 with substantial Canadian input, mainly from Ernst & Young’s Vancouver, BC, office.

**Design-build cost:** $339.5 million

**NPV 35-yr life-cycle cost:** $725 million

**Annual availability payment** to Meridiam Infrastructure by legislative appropriation: $53.65 million, assuming no deductions for poor performance.

**Owner:** California Judicial Council through Administrative Office of the Courts (AOC)

**Public advisors:**
Ernst & Young, financial
Hawkins Deafeld & Wood, legal

**Developer-investor:** Meridiam Infrastructure / Long Beach Judicial Partners

**Subcontractors:**
Clark Design/Build of California, Inc., with Clark’s P3 development company, Edgemoor Infrastructure & Real Estate
AECOM, architect and engineer of record
Johnson Controls, operating service provider

**LBJP advisors:**
KPMG and BNP Paribas, co-financial advisors
Norton Rose Fulbright, legal

**Finance:**
$492 million 12/10 close
equity: $49m (10%)
debt: $443m; 7-yr miniperm bank loans at 275 bps over Libor in 12/10: RBC (lead), BNP Paribas, Credit Agricole, Deutsche Bank, Scotia Bank, BBVA. Refinancing gains 50/50 with the state.

**Bank advisors:**
DLA Piper and Milbank, co-legal advisors
Arup North America, technical

**Procurement schedule:**
1/09 RFQ
10/09 proposals due
6/10 preferred bidder
12/10 financial close.
WHERE THE P3 VALUE PROPOSITION IS REVEALED

The P3 value proposition is often buried in the economics of a project and difficult to quantify. There are no true comparables to the Gov. George Deukmejian Courthouse because there are no other social infrastructure projects in the U.S. that integrate all the design, construction and operation disciplines under a single performance-based contract aimed at the lowest net present value over 35 years. Cost-per-sq comparisons between the Long Beach, Calif. DEFOM project and similar buildings delivered using conventional methods aren’t possible for that reason.

Acknowledging that, Public Works Financing asked Geoffrey Stricker, managing director at Edgemoor Infrastructure and Real Estate, to evaluate the P3 delivery process used to achieve the on-time delivery of the project. Edgemoor is the P3 development arm of Clark Construction, which teamed with architect/engineer AECOM to complete the 535,000-gross-sq-ft courthouse in 32 months.

To put that into context, the design-build team began steel erection a year after the notice to proceed, which would have taken twice long using the traditional delivery methods, according to the public owner, the Administrative Office of the Courts (AOC).

Public Works Financing: Where in the P3 process do you see private sector innovation put into play most effectively?

Edgemoor’s Geoffrey Stricker:

Collaboration

The level of collaboration amongst the team (AOC, Superior Court of California, County of Los Angeles, financial institutions, LBIP (Meridiam), Clark’s design-build team, City of Long Beach, subcontractors, utility service providers, and Johnson Controls as facility management service provider) was greater than on any other project with which we have been involved. From end-users (judges, administrative staff, county justice agencies), to the Administrative Office of the Courts (AOC), the developer, design-builder, facility manager, and the City of Long Beach, there was a true sense of partnership and a desire to work together to achieve great results.

By integrating the expertise of the team members in the design-build process and understanding the contract objectives of the Performance Based Infrastructure (PBI) structure, the team is able to work together to develop innovative solutions and maintain schedule and cost certainty. Additionally, the client also plays a critical role in the success of the project, and their early and constant involvement helps to ensure that decisions are being made in the best interest of the project.

One example is the tiered review that allowed over 7,000 design review comments to be generated, responded to, and incorporated all on the fast-track schedule. During construction, the court staff was able to review the design of their spaces and even “try them out” in a series of mock-ups. They were able to see and approve samples of key building components and finishes while significant portions of the building were under construction. Feedback was incorporated into the final building design without impact to budget or schedule.

Minimizing Taxpayer Risk

California taxpayers are the big winner in Long Beach, says Joseph Aiello, a partner at Meridiam Infrastructure, which put in $49 million of its equity as the long-term investor in the project. Meridiam’s fund has a 25-year horizon, so, Aiello says, its returns will come from diligent asset management of the courthouse over the full term of the concession.

“We’ve shifted the taxpayer impact to not just the lowest design and construction cost but to the lowest net-present-value life-cycle cost, which is really the exposure the taxpayer has in any infrastructure asset,” he says.

Governments typically short-change asset management which makes high operating cost taxpayers’ greatest financial risk in the delivery of public building services. Good facilities management saves far more public dollars than low-bid construction.

Private finance is the driver of long-term performance and cost control in a P3, says Aiello. “By causing a private partner to do project financing, you hold a hammer over their head,” he says. “And you can lower that hammer anytime you want, which is not true in any other procurement system.”

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The PBI process required an unwavering commitment to schedule and an ability to balance the demands of the date and price-certain contract while responding to stakeholder input. In just 32 months, the Project Team was able to finance, develop, permit, design, build, install FF&E, commission, and commence operations of the more than 500,000 SF of complex courthouse and lease space. This success is due to the Team's ability to work together collaboratively to make decisions that are in the best interest of the project, without compromising the fast-track schedule, the effective operation of the completed facility, or the functionality of the space for the courthouse building tenants, staff, and visitors.

### Schedule

<table>
<thead>
<tr>
<th>Activity</th>
<th>Date</th>
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<tbody>
<tr>
<td>Contract Signing</td>
<td>12/10</td>
</tr>
<tr>
<td>Relocating Major Utilities</td>
<td>4/11</td>
</tr>
<tr>
<td>Excavating</td>
<td>6/11</td>
</tr>
<tr>
<td>Steel Started</td>
<td>12/11</td>
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<tr>
<td>Topped Out</td>
<td>4/12</td>
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<tr>
<td>Enclosed</td>
<td>10/12</td>
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<tr>
<td>Occupancy Ready</td>
<td>8/13</td>
</tr>
</tbody>
</table>

### Integration of Facilities Manager into Design and Construction

Having Johnson Controls, the facilities management service provider, at the table with Clark's design and construction team helped ensure maximization of the efficiency and performance of the building systems. Since "whole life" costs throughout the design and construction periods are important considerations in a PBI project, involving Johnson Controls early on in the process helped guide decisions around building operations, energy, and lifecycle. Additionally, early involvement allowed Johnson Controls to plan delivery methods and develop models that will deliver quality results for the key performance indicators for the project.

### Focus on Lifecycle Costs vs. First Costs

The benefits of team integration within the PBI model can be seen in many specific examples. Key decisions on systems, finishes, etc., were based on a broader range of value considerations than just the lowest first cost, which was a result of the team collaboration encouraged by the PBI structure. A couple of examples are:

> **LED Lighting**: While the initial cost of LED fixtures is higher than fluorescent fixtures, longer bulb life means fixtures need to be changed far less often. In certain areas, such as above escalators or on high ceilings, the cost to replace a bulb can be significant. The team opted for the higher first cost to...

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### Value for Money

Tax laws limit private service contracts to 15 years and prohibit equity investments in P3 projects that are debt-financed with tax-exempt bonds. Most privately financed public buildings are done that way. But the absence of a true equity investor and the shorter operating period for tax-exempt projects doesn’t allow governments to capture the full life-cycle benefits possible with a P3, says Sean Maier, Business Development Director, Johnson Controls.

“At year 15,” he says, they haven’t even gotten into the first intensive round of refresh (repair and replacement), so you’re handing back a building to a customer at the point where they’re going to have to start investing additional capital to preserve the asset value of the building.” That typically begins in year 18, he says, and “hopefully, they’ve planned for it.”

Maier says Johnson Controls’ experience teaming on long-term P3 buildings projects in British Columbia played a key role in Long Beach. Partnerships BC’s (PBC) P3 delivery model was adapted by the Administrative Office of the Courts for use on Long Beach. Likewise, the Value-for-Money analytical tool developed in Canada to compare public and private delivery options also was used to evaluate California’s first major buildings P3 project.

One result is that the contract documents developed for Long Beach are well developed and bankable,” says Michael E. Pikel, Jr., a partner at Norton Rose Fulbright, advisor to the project company. “It’s a document that can be replicated in the U.S. social infrastructure market.”

Maier believes the structured risk assessment in PBC’s Value for Money tool may be Canada’s greatest contribution to the emerging P3 buildings market in the U.S. P3’s are largely about building trust, and Maier says, “I don’t want to be involved in a project that doesn’t deliver good value for money.”
create lower long-term operating costs and energy savings, which will benefit California taxpayers for years to come.

> Carpet vs Terrazzo: While carpet would meet the building’s needs and been a lower first cost, its replacement every five to seven years would have driven up lifecycle costs. Choosing a more durable hard surface such as terrazzo results in a less expensive lifecycle cost and also leaves the state with more durable and sustainable flooring surface at the end of the 35-year term.

> Exterior Glass Glazing: High-performance glazing was added to the exterior envelope of the building in order to reduce energy use through additional day lighting without increasing solar heat-gain, saving the state money, which will more than offset the higher initial costs over the term. Additionally, a vandal-resistant coating was added to interior surfaces to reduce service costs. Ultimately, the lower energy consumption benefits our environment and is key for the building to achieve at least a LEED Silver certification.

These examples demonstrate the importance of leveraging the experience of the facility management service provider to better the overall outcome of the project and optimizing performance, efficiency, and maintainability through positive NPV decisions.

**Risk Transfer to Private Sector**

The AOC secured the land for the new courthouse in a swap agreement between the City of Long Beach and the state that allowed for the construction of the new courthouse and the transfer of the old courthouse to the City upon completion of the new courthouse. Beyond that, the state allocated all project risks (i.e., development, finance, design, construction, operations, and maintenance) to the members of LBJP’s consortium of professionals who were best able to control and price those risks.

This allocation of risk allowed the private sector team to guarantee competitive pricing, schedule, and performance at contract signing.

Significant risk transfers, beyond the inherent risks of delivery, lease-up and finance, included the private sector’s full responsibility for dealing with regulatory authorities on all entitlements and permits, utilities, including the relocation of natural gas transmission lines, water transmission lines, underground and overhead high voltage electric lines and a number of copper and fiber optic lines belonging to many different service providers and ensuring sufficient capacity and availability for the new facility.

In addition, the private sector is bearing utility consumption risk, operations risk and related service-fee deductions, re-finance risks, coordination and permitting with City of Long Beach for work required off the property, impacts from unforeseeable issues at the property—differing soil, compliance with environmental impact regulations, and complete initial outfitting, and transition of the new facility to the tenants.

An example of how that manifested itself and drove innovation was in the design of the courthouse, where the horizontal design of the building allowed us to build redundancy and mitigate the impact of (potential) service-payment deductions. By spreading the building out we were able to have five elevators and mechanical cores servicing the courtrooms, versus one or two as other designs might have featured.

Sizing the equipment correctly provided redundancy without adding a lot of first cost. Having the manufacturer of some of the critical equipment double as the operating service provider responsible for service payment deductions was critical to predicing the failure rates of the equipment and providing redundancy where appropriate.

**Access to New, Competitive Sources of Capital**

The Meridian team provided 100% of the financing for the project through a combination of its own equity and bank financing. This was critical because California was experiencing budget constraints and was able to leverage cost-effective, private funding to get the facility started. Further, the team was able to get the deal financed and closed in the midst of one of the nation’s most challenging economic periods. In addition, the state did not have to make any monthly construction payments or milestone payments, and only began pay-
Equity Takes The DBFOM “Collection Risk”

Ultimately, the goal of a P3 is to put the full responsibility for contract performance on a single entity so that the performance risk for full turnkey delivery and long term operation is taken by one, financially strong party. In a water or solid waste P3, the guarantor typically is the operator. Buildings are different. Johnson Controls, the Long Beach building operator, wasn’t about to guarantee the performance of the courthouse design-build team.

So another deep-pocket risk-taker was needed, and that was Meridiam Infrastructure. As the developer-equity investor, Meridiam arranged the bank financing and funded the design, construction oversight and quality checking, which together can amount to 10-12% of a large project’s cost. Meridiam’s team actively managed all the subcontractors, including Johnson Controls. That bundle of responsibilities could be called the “collection risk,” which is nearly always taken by government.

On large, complex urban projects, such as Long Beach, the risk of “collection” mistakes and delay is substantial. For example, the joint powers authority building the Transbay Transit Center in San Francisco announced a $300-million overrun a few months ago on what is now a $1.9-billion project that’s still in the ground.

Few public managers have enough experience to control such a project so the authority has hired dozens of consultants, who have been designing Transbay since 2005. The project’s first steel erection contract was bid and withdrawn in March when only one firm tendered, at a price 50% over estimate.

Creating the incentives for a private investor to perform the role of government in managing the construction process and life-cycle risk of a public asset over 35 years is only possible by using P3 delivery, says Eric Petersen, a partner at Hawkins, Delafield and Wood, legal advisor to the Administrative Office of the Courts (AOC).

AOC typically outsources building operations and has a competent building staff. And it could have issued tax-exempt bonds to pay for the Long Beach courthouse. But it couldn’t have assigned the “collection risk” to Meridiam without choosing a P3 delivery model, says Petersen.

What is that worth? On a 50-mgd desalination project in Carlsbad, Calif., Petersen points out that P3 developer Poseidon Resources was awarded returns of 9-13% on 18% of the project cost for its “collection” services. “A P3 takes a huge amount of burden off of government,” says Petersen, who advised San Diego on the Carlsbad contract.

Clifford Ham, the Long Beach project executive, says the P3 team members collaborated among themselves in making all of the life-cycle cost tradeoff decisions. “They never really burdened us with all the details,” Ham says. “That’s one of the beauties of the design-build-operate-maintain delivery model.”

Public Works Financing: How is the P3 project delivery model used on Long Beach different/better than the delivery methods used for 100% lease-debt building projects?

Geoffrey Stricker:

Availability Payment Concept vs. Lease

Under the PBI model, an availability-payment structure is used as a means of compensating the concessionaire for its responsibility to design, construct, operate, and maintain the facility for a set period of time. The payments are based on particular project milestones and established performance standards. Detailed key performance indicators measure the condition of the space and the performance of the facility manager. Predetermined deductions to the availability payments are instituted if key performance indicators are not met or achieved. In the case of the Long Beach courthouse, there
are predetermined deductions that will be exercised if a courtroom, holding cell, elevator or other space in the building is not available for use.

This approach drives the needs for a fully integrated design process involving the architect, engineers, contractor, and facility manager. With the risk of long-term operations and life cycle costs built into the transaction structure, design choices are driven by the total cost over the entire concession period, as opposed to initial cost. Service deductions properly incentivize the concessionaire and its operating service provider to maintain the facility in a Class-A state and does not allow the operator to defer maintenance or repairs. This means that court operations will be able to effectively use the facility without the potential for down-time as the building ages.

**Key Performance Indicators**

The Availability Payments that were discussed above are based on established performance standards, which are measured operationally and according to occupant satisfaction. Operational considerations might include room air temperature, cleanliness, and lighting levels. Occupant satisfaction measures customer service, performance, the completion of preventative maintenance, testing of equipment, and inspection of space. Prescribed methodologies of measuring the KPI means that performance and any resulting deductions to the Availability Payment are self-evident and therefore self-reporting. The State is not obligated to police the facility to ensure the building is being well maintained—the operating service provider does that work too.

**Handback Provisions**

The project agreement stipulates how the building will be “handed back” to the AOC at the end of the concession period. This includes age of MEP systems, for example, requiring that the equipment be replaced within a certain period of time prior to the end of the concession period.

**Energy Performance**

The facilities management service provider takes the risk on the building’s energy consumption during the concession term, guaranteeing energy savings. This dynamic reduces design risk. If equipment does not perform to specifications, the project team bears the cost. With the team focused on whole-life costs, including the costs of operations, the team is motivated to specify energy efficient equipment and materials to reduce consumption in the operating period. The state further benefits from a gain-share formula on operating efficiency. As consumption drops below the benchmark threshold, savings are passed on to the State. Consumption increases, however, are born 100% by the project team.

This motivates the operating service provider (which in the case of the Governor George Deukmejian Courthouse happens to be the manufacturer of the chillers, air handlers, and building automation systems) to operate the equipment at peak efficiency and invest in new equipment as it is economical to do so. This formula aligns incentives, allowing upgrades to happen when they make economic sense versus when capital is appropriated by the legislature for repair and upgrades.

**O&M + Capital Replacement Terms**

Under a typical lease, the private sector can guarantee no more than 15 years of lifecycle costs, (qualified management agreement) compared to the 35-year term guaranteed under the PBI model. In the State of California, service contract terms are limited. By using 100% private financing, the team was able to provide additional certainty to the state in a 35-year agreement. This allowed the team to model lifecycle replacement costs for every major piece of equipment and ensures that the building will be turned over at the end of the service contract with upgraded equipment in an 85%-of-new condition, setting the state up for a much longer useful life of the structure than is typical. It also matched the guaranteed operating costs and lifecycle costs to the amortization period of the loans creating one fixed predictable payment over the entire project life.
LONG BEACH COURTHOUSE DBFO BANK FINANCED

Meridian Infrastructure this month closed a $492-million debt-equity project financing for California’s largest courthouse, leading an all-American development team that will design, build, operate and maintain the Long Beach facility under a 35-year lease-lease back contract that’s off-balance sheet to the state.

Long Beach is the only Performance-Based Infrastructure (PBI) project financed during former Gov. Arnold Schwarzenegger’s administration, which was a strong supporter of private development of public-purpose infrastructure.

Commercial close of the more visible Presidio Parkway DBFO project in San Francisco was delayed this month by a legal challenge and row rolls over into the Brown administration, which has not opined on PBI projects (another name for PPPs). Meridian and Hochtief PPP Solutions are leading that development effort. Joe Aiello, Meridian’s president, says they will continue their pursuit.

For Long Beach, Meridian paid in $49 million cash equity at the closing on Dec. 21. Seven-year floating-rate miniperm loans totaling $443 million were arranged with a bank consortium to cover the three-year construction period and allow Meridian four years to refinance. The lenders are: lead bank BBVA, with RBC, Scotia Bank, BNP Paribas, Credit Agricole and Deutsche Bank.

A blended LIBOR swap was used to set the all-in interest rate at the financial close, which determined the annual service contract cost to the state. The payment for the first full year of occupancy, 2014-2015, is set at $53.65 million, assuming no deductions.

(Meridian worked with Barclays Capital last summer to look at 30-year-plus taxable bond financing with an appropriation-risk credit rating one step below the general obligation bonds of the state. The taxable bond market for California was highly volatile at the time, however, so the decision was made to go with short-term bank financing.)

The Business Deal

The Long Beach Court Building will house 31 courtrooms of the Superior Court of Los Angeles County, administrative space, offices of related county justice agencies, and commercial office and retail space. A nearby existing parking structure will also be renovated and expanded to over 900 spaces.

The state owns the courthouse site and is leasing a six-acre parcel of land to the private sector for 50 years. If the project agreement expires as scheduled in 35 years and everyone has performed, the lease will terminate and control of the property will revert to AOC. If the state doesn’t pay its rent, the private sector has the right to evict it, convert the property to a profitable use, and operate it for the final 15 years of the agreement.

American Success

Long Beach is an American success, says Aiello. “We think this is the first all-U.S. team in the PPP space. It’s a terrific message to the market.”

“One of the things we’ve been trying to do at Meridian is to make sure that as this PPP system evolves that it is viewed by U.S. professionals in the infrastructure space as something they can participate in,” he says. “It’s not a market that has to be dominated by companies from Europe, Australia and elsewhere.”

The project was procured by the California Judicial Council through the Administrative Office of the Courts (AOC), which handles all construction for the judiciary. Its work was directed by Clifford Ham, Principal Architect of AOC, which was advised by Ernst & Young’s Vancouver, B.C. office and attorneys from Hawkins Delafield & Wood.
The AOC has its own enabling legislation, adopted in 2007, which allowed it to bypass the legislature for approval of the final contract. The deal did require a sign-off by the executive branch Dept of Finance, which accepted AOC’s value-for-money analysis on Dec. 16.

The analysis showed a positive benefit—“a couple of percentage points,” says Ham. The key benefit to the state, he says, is the assured funding of maintenance over 35 years and the ability of the state to expand into the 50,000 sq ft of commercial space as its need for courtrooms increases. Ham also believes that the opportunity to confer with the three finalists during the proposal process greatly improved the quality of their designs.

Speed of delivery, transfer of construction and operating risk and other elements of the PPP value proposition are still hypothetical, says Ham: “The questions will be answered in due time.”

Most other institutional building PPPs in the U.S. have been financed with tax-exempt debt issued by 63-20 nonprofit corporations. Though it brings a lower cost of capital, the IRS rules governing 63-20s prohibit use of private equity. “You don’t have an entrenched developer/equity investor with long-term risk exposure,” says Aiello.

Meridiam’s project company, Long Beach Judicial Partners, LLC (LBJP), consists of AECOM Design; Clark Construction Group, LLC; Edgemoor Real Estate Services (owned by Clark); and Milwaukee-based Johnson Controls Inc. Clark Design/Build of California, Inc., bonded its performance under a $350-million, fixed-price, date-certain delivery contract. Johnson Controls guaranteed its facilities management, operation, and maintenance performance and will manage the final hand-back to the State of California.

Consortium financial advisors include KPMG and BNP Paribas. Fulbright & Jaworski’s legal team advising LBJP was led by Andrew Hart from its London office.

**Canadian Model**

After a number of visits by Canadian government PPP experts in 2008, AOC adopted the Canadian approach to the value-for-money analysis of bids and for negotiating the lease.

In the former, an expert panel is convened to evaluate the public and private options based on the panel’s collective opinion about how each of 73 separate types of risks might impact costs. This basic approach is the “industry standard” used in Canada, which adopted the structured risk assessment method used in the UK.

During contract negotiations, all pieces of the finalist’s DBFO puzzle are incorporated into a financial model that’s created by the project company and made available to the government and its advisors. The developer’s desired return on equity is plugged into the model and that becomes the single point of focus for negotiations. KPMG ran the model for Meridiam, and Ernst & Young reviewed it for AOC.

At construction completion, an independent building expert has to certify that the building is properly commissioned to function as specified by AOC, according to a detailed set of design, construction and operations performance standards. The expert is paid by all parties to act, in effect, as an arbiter in the commissioning process.

Among the banks, Toronto-based RBC took a leadership role, says Aiello, and that gave comfort to the European lenders: “It’s a very strong Canadian bank with a local presence [in California] and they were very excited about the project.”

In Canada, RBC is a lender to two large hospital DBFO projects in Ontario, where Johnson Controls is the long-term operator and guarantor of performance.

**California Risk**

The bank transaction is a project financing so it’s the 10% equity of Meridiam that holds the various pieces together. Lenders have recourse only to the contracts, not to the state, Clark or Johnson Controls. The repayment of the bank loans is subject to annual appropriation by the legislature, so it is not considered a debt of the state. In a default, the lenders only get the equity returns that would have been paid to the project company in order to cure problems and continue operations. A similar structure has been used for years in lease-purchase deals by the General Services Administration to build new federal office buildings.

Meridiam’s challenge was to convince the banks that annual appropriations would be made by the legislature to pay the project company. “You have to put together all these pieces to demonstrate to the banks that there is a solid foundation of support for this project,” says Aiello.

There are a lot pieces. The Schwarzenegger administration was a strong advocate of Performance-Based Infrastructure. The state has been trying to build this cour-
thousau, the biggest in the California system, for 20 years. The City of Long Beach strongly favors the project. Democratic Senator Alan Lowenthal, a Long Beach resident who chairs the Senate Committee on Transportation and Housing, is a key supporter.

California’s state budget is put together in an intricate process that’s built on the previous year’s budget. It is not zero-based budgeting so once an appropriation is embedded in the baseline budget, the legislature has to affirmatively act to take it out.

AOC’s challenge will be to get Long Beach in the baseline budget starting in three years when the first service fee payment comes due. After that, adjustments for uninsured losses and other uncovered risks would be funded through a budget-change proposal that does not include a review of the original appropriation.

**Market Mover**

It took about two years to compete and finance the courthouse, much longer than AOC expected. Now that it’s financed, Aiello says, “We’re hopeful that it will help move the market a bit.”

“There are a lot of courthouses that need to be built in California and around the country,” he says. “Long Beach is getting a lot of attention. They’re going to look at this model and see if it fits their purposes.”

Government needs the PPP option, says AOC’s Ham. “We’re creating a new tool and we need all the tools we can get,” he says. ■
U.S. P3 Market Attracts World-Class Players
Source: Public Works Financing newsletter (10/13)
Top-ranked firms pursuing service and investment opportunities in the US. public works infrastructure market

**Investor Developers**
Meridian
Macquarie Group
Transurban
Infrared
Menary Group
Goldman, Sachs
Morgan Stanley
KKR

**Builder Developers**
ACS Group/Hochtief
Perovval/Cintra
Kiewit
Walsh
SNLavalin
OHL
VINCI
Balfour Beatty
Fluor
PFG
Skanska
Bouygues
Lane
Traylor Bros.
Bechtel
Global Via
Acciona
Odebrecht
Samsung
Isolux
United Water
Veolia
Capstone Development
Hunt Building
LAD Parking Ltd.

**Private Advisors**
Macquarie
Barclays Capital
BMO Capital Markets
Hatch Mott McDonald
Arup
Parsons Brinckerhoff
Louis Berger
Milbank Tweed
Latham & Watkins
Skadden Arps
Orrick
Winston & Strawn
Cleary Gottlieb
Hogan Lovells

**Design-Builders**
Ferrovial
Draagados
Hochtief
Flattiron
Fluor
Granite
Kiewit
Walsh/Archer Western
Balfour Beatty
Skanska
Webber
Tutor Perini
Lane Construction
Traylor Bros.
Bechtel
Zachry
Sundt
Clark Construction
Herzog
Odebrecht

**Design Partners**
Parsons Transportation
Jacobs
UKS
AECOM
HTNB
HDR
Parsons Brinckerhoff
Lochner MMM
CDM Smith
PBS&J
O.R. Colan
Moffatt Nichol
Raja Kistner
CH2M Hill
Dewberry

**Banks/Underwriters**
Deal: DBFOM Goethals Bridge, NY-NJ, 11/13 close ($457m 38yr PABs avail. pay) BoA Merrill Lynch, Barclays

Deal: DBFOM No. Tarrant Express 2, Texas, 9/13 close. ($273m PABs revenue risk) Barclays, IP Morgan, BoA Merrill Lynch

Deal: DBFOM I-95 HOT lanes, Virginia, 6/13 close. ($567m 38yr PABs avail. pay) BoA Merrill Lynch

Deal: DBFOM East End Crossing, Indiana-Kentucky, 3/13 close ($677m 38yr PABs avail. pay) BoA Merrill Lynch

Deal: DBFOM I-95 managed lanes, Virginia, 8/12 close, ($261m 30yr PABs, tol revenue risk-shadow tol). RBC

Deal: DBFOM untold Presidio Parkway, San Francisco, CA 6/12 ($170m 3yr bank loans, TIFIA takeout, appropriations risk) five banks

Deal: DBFOM Midtown Tunnel, Norfolk, Va. 4/12 ($663m 30-year PABs, toll revenue risk) Barclays, BMO, BoA

Deal: Long Beach, Calif., courthouse 7/10 ($443m, 7-yr bank loan, state appropriation risk) BBVA, RBC, BNP Paribas, Credit Agricole, Deutsche Bank, Scotiabank

**Public Advisors**
Legal/procurement:
Nossaman
Hawkins Delafield
Mayer Brown
Freshfields
Nixon Peabody
Allen & Overy

Financial/procurement:
KPMG
RBC Capital Markets
Macquarie Capital Advisors
Ernst & Young
Morgan Stanley
Goldman Sachs
Citi

Sperry Capital
Public Financial Management
Infrastructure Management Group
Scully Capital
First Southwest
PriceWaterhouseCoopers
UBS
William Blair & Co.