AASHTO

TECHNICAL COMMITTEE ON HYDROLOGY & HYDRAULICS (TCHH) UPDATE

Prepared for:
AASHTO Subcommittee on Design (SCOD)
Summer 2016 Meeting
Baltimore

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TCHH MEMBERSHIP STATUS

Total Number of Members – 22
19 State DOTs (twelve members appointed within last three years) + 1 FHWA + 1 Canada + 1 AASHTO
1 Vacancy in Region 2
Average TCHH service length – 5 years
Several Meetings Per Year
- One In-person meeting in Summer/Fall
- 2 to 3 Web-conference meetings for the entire TCHH
- 2 to 3 Teleconference for each work groups

Meeting Format
- Joint meeting with SCOD (alternating year)
- Joint meeting with TRB AFB 60 and National Hydraulic Engineering Conference (NHEC)

2016 Meeting:
Portland, Oregon
August 8-10, 2016
Joint Meeting with TRB AFB 60 and National Hydraulics Engineering Conference
TCHH ACTIVITIES

Support Hydrology and Hydraulic Engineering in Transportation with Manuals, Research and being Advocates on Emerging Issues and National Policy.

- development of technical publications,
- participate in nation research projects, and
- be an advocate (Review and comment on proposed federal regulations, and participate in the efforts related topics of Hydrology, Hydraulics, Water Quality etc.)
TC-HYDROLOGY HYDRAULICS

BE AN ADVOCATE - OTHER ACTIVITIES AND INITIATIVES

- Review Federal Floodplain Management Regulations (FFMR)
- Publish News Letters for All Member States
- Interest in Preparing Short Publications in the Specific Practice Area to Document State of the Art Practices
- Participate in Joint Committees (None at this time)
- Support National Hydraulics Engineering Conference
- Recognition of professionalism and service in the realm of Hydraulics through the Mark Miles Award (in memory of Late TCHH member).
TC-HYDROLOGY HYDRAULICS

RECOMMEND AND PARTICIPATE IN RESEARCH

Research may be proposed in following categories that affect the work of H/H engineers.

- Hydrology
- Hydraulics – Roadway Drainage and Bridge Hydraulics
- Coastal Hydraulics
- Scour
- Stream Stability
- Climate Change Impacts on Hydraulics Infrastructure
- Environmental –
  - Stormwater Management
  - Water Quality
  - Wetlands
- Pipe Materials & Standards
- Infrastructure Management
TCHH RESEARCH

FY 2012 NCHRP Projects:

- Scour at the Base of Retaining Walls and Other Longitudinal Structures
- Combining Individual Scour Components to Determine Total Scour
- Evaluation of Long Term Performance of Stormwater Controls
- Guidance for Achieving Volume Reduction of Highway Runoff in Urban Areas
- Bridge Runoff Treatment Analysis and Treatment Options
- Guidance for Complying with EPA Effluent Limitation Guidelines for Construction Runoff
- Culvert and Storm Drain Inspection Manual
FY2014 NCHRP Hydraulics related research:

- 20-07 synthesis “Hydrology for Water Quality Analysis and Design” was just funded.
- 24-40 “Design Hydrology for Stream Restoration and Channel Stability at Stream Crossings”
TCHH RESEARCH

FY2015 NCHRP Hydraulics related research:

- Development of Design Guidance to Mitigate Hydroplaning Effects (SCOD)
- Limitations of the Infiltration Approach to Stormwater Management in the Highway Environment (SCOE)
- Minimize Roadway Embankment Damage from Overtopping (SCOD)
TCHH RESEARCH

FY 2016 NCHRP HYDRAULICS RELATED RESEARCH:

• Applying Climate Change Information to Hydrologic and Hydraulic Design of Transportation Infrastructure (Selected, 15-61)

• Strategic Plan for Prioritization and Selection of Research Proposals for Hydrology and Hydraulics (Selected, 20-07)
Highway Drainage Guidelines - Last Publications 2007

Previous Publication 1987, 1992

The AASHTO Drainage Manual – Last Publication 2014
Two Volumes – Policy & Procedures

Previous Publication – 1991, 2005
MAINTAIN DRAINAGE MANUAL UPDATES

Three chapters are currently being updated:

- Surface Water Environment
  - replacing one chapter with two — Water Quality and Flood Control
  - series of reports on each stormwater BMP type and functions achieved
- Bridge Hydraulics
- LRFD considerations
TCHH ACTIVITIES AND EFFORTS GOING FORWARD

Topic Areas of Future Challenges

- Water Quality and Transportation
- Climate Change Impacts and Adaptation Strategies
- Aging Drainage Infrastructure
- Preparedness for Hurricanes – Potential Need of Design Standards
- Understanding Drainage Design for Reconstruction Projects and for the Practical Design
Work Groups formed to discuss selected topic areas and to develop work plans and solutions

1. Water Quality Work Group
   Address Rising issues, update manual chapters consider additional chapters

2. Climate Change Work Group
   Support research, cross communicate issues develop a report or a paper related to water resources

3. LRFD Bridge Specification Work Group
   Address conflicting requirements in various AASHTO publications, Update Drainage Manual chapter and work with Bridge Committee to obtain buy-in for update to their product.

4. Bridge Work Group
   Address Rising issues, update drainage manual

5. Hydrolink Newsletter Work Group
   Actively seek new topics in H/H arena, publish newsletter – at least twice a year

6. Idea Exchange / State of Practice Work Group
   Collect information about the advances in H/H practices, develop short papers or publications for use by professionals
TCHH INTERESTS - SEEKING INPUT

Past joint committee with Materials on pipe culverts – entered sunset prior to completion of task. TCHH interest in communication with the committee on materials.

TCHH currently communicating with members of Bridge committee for LRFD related changes. Engaging TCED members for Water Quality related work. TCHH would welcome some dialogue with the members of SCOE as appropriate.

Interest in publishing individual chapters of the manual.

Interest in documenting and sharing state of practice, state of art in H/H engineering, software, research ready for implementation, synthesis of research findings and recommended course of action, and other notable practices adopted by various State DOTs as tool box of solutions.

TCHH can greatly benefit from adaptation of Technical Services Program (TSP).
QUESTIONS?