FHWA Update
AASHTO SCOBS Annual Meeting

Technical Committee T-5 Annual Meeting

Spokane, WA

June 13, 2017

Lubin Gao, Ph.D., P.E.
Senior Bridge Engineer – Load Rating
Office of Bridges and Structures
Federal Highway Administration
• Develop guidance and training on bridge technologies that improve the safety, durability, and longevity of our nation’s bridges

• Advance the state of practice in bridge engineering

http://www.fhwa.dot.gov/bridge/
Concrete Bridges

Reports
- Bridge Data File Protocols for Interoperability and Life Cycle Management (April, 2016)
- Bridge Information Modelling Standardization (April, 2016)
- Bridge Information Modelling (BIM) Using Open Parametric Objects (pdf) (December, 2015)
- Multiple Corrosion Protection Systems for Reinforced Concrete Bridge Components
- Compilation and Evaluation of Results from High Performance Concrete Projects
- Ultra-High Performance Concrete: A State-Of-The-Art Report for the Bridge Community

Manuals
- Contracting and Construction of ABC projects with Prefabricated Bridge Elements and Systems (pdf) (June, 2013)
- Engineering Design, Fabrication and Erection of Prefabricated Bridge Elements and Systems (pdf) (June, 2013)
- Load and Resistance Factor Design (LRFD) for Highway Bridge Superstructures (pdf) (July, 2016)
  - Design Examples (pdf, 8 mb) (June, 2013)
  - Post-Tensioned Box Girder Design Manual (pdf) (September, 2015)
  - Post Tensioning Tendon Installation and Grouting Manual (pdf) (May, 2013)
- Engineering for Structural Stability in Bridge Construction (pdf) (April, 2015)
- Manual of Refined Analysis (pdf, 1 mb) (anticipated Spring 2017)

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Concrete Bridges

Post-Tensioned Box Girder Design Manual

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Strut and Tie Modeling Short Course & Design Examples (under development)

- 1.5 day course
- Available Fall of 2017
- NHI course 130126
- 4 Design Examples

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Steel Bridges

Reports

- Bridge Data File Protocols for Interoperability and Life Cycle Management (April, 2016)
- Bridge Information Modeling Standardization (April, 2016)
- Bridge Information Modeling (BrIM) Using Open Parametric Objects (pdf) (December, 2015)
- Serviceability Limits and Economical Steel Bridge Design (pdf) (August, 2011)
- Seismic Performance of Steel Plate Girder Bridges with Integral Abutments (pdf) (August, 2011)
- Steel Bridge Fabrication Scan - Summary Report

Manuals

- Contracting and Construction of ABC Projects with Precast Bridge Elements and Systems (pdf) (June, 2013)
- Engineering Design, Fabrication and Erction of Prefabricated Bridge Elements and Systems (pdf) (June, 2013)
- Load and Resistance Factor Design (LRFD) for Highway Bridge Superstructures (pdf) (July, 2016)
- Design Examples (pdf, 8 mb)
- Steel Bridge Design Handbook (December, 2015)
- Manual for Repair and Retrofit of Fatigue Cracks in Steel Bridges (pdf) (March, 2013)
- Guide for Heat-Straightening of Damaged Steel Bridge Members (pdf) (09/16/2008)
- Engineering for Structural Stability in Bridge Construction (pdf) (April, 2015)
- Manual of Refined Analysis (pdf, 1 mb) (anticipated Spring 2017)

Events

- SuperPile '17
  Coronado, San Diego, CA
  June 14-16, 2017

Contacts

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Steel Bridges

Design and Evaluation of Bridges for Fatigue and Fracture

PROGRAM AREA: Structures
COURSE NUMBER: FHWA-NHI-130122

Contact:
Brian Kozy:
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• Webinar No. 18: Bridge Load Rating and Posting for State-Specific Legal Loads (1) (02/24/2016)
• Webinar No. 19: Load Rating of Gusset Plates (10/11/2016)
• Webinar No. 20: Load Rating of Complex Bridges (1) (12/01/16)
• Webinar No. 21: Load Rating and Posting for State-Specific Legal Loads (2) (03/15/2017)

Recordings are available: https://www.fhwa.dot.gov/bridge/loadrating/
FAST Act’s Truck Size and Weight

Policy Guidance:

Load Rating for the FAST Act’s Emergency Vehicles, issued by Federal Highway Administration (FHWA) on November 3, 2016

- Type EV2 - for single rear axle emergency vehicles
- Type EV3 – for tandem rear axle emergency vehicles
Questions and Answers:

Load Rating for the FAST Act’s Emergency Vehicles, issued by Federal Highway Administration (FHWA) on April 19, 2017
Load Rating

- Upcoming IDIQ Task Orders
  - Development of a Synthesis Report on Concrete Bridge Shear Load Rating
  - Tunnel Load Rating Reference Guide Development
Long-Term Bridge Performance Program

LTBP Program Focus Areas – Near Term

Data Collection
- Untreated Bridge Decks
- Treated Bridge Decks

Programmatic Support
- Coordination, meetings, website, bridge portal, gap analyses, etc.

Data Access
- Provide data access via LTBP Bridge Portal

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2017 AASHTO SCOBS Bridge Meeting

Update on the Federal Highway Administration’s (FHWA) Long Term Bridge Performance Program (LTBP)

Benjamin Graybeal, Ph.D., P.E.
Structures and Foundations Team Leader

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Multi-Hazard Bridge Design

**Background**
- Design methodology inconsistent between hazard
- A bridge likely to experience multiple hazards over its life
- Little guidance on combining loads

**Technical Panel**
- Chairs & members of AASHTO T1, T3, T5, T9, T10
- NCHRP, FHWA
- Facilitator: Greenman-Pedersen Inc.

**Research Team**
- Genex Systems; Modjeski & Masters; and MCEER

**Status Update**
Jia-Dzwan Jerry Shen, Ph.D.
Program Manager, Genex Systems
Public safety is our first responsibility.

Thank you for your attention!

Lubin Gao, Ph.D., P.E.
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Federal Highway Administration