

# Committee Meeting AFS30

*Foundations of Bridges*

*and*

*Other Structures*

# Membership

- Mark Morvant (chair)
- Naser Abu-Hejleh
- Tony Allen
- Corey Bobba
- James Brennan
- Dan Brown
- Kenneth Fishman
- Rudolph Frizzi
- George Goble
- Ed Kavazanjian
- Daehyeon Kim
- K. J. Kim
- Robert Kimmerling
- Peter Lai
- Kerstin Lesny
- Brian Liebich
- Silas Nichols
- Andrzej Nowak
- Jamal Nusairat
- Scott Olson
- Sam Paikowsky
- Miguel Pando
- Frank Rausche
- Carrie Ridley
- Lance Roberts
- Naresh Samtani
- Ed Tavera
- Hani Titi
- Gerald Verbeek
- James Withiam

# Committee Scope

This committee is concerned with the local and global behavior, stability, and interaction of structural foundations, and their supporting materials, for permanent and temporary transportation structures (bridges, retaining walls, box culverts, buildings, overhead signs, and other transportation structures).

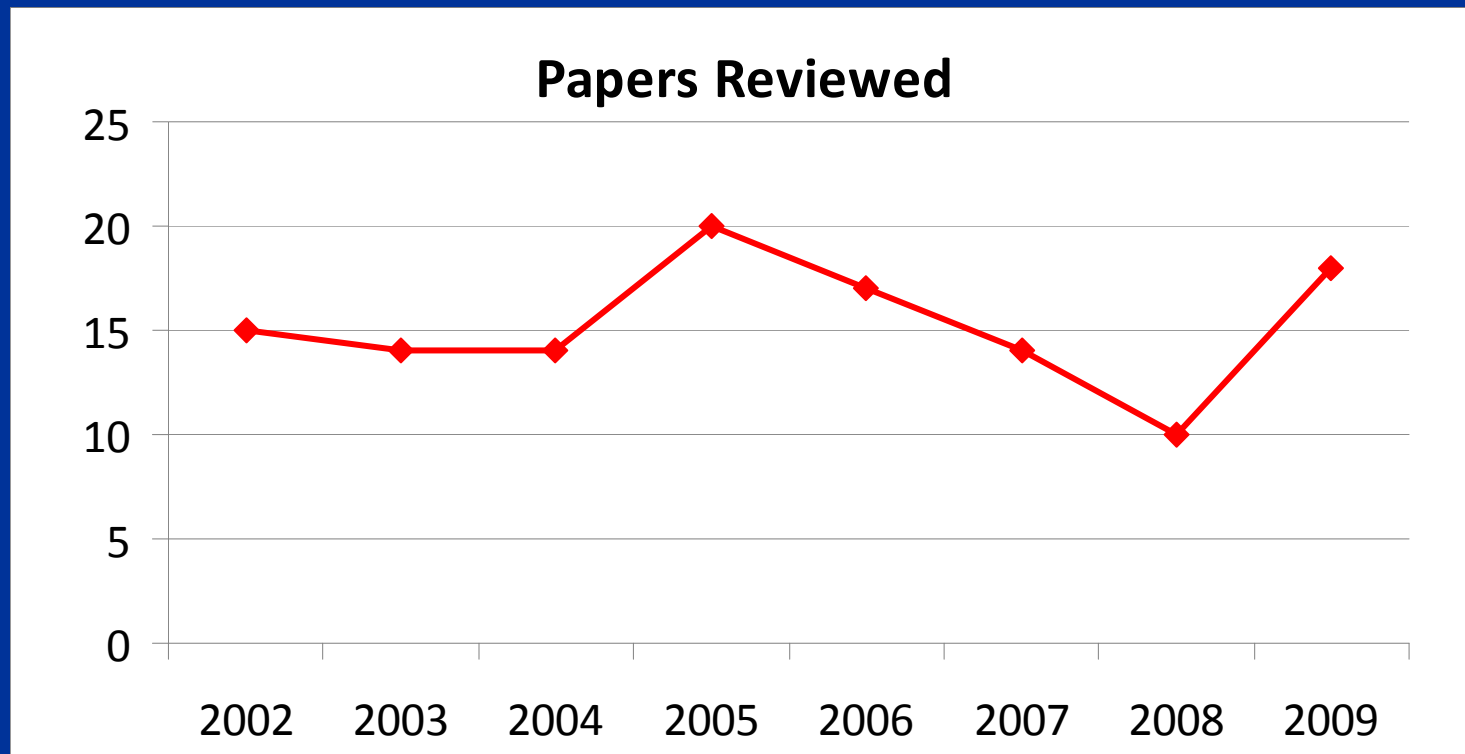
# TRB Announcements

# Future Goals (TSE Report)

- LRFD Practical Application
- Optimization of Driven Pile Foundations
  - Soil set-up, high capacity piles
- Foundation Methods for Accelerated Construction
  - CIP piles, micropiles, deep soil stabilization
- Drilled Shafts in Rock Sockets
- Performance based design for extreme events
- Guidelines for different site conditions
- Mitigation of defects within deep foundations
- Foundations of existing structures
  - Corrosion, unknown foundations, re-use

# Technology Transfer

- 18 Papers reviewed
- 4 papers presented in lectern session
- 3 papers presented in poster session
- 4 papers considered for publication



# 2009 Meeting Call for Papers

- Geotechnical Aspects of Design Build Contracting for Accelerated Bridge Construction : **Tom Cooling**
- If It's Broke, How Do You Fix It? Mitigation of Defects in Drilled Shafts : **Brian Liebich**
- Design, Construction, and Testing of High Capacity Driven Piles : **Jamal Nusairat**

# Summary AFS30 Sponsored 2008 Sessions

- Innovative Bridge Foundation Specifications and Projects
  - Monday 8:00 – 9:45
  - Presentation Session
  - Moderator: Gerald Verbeek
  
- Performance of Retained Fill Structures and Foundation Elements Subjected to Lateral Loads
  - Tuesday 9:30 – 12:00
  - Poster Session
  - Monitor: Miquel Pando ??
  
- Geotechnical Data for Design-Build Projects: How Much Should the Owner Provide?
  - Tuesday 3:45 – 5:30
  - Panel Discussion
  - Facilitator: Tom Cooling



# Presentations

- Performance-Based Design of Deep Foundations within the LRFD Framework
  - Lance Roberts
- Foundation Design for the main river pier for KY-60 over Tennessee River
  - Jamal Nusairat

**BREAK**

???

# Suggested Topics for Technical Sessions/Workshops

## ■ 2010 Annual Meeting

- Open format for foundation testing equipment : Gerald Verbek

## ■ 2009 Meeting Suggested Topics

- Mitigation of Drilled Shafts and High Capacity Piles
- Case Studies of Drilled Shafts Construction: QA/QC, Defects, and remediation
- Foundation Challenges in Design Build Projects
- Practical Application of LRFD for Foundation Designs
- Case Histories of Micro piles for Critical Site Access
- Foundation Systems for Earth Retention & Slope Stabilization
- Performance of Foundations Elements During Liquefaction Events
- Reducing Vibration from Pile Driving in Urban and Marine Environments

# Research Needs Statements

## Currently Posted

- Setup and Relaxation Effects on Load Carrying Capacity of Driven Piles
- Performance of Laterally Loaded Drilled Shafts in Rock
- Performance-Based Design of Foundation Elements and Earth Structures for Extreme Event Loadings

# Suggested Topics for Research Needs Statements

1. Consideration of QA and QC Results in LRFD for Deep Foundations of Transportation Bridges
2. Asset Management Practices for Structure Foundations
3. Calibration of AASHTO LRFD Specifications for Load Transferred to Bridge Foundations
4. Actual Performance of Common Structure Foundation
5. Reliability-Based Calibration of LRFD Specifications for Design of Micropile Foundations
6. Resistance Factor Calibration including Site Variability, and Number of Static Load Tests Needed for Deep Foundations

# Suggested Topics for Synthesis

- 2009 Topic Recommendation
  - Developing production pile driving criteria from test pile (load/PDA/CAPWAP) data
  
- 2008 Meeting Topics
  - Integral Bridge Abutments
  - Integral Abutments Movements within MSE Masses
  - Analysis of Laterally Loaded Drilled Shafts in Rock
  - Geotechnical Related Claims: causes, costs, mitigation avoidance
  - Design Phase Load Testing for Foundations
  - Performance of Foundations during Liquefaction Events

# Resistance Factor Design in State Departments of Transportation

- Contributing authors:
  - Pennsylvania DOT
    - Beverly Miller
  - North Carolina DOT
    - Njoroge Wainaina, K.J. Kim, Chris Chen
  - Louisiana
    - Arthur D'Andrea, Ching-Nien Tsai
  - Florida
    - Peter Lai

# Other Committee Business



# Presentations

- Overview of the Upcoming Full Scale Lateral Load Test of Group-Pile-Pier at I-10 Twin Span Bridge in New Orleans
  - *Murad Abu-farsakh*
- Instrumentation plan for long term health monitoring of the foundation and superstructure of the I-10 Twin Span Bridge in New Orleans
  - *Alan Marr*
- Field test of H-shaped Ultra High Performance Concrete Pile under vertical and lateral loads

*Thank You for Attending*