2013 SCOBS Annual Meeting
Portland, Oregon
June 17-20, 2013

Remarks by Secretary
and FHWA Update

M. Myint Lwin
Director, Office of Bridge Technology
Federal Highway Administration
Washington, DC
Remarks by Secretary

- Mid-Year Tech Committee Meetings
- NCHRP 12-82 Developing Reliability Based Inspection Practices
- NCHRP 12-87 Fracture-Critical System Analysis for Steel Bridges
- NCHRP 12-89 LRFD Tunnel Design and Construction Specifications
New Publications

- Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals
- Guide Specifications for the Design of Concrete-Filled FRP Tubes for Purlin and Diaphragm Members
- AASHTO LRFD Bridge Design Specifications (Customary U.S. Units - 2012)
- AASHTO 2013 Interim Revisions to the Manual for Bridge Evaluation

Sixth Edition 2013
Activities for the Years Ahead

- Implement MAP-21
- Implement SHRP2 Products
- Support Research, Technology, and Training
- Continue effort to successfully implement LRFD and LRFR
- Support FHWA’s LTBP Program
FHWA Update

General Session:

- I - FHWA Research Update by Lou Triandafilou
- J - LTBP Program Update by Sue Lane
- R – Status of the High Chloride Content Study by Joey Hartmann
I-5 Skagit River Bridge Reopens Today

Congratulations,
WSDOT

Thank you for working cooperatively with FHWA
The Tennessee Story
(Reported By Paul Sharp)

- Properly and promptly posting or closing bridges based on “critical findings”:
- Strong partnership between:
  - TDOT and FHWA
  - City Bridge Owners
  - Local Road Superintendents
Partnership for Accomplishments
(Reported By Matt Shamis)

Percent Reduction since April 2008 Baseline
for Load Rating, Scour Assessment, and Unknown Foundation Goals

- EJ Load Rate % Reduction
- Scour Assessment % Reduction
- Unknown Foundations % Reduction

NBI Date:
- Oct-06
- Feb-08
- Jul-09
- Nov-10
- Apr-12
- Aug-13

Percent Reduction:
- 0.00
- 10.00
- 20.00
- 30.00
- 40.00
- 50.00
- 60.00
- 70.00
- 80.00
- 90.00
- 100.00
## Bridge Statistics
### (December 2012)

<table>
<thead>
<tr>
<th></th>
<th>Totals</th>
<th>Fracture Critical</th>
<th>Structurally Deficient</th>
<th>Functionally Obsolete</th>
<th>Steel Thru Trusses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interstate</td>
<td>55,959</td>
<td>2,234</td>
<td>2,494</td>
<td>9,982</td>
<td>105</td>
</tr>
<tr>
<td>NHS</td>
<td>117,485</td>
<td>3,985</td>
<td>5,237</td>
<td>19,075</td>
<td>383</td>
</tr>
<tr>
<td>Non-NHS</td>
<td>489,895</td>
<td>16,823</td>
<td>61,512</td>
<td>65,673</td>
<td>9,249</td>
</tr>
<tr>
<td>Total</td>
<td>607,380</td>
<td>20,808</td>
<td>66,749</td>
<td>84,748</td>
<td>9,632</td>
</tr>
</tbody>
</table>
Every Day Counts (EDC2)

- Accelerated Bridge Construction (ABC)
  - ABC’s of Prefab Bridge Elements
  - Geosynthetic Reinforced Soil-Integrated Bridge System (GRS-IBS)
  - Prefabricated Bridge Elements and Systems
  - Slide-in Bridge Construction
Implementation Assistance Program

- FHWA has the Lead Responsibility, in working closely with AASHTO and TRB
- States are the primary recipients and users
- Three participation levels:
  - Proof of Concept
  - Lead Adopter
  - User Incentive
R04 Innovative Bridge Design for Rapid Renewal. First Round Recipients:

<table>
<thead>
<tr>
<th>State</th>
<th>Participation Level</th>
<th>Projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arizona</td>
<td>Lead Adopter</td>
<td>IR7 Gila River Bridge</td>
</tr>
<tr>
<td>California</td>
<td>Lead Adopter</td>
<td>Fort Goff Creek Bridge</td>
</tr>
<tr>
<td>Kentucky</td>
<td>Lead Adopter</td>
<td>KY-6 Stewarts Creek</td>
</tr>
<tr>
<td>Maine</td>
<td>Lead Adopter</td>
<td>KY-6 Stewarts Creek</td>
</tr>
<tr>
<td>Michigan</td>
<td>Lead Adopter</td>
<td>Seney National Wildlife Refuge</td>
</tr>
<tr>
<td>Missouri</td>
<td>Lead Adopter</td>
<td>Bridge A-0087</td>
</tr>
<tr>
<td>Nebraska</td>
<td>Technical Assistance</td>
<td></td>
</tr>
<tr>
<td>Rhode Island</td>
<td>Lead Adopter</td>
<td>Warren Avenue</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>Lead Adopter</td>
<td>Bridge A-0087</td>
</tr>
</tbody>
</table>
## Report to Congress

<table>
<thead>
<tr>
<th>Report Title</th>
<th>Synopsis</th>
<th>Due Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Bridge and Tunnel Inventory – Annual Report</td>
<td>Sec 1111 of MAP-21: Inventory bridges and tunnels on public roads. Update inventories annually and submit report to Congress</td>
<td>No due date specified</td>
</tr>
<tr>
<td>Bridge Inspection – Study and Report to Congress on Bridges</td>
<td>Sec 1111 of MAP-21(a): Study and report to Congress on the benefits, cost-effectiveness and feasibility of requiring element-level data collection</td>
<td>No due date specified</td>
</tr>
<tr>
<td>Element Level Data for Bridges</td>
<td>for bridges not on the NHS.</td>
<td></td>
</tr>
<tr>
<td>Comprehensive Truck Size and Weight Study</td>
<td>Sec 32801 of MAP-21: Comprehensive truck size and weight limits study.</td>
<td>November 2014</td>
</tr>
</tbody>
</table>
TIGER 2013

- Received 568 Applications
- Total value = $9 Billion
- Available = $474 Million

- Previous 4 TIGER Grants:
  - Number of Projects = 218
  - Total Amount = $3.1 Billion
## Rulemaking Per MAP-21

<table>
<thead>
<tr>
<th>Program</th>
<th>Topic</th>
<th>Due Date</th>
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</thead>
<tbody>
<tr>
<td>Performance Management</td>
<td>Sec 1203 of MAP-21: National goals and performance management measures</td>
<td>December 2013</td>
</tr>
<tr>
<td>National Highway Performance Program (NHPP)</td>
<td>Sec 1106 of MAP-21: Asset Management Plan</td>
<td>April 2014</td>
</tr>
<tr>
<td>National Bridge Inspection Standards (NBIS)</td>
<td>Sec 1111 of MAP-21: Modernize NBIS to address inspector certification, risk-based inspection intervals, inspector training and qualification, etc.</td>
<td>October 2015</td>
</tr>
<tr>
<td>National Tunnel Inspection Standards (NTIS)</td>
<td>Sec 1111 of MAP-21: Establish new NTIS to address inspector certification, inspection intervals, inspector training, critical findings, etc.</td>
<td>October 2014</td>
</tr>
</tbody>
</table>
FHWA Webinars and Training

_LRFR Implementation Webinar Series”
- Completed 8 webinars since October 2011
- No. 9 LRFR Webinar on Load Rating of Steel Truss Bridges scheduled for Sept 2013
  - http://www.fhwa.dot.gov/bridge/lrfd/

_Bridge Preservation Training
- NHI Training on Bridge Preservation
- New Web-based Training Modules
- Update NHI Bridge Maintenance Course
Management of Bridges with FCMs

- Review current State practices on “Critical Findings”
- Study on “Safety Inspection Practices for bridges with Fracture Critical Members”
- Review common approaches to “Safety Management of Transportation Infrastructure” by FAA, FRA, FTA and Corps of Engineers
## Modal Approaches to Safety

<table>
<thead>
<tr>
<th>Role and Responsibilities</th>
<th>FAA</th>
<th>FRA/FTA</th>
<th>FHWA/Corps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single load path structure – inspection based on crack size, crack growth, analysis &amp; testing</td>
<td>No distinction in FCM or Non-FCM: Annual inspection</td>
<td>Per owner’s FCM Plan: Inspection not to exceed 24 months.</td>
<td></td>
</tr>
<tr>
<td>Safety Management System (SMS)</td>
<td>Bridge Management System (BMS)</td>
<td>Bridge Management System (BMS)</td>
<td></td>
</tr>
</tbody>
</table>
Developing Guidelines

Guidance on Safety Management of Bridges with Fracture Critical Members
– Integrated approach to Bridge Safety:
An Effective Bridge Safety/Asset Management Plan

Bridge with Nonredundant Members?
   Yes
   Design and Detailing Using AASHTO LRFD Design Specifications
   Fabrication using AASHTO/AWS Fracture Control Plan (FCP) for Nonredundant Members
   Project Completed and Accepted?
      No → Inspect for Acceptance
      Yes
         In-Service Inspection and Evaluation in accordance with National Bridge Inspection Standards (NBIS)
         In Compliance with NBIS?
            No → Take Corrective Action
            Yes
               Maintenance and Preservation Plans in Place?
                  No → Develop and Implement M&P Plans
                  Yes
                     Keep Bridges in “State of Good Repair”!
   No → Conventional Design
Components of a Safety/Asset Management Plan

Bridge with Nonredundant Members?

- Yes
  - Design and Detailing Using AASHTO LRFD Design Specifications
  - Fabrication using AASHTO/AWS Fracture Control Plan (FCP) for Nonredundant Members
- No
  - Conventional Design
Construction in accordance with
1. AASHTO LRFD Construction Specifications
2. State Standard Specifications for Construction of Roads and Bridges

Project Completed and Accepted?

Yes

No

Inspect for Acceptance
In-Service Inspection and Evaluation in accordance with National Bridge Inspection Standards (NBIS)

In compliance with NBIS?

Yes

Maintenance and Preservation Plans in Place?

Yes

Keep Bridges in a “State of Good Repair”

No

Take Corrective Action

No

Develop & Implement M&P Plans

Yes
Integrated Effort for Safety & Performance

Inspectors and Maintenance Personnel

Designers

Industry Decision Makers

Constructors

Educators

Researchers

Design
Build
Inspect
Maintain
Thank you for working together in Keeping our Bridges and Tunnels in a “State of Good Repair”!