An Update* for the Bridge TWG @ AASHTO SCOM, 2016

* Incomplete, Incoherent, Off-the-Cuff & Wholly Unauthorized
Pilot States and Bridge Types

- California: 2-span prestressed post-tensioned continuous CIP box girder
- New York: Two simple spans of adjacent concrete box beams
- Minnesota: Steel deck truss
- Florida: Precast, segmental post-tensioned concrete box beams
Scope of LTBP—Main Study

I. Synthesis of Existing Information
II. Create Bridge Portal with NBI Data
III. Survey 15 States
IV. Determine High-Priority Issues
V. Establish Data Gathering Protocols
VI. Verify Data Protocols on Pilot Bridges
VII. Add Pilot Bridge Data and State Element-Level Data to Bridge Portal
Scope of LTBP—Main Study

VIII. Select Bridges for Long-Term Data Gathering
IX. Gather Long-Term Data
X. Analyze all Data
XI. Develop/Refine Models (DMM and CAMM)
XII. Make Models Available for States’ Bridge Management Systems
XIII. Create Suite of “Best Practice” Publications
Version 1 of the LTBP Bridge Portal was integrated with UPACS system and is available through FHWA network.

Will discuss future development and will address questions/concerns pertaining to access this afternoon.

Version 1 available as of October 1, 2015.
Bridge Performance – High Priority Topics

Based on input from stakeholders and considering current resources of the program, the following key topics will initially be addressed:

<table>
<thead>
<tr>
<th>Category</th>
<th>Issue</th>
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<tbody>
<tr>
<td>Decks</td>
<td>Untreated Concrete Bridge Decks</td>
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<tr>
<td>Decks</td>
<td>Treated Concrete Bridge Decks</td>
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<tr>
<td>Joints</td>
<td>Bridge Deck Joints</td>
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<tr>
<td>Bearings</td>
<td>Bridge Bearings</td>
</tr>
<tr>
<td>Steel Bridges</td>
<td>Coatings for Steel Superstructure Elements</td>
</tr>
<tr>
<td>Concrete Bridges</td>
<td>Prestressing Wire, Strands, &amp; Tendons</td>
</tr>
</tbody>
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Data Collection Approach

Candidate Bridges – Legacy Data Mining
• Selected to provide context, assess variability, and ensure that the cluster bridges are representative
• Performance tracked through standard element-level inspection

Cluster Bridges
• Selected to allow the investigation of various input and attribute influences on performance
• Performance tracked through targeted use of technology and enhanced visual inspection procedures

Reference Bridges
• Representative of the most common inputs and attributes of selected bridge type
• Rendered completely transparent through the application of the state of the art assessment and monitoring approaches
Representative Bridges

Based upon an analysis of the National Bridge Inventory Database:

- Steel stringer
- Prestressed Concrete Multi-girder
- Prestressed Concrete Box Girder
- Adjacent Box Beam Bridges

were selected as the most representative
LTBP Program

Research Methodology

Long-Term Bridge Performance Program

14 Suggested Clusters

Climate Zones

ZNUM

- Hot-Humid
- Mixed-Humid
- Mixed-Dry
- Hot-Dry
- Cold
- Very Cold
- Marine

U.S. Department of Transportation
Federal Highway Administration
Long-Term Bridge Performance Program

Bridge Corridors – 10 Nationally
LTBP Data-Driven Deterioration Model - Rutgers

- **Current Status:**
  
  Empirical Model developed and is in process of validation

- **Remaining Work:**
  
  - Model validation (NJ, NY, NH)
  - Model implementation
  - Model integration with Bridge Portal