September 7, 2004

William A. Prosser, Secretary
AASHTO Technical Committee on Geometric Design
Federal Highway Administration, HIPA-20
400 Seventh Street, SW
Washington, DC 20590

Members
Technical Committee on Geometric Design

Dear Member:

The annual meeting of the AASHTO Subcommittee on Design, Technical Committee on Geometric Design was held in Williamsburg, Virginia during the period July 14 through July 17, 2004. The meeting was held jointly with the Transportation Research Board (TRB) Committee on Operational Effects of Geometrics (AHB65) and the TRB Committee on Geometric Design (AFB10). The purpose of the joint sessions was to develop a framework for a long-range geometric design research program. The Technical Committee also conducted independent sessions to receive status reports on research underway and documents being readied for publication by AASHTO Headquarters, review a proposed addition to the Green Book on 2+1 Roadways, and other administrative matters of concern to the Technical Committee.

Mr. Robert Walters, Chair, called the meeting to order at 8:00 a. m. on July 14.

ATTENDANCE

The following members were present:

Mr. Reza Amini, Oklahoma Department of Transportation
Mr. Don T. Arkle, Alabama Department of Transportation
Mr. Paul Bercich, Wyoming Department of Transportation
Mr. James O. Brewer, Kansas Department of Transportation
Mr. Kenneth T. Briggs, Maryland State Highway Administration
Mr. Philip J. Clark, New York Department of Transportation
Mr. David Hutchison, National League of Cities
Mr. Jeff Jones, Tennessee Department of Transportation  
Mr. Wayne Kinder, Nevada Department of Transportation  
Mr. John LaPlante, American Public Works Association  
Mr. Reza Maleki, The Port Authority of New York and New Jersey  
Mr. Donald Lyford, New Hampshire Department of Transportation  
Mr. John Pickering, Mississippi Department of Transportation  
Mr. William A. Prosser, Federal Highway Administration  
Mr. James Rosenow, Minnesota Department of Transportation  
Mr. Norman Roush, West Virginia Department of Transportation  
Mr. Larry Sutherland, Ohio Department of Transportation  
Mr. Max Valerio, New Mexico Department of Transportation  
Mr. Robert L. Walters, Arkansas Highway and Transportation Department  
Mr. Ted Watson, Nebraska Department of Roads  

The following members were unable to attend:  

Mr. Mark Marek, Texas Department of Transportation  
Mr. Joe Ruffer, National Association of County Engineers  
Ms. Carla Sutliff, California Department of Transportation  

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

Mr. B. Ray Derr, Project Manager, NCHRP, Transportation Research Board  
Mr. Douglas Harwood, Principal Traffic Engineer, Midwest Research Institute  
Mr. Cameron Kergaye, AASHTO represented Mr. Jim McDonnell  

Additional guests for the first morning were:  

Mr. Clayton Chen, Office of Safety, Federal Highway Administration  
Mr. Keith Harrison, Western Resource Center, Federal Highway Administration  
Mr. Patrick Hasson, Midwest Resource Center, Federal Highway Administration  
Ms. Vanna Patterson Lewis, Virginia Division, Federal Highway Administration  
Mr. Mark Taylor, Central Federal Lands Division, Federal Highway Administration  

A copy of the roster and a home mailing list were circulated for correction and additions. A copy of the updated lists is attached.  

GENERAL  

Mr. Walters announced that Don Arkle received the National Design Award, and Phil Clark and Wayne Kinder Regional Design Awards for their contributions to design community. These awards were presented by the AASHTO Subcommittee on Design at
their national meeting in Snowbird, Utah in June, 2004. This is the second year in a row that members of the Technical Committee have been honored with Design Awards.

The question of industry sponsorship of the Technical Committee meetings was discussed. The conclusion reached was that such sponsorship would be inappropriate.

It was announced that the Technical Committee was asked to present a Country Report at the 3rd International Symposium on Highway Geometric Design in Chicago on June 29 through July 2, 2005. The Subcommittee on Design will be meeting just prior to the symposium. A copy of the abstract and an outline were made available to the committee. The membership was asked for comments. Bob Walters and Bill Prosser will be preparing the report.

The Low-Volume Local Roads Guide was discussed to determine future disposition. It was recommended that the guide remain as a standalone document and appropriate parts be incorporated into Chapter 5 – Local Roads and Streets of the Green Book with a reference to the Chapter 5 information be included in Chapter 6 – Collector Roads and Streets.

Don Arkle raised the question about the validity of the cost effectiveness of the geometric design criteria contained in Special Report 214, particularly in relation to the design speed on crest vertical curves. SR 214 recommendations were established when the 1984 Green Book was in effect. The 2001 Green Book revised the model for stopping sight distance. The 20 mph criteria developed using the 6-inch height of object may no longer be valid with the current 2-foot object criteria. Are other criteria contained in SR 214 still valid? Bob Walters proposed a NCHRP 20-7 project to evaluate the cost effectiveness of the geometric improvements contained in TRB Special Report 214 to determine the validity recommendations and any update actions necessary.

The FHWA 13 Controlling Criteria were discussed because of a resolution developed in a Subcommittee on Design Regional meeting. The members are to provide an assessment of the criteria to Bob Walters by September 1.

Several items concerning the Green Book were discussed. A question of changing the Green Book from a bound volume to a loose-leaf format was debated. Retention of the bound volume was recommended. It was determined that information on Traffic Calming should be reviewed and incorporated as appropriate. No firm conclusion was reached on reorganization of the Book to add more chapters to combine auxiliary material located throughout the Book, such as park and ride, traffic calming, noise walls, HOV facilities, etc.

A copy of the 1960 “Informational Guide for Preparing Private Driveway Regulations for Major Highways” was distributed to the members. The Technical Committee has been
requested to update this publication. Bob Walters requested that he be furnished
comments on activities necessary to update the informational guide by December 31.

The Technical Committee recommended that the revisions to the Superelevation section
of Chapter 3 be printed as a separate document, rather than in a new printing of the
2001 Green Book. In this way, the revisions could be used in the interim pending the
updating of the Green Book. In addition, differing versions of the 2001 Green Book
would not be in circulation.

The AASHTO Ad Hoc Task Force on Bicycle Routes is seeking members. They have
requested two volunteer members to represent the Technical Committee. Anyone
interested in serving on the Task Force should contact Bob Walters.

The committee agreed to invite the Technical Committee on Non-motorized
Transportation to participate in a joint meeting in Woods Hole, MA in 2005 or Jackson
Hole, WY in 2006.

It was announced that a CD incorporating older versions of the AASHTO Policies on
Geometric Design should be available in August.

ALTERNATIVES TO DESIGN SPEED FOR SELECTION OF ROADWAY DESIGN CRITERIA

Doug Harwood made a presentation on NCHRP Project 15-25. This project has been
underway for approximately 2 months. The objective of this research is to recommend
comprehensive improvements or augmentations to the design speed approach for
setting geometric design criteria. In addition to an overview of the subject, he
discussed 9 concepts to be considered. A copy of the PowerPoint slides Doug used in
the presentation is attached.

STATUS REPORTS ON AASHTO DOCUMENTS

Guide for the Planning, Design, and Operation of Pedestrian Facilities - The guide is in
the publication department and is expected to be available in September.

A Guide for Achieving Flexibility in Highway Design – The guide is available at this time
as a standalone document. This guide is primarily a philosophy document and is not
expected to be incorporated into the Green Book. It is recommended that the
document remain under the Subcommittee on Design and the Technical Committee on
Geometric Design.

Transportation Glossary – The Glossary is expected to be available in the Fall.
**A Policy on Design Standards – Interstate System** - The Policy is expected to be printed in October or November.

**Superelevation Revisions to Chapter 3 of "A Policy on Geometric Design of Highways and Streets** – The revised procedures are expected in September. The Technical Committee recommended that it be published as a standalone document to be used in the interim until incorporated into the next edition of the Green Book.

**Guide for the Design of High Occupancy Vehicle Facilities** – This guide is in the printing stage and is expected in November.

**Guide for the Design of Park-and-Ride Facilities** – This guide is in the printing stage and is expected in November.

**A Policy on Accommodation of Utilities Within Freeway Right-of-way**

**A Guide for Accommodating Utilities Within Highway Right-of-way** – These two documents are expected to be balloted by the Subcommittee on Design during August with availability in October or November.

**STATUS OF RESEARCH UNDERWAY**


Three projects are in the final stages, all are 20-7 projects - Task 167 – Construction Tolerances for Americans with Disabilities Act Advisory Guidelines, Task 168 – Determination of Appropriate Railing Heights for Bicyclists (LaPlante and Clark), and Task 171 – Identification of Conflicts with AASHTO Publications Related to Clear Zone.

The final draft for Project 20-7(168) – Determination of Appropriate Railing Heights for Bicyclists – has been reviewed. The report is expected in a few months and a copy will be provided to the members of the Technical Committee.


2+1 ROADWAYS

A proposed discussion on 2+1 Roadways to be included in the next edition of the Green Book was distributed. Jeff Jones, Jim Brewer, Max Valerio, and Bill Prosser were assigned to develop a section on this design for the Green Book. The proposed text is based on a Research Results Digest 275 summarizing the results of NCHRP Project 20-7/Task139. Comments on the proposed text and exhibits from the Technical Committee were noted and will be incorporated into a second draft of the document.

A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS 2001

After the initial review, at the 2003 meeting, to identify sections of the 2001 Green Book requiring revisions as the result of completed research; copies of the assigned chapters were provided to the authors for additional review. The individual chapters were again discussed and a number of areas identified for updating.

Forward – Identify revised sections to include Low-Volume Roads, Passing Sight Distance, Superelevation, Design Speed, etc. Add statements on Maintenance of Traffic, Context Sensitive Design, Consistency, Cost Effectiveness, and the Pedestrian Guide. Consider adding reconstruction specifically.

Chapter 1 – Add information on Low-Volume Local Roads classifications. Update statistics (VMT, etc) included in the chapter.


Chapter 3 – Replace Superelevation and Transitions discussion with the recently approved material. Revise discussion on trucks (NCHRP 504) including Stopping Sight Distance, pavement widening, gradability, and downhill truck lanes. Add a discussion on low-volume roads stopping sight distance. Revise the discussion on friction (20-7/143). Add discussion 2+1 roadways.
Chapter 4 - Note that the cross section is ROW line to ROW line. Revise discussion on Parking. Add information on Low-Volume Local Roads, clear zones (20-7/171) and downhill truck lanes.

Chapter 5 – Add section on Low-Volume Local Roads and work zones.

Chapter 6 – Add a reference to Chapter 5 for Low-Volume Local Roads.

Chapter 7 – Add information on design consistency (NCHRP 502), 2+1 roadways, and access management.

Chapter 8 – Update superelevation discussion to eliminate any conflicts as a result of the revised discussion in Chapter 3. Revise discussion on clear zones (20-7/171).

Chapter 9 – Add information on Continuous Flow Intersection. Update discussion on roundabouts (Projects 3-65 and 3-78). Review Intersection Sight Distance discussion.

Chapter 10 – Update discussion on ramp spacing. Provide some discussion on the crossroad weave. Add further discussion on the SPUI (Project 3-45). Revise discussion on acceleration-deceleration lanes (Project 15-31).

JOINT MEETING WITH TRB GEOMETRIC COMMITTEES

The major focus of the technical committee was a joint meeting with the TRB Committee on Operational Effects of Geometrics (AHB65) and the Committee on Geometric Design (AFB10). The three groups conducted a workshop to develop a framework for a long-range geometric design research program. TRB is expected to produce an electronic circular that captures the results of the workshop.

Twenty-two topics were proposed for desirable research projects. Of the twenty-two topics, five topics were selected for immediate action. The five subjects were: Median Design and Barrier Issues in Urban and Rural Environments/Median: Types and Design (Crossover Crashes); Ramp and Interchange Spacing; Performance-based Geometric Design Analysis; Superelevation Criteria for Steep Grades on Sharp Horizontal Curves; and Right-turn Interactions and Channelized Right Turns/Free-Right Turn Lane Design and Impacts/ Continue the work of NCHRP 3-72.

A list of the topics considered is attached.

CLOSING

The Chair reminded the membership of the dates for responses on the 13 controlling criteria (Sep1) and the recommendations for the driveway informational guide (Dec 31).
The next meeting of the Technical Committee will be in Woods Hole, Massachusetts on July 11 through 13, 2005. Larry Sutherland is hosting.

Tentatively, the 2006 meeting will be in Jackson, Wyoming with Paul Bercich hosting.

The meeting of the Technical Committee was adjourned at 11:00 a.m. on July 16. Members joined the TRB Committees for a joint wrap-up session.

Sincerely yours,

William A. Prosser
AASHTO Technical Committee on Geometric Design