



AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS

COMMITTEE CORRESPONDENCE

Address Reply to

Dwight A. Horne, Secretary
AASHTO Subcommittee on
Design
Federal Highway
Administration, HIPA-1
400 7th Street, SW
Washington, D.C. 20590

Subject: Subcommittee on Design Annual Meeting
Orlando, Florida - June 13-16, 2006
Meeting Minutes

Members
AASHTO Subcommittee on Design

Region II and the Florida Department of Transportation hosted the 2006 meeting of the AASHTO Subcommittee on Design (SCOD) in Orlando, Florida on June 13-16.

Tuesday – June 13

Regional Meeting, Part 1

Summary reports to SCOD members will occur on Wednesday morning. Regional meetings are to be continued on Thursday morning.

The Regions met and began regional presentations and roundtable discussions to facilitate sharing of knowledge about activities underway and best practices. Also addressed was the rotation of officers. The Regions began the identification of items to be forwarded for consideration by the Standing Committee on Highways (SCOH). These items included:

- proposed motions and resolutions
- proposed research statements

Reception

Fellowship and networking continued at the welcoming reception on Tuesday evening.

SCOD Executive Council Meeting

Moderator: **Allen Biehler**, SCOD Chair (Pennsylvania)

The SCOD Executive Council also met on Tuesday evening and discussed general business and the agenda for the SCOD meeting. Thirteen persons were in attendance. At the request of **Mr. Biehler**, a representative of each Region gave a brief synopsis of the afternoon's Regional meetings. **Mr. Biehler** led the group in a discussion of the structure and operation of SCOD, especially the relationship with the Technical Committees. The amount of direction and oversight by SCOD of the Technical Committees was discussed. **Mr. Biehler** and **Jim McDonnell** (AASHTO Staff) explained that per new direction from SCOH, the Chairs for the SCOD Technical Committees must come from the SCOD membership. At the end of the discussion, **Mr. Biehler** requested **Kathleen Penny** (District of Columbia) and **Joe Bucik** (Ontario) to look at the SCOD structure and operating procedures, especially for comprehensive participation between SCOD and the Technical Committees. The objective is to consider whether participation and knowledge sharing across and among SCOD and the Technical Committees should be enhanced and if so, identify the effects of suggested changes to the SCOD structure and operating procedures.

Wednesday – June 14

Opening Session and Official Welcome

Moderator: **Allen Biehler**

Mr. Biehler opened the meeting and welcomed the attendees. He mentioned the SCOD Executive Board Meeting and noted that **Kathleen Penny** and **Joe Bucik** would be looking at the structure and operation of SCOD, including the Technical Committees. **Mr. Biehler** introduced the following people who also provided welcoming remarks:

Ananth Prasad (Chief Engineer of Florida DOT (FDOT)), included in his remarks:

- growth of the state's population and traffic
- cost increases for materials and labor
 - 2005, average of 12 percent over estimates
 - 2006, average of 26 percent over estimates
- increase competition for projects
 - number of bidders for projects decreasing from 3.5 to 2; less than 2 in some Districts
 - manage size and length of contracts
 - effective use of alternate materials
- work force shortages in professional and skilled categories
 - make use of coops and interns
 - reciprocity among states
- delivery of projects quicker
 - better quality
 - design-build use increasing; has pluses and minuses
- managing safety and fatalities
 - enhance strategies
 - use of new products and technology
- cost estimates are updated monthly to keep current
- need to control scope creep
- make decisions regarding “got to haves” and “not to haves”

- tender bid options to determine what can be obtained for the available funds
- make appropriate use of design exceptions or design variances
- remove restrictions that do not add value
- use of CSS could enhance image of what we do

Dwight Horne (Federal Highway Administration (FHWA)), SCOD Secretary, included in his remarks:

- Interstate Highway System 50th anniversary
- Federal-aid highway program's 90th anniversary
- Congestion relief initiatives in US DOT
 - Recurring
 - Freight bottlenecks
 - Work zones
- Highways for LIFE
- NPRM to address requirements of SAFETEA-LU Section 5514
 - Pipe materials
 - Adjustments to 23 CFR 635.411
 - Comments due June 16, 2006
- NPRM to address requirements of SAFETEA-LU Section 1503
 - Design-Build
 - Adjustments to 23 CFR 636
 - Comments due July 24, 2006

After the welcoming remarks, **Mr. Biehler** asked everyone to stand and provide their name and affiliation. There were 125 people present at this roll call/self introduction. The official meeting participation was 154 people. The participants represented 43 member departments (97), FHWA (34), consultants (19), and industry (4).

Hot Topics from the Regional Meetings

Moderator: **Al Biehler**

Region 1

Scott Cristi (Pennsylvania)

- Standards criteria and green book
- Project performance measures
- Recruitment and retention of engineers
- SAFETEA-LU flexibilities and delegations opportunities; are they being fully utilized

Region 2

Nick Kalivoda (Louisiana)

- Work zone barriers and drainage
- Protection of barrier ends
- Green book design standards and exceptions
- CSS and safety; explain the relationship
- Rutting at intersections; particularly in urban areas
- Innovative designs; mostly focused on types of intersections

- Hydroplaning; particularly where superelevation reverses
- Electronic file transfer to contractors
- Low volume local roads
- **Jay Bennett** (North Carolina) described North Carolina's Strategic Highway Corridor Initiative

Region 3

Joe Bucik (Ontario)

- Innovative interchanges and intersections
- Roundabouts; are we getting the capacity we expect; need an analysis of capacity as-built versus expected at design/construction
- Use of visualization during design
- Construction cost estimating; redesign of process needed
- Multi-use trails and design exceptions; particular emphasis for trail across bridges
- Electronic design data to contractors; format and amount
- Warrants for median protection
- Review of plans prepared by consultants; how much being done; what are states doing regarding errors and omissions
- Electronic bidding; electronic plan availability
- Extent of use of design exceptions

Region 4

Mitch Kumar (Colorado)

- Inflation and cost estimating; what items have price adjustment clauses; life span of an estimate
- Electronic files to contractors
- 3-D modeling versus small contractors
- CSS/CSD; who has written policies; what projects to use on; any manuals; who to train
- ADA compliance; what is it; who is responsible; how to fund, i.e. as part of project or as separate project

At **Mr. Biehler's** request, **Scott Christi** (Pennsylvania) made a presentation on the failure of a prestressed concrete box beam on a bridge on Pennsylvania Route 1014 over I-70. The bridge was constructed in 1960. **Mr. Christi** described what happened and the causes. He also described Pennsylvania's action for inspecting, maintaining, and monitoring box beams.

Note: Printouts of slides from some presentations are included in the handouts provided at registration. Slides from this presentation and other technical presentations can be found on the Subcommittee's web site at: <http://cms.transportation.org/?siteid=59&pageid=745>

Urban and Country Crossover Hits; Median Safety and Cable Barrier

Moderator: **Dick Albin** (Washington)

- Revising Chapter 6 of the Roadside Design Guide

Missouri's Experience with Cable Barrier

Kathryn Harvey (Missouri)

- In 1980; installed and discontinued due to maintenance issues
- In 1990; installed on I-44 in area with 2:1 and 3:1 slopes; 94 percent effective at preventing median crossovers
- In 2000 and later; installed on I-435; 98 percent effective; contract maintenance begun
- Experience
 - About 460 miles in place
 - \$60,000 to \$100,000 per mile
 - now limiting use to areas with 6:1 or flatter slopes
 - contract maintenance; \$6,000 to \$12,000 per mile per year
- Lessons learned technical bulletin
- Beginning use of high-tension cable barrier systems
 - areas with 4:1 slopes; can use Brifen cable barrier system

Median Barriers in North Carolina

Jay Bennett

- 1,000 miles installed
- 40 percent reduction of cross median crashes
- 45 percent reduction of fatalities
- using contract maintenance
- addressing different system interfaces
- longitudinal placement
- \$6 per foot for normal cable barrier
- \$20 per foot for high tension cable barrier systems

Experiences of Florida's Turnpike Enterprise Median Cable Barrier Pilot Project

William Cook (Florida Turnpike)

- High tension cable barrier system
- Seven mile pilot in Dade County
- MP 3-5; Brifen system; 4 ropes
- MP 5-6; Safence system; 4 ropes; end protected by guardrail
- MP 7-10; Cass system; 3 ropes
- Setting tension; may have to use material temperature rather than ambient temperature
- On lump sum bid; contractor estimated \$19 per foot
- On a separate 70 mile canal protection project; state estimate is \$15 per foot without end anchors
- Using socketed posts
- Contract maintenance
 - 15-30 minute repair time
 - \$120 for repairing locations with damage involving 4 posts or less
 - \$80 for repairing locations with damage involving more than 4 posts

Update on Guidelines for the Selection of Cable Barrier Systems, NCHRP Project 20-7(210)

Dean Alberson (Texas Transportation Institute)

- pre-stretched cables
- crashes up due to introduction of cable barrier along roadside
- however, severity index reduced

You Spin Me Right ‘Round: Roundabouts in the U.S.

Moderator: **Jim Mills** (Florida)

The Case for Roundabouts: What the Research Shows

Susan Ferguson (Insurance Institute for Highway Safety)

- reduction in crashes, emissions, and delay
- best time to install is during land development
- consider needs of visually impaired pedestrians
- roundabout Q&A at www.iihs.org

Traffic Circles: A Variation on the Roundabout

Kathleen Penny and **Greer Johnson Gillis** (Parsons Brinckerhoff)

- described existing circles, including variations and modifications
- DC circles include monuments or parks and are destinations for pedestrians
- South Capitol Street project highlighted
 - Alternatives for two to four intersections were described
 - Circle versus roundabout considered
 - National Capital Planning Commission input has to be addressed

Results from NCHRP Project 3-65, Applying Roundabouts in the United States

Lee Rodegerdts (Kittelson & Anderson)

- Successful by most measures
- Safety is very good
- Crash prediction models
- Lower capacity relative to non-U.S. installations
- Model lane with most traffic waiting
- Calibrate model to local conditions
- Safety and geometric design
 - Compare objectively with other types of intersections
 - Can stand on their own

The Chicken and the Egg: Land Use and Transportation

Moderator: **Allen Biehler**

Results from the Workshop on Land Use and Transportation

Timothy Jackson (Glating Jackson)

- Examine trends
- Improve forecasting of land use
- Accommodate growth resulting from the forecast
- State, region, and local input essential
- Summarized
 - 4 broad state initiatives
 - 4 broad regional initiatives
 - 4 broad local project implementation initiatives
 - 5 emerging themes
- Land use and transportation projects influence each other

Quick Bites: Status Reports on Ongoing Projects

Moderator: **Bob Walters**

Clear Zone Conflicts in AASHTO Publications, NCHRP Project 20-7(171)

Dick Albin

- Noted four publications
 - Roadside Design Guide
 - Very Low Volume Roads Guide
 - Green Book
 - Flexibility in Highway Design
- 15 recommendations are being resolved for implementation

Highways for LIFE

Bryon Lord (FHWA)

- Explained why the initiative is being undertaken
- Explained the objectives

Update on TRB/AASHTO Geometric Design Research Efforts

Jim Brewer (Kansas)

- Requested SCOD members to complete the questionnaire in the handouts
- Completed questionnaire is to be returned to Brian Ray (Kittelson & Associates)

Status of Pavement Design Guide Effort

Phil McConnell (Arkansas)

- Verbal update only; no slide presentation
- NCHRP Project 1-37A
- Software is on the web
- FHWA training
- NCHRP Project 1-40 is to tweak the guidance
- Some of the models have been updated
- Software is being updated
- Vendor is being acquired
- Practical user's manual
- Draft manual; November 2006 target date
- Training; funds being considered for one person per state
- Final manual; March 2007 target date
- Balloting; Summer 2007; SCOD and Subcommittee on Materials
- Adopted manual available; late 2007 to early 2008

AASHTO Publication Titles

Jim McDonnell

- Publication titles
 - Current naming system is confusing and inconsistent
 - NCHRP Project
 - Draft a proposed naming system

- Possibly eight categories
 - Hierarchy approach; e.g. specifications to references
- Joint Task Force on Highway Safety Manual
 - Six SCOD members on task force
 - Jim's June 14 email identifies the SCOD members
- NPRM coming this fall on temporary traffic control devices
 - Addresses requirements of Section 1110 of SAFETEA-LU

Direction to Regions for the Continuation of their Meetings

Moderator: **Al Biehler**

- Discuss rotation of officers
- Identify future meeting locations
- Suggested that each Region discuss
 - Green book
 - Safety and CSS
 - Innovative designs
- Decide whether any issues raised should be addressed as
 - Technical committee activities
 - Research studies
 - Motions or resolutions

Thursday - June 15

Regional Meetings, Part 2

This is a continuation of the sessions begun on Tuesday afternoon. See below for information on reports from these meetings.

Lunch Speaker

Moderator: **Bob Walters**

Highway Fatalities – A National Health Crisis Highway Designers Can Help Turn Around
Tony Kane (AASHTO Director, Engineering and Technical Services)

- Emphasized AASHTO Strategic Highway Safety Plan
- Safety trends noted
- Described Standing Committee on Highway Traffic Safety recommendation for automated enforcement
- Check safety content when updating AASHTO guides
- 80,000 mile Interstate system being considered
- Asked attendees to push safety in everything you do

Reports/Discussion from the Regional Meetings

Moderator: Bob Walters

Region 4

Mitch Kumar

- Green book glossary of terms that includes distinction between should and shall
- CSS and safety; weigh safety as priority

- Innovative bridge design to reduce road closure
- Items suggested for handling by technical committees
 - Risk based cost estimates
 - Design-build minimums versus desirable
 - Design-build and value engineering coordination
 - Environmental design
 - Geometric design
- Items suggested for research
 - Guidance for ADA for 3R projects
 - Electronic files to contractors
- Items suggested for motions
 - Technical committees brief SCOD before Regional Meetings
- Rotation of officers
 - Chair, **Harold Peterfeso** (Washington)
 - Vice-Chair, **Lesly Tribelhorn** (Montana)
 - Secretary, **Paul Bercich** (Wyoming)
 - Arizona follows in the rotation
- 2008 SCOD Meeting will be hosted by New Mexico

Region 3

Joe Bucik (Ontario)

- Strategies for recruitment and retention of staff
- End treatments on low volume roads
- Retain Regional Meetings
- Regional Chairs should attend FHWA meeting
- Rotation of officers
 - Chair, Kathy Harvey (Missouri)
 - Vice-Chair, Muktar Thakur (Minnesota)
 - Secretary, Michael Kennedy (Iowa)
- 2009 SCOD Meeting will be hosted by either Indiana or Ohio

Region 2

Nick Kalivoda (Louisiana)

- Safety and CSS
- Tweak Regional Meetings
 - only report top 2-3 issues to SCOD
 - identify priority order
- information needed on Right-of-Way provisions in SAFETEA-LU
- Rotation of officers
 - Chair, Nick Kalivoda
 - Vice-Chair, Mohammad Mirshahi (Virginia)
 - Secretary, Phil McConnell
- 2010 SCOD Meeting host has not been decided

Region 1

Brian Hare (Pennsylvania)

- CADD licensing
- Electronic data transfer
- FHWA oversight agreements
- Work zone issues
 - More accommodation for contractors for faster delivery
- Financial plan experiences
- Utility coordination
- When to consider design exceptions
- Roundabout implementation
- Safety and CSS
 - Address safety regarding project context and environment
- Innovative design, e.g. continuous flow intersections and diverging diamond interchanges
- Research considerations
 - Best practices of cost escalation evaluation
 - Work zone speed control over life of project
 - Work force retention
- Technical committee considerations
 - Electronic data transfer
- Resolution consideration
 - Technical committee topics to Regional Meetings
- Rotation of officers
 - Chair and Vice-Chair to work as co-chairs
 - Chair, Brian Hare (Pennsylvania)
 - Vice-Chair, Connecticut scheduled
 - Secretary, Maine scheduled
- 2011 SCOD Meeting will be hosted by Region 1

Spotlight Project

Introduction: **David O'Hagan** (Florida)

Interstate 4 Ultimate Improvements through Metropolitan Orlando

Mark Robinson (Florida)

- I-4 Multi-modal Master Plan
- 4-day partnering meeting with FHWA
- Public involvement and Section 106/Section 4(f)
- 73 mile corridor; access modifications
- 7 design projects underway
- 7 construction projects underway
- 3 future construction projects funded and not underway
- innovative design
 - storm water
 - design variations handled through urban design process with locals represented

In The Zone: Feedback Session on Work Zone Issues

Introduction: **Lesly Tribelhorn**

Design Guidance for Construction Work Zones on High-Speed Highways, NCHRP Project 3-69

Kevin Mahoney (Pennsylvania State University)

- Project nearing completion
- Appendix with design guidance will be in hard copy format

Your All-Access Pass: Update on ADA and Transportation

Moderator: **Bob Walters**

Revised Draft Guidance on Public Rights-of-Way (PROW)

Dennis Cannon (U.S. Access Board)

- In addition to this presentation, 2 other presentations will be posted on the SCOD Meeting website
- www.access-board.gov
- Email to row@access-board.gov
- In public rights-of-way, installed curb ramp does not have to connect to accessible feature
- The revised draft guidance will be a stand alone document
- For alterations, sidewalks are not required
- FHWA memo recommends guides
- DOJ causing hold-up of publication of PROW guidance

Florida DOT's ADA Approach

Dean Perkins (Florida)

- Updating as Access Board revises ADAAG
- Lawsuits do occur
- Bridge sidewalks
 - On new bridges, following roadway with no landings
- 11 to 12 products related to ADA are on Florida DOT's qualified products list

SCOD Awards Banquet

Moderator: **Bob Walters**

Awards Recipients

- National, **Phil Clark** (New York State DOT)
- Region 1, **Arthur Gruhen** (Connecticut DOT)
- Region 2, co-recipients
 - **John Pickering** (Mississippi DOT)
 - **Kent Israel** (Louisiana DOTD)
- Region 3, **James Richardson** (Kansas DOT)
- Region 4, **Roy Maestas** (New Mexico DOT)

Friday, June 16

Finding a Safe Haven: The New Highway Safety Manual

Moderator: **Craig Green** (New Hampshire)

Overview of the Forthcoming Highway Safety Manual (HSM)

John Zegeer (Kittelson & Associates)

- What is a safe design?
- HSM publication expected in 2008
- Part IV – how to do a safety analysis
- Part V – effectiveness of implemented strategies
- Pedestrians and bicycles on urban and suburban arterials
- Guidance on effect of lane width reduction
- Some human factor information regarding age, gender, and ethnicity

Preview of the 2007 SCOD Meeting

Kevin Marshia (Vermont)

- Likely in Burlington

Do Your Dollars Make Sense? New Strategies for Cost Estimating

Moderator: **Frank Csig** (Nevada)

Florida's Long Range Element (LRE)

Dale Stanley (Florida)

- Before recent change, long range estimates were based on cost per mile
- Cost per mile did not allow for consideration of unique features that had to be addressed
- LRE is used at any point in project continuum, from planning to construction
- A real-time demo of the current system was provided
- LRE system uses unit pricing in its calculations
- Pricing is in present day dollars
- For work plan needs, another office escalates the costs

Washington State's Cost Estimate Validation Process (CVEP)

Ken Smith (Washington)

- CEVP process described
- Cost risk assessment (CRA)
- CRA and VE can be done together

Results from Estimating and Cost Management Research, NCHRP Project 8-49

Stuart Anderson (Texas Transportation Institute)

- Risk assessment, e.g. WSDOT's method
- LRE component, e.g. FDOT's method
- Minnesota DOT to launch the recommended approach
- Guide book to be available by Fall 2006

SCOD Business Meeting

Leader: **Bob Walters**

- Proposed motions/resolutions
 - Each technical committee makes short report at SCOD Meeting before second half of the Regional Meetings (Region 4)
 - Verbal, short briefing of hot topics
 - Continue with technical committee work plans
- Proposed research
 - Cost escalation/adjustments
 - A national conference or workshop on best practices (Region 1)
 - Synthesis on work zone speed control (Region 1)
 - Workforce retention and recruitment (Region 1)
 - Innovative interchange and intersection design (Regions 2 and 3)
 - Capacity of roundabouts (Region 3)
 - Monitoring of Missouri's crossover interchange (Region 4)
 - ADA on 3R projects (Region 4)
 - Synthesis on electronic formats for contract documents (Region 4)
- Proposed technical committee tasks
 - To be compiled
- Structure of SCOD and technical committees
 - **Bob Walters, Kathleen Penny, and Joe Bucik** are tasked to review and recommend improvements
 - Report to be provided at the 2007 SCOD Meeting
- New SCOD Chair
 - **Allen Biehler** has been nominated to become Chair of SCOH
 - The new Chair of SCOD will be
 - appointed by the President of AASHTO
 - a CEO or Chief Engineer from a member department

SCOD Meetings Beyond 2006

- 2007 – Region 1, Vermont
- 2008 – Region 4, New Mexico
- 2009 - Region 3
- 2010 – Region 2

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