AGENDA (As of 1/4/2016)

AHD30(3) Structural Health Monitoring Joint Subcommittee of AHD30, AHD35, AFF40

1. Self-Introduction of those attending – All (note- there are no membership restrictions for TRB subcommittees, all friends are welcomed equally)

2. A word from our sponsors if present and if desired. G. Hearn (AHD30), B. Johnson (AHD35), or S. Alampalli (AFF40)

3. Presentations (10 minutes)
   a. LTBPP Update with emphasis on SHM - H. Ghasemi, FHWA TFHRC
   b. FHWA NDE Program Activities Relevant to SHM - H. Azari, FHWA TFHRC (upon arrival)
   c. Update on ACI SHM Document Development -M. Brown, VDOT/VCTIR
   d. Continuous Rating Factors Based on SHM Data -H. Al-Khateeb, U. Delaware
   e. BECAS: A Bridge Structural Health Monitoring System –B. Phares, Iowa State U

4. Discussion and Finalization of SHM Document Outline- J. Duke, moderator
   a. Draft Outline (proposed by Dr. Sreenivas Alampalli, NYDoT)
      i. Introduction to SHM
         1. What is SHM?
         2. NDT vs. SHM
         3. How do you decide if SHM is for you?
         4. Phases of SHM
      ii. Problem Identification and Value Analysis
      iii. System Identification (Understanding your structure)
      iv. Sensors and Instrumentation (Data Collection)
      v. Problem/Damage Detection (Data Analysis)
      vi. Decision-Making
      vii. Implementation of SHM
      viii. Case Studies
      ix. (See comments on second page.)
   b. Time permitting identify volunteers and chapter coordinators

5. Suggestions for presentation to AHD30, AHD35, or AFF40 *
   a. Research Topics
   b. Synthesis Topics
   c. Webinars
   d. Workshop (Sunday, 96th TRB)
   e. 96th Annual podium or poster session topics

*bring brief description and name of champion or organizer; if possible notify the J. Duke in advance
Sunday Workshop:

Structural Health Monitoring for Bridge Infrastructure Management: What Owners and Practitioners Should Know  Sunday 1:30- 4:30 PM Convention Ctr 204A

Main committee meetings:

- AFF40 Monday, Jan. 11, 2016, 8:00 AM-12:00PM  Marriott Marquis, Silver Linden
- AHD35 Wednesday, Jan. 13, 2016, 8:00AM-12:00PM  Marriott Marquis, Georgetown Univ.
- AHD30 Tuesday, Jan. 12, 2016 1:30-5:30 PM  Marriott Marquis, Georgetown Univ.

AHD37 Monday, Jan. 11, 2016 8:00AM-12:00PM, Marriott Georgetown Univ.

Additional input- Bruce Johnson and Steven Lovejoy

The only other issues we have encountered that are not specifically covered in the outline are

1. Remote versus on-site reading and recording of data, and
2. Doing advanced analysis to determine if you can actually use the data planned to be collected to provide the desired results.
3. Another issue owners have to face is whether they have enough need for SHM to justify in-house expertise or just plan on outsourcing design, collection, analysis and reporting/recommendations; and where is that breakpoint.

Applications (Case Study possibilities) Peter Vanderzee

- Global assessment of bridge condition (may require a calibrated FEM for full analysis and load scenario evaluation)
- Crack activity (steel or concrete) monitoring for safety; load restrictions necessary?
- Load rating (particularly using the AASHTO MBE Chapter 8 alternative protocol)
- Proper bearing operation (are they working or are they frozen?)
- Repair efficacy (did the repair work as intended, e.g. lower stress on member?)
- Out-of-plane bending (is the member starting to buckle?)
- Unequal loading of members when compared to others (eye bars on old RR bridges)
- Damage to members caused by heavy permit loads (were the members overstressed?)
- Condition of substructure (are the piers moving or stable?)