PERFORMANCE BASED CONTRACTING FOR BRIDGE DECK PRESERVATION

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PRESENTATION OUTLINE

• Background Information
• Bridge Preservation Overview
• Past & Current Bridge Preservation Practices
• Performance Based Maintenance Contracting/Asset Management Basics
• Performance Based Maintenance Contracting for Bridges
• In Closing.....
• Questions/Discussion??
BACKGROUND INFORMATION

- 35+ years experience as infrastructure operations & maintenance service provider
- Performed any and all types of contracts
- Good, bad, and ugly
- Present times call for change
- Map – 21 calls for asset management plan
- One contractor’s view on effective bridge preservation practices - deck and total
• Minnesota I35W Bridge Collapse in 2007
• Inspections, Inspections, Inspections
• Line Item Maintenance
• Bridge Preservation groups/committees- AASHTO TSP2 BPP, ARTBA, TRB
• Quest for Funding
• Curators or Firemen??
Current Work Execution

- Agency performed - “In-house”, utilizing State/Agency personnel
- By Contract: Private industry is guided by legislation that focuses primarily on low bid system, and “recipe” driven, cookie cutter work specifications
- Both methods focus primarily on single service, work order type maintenance services
- Reactive in nature
- Little more than basic preventative maintenance done
- Repair or replace after damage is done
• Challenges With Current Methods
  • Not getting what specifications say and/or what you are actually paying for
  • High and ever-increasing costs—struggle to meet budgets
  • Lack of innovation limiting use of latest technologies
  • Reactive vs. proactive approach to maintenance
  • Agency bears majority of risks
  • Multiple contracts needed to address many services
  • Current programs do little to address long-term bridge preservation
PBMC/AM BASICS

- Asset Condition Without Proper Maintenance
- Performance-Based Contracting
- Performance Standard
- Baseline
- Traditional Maintenance

Time

Asset Condition
Advantage Overview

- Management decisions by Contractor
- Right time – right application
- Risk is shifted to Contractor, shared with owner
- Uninterrupted maintenance on assets for the duration of contract (5-10 years)
- Lower long-term costs for infrastructure preservation
- Improved conditions, performance and better assurance of achieving expected bridge service life
Advantage Overview

• Improved cost-effectiveness and use of all available resources and cutting-edge technologies
• Focus on performance and outcomes
• Improved credibility and accountability for decisions and expenditures
• Performance requirements set by Public Agency and monitored via programs such as MRP (Agency or 3rd party)
• Promotes “green” activities and practices
• Best value award
Possible Bridge Preservation Maintenance Items:

- Deck Washing by high and low pressure methods
- Deck and concrete surface sealing and coating
- Deck sweeping
- Thin bond deck overlays
- High Friction Surfacing Treatments (HFST)
- Bridge deck expansion joints
- Bridge support bearings maintenance
- Bridge drainage system maintenance
PBMC FOR BRIDGES

• Possible Bridge Preservation Maintenance Items:
  • Concrete and asphalt patching (deck and substructure)
  • Pressure grouting and crack sealing
  • Barrier, railing, and fence maintenance
  • Annual bridge deck and substructure inspections
  • Bridge signage and ITS systems & maintenance
  • Bridge deck deicing systems & maintenance
  • Bridge deck traffic markings
  • Vegetation control around bridge structures
<table>
<thead>
<tr>
<th>BRIDGE ASSET GROUP</th>
<th>ASSET</th>
<th>OUTCOME</th>
<th>TOLERANCE AND CRITERIA</th>
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| Deck (Roadway and Multi-Use Trails) | Safe | Structurally Sound Free of Dirt/Debris | - <25% of joint material missing. No dirt, silt, debris, or grass growing in joint.  
- No pavement obstructions that present a safety hazard.  
**Timeliness Requirements:**  
- Temporary repairs to potholes 6” x 6” x 1 ½” or equivalent depth or larger shall be made immediately upon notification. All others within 2 days.  
- Permanent repairs to potholes/pavement failures and joints shall be completed within 30 days of notification with an approved VDOT/MSHA concrete patching or sealing material.  
- Pavement obstructions that present a safety hazard shall be mitigated immediately. |
| Superstructure (Includes Parapet Walls) | Structurally Sound Free of Debris | MRP Requirements:  
- Perform all ordinary maintenance including sweeping, washing and cleaning.  
- No potholes > 1” width or depth  
- ≤ 10% surface area spalling < 1” deep  
- No unsealed cracks with width ≥ 1/8”  
- Temporary patches ≤ ½” higher or lower than surrounding concrete deck surface  
- No damaged or missing bridge railings. Railings are intact and connections are tight.  
- Drains/scuppers open and functional.  
- The deck is free of foreign material (grass, stones, limbs, trash, etc.)  
- Joints are clean, intact, and functioning as designed.  
- Drainage system (drains, scuppers, trough, etc) is clean and functioning as designed.  
- VDOT/MSHA and/or Contractor’s Inspection Report shall be reference for other ordinary maintenance and minor repair needs.  
**Timeliness Requirements:**  
- Temporary repairs to potholes 6” x 6” x 1 ½” or equivalent depth or larger shall be made immediately upon notification or discovery.  
- Permanent repairs to potholes shall be completed within 30 days of notification or discovery and flush with surrounding surface.  
- Damaged/missing bridge railing shall be mitigated immediately upon notification or discovery.  
- Damaged/missing railing shall be repaired or replaced within 30 days. |
In Closing

- Past methods proven to not be working
- Easier than ever to get PBMC information
- Need to take advantage of all innovations
- Successful track record now established
- A valid option in the “toolbox”
- Preservation based program
Thank You Very Much!!!