



# **PERFORMANCE BASED CONTRACTING FOR BRIDGE DECK PRESERVATION**

Frederick M. Grant – Business Development Manager  
AASHTO TSP2 Southeast Bridge Preservation Partnership  
2015 Conference – April 13 – 15, 2015  
Montgomery, Alabama

# 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



# BRIDGE PRESERVATION OVERVIEW

- 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??

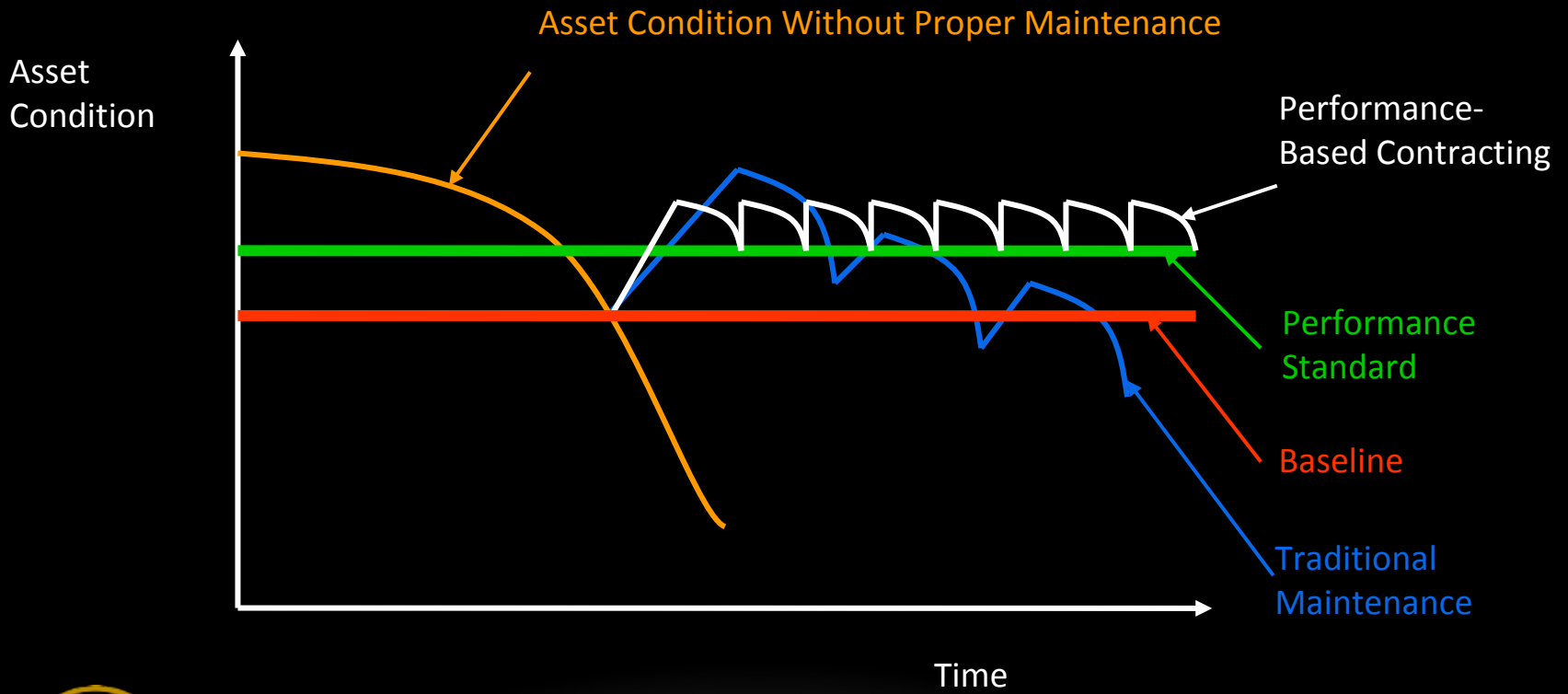
# PAST AND CURRENT BRIDGE PRESERVATION PRACTICES

- 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

# PAST AND CURRENT BRIDGE PRESERVATION PRACTICES

- 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



# PBMC/AM BASICS

- 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



# PBMC/AM BASICS

- 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 3<sup>rd</sup> party)
  - Promotes “green” activities and practices
  - Best value award

# PBMC FOR BRIDGES

- 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

# PBMC FOR BRIDGES

ASSET	OUTCOME	TOLERANCE AND CRITERIA
		<ul style="list-style-type: none"> <li>• &lt;25% of joint material missing. No dirt, silt, debris, or grass growing in joint.</li> <li>• No pavement obstructions that present a safety hazard.</li> </ul> <p><b>Timeliness Requirements:</b></p> <ul style="list-style-type: none"> <li>• Temporary repairs to potholes 6" x 6" x 1 1/2" or equivalent depth or larger shall be made immediately upon notification. All others within 2 days.</li> <li>• 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.</li> <li>• Pavement obstructions that present a safety hazard shall be mitigated immediately.</li> </ul>
<b>BRIDGE ASSET GROUP</b>		
Deck (Roadway and Multi-Use Trails)	Safe Structurally Sound Free of Dirt/Debris	<p><b>MRP Requirements:</b></p> <ul style="list-style-type: none"> <li>• Perform all ordinary maintenance including sweeping, washing and cleaning.</li> <li>• No potholes &gt; 1" width or depth</li> <li>• ≤ 10% surface area spalling &lt; 1" deep</li> <li>• No unsealed cracks with width ≥ 1/8"</li> <li>• Temporary patches ≤ 1/2" higher or lower than surrounding concrete deck surface.</li> <li>• No damaged or missing bridge railings. Railings are intact and connections are tight.</li> <li>• Drains/scuppers open and functional.</li> <li>• The deck is free of foreign material (grass, stones, limbs, trash, etc.)</li> <li>• Joints are clean, intact, and functioning as designed.</li> <li>• Drainage system (drains, scuppers, trough, etc) is clean and functioning as designed.</li> <li>• VDOT/MSHA and/or Contractor's Inspection Report shall be reference for other ordinary maintenance and minor repair needs.</li> </ul> <p><b>Timeliness Requirements:</b></p> <ul style="list-style-type: none"> <li>• Temporary repairs to potholes 6" x 6" x 1 1/2" or equivalent depth or larger shall be made immediately upon notification or discovery.</li> <li>• Permanent repairs to potholes shall be completed within 30 days of notification or discovery and flush with surrounding surface.</li> <li>• Damaged/missing bridge railing shall be mitigated immediately upon notification or discovery.</li> <li>• Damaged/missing railing shall be repaired or replaced within 30 days.</li> </ul>
Superstructure (Includes Parapet Walls)	Structurally Sound Free of Debris	<p><b>MRP Requirements:</b></p> <ul style="list-style-type: none"> <li>• Perform all ordinary maintenance including washing and clearing of all obstructions.</li> <li>• No spalling &gt; 1" deep</li> </ul>

# 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

**QUESTIONS/DISCUSSION??**

Thank You Very Much!!!

[fgrant@dbiservices.com](mailto:fgrant@dbiservices.com)

