



DTX Project Delivery Methodology and Options

January 9 , 2014

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TJPA





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Outline/Agenda

- Overview of Common Project Procurement and Delivery Methods
- Examples of Past Project Delivery Methods
(“The Good, The Bad, and The Misunderstood”)
- DTX Development Status
- Pathways to Determining the Optimal Project Delivery Method



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Presentation Objectives

- Provide “menu” of various types and structures of project delivery
- Present an objective overview of these methodologies
- Discuss where some of these methodologies have been implemented, and their outcomes
- Explain how various methodologies can provide solutions to the TJPA’s goals for DTX



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Common Project Delivery Methods



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Project Delivery Methods

Design Build Finance and Maintain (DBFM)	Design Build and Finance (DBF)	Design/Build (D/B)	Construction Manager at Risk (CMAR)	Design Bid Build (DBB)
<i>Public-Private Partnerships</i>				<i>Traditional</i>
LEAST	OWNER'S RISK			GREATEST
GREATEST	CONTRACTOR'S RISK			LEAST
LEAST	OWNER'S CONTROL			GREATEST
GREATEST	CONTRACTOR'S CONTROL			LEAST



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Design-Bid-Build (DBB)

Key Parameters:

- Most utilized delivery method
- Owner leads both design and construction of asset in a sequential manner
- Designer and Constructor conduct work independently
- Design taken to a 100% completion before tender
- Design very prescriptive
- Constructor selection solely based on low-bid basis
- Owner assumes nearly all risks on design
- High amount of oversight required during construction to ensure quality
- Owner transfers very little risk during construction to Contractor
- Contractor's work covered by performance bond
- Life-Cycle (Operations and Maintenance) integration, risks and responsibilities reside with Owner
- Payment structure is typically progress payments as work is completed



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Design-Bid-Build (DBB)

Benefits:

- Certainty of design outcome via prescriptive nature of procurement documents
- All roles well-defined & understood
- Marketplace acceptance and comfort

Limitations:

- No integration of design and construction
- Little to no innovation, ingenuity or value reductions available
- Competitive tension is present, but limited
- Quality of Constructor is generally limited in selection (price based)
- Highly susceptible to cost overruns, claims and litigation
- Very limited to no warranty for work performed
- Life-cycle integration not fully considered
- Little to no risk transfer
- Little to no overall price certainty



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Construction Manager at Risk (CMAR)

Key Parameters:

- CMAR is a Contractor entity that very early in the development process is engaged, and concludes with a commitment by CMAR to deliver the project via a Guaranteed Maximum Price (GMP)
- Designer and CMAR are solicited by the Owner separately to engage the most qualified entities
- Designer and CMAR are both agents to the Owner with the goal of defining, designing against, costing and delivering the determined scope of work
- Very open, transparent and collaborative approach between Designer and CMAR
- Risk management is accomplished by a open discussion and accountability in costing as the scope and design is progressing, and later tallied in the GMP
- Costing of work is an on-going element such that continual updates are available to Owner before GMP
- Model also is highly interactive as work progresses permitting scope of work adjustments to be measured and balanced against costing estimates to optimize design, quality, schedule, scope and cost



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Construction Manager at Risk (CMAR)

Benefits:

- May increase the speed of the project
- Strengthens coordination between the Designer and CM
- CM, Designer and Owner all collaborate; creating enhanced synergies
- Transparency is enhanced, as all costs and fees are open, which diminishes adversarial relationships between parties working on the project
- High degree of price and risk certainty via GMP
- Innovations and best practices folded into work as scope and costs develop

Limitations:

- Low amount of competitive tension
- More complex relationships
- Reduces “Low-Cost” Bid element, which can raise overall costs even with GMP
- Lengthy time is possible as design, risks and construction are measured against costs
- Billing to Owner by CM will seek to protect the CM in retaining a positive “cash-flow”



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Design/Build (D/B)

Key Parameters:

- Modern delivery method, now widely known and used
- Design to about 30% level by Owner's Designer so to articulate scope of work and provide "proof of concept"
- Designer and Constructor form team during procurement process to take design to a competent "biddable" level (and after selection to Final Design)
- Scope and design is prescriptive, but "Alternative Technical Concepts" provides pathway to bring value
- 2-step procurement process: RFQ for quality of team, and RFP for price
- Design risk/responsibility is fully transferred to private sector; more construction risk is transferred to private sector, over DBB
- Quality of work typically covered by 1-2 year limited warranty, and Constructor's work covered by performance bond
- Life-cycle integration, risks and responsibilities remain with Owner
- Price for work is Fixed Firm Fee (Lump Sum) based



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Design/Build (D/B)

Benefits:

- More price certainty via Lump Sum
- More schedule certainty - profit margins aligned with completing work early
- Provides opportunity for innovations
- Overall cost reduction, typically
- Integrated team for design and construction
- Marketplace acceptance and comfort
- Good competitive tension
- Quality of team is evaluated at RFQ
- Limited term warranty provided

Limitations:

- Roles and divisions of responsibilities can cause internal fighting within D/B Team
- Owner cedes some design control
- Susceptibility to cost overruns, but typically less than DBB
- Warranty covers only 1-2 year term
- Some, but limited, risk transfer
- Disputes and litigation are still common
- Selection criteria can be troublesome if not properly structured (best value selection – technical and cost)



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Design Build Finance (DBF)

Key Parameters:

- *A hybrid between the D/B and the DBFM approach*
- Introduces 1 key element beyond D/B and CMAR; here the Private Entity is fully responsible for private finance, but only during construction, and/or short (0-4 years) defined “tail” after construction is complete
- Long term financing, maintenance and rehabilitation remain the responsibility (and risk) of the Owner
- The repayment of construction costs are committed to at substantial/final completion, but payment is made over a time period of 0 to 4 years
- No performance based deduction scheme like DBFM
- More based upon performance based contracting, resulting in more flexibility, innovation and ingenuity by the Private Entity
- Format has been used in other jurisdictions to gain the advantage of risk transfer during construction while reducing the long term cost of private financing



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Design Build Finance (DBF)

Benefits:

- Allows the use of lower cost tax exempt debt during “pay-back” period
- More schedule certainty as internal repayment to Lenders create date “certainties”
- Greater opportunity for implementation of innovations, ingenuity, and best practices
- Can provide total overall price reduction
- Integrated design and construction team
- Excellent competitive tension; driving value
- Maximizes construction risk transfer
- Ability to delay the Owner’s payment may assist in Owner budget management

Limitations:

- O&M risk is retained by the Owner – only construction risk is transferred
- Construction financing is likely to be in the taxable bank market
- Some loss of control on traditional elements as delivery is “outcome based” and guided by performance specifications
- One-off nature can drive up internal costs and education for first transaction
- Procurement and evaluation is more complex than D/B but less than a DBFM or DBFOM



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Design Build Finance and Maintain (DBFM)

Key Parameters:

- ***Commonly referred to as Public Private Partnership (PPP)***
- Project delivery model introduces 2 key elements beyond DBB, D/B and CMAR that the Private Entity is fully responsible for:
 - Long term private finance; and
 - Life cycle maintenance, rehabilitation and hand-back
- Only a portion of construction costs are owed at substantial/final completion, as Private Entity self-finances remainder over 30 year (typical) contract term
- Performance based contracting, provides a lot of flexibility, innovation and ingenuity to Private Entity
- Method prescribes an inherent self-behavior tool to increase short-term and long-term (life-cycle) quality, safety and reinvestment into the asset
- Value for money, when compared to other delivery methods, should be apparent if Owner is to move forward with DBFM



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Design Build Finance and Maintain (DBFM)

Benefits:

- Provides price certainty in both short-term (construction) and long-term (life-cycle)
- Provides schedule certainty as internal repayment of lenders to Private Entity have many date “certains”
- Most opportunity for implementation of innovations, ingenuity, and best practices
- Provides largest cost reduction, when model fits the project
- Highly integrated team that is also highly incentivized for long-term quality
- Excellent competitive tension, which drives value
- Long-term quality guaranteed against equity investment
- Maximizes risk transfer

Limitations:

- Newest project delivery method that can be quite complex as it spans many years
- Loss of control on many traditional elements as delivery is truly “outcome based”
- One-off nature can drive up internal costs and education for first transaction
- Cost of private financing for availability equity is greater than equivalent rates for public finance



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Concession Type PPP Structures

- Commonly referred to as Revenue Transactions
- *Key dynamic* → Revenue stream (user fees) and the risks of maintaining that stream, are transferred to the private entity (concessionaire) for the term of the transaction
- Typical structure has 100% of revenue stream rights transferred to private entity
- Newer structures have “baseline” models (whereby revenue sharing percentage bands are present)
- Concessions typically best suited for existing assets



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Concession Type PPP Structures, cont.

- Typically high risks associated with newly built (“Greenfield”) infrastructure
- FY 2008 to FY 2011 saw a large drop off in these types of transactions
- Resurgence with stability in financial marketplace, and FY 2012/2013 saw two deals close in Puerto Rico
- When properly structured and transacted, very powerful results can be gained



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Availability Type PPP Structures

- Commonly referred to as Non-Revenue Transactions
- *Key dynamic* → Revenue stream (user fees, if any) and the asset's financial risks are retained by the Owner
- Private entity receives a Construction Completion Payment (and maybe milestone payments) that equates to 66% to 75% of the Capital Construction Costs
- The remaining 25% to 34% owed (plus operating, rehabilitation, maintenance, and finance costs) are repaid via a pro-rata share over the term of the transaction on a monthly basis (*Monthly Service Payment (MSP)*)
- Typical transaction is 30 years



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Availability Type PPP Structures, cont.

- Concept founded on making asset “open for use” or “available” to users
- If “available”, MSP is made in full; if not payment mechanism applies a deduction until issues are completely resolved
- Structure referred to as UK Model (PFI Model), as it first gained success there
- Model is present throughout Europe, Asia, South America, Canada and now in US
- Holdback of this structure is “tax-exempt” bonding ability of governments versus cost of private capital investment



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Examples of Past Project Delivery Methods



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DBB, CMAR and D/B Projects

Many examples as these are common forms of delivery

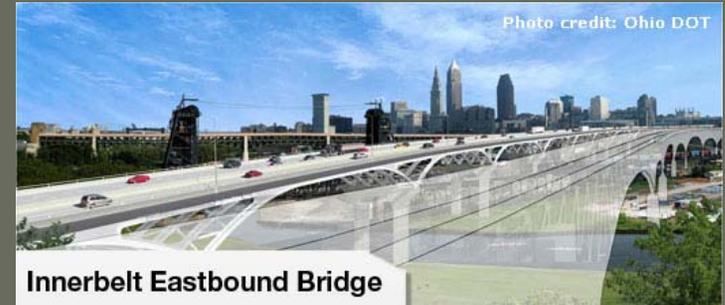
- Good
 - History solid when procurement is well defined and transacted
- Bad
 - History bad in cases where projects led to litigation, which is at higher probability with DBB and D/B
- Misunderstood:
 - Risk transfer is more limited than thought
 - Risk contingencies carried by Private Entity not ideal to overall cost



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DBF Projects

- Good
 - Michigan DOT (3 Highway Projects)
 - Cleveland Innerbelt Eastbound Bridge Project
 - US Rte 460 Corridor Improvements Project (Petersburg to Suffolk, VA)
 - I-4/Selmon Expressway Connector (Tampa, FL)
 - I-95 Express (Miami, FL)
- Bad
 - None to date
- Misunderstood
 - This methodology is a deferred payment structure, and is not considered debt under usury law. Legally, the Owner purchasing construction services and deferring payment for them.





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DBFM – Concession Projects

- Good
 - Chicago Skyway Toll Bridge System
 - Northwest Parkway (Denver)
- Bad
 - South Bay Expressway SR 125 (San Diego)
 - SH130 (Texas)
 - Highway 407 ETR (Toronto)
 - Chicago Parking Meters
- Misunderstood:
 - Indiana Toll Road
 - Pennsylvania Turnpike





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DBFM – Availability Projects

- Good
 - Ottawa Light Rail (Ottawa, ON)
 - Canada Line (Vancouver, BC)
 - I-595 Corridor Roadway Improvement Program (Broward Cnty, FL)
 - FasTracks Eagle Transit (Denver, CO)
 - Presidio Parkway (Doyle Drive), San Francisco, CA
- Bad
 - No history of defaults or under-performance to date
- Misunderstood:
 - Highway 407-East Extension (Toronto, ON)
 - Long Beach Court House



Ottawa Light Rail



Long Beach Courthouse

DTX Development Status



Downtown Core

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Existing Caltrain Station

Transbay Neighborhood



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DTX Project Status

- FEIS/EIR certified in 2004
- Supplemental EIS/EIR expected complete late 2014/early 2015
- Design is 30% complete
- Obtained final sign-off by CHSRA and Caltrain for modifications to accommodate High Speed Rail
- DTX designated in Plan Bay Area as a regional priority for at least \$650 million in New Starts funds
- ***Project Delivery***
 - ***Recommended for further study – DBFM (PPP)***



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Pathway to Determine Optimum Project Delivery Method for DTX

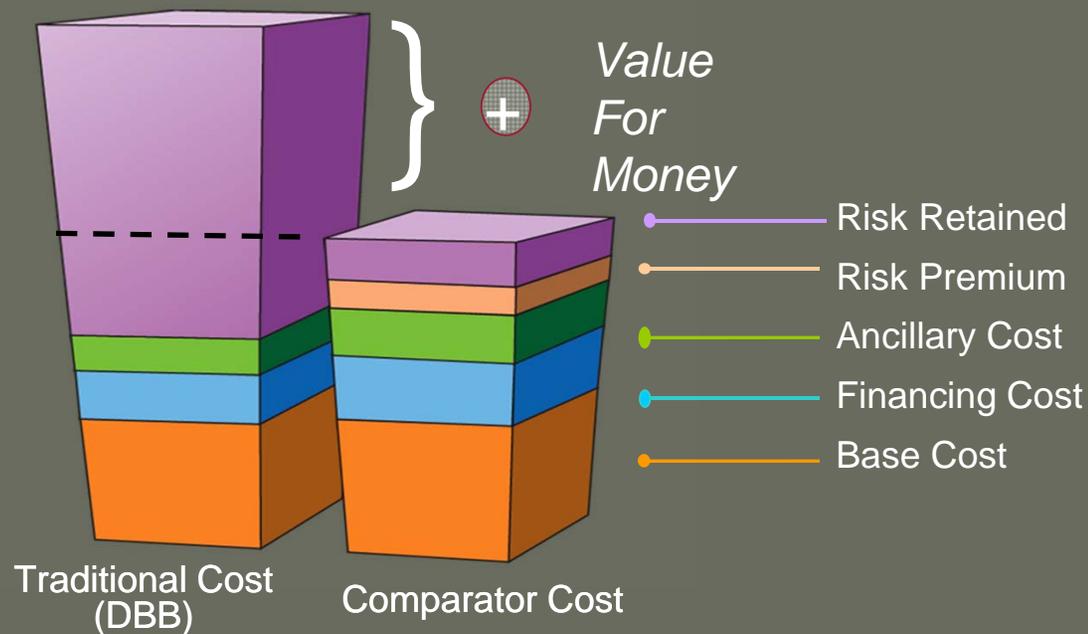


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Screening Pathways for Selection

A) Procurement Options Analysis, Risk Model Development and Value for Money (VfM) Analysis:

VfM is a process of comparing costs using two delivery models to determine which is the better value proposition



Key Point:
If the Comparator cost is less than the Traditional Cost there is positive Value for Money by procuring a project using the alternative delivery method



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Screening Pathways for Selection (**)

B) Goals and Objectives Analysis (**)

Project Objectives	DBB	D/B	CMAR	DBFM
Timeliness	●	●	○	●
Flexibility	○	○	○	○
Design	○	○	○	○
Integration with community	●	●	●	●
Asset quality & longevity	○	○	○	●
Maximizes competition	○	●	○	●
Local participation	●	●	●	○
Fairness & transparency	●	●	●	●
Environmental sustainability	●	●	●	●
Risk allocation	○	○	○	●
Cost certainty	○	○	○	●
Value-for money	○	●	○	●
Affordable	○	●	●	●

KEY:	●	Strongly Achieves Objectives
	○	Mostly Achieves Objectives
	○	Achieves Some Objectives

() Note – Example Only...Not measured against DTX Goals or Objectives**



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Questions & Thank You