Innovative Contracting For Movable Bridges

Structuring Contracts to Achieve Best Value

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FDI Services

Topic to discuss

- Introduction of FDI Services
- Types of Movable Bridge Services
- History of Movable Bridge Contracting in Florida
- Current status of Movable Bridge contracts in other States
- Economic findings from a national prospective

Introduction of FDI Services

- DBA for Florida Drawbridge, Inc.
- Started 1997 subcontracting bridge operations for General Electric on 63 drawbridges in Florida.
- Early growth follows the evolution of Florida's Movable bridge contracts
- Currently Contracting on Movable bridges in New Jersey, Louisiana, Virginia, Maryland, South Carolina, and Florida.
- Also holding asset maintenance contracts for multiple roadway systems.

Types of Services

- Bridge Tending Operations
- Routine Maintenance
- Field Repairs
- Emergency Response
- Roadway Maintenance (asphalt, signs, drainage, joints, etc.)
- Rail Road Bridge O&M
- Facilities Maintenance
- Engineering Services (design, plans and review, permit reviews, etc.)
- Bridge Inspections

History of Contracts in Florida

- First Contracts were bridge Operators only
- Low bid (ITB)
- Nation of The Yahweh (undisclosed location in FL)
- Minimum Wage
  - $3.35
  - Operators lived in bridge house
  - Same operator 24/7

Pros and Cons to low bid

- Very cost effective business model
- Low cost to the State
- Some problems with QC/QA
- Safety Concerns
- Hygiene concerns
- FDOT not happy with quality of service provided
- Contractor defaulted and FDOT had to resume operations of the bridges in-house.
- Total fail.

Next: Operations + Maintenance + Billable Minor Repairs

- Switching from ITB to RFP with respect to the movable bridges.
- FDOT wanted to attract more qualified firms that could not compete with more aggressive unqualified bids for Safety sensitive, highly technical work on critical infrastructure.
- 1991 FDOT District 4 - 34 bridges
  - Maintenance + Operation, Repairs (time and material)
  - Short term contracts
  - General Electric helped develop contracts with the FDOT

Pros and Cons to time and material

- Successfully drew qualified firms with the desired expertise and recourses.
- FDOT was happy with level of service and RFP for this contract type.
  - Allowed more department regulation
- Billable repair costs were high
  - Contractors had no motivation to find low cost materials and labor.
    - Expense passed directly through to the State with added Mark-up
    - Higher administrative costs to approve and inspect each repair
      - Process each repair PO and invoice/payment.

Performance based Contract 2002

- FDOT advertised first expansive Performance Based Contract for Movable Bridges.
  Based on first Performance based (Asset Maintenance) contract in Virginia around 1995 which was roadway and fixed bridges.
- 7 Year contract term
- The contracts included
  - Operation
  - Maintenance
  - Minor repairs
  - Inspections
- One Lump Sum Price- Contractor assumes Liability and Repair Risk
- Performance based contract held contractor financially accountable for poor performance.

Pros…

- Lower administrative costs
  - Drastically reduced Processing of minor repair POs, Invoices, Payments.
- Long contract term on fixed price set predictable State Budget.
- Reduced Costs of repairs
  - Contractor was held to Lump Sum bid
    - Economically motivated to implement cost effective repairs
      - Aggressively negotiate prices for parts/materials and labor rates
    - Step up Preventive and Predictive maintenance efforts to reduce need for repairs that could have been avoided.
  - Contractor was economically motivated to act as a true Partner of the State.
  - Performance Based Contract left no room for excuses or unexpected costs to the State.

Current FL Bridge Contracts of Note

- Broad Scope Performance Based Contracts
  - FDOT District 4. (Broward, Palm Beach area)
    - 34 movable bridges, US-1, and A1A. Including all the roads that cross the intercostal waterway and join the two parallel roads.
- Performance based contracts that only include movable bridges and associated structures (fixed bridge fender systems and navigational lights in the area.)
  - FDOT Districts 5 and 6
  - Movables and the fender systems/ navigational lights on all the state fixed bridges along the waterway in that District.

Florida continued..

- BRIMM contracts (23 Movables, over 200 Fixed bridges)
  - Second Advertisement of this contract. (first advertised in 2002)
- Spanning two different FDOT Districts
  - This allows for Bundling a larger number of Assets to benefit from economies of scale.
  - Eliminates paying redundant overhead costs and multiple mark-ups.
  - RFP is advertised separately but simultaneously in the two Districts.
    - Identical contract scope and RFP language.

Florida- Port Canaveral

Virginia

- Hampton Roads District-VDOT (Group of Bridges and Tunnels)
  - Operation and maintenance contracts
    - Light repairs billed at time and materials.
    - Short contract terms. 2 years.
- Richmond Area-VDOT
  - Operations/ Maintenance contracts
    - Repairs billed at time and materials
    - Short contract terms.
- Washington D.C. Area- VDOT/MDOT
  - Woodrow Wilson Bridge crossing the Potomac
    - Under a (TAMS) contract. Full Asset Maintenance. Performance Based Contract
    - 6 year term.
    - One Lump Sum price.
    - Contractor takes on liability and risk
    - Impressive Interagency Cooperation between Stakeholders.

Woodrow Wilson Bridge

South Carolina

- Statewide Contract-SCDOT
  - A full Scope Performance based Contract.
  - Operations/Maintenance/Repairs
    - Minor repairs included in the Lump sum
    - 6 year term
    - Contractor takes no almost no repair risk
    - Major repairs billed time and materials
  - 8 Movable bridges and a number of large fixed bridges.
  - Impressive Multi District Cooperation
    - Bundle assets to achieve larger scope and saving from economy of scale

SC Ravenel and Ashley

Louisiana- Pilot Program

- Pilot Contract, District 3 (Southern LA)
  - First Movable bridge Contracted services in LA
  - Bridge Operations of 5 Movable bridges
  - Pilot Scope captures the challenges of operating Movables in Louisiana.
    - Consists of 1 24/7 manned bridge, and 4 on-call bridges.
    - Contract includes wide variety of Movable Bridges
      - Older swing type and vertical lift bridges
      - New large swing type bridge.
    - This Pilot represents the staffing challenges that LA uniquely faces
    - Mobile On-Call operators are responsible for opening multiple bridges as vessels travel down the bayous.

Louisiana

- Unique Challenges
- Largest Movable Bridge Owner in the USA
  - 100+state owned and 50+ Parish owned Movables
  - Many bridges are extremely remote
  - State is already very efficient with their operating methods
    - In District 3 one operator can open up to 9 bridges successively along a certain waterway in one passage.
  - The waterways are critical for the sugar and oil industries.
  - An efficient contractor must operate in a similar manner and can not use a one-size-fits-all approach.

Horace Wilkinson Bridge

Northeast

- New Jersey DOT- Statewide maintenance and repair contract.
  - Time and materials for all activities
  - 1 year terms
  - Work is done by Construction firms using construction methodologies
  - Operation is done in-house by the state
- Massachusetts- Operations+ maintenance contracts by District
  - Time and material contracts. Everything is billable.
  - Short term contracts
  - Work done by construction firms using construction methodologies.
- Both states researching more progressive contract methods.

Economic Findings from national perspective.

Main Cost Drivers for Movable Bridge Management.

- #1: Heavy repair/Rehabilitation Costs.
  - High cost because each repair job requires extensive administration and a full procurement process for rehabilitations.
  - Paying full mobilization, OH, and Mark-up per repair.
  - Repairs often done with little thought to future maintenance.
  - The sporadic and significant cost of these repairs makes it more difficult for precise long-term budgeting by the Owners.
  - Worst part is that they are often premature or unneeded.

Cost Drivers Continued..

- #2: By The Drink Repairs…
  - Time and Material Type Repair Contracts
  - Relying on the goodwill of Contractor to Seek best value in parts/ material and labor costs.
    - Contractor benefits from higher costs to achieve higher mark-up.
    - Contractor is not motivated to identify long term cause of system failure and implement operation or preventive maintenance solution to prevent future failure.
  - Adds administration for owner for routine repairs.
  - A simple case “Can’t See The Forest For The Trees”
  - Contractors focusing on their own narrow scope.
  - The Asset Owner’s focus in on the Big Picture.
- This leads to a conclusion

Bottom Line

- All parties servicing the bridge are not economically motivated toward the one unified goal of maximizing Asset life for the best possible value to the Owner.
- By aligning all the service elements under one contract: (Operations, Maintenance, Repairs) The Owner also aligns the bottom line goals of the contractor with their own.
- Rely on economics and capitalism to reduce costs by placing repair risk on Contractors.

Contract Elements Reducing Waste and Realizing Best Value

- Long term contracts
- Large contract scope
  - Inerter-agency pooling of similar assets
- Substantial risk and liability placed on Contractor
- Strict Performance Measures
- True Partnership