Don’t Forget Life Cycle Delivery of “Basic Infrastructure”

It Has an Important Future –
Even if the term “PPP” Should Not!

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“Basic Infrastructure” Defined

- Very Long Term, Complex, Essential.
  - Individual Facilities and Networks of Such Facilities
  - Constantly rebuilding, repositioning, upgrading.
  - Likely to be NEVER-ENDING

- Water, Wastewater, Key Transportation, Energy
  - Example (500+ year old transportation route):
    - 1927 to Present – US 40 and later Interstate I-70
    - 1912 -1927 Part of the National Old Trails Road
    - 1806 to 1912 – Cumberland Road
    - 1751 to 1806 – Braddock’s Road
    - Pre 1751 – American Indian Trail over the Appalachian Mountains
Near Exclusive Reliance on Initial Delivery Cannot Succeed Financially

1:10:100 Ratio (Min) Design/Construction/OM&R Cost
OM&R (Operation, Maintenance, and Repair) is an Enormous Burden

- For each 1$* spent on Design
- At least 10 is spent on Construction, and
- At least 100 more is spent for OM&R

* or £, €, ¥, etc.
Deferring OM&R Dramatically Worsens Both Level of Service and Life Cycle Cost

- Timely (non-capital) Repair is ¼ the Cost of Deferred Repair

US Army Corps of Eng. Pavement Degradation Curve
Basic Project Delivery Choices

**FOCUS ON INITIAL DELIVERY**

- Initial Design
- Initial Construction
- O&M by Public Entity
  - (Historical Problems with O&M Funding, typically deferred, which shortens life, lowers service level, and increases Life Cycle Cost of Service)
  - DBB CM at Risk
  - Design Build
- O&M by Contract

**FOCUS ON LIFE CYCLE DELIVERY**

- Life Cycle Delivery (Typically 25 to 35 Years)
  - Revenue Streams to Repay Public and/or Private Debt are ALL “Arranged” with Public Sector Assistance
  - Maintenance Costs Embedded in All These Approaches
  - Public Entity Takes Entire Finance Risk
  - Private and Public Entities Share Finance Risk
  - Private Entity Takes Entire Finance Risk
  - DBOM Alternate 1
  - DBOM Alternate 2
  - DBFOM
Taxpayers, Users, Pension Funds, Investors

Sources of Funding for Public Infrastructure Facilities

- From Cash
  - On Hand: (e.g.)
    - From Grants
    - From Prior Savings
    - From Stabilization Funds
  - Municipal Bonds
  - General Obligation Bonds
  - Bond Anticipation Notes

- Funds for Infrastructure Through Debt
  - Obligations of State and Local Public Entities
    - Based on the Creditworthiness of the Entity
  - Credit Enhancements (TIFIA, Revolving Funds, etc.)

- Funds for Infrastructure Through Private Equity
  - Obligations of Private Infrastructure Providers
    - Based on the Creditworthiness of the Project

DBB CM at Risk
Design Build
O&M by Contract
DBOM Alternate 1

DBOM Alternate 2
DBFOM
Benefits of Life Cycle Delivery


  - This is 30-40% of the $1+$10+$100.
  - Public Owner can establish floor Level of Service Requirements, and reward proposers who exceed them.
  - Requires Public Entity to:
    - Have a Solid Understanding of Current Facilities, Current Condition, Current and Future Associated Costs; and
    - Conduct a Head to Head Competition on Life Cycle Cost over Same Scope

- Other Procurement Practices Do Not Achieve These Results
The “Linear” Procurement Model Does Not Achieve These Results

- “Cost” of Life Cycle Delivery is the sum of the pieces.
  - There is little competitive pressure in the procurement to:
    - (1) minimize or reduce current life cycle cost;
    - (2) minimize or reduce user charges over the life cycle; or
    - (3) maximize level of service (LOS).
The “Integrated” Procurement Model

“Cost” of Life Cycle Delivery is the best combination of the pieces.

- There is maximum pressure in a competitive procurement to:
  1. minimize life cycle cost;
  2. minimize user charges over the life cycle; and
  3. maximize level of service (LOS).

Best Combination of Design-Construction-O&M&Repair over Life Cycle = Cost
Examples:  www.barchanfoundation.com

- Tolt Water Treatment Plant – Seattle
  - RFP Required at least a 15% improvement in LCC over 35 year DBOM contract – 30%+ savings achieved.

- Confederation (Northumberland Strait) Bridge – New Brunswick to Prince Edward Island
  - Competitive RFP achieved a $CDN 750 million savings in LCC over 35 year DBOM contract to replace ferry services with fixed crossing.

- Kicking Horse Canyon Bridge – British Columbia
  - Competitive RFP achieved a 10% improvement in LCC over a 25 year DBOM contract, with a 40% improvement in the time for initial delivery.
These Procurements Were Structured to Require Improvements in LCC and/or LOS

- Solicitations:
  - Require Proposers to submit best combination of design, equipment, technology, construction, OM&R, and finance variables;
  - Contain Floor Requirements for LOS (Level of Service);
  - Contain Owner-Developed Projections for Expected LCC over practicable periods (25-35 yrs);
    - Require conforming proposals to meet (or beat by stated percentage) expected LCC over the same period.

- Evaluation Criteria include:
  - Head to head competition on price (over same scope);
  - Fares/charges to users (public entity) as evaluation criteria;
  - Rewards for improved LOS above Floor Requirements.
Predictions

- Should the term “PPP” have a Future?
  - No!
- Does Life Cycle Delivery have a Future?
  - Yes!
  - 10% of projects
  - 50% of expenditures.