August 14, 2013

To: Members, AASHTO Technical Committee on Geometric Design

Dear Member:

The annual meeting of the AASHTO Technical Committee on Geometric Design was held July 30, 2013 through August 1, 2013. It was a joint meeting and workshop with the TRB Committees; Geometric Design (AFB10), Operational Effects of Geometrics (AHB65), Highway Safety Performance (ANB25) and Access Management (AHB70). The joint meeting, named the “Safety Effects of Geometric Design Decisions Workshop,” was held at the TRB Beckman Conference Center in Irvine, Ca. The purpose of the joint meeting and workshop was to:

1. Present transportation agency experiences and “lessons learned” from application of the Highway Safety Manual in various stages of transportation project development process.


3. Identify and document emerging research needs to support future editions of the AASHTO Green Book.

Attached for your convenience is a copy of the minutes from this meeting.

If you have any questions or comments, please feel free to contact me.

Sincerely,

Jeff C. Jones, Chair
AASHTO Technical Committee on Geometric Design

JCJ:edt

Attachment
Minutes of Annual Meeting
AASHTO Technical Committee on Geometric Design
July 30 – August 1, 2013

Mr. Eric Donnell, Pennsylvania State University, called the meeting to order at 8:00 a. m. on July 30. Sessions which followed were:

General Session 1: Applications of *Highway Safety Manual* in Project Development
- Application of the Interactive Highway Safety Design Model for Local and Tribal Roads, Xiao Qin, South Dakota State University
- Use of *Highway Safety Manual* in Corridor Study in Arizona, Mike Colety, Kimley-Horn and Associates
- HSM Implementation in ODOT and WYDOT, Jake Kononov, DiExSys

General Session 2: HSM Applications for Use in Developing Geometric Design Policy or Design Criteria
- Application of the Enhanced Interchange Safety Evaluation Tool in Ohio, Adrianna Stanley, CH2M Hill
- The HSM: MoDOT and Design Exceptions, Ashley Reinkemeyer, Missouri Department of Transportation
- Application of the *Highway Safety Manual* in the Highway Safety Improvement Program, Andy Kaplan, Rutgers Transportation Safety Resource Center
- State Transportation Agency Implementation of the *Highway Safety Manual*, Howard Lubliner, Kansas Department of Transportation

General Session 3: Facilitated Break out session. Workshop participants provided input for the following topics:
1. NCHRP 15-47 – Developing an Improved Highway Geometric Design Process, Facilitator; Tim Neumann, CH2M-Hill
2. AASHTO Design Criteria – Models, Assumptions and Values
   Facilitator; Doug Harwood, MRI Global
3. A Vision for the Future
   Facilitator - John Nitzel, CH2M-Hill

General Session 4: Future Vision of the AASHTO *Green Book*
The AASHTO Technical Committee on Geometric Design meeting began on Wednesday, July 31. Technical Committee members and guests were welcomed to the meeting. Since the 2012 meeting in Chicago, Mr. Rick Bruce, Ohio DOT, and Mr. Max Valerio, New Mexico DOT, have retired from the Technical Committee on Geometric Design. At this time, their committee positions remain vacant. A committee member roster will be distributed to verify or update their contact information.

ATTENDANCE

The following members of the AASHTO Technical Committee on Geometric Design were present:

Mr. Reza Amini, Oklahoma Department of Transportation
Mr. Kent Belleque, Oregon Department of Transportation
Mr. James O. Brewer, Kansas Department of Transportation
Mr. Marshall Elizer, APWA
Mr. Mike Fugett, Arkansas Department of Transportation
Mr. Mark Leiferman, South Dakota Department of Transportation
Ms. Deanna Maifield, Iowa Department of Transportation
Mr. Reza Maleki, The Port Authority of New York and New Jersey
Mr. James Rosenow, Minnesota Department of Transportation
Ms. Brooke Struve, Federal Highway Administration
Mr. Bart Thrasher, Virginia Department of Transportation
Mr. Robert Wunderlich, National League of Cities and
Mr. Jeff Jones, Tennessee Department of Transportation

The following members were unable to attend the 2013 meeting:

Mr. Joe Ruffer, National Association of County Engineers
Mr. Brent Story, Georgia Department of Transportation
Mr. Rick Wilder, New York State Department of Transportation
Mr. Eric Marabello, Maryland Department of Transportation
Mr. Stanley Wood, Massachusetts Department of Transportation
Mr. Donald Lyford, New Hampshire Department of Transportation

Also in attendance during all or part of the meeting were:

Mr. Michael Matzke, FHWA
Mr. Shyuan-Ren Chen, FHWA
Mr. B. Ray Derr, Transportation Research Board
Mr. Tim Neumann, CH2M Hill
Mr. Douglas Harwood, MRI Global
Ms. Ingrid Potts, MRI Global
Ms. Greta Smith, AASHTO
Ms. Kelly Hardy, AASHTO
GENERAL BUSINESS

AASHTO has a web-based membership database that this committee can use to organize contact information, etc. Greta Smith will provide a link via e-mail for committee members to register.

Microsoft Word versions of the Green Book are currently posted in AASHTO’s portal. They are available now for download by committee members / chapter authors, but they are not set up for editing and version control as yet. For this reason, chapter authors are asked to not upload anything to the portal until further notice.

Brooke Struve and Michael Matzke provided an update on Federal rulemaking pertinent to committee efforts. An early autumn timetable is expected for publication of rules that will adopt the 6th Edition of the Green Book (2011) as the standard for the National Highway System. (The 4th edition – 2001 – is the currently adopted edition.) This will be a bare bones adoption and will not include any substantive changes to current policies.

RESEARCH ACTIVITIES

Ray Derr, TRB, provided a status report of the various research reports underway related to Geometric Design. Subsequent to the meeting, he developed a website with this information, which became available on August 8th.

RESEARCH NEEDS

Potential research projects generated during the workshop were discussed by the committee. Those that were selected by the AASHTO technical committee to develop problem statements for potential NCHRP 20-7 projects are as follows:

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Problem Statement Volunteers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Horizontal Sightline Offset Criteria for Freeways and Ramps</td>
<td>Jim Brewer, Mike Fugett, and Deanna Maifield</td>
</tr>
<tr>
<td>2.</td>
<td>Ramp Design Speed Selection</td>
<td>Jim Rosenow, Mark Leiferman, and Reza Amini</td>
</tr>
<tr>
<td>3.</td>
<td>Appropriate Treatments for Diverging Diamond Interchanges</td>
<td>Kent Belleque, Bart Thrasher, Reza Amini, and Marshall Elizer</td>
</tr>
<tr>
<td>4.</td>
<td>Location and Geometric Design of Refuge Areas in Managed Lane Corridors</td>
<td>Jim Brewer and Brooke Struve</td>
</tr>
</tbody>
</table>
CONTRACTOR REPORTS

Mr. Tim Neumann, CH2M-Hill, facilitated a discussion about NCHRP Project 15-47, regarding an improved geometric design process. Design matters discussed include the design process, the distinctions between New Construction and Reconstruction, SSD Model, Design Speed Concept, and Horizontal Curve Model.

Doug Harwood, MRI Global, provided an overview of NCHRP Project 15-50 regarding 3R Criteria. This is a 2-year project funded at $600,000 that ends July 2, 2015. The project has just started. The scope of work is focused on local roads, collectors, and urban/suburban arterials. Some Geometric Technical Committee discussion was related to whether the project should include 3R Criteria for Freeways in light of Federal rules exempting freeways from state-developed 3R standards. States and Geometric Technical Committee members can expect a survey on this topic.

Doug Harwood, MRI Global, provided a status report of the update for the AASHTO publication “Guidelines for Geometric Design of Very Low Volume Local Roads (< 400 ADT)”, which is being done under NCHRP Project 15-47. The 12-month update project is funded for $100,000. One of the early tasks is to survey the States and/or Geometric Technical Committee members to learn more about their practices.

TECHNICAL COMMITTEE MEETING NOTES

Jim Rosenow, Minnesota Department of Transportation, made a presentation about superelevation transitions based on his investigation of the proportion of transition length on the tangent and transition rates. In short, long transitions and larger proportions of the transitions on tangent seem to result in negative side friction and some measure of driver discomfort. He developed an Excel spreadsheet tool that computes side friction continuously throughout the transition.

Jim Rosenow, Minnesota Department of Transportation, provided a presentation about a buffer lane treatment to address short Type A weaving turbulence associated with a full cloverleaf interchange or other closely-spaced, low-speed ramps.

Brooke Struve, Federal Highway Administration, provided a draft update of the Interstate Design Guide. Committee members discussed the document but deferred further review to until the committee can discuss NCHRP Report 687 regarding access management, in more detail. During the discussion of the Interstate Design Guide, Bart Thrasher, Virginia Department of Transportation, offered to provide a paragraph from VDOT regarding access control limits within the vicinity of interchanges.

Discussion to be completed is related to the discouragement for the use of curbs with guardrail. The Midwest Guardrail System (MGS) has now been approved with curb installations, which will affect how the guidance in the Interstate Design Guide should be presented in future editions.
CLOSING

The technical committee had an open discussion about the 2013 meeting and/or committee publications. An area of common complaint is related to the Green Book index, whose size was inadvertently reduced in the 6\textsuperscript{th} edition. It was suggested to place more emphasis on the index for the next publication of the Green Book.

The committee heard some technical corrections to the 2011 Green Book are needed. Committee members were advised to send potential errors to Greta Smith, AASHTO. Greta will follow up with the AASHTO publications or the Committee Chair as required.

For the meeting next year, it was recommended to allocate more time on the agenda to chapter author overviews of completed research. In addition, committee members are asked to come with known issues and editing needs encompassing the entire Policy, not limited to their assigned chapter.

The 2014 meeting of the AASHTO Technical Committee on Geometric Design will be held in conjunction with the TRB Alternative Intersections Conference in Salt Lake City, Utah.

The meeting of the Technical Committee was adjourned at 11:45 a. m. on August 1, 2013.