



# AASHTO Technical Committee on Hydrology & Hydraulics (TCHH)

Karuna Pujara, Maryland State Highway Administration  
Chair, TCHH

# \* AASHTO Organization





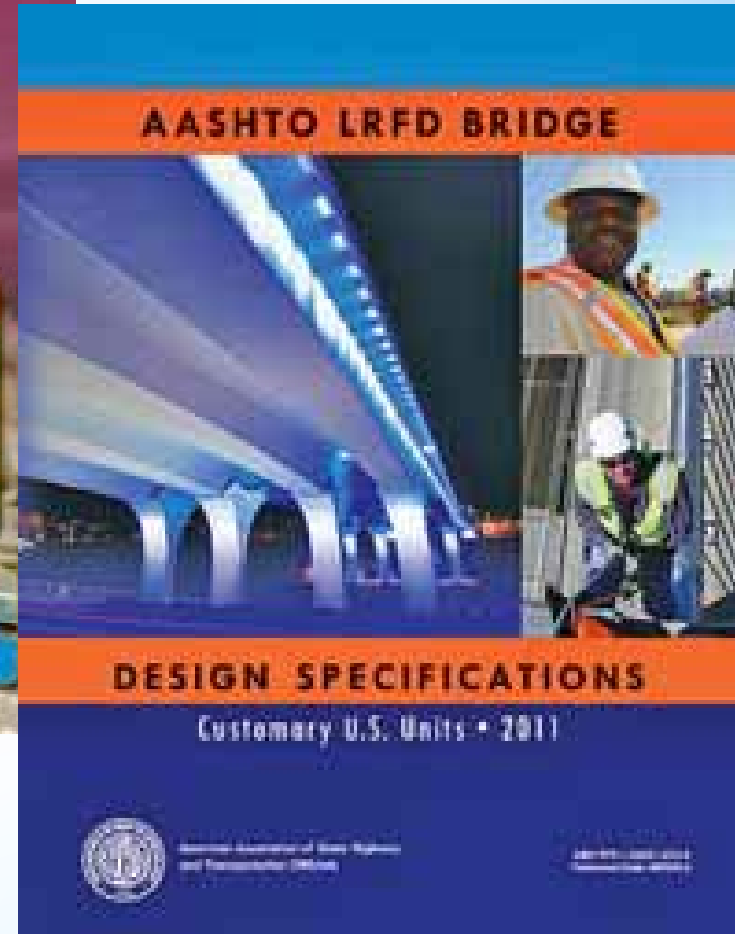
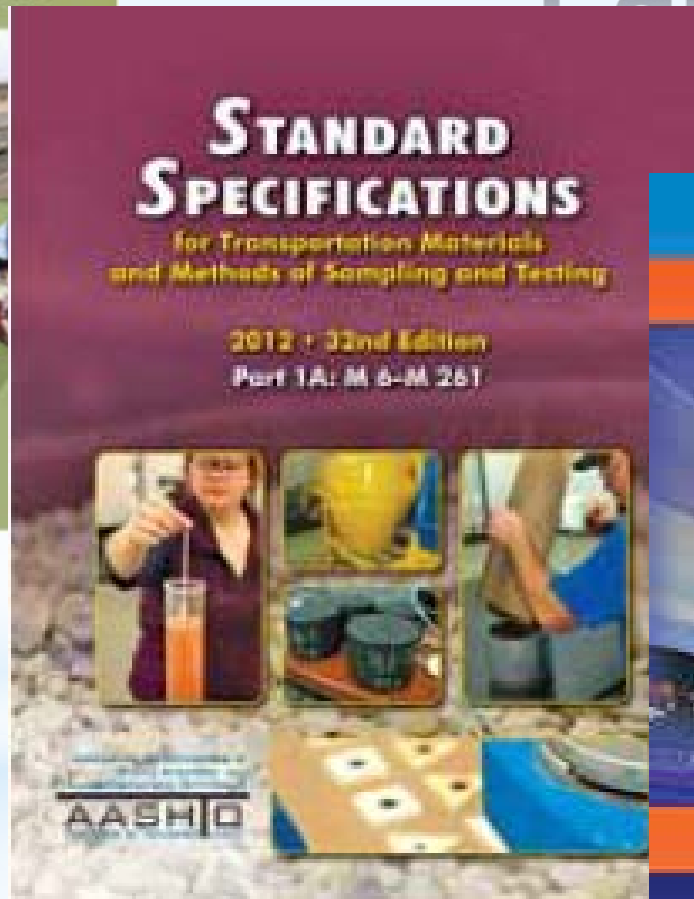
- \* AASHTO Mission: Voice for transportation and catalyst for organizational and technical excellence.
- \* Subcommittee on Design (SCOD):
  - \* development of guidelines for design,
  - \* product evaluation,
  - \* specification standards for construction and maintenance.
- Technical Committees:
  - development of technical publications,
  - participate in nation research projects and
  - comment on proposed federal regulations.

A Policy on  
**Geometric  
Design of  
Highways  
and Streets**

2011  
6th Edition



# \* Popular AASHTO Publications

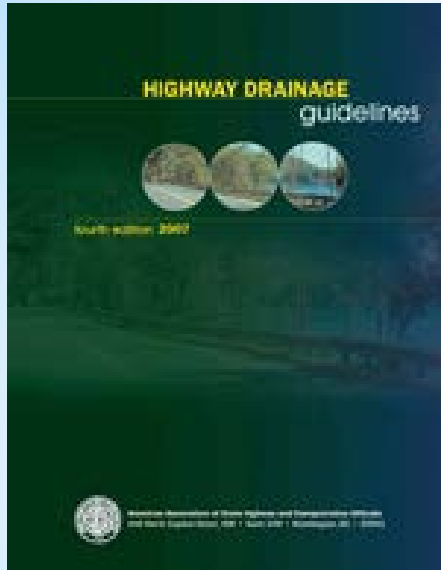


AASHTO M178  
Alternative to  
ASTM Specs



# \* Technical Committee on Hydrology and Hydraulics (TCHH)

- \* Hydraulics is a broad category consisting of many perspectives and specialties.
  - \* Hydrology
  - \* Roadway Hydraulics
  - \* Bridge Hydraulics
  - \* Scour
  - \* Pipe Materials & Standards
  - \* Infrastructure Management
  - \* Coastal Hydraulics
  - \* Stream Stability
  - \* Climate Change Impacts on Hydraulics Infrastructure
  - \* Environmental -
    - \* Stormwater Management
    - \* Water Quality
- \* TCHH has 20 members (State Transportation Agencies) and associate members (Canada, FHWA & AASHTO).
- \* <http://design.transportation.org/Pages/HydrologyandHydraulics.aspx>



Highway Drainage Guidelines – 4<sup>th</sup> Edition  
Published in 2007

Guidelines are intended to provide an overview, discussion, and design philosophy for each of the covered topics, technical information is kept to a minimum by making reference to appropriate publications and to the AASHTO Model Drainage Manual



The AASHTO 2014 Drainage Manual provides transportation agencies with guidelines for establishing state-specific policy and procedures for the design of highway drainage facilities

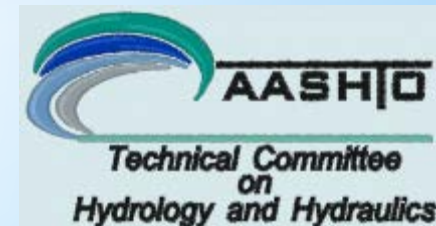
Two Volumes – Policy & Procedures

\*TC - Hydrology and  
Hydraulics Publications

# \* TCHH Activities

Support Hydrology and Hydraulic Engineering in Transportation with Manuals, Research and being advocates on emerging issues and national policy.

- \* AASHTO Publications
- \* Research
  - \* Work closely with TRB committee AFB 60 on Hydrology, Hydraulics and Water Quality
  - \* Work closely with AASHTO Center for Environmental Excellence
  - \* Subcommittee on Environment
- \* Advocates (Review, comment, and participate and legislation in the efforts related topics of Hydrology, Hydraulics, Water Quality etc.)
- \* Support National Hydraulics Engineering Conference





# \*TCHH Research

- \* TCHH promotes Hydrology & Hydraulics research, prioritize and recommendation needs and participate on project panels.
  - \* NCHRP and Pooled Fund projects.
- \* Recent NCHRP Hydraulics 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”
  - \* 24-39 “Evaluation and Assessment of Environmentally Sensitive Stream Bank Protection Measures”
  - \* Strategic Plan Development for Hydraulic Research
  - \* Minimizing Roadway Embankment Damage from Overtopping



# \*TCHH Research

## \*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

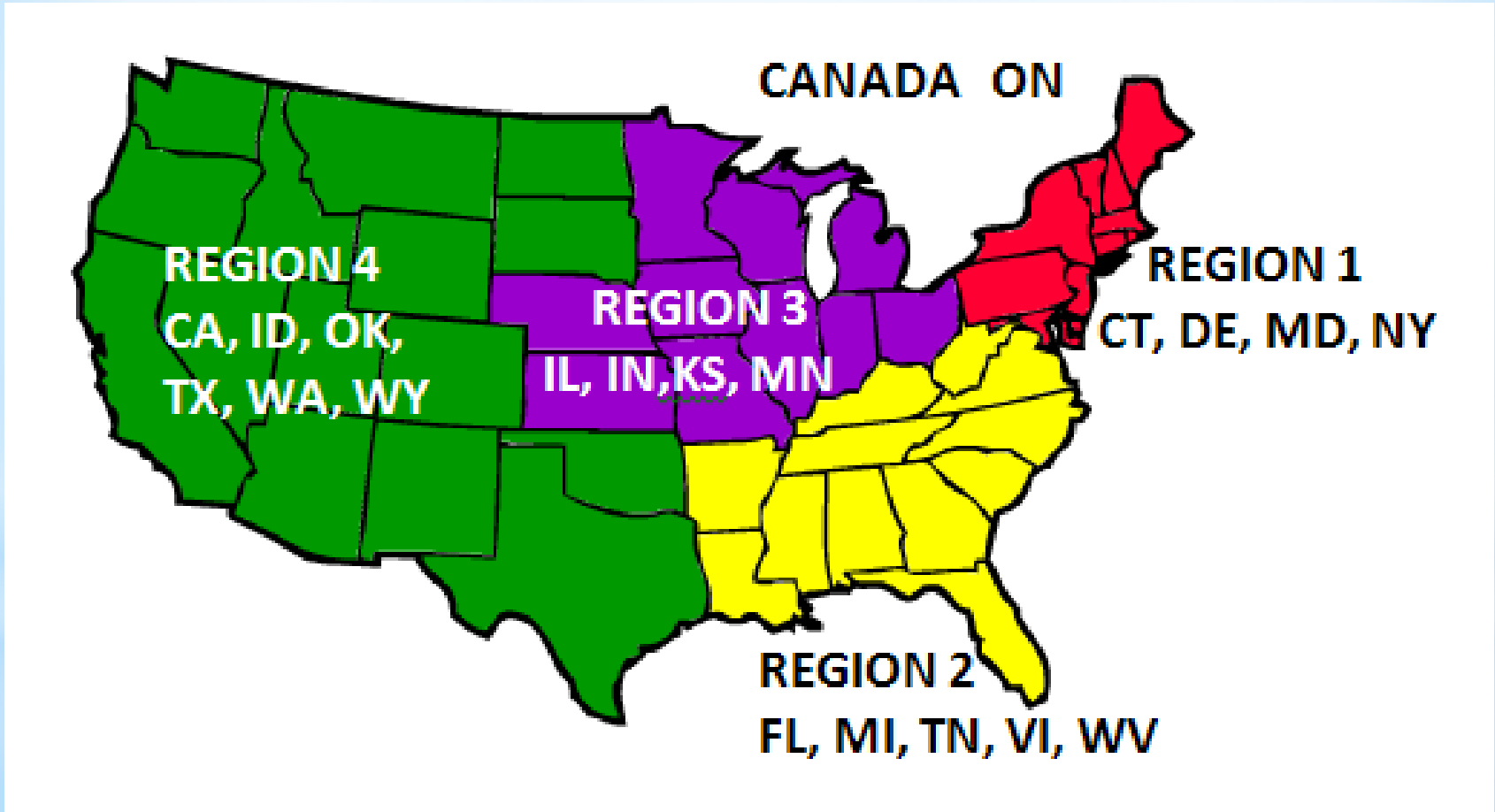
- \* Publish Annual News letters for all member States
- \* Participate in Joint Committees with Materials, Bridge, Environmental Expertise and others
- \* Short publication in the specific practice area to document State of the Art Practices
- \* Maintain Drainage Manual updates on specific chapters - currently being evaluated Surface Water Environment, Bridge Hydraulics and LRFD considerations
- \* Evaluating need for chapter update needed to address Climate Change

# \*TC-Hydrology Hydraulics Other Activities and Initiatives

# \*TCHH Members Regions

20 members across the country

3 members region 1, 3 members region 2, 3 in region 3, and 6 in region 4



# \*TCHH Members Regions

- \* Additional members in Regions 1, 2 and 3 are being solicited
- \* Members can be nominated through AASHTO Subcommittee on Design (SCOD) members
- \* SCOD members listed  
<http://design.transportation.org/Pages/Default.aspx>



- \* Member State Funding and Staffing Levels
- \* Cross Functional Coordination
  - \* Overlap with roads, bridges, environmental, materials, construction, maintenance, climate change and others.
- \* Environmental Regulations
  - \* MS-4, NPDES, TMDL, Impaired Waters, Watershed District Requirements
  - \* Effluent Limits
  - \* Volume Control
- \* Climate Change and Impacts on Drainage Systems
  - \* Hydrology, Resiliency of Existing Systems, Asset Management

# \* TCHH Challenges and Interests



# \*TCHH Opportunities

\*Transportation TV

<http://www.transportationtv.org/Pages/default.aspx>

\*AASHTO TCHH Web Page

<http://design.transportation.org/Pages/HydrologyandHydraulics.aspx>

\* Meeting minutes

\* Concerns of the States

\* Member list and state DOT hydraulics contact list

\* Publish "HydroLink" newsletter (contact Andrea Hendrickson of MnDOT or me to get on the emailing list)



Thank you

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AMERICAN ASSOCIATION OF  
STATE HIGHWAY AND  
TRANSPORTATION OFFICIALS

**AASH|O**  
THE VOICE OF TRANSPORTATION