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Inaugural Meeting of the AASHTO's Safety Management Subcommittee Hits A Successful Note!

By Keith Sinclair FHWA

The first annual meeting of the American Association of State Highway and Transportation Officials (AASHTO) Standing Committee on Highway Traffic Safety - Subcommittee on Safety Management (SCOHTS-SM) was held on September 20-22 in Oklahoma City, Oklahoma. 112 highway safety practitioners from federal, state agencies and the private sector convened to initiate facilitation and implementation of multidisciplinary safety strategies in each state that will advance efforts toward reducing highway injuries and fatalities. 42 states were represented at the meeting.



A group discussion that took place at the meeting.

Larry Tibbits, Chief Operations Officer of the Michigan Department of Transportation and SCOHTS-SM Chair, kicked off the meeting with opening remarks and was followed by John Fuller, Chief Engineer of the Oklahoma Department of Transportation, who welcomed the Subcommittee to Oklahoma. Pete Rahn, Director of the Missouri Department of Transportation and SCOHTS Chair, gave an impassioned welcoming to the subcommittee, encouraging SCOHTS-SM to press on in implementing new ideas and countermeasures.

Rahn closed with an inspirational illustration that included the equation "Perfect Plans - Action = Squat." In other words, plans mean nothing if not followed up by action. Jeffrey Lindley, FHWA Associate Administrator for Safety, and Tony Kane, AASHTO Director of Engineering and Technical Services, also delivered opening remarks.

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Message From The FHWA Associate Administrator for Safety

I want to personally welcome and introduce you to the inaugural edition of the Federal Highway Administration's (FHWA) Safety Program newsletter, the "Safety Compass." The Safety Compass is intended to be a tool for enhancing communications throughout the highway safety community and to serve as a means of sharing and providing information on tools and success stories to help the safety community build effective highway safety programs. I encourage you to submit information on your success stories and experiences, to help all of us improve our programs and reduce crashes and fatalities.

We face many challenges in highway safety. The recent release of the 2005 Fatality Analysis Reporting System (FARS) statistics reveals an overall increase in fatalities and at best a flat fatality rate. We simply have to figure out how to reverse these trends. This is a challenge that no single agency can take on alone, and there is no single "silver bullet" solution. The emphasis, resources, and tools provided by SAFETEA-LU will help, but we will continue to need innovative ideas, countermeasures, and solutions if we are to make progress in moving the numbers in the right direction. Sharing information on what works will be critical to achieving success.

Please share the Safety Compass with others in your organization and let us know if you have any suggestions for improving its content and format. Likewise, if you have thoughts about actions the FHWA Office of Safety can take to support your efforts to improve highway safety, I would be interested in hearing those as well.



Have a Successful and Life Saving Happy New Year,
Jeffrey Lindley,
FHWA Associate Administrator for Safety

Inaugural Meeting of the AASHTO's Safety Management Subcommittee Hits A Successful Note!

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The Subcommittee established six task groups who met and initiated formulation of plans to:

1. Revise and distribute existing and new resource documents.
2. Coordinate ongoing pedestrian/bike safety efforts with the Safe Routes to School Program and motorcycle safety programs (<http://safety.fhwa.dot.gov/>).
3. Update AASHTO's SHSP highlighting current national safety issues and solutions.
4. Support and enhance all safety management support systems.
5. Develop national and state-specific safety informational packages addressing the magnitude and causes of traffic crashes and describing cost-effective solutions.
6. Recommend prospective advanced and applied research to SCOHTS for further consideration by the Standing Committee on Research; and draft a resolution on Motorcycle Safety for further consideration by SCOHTS.

The task groups will report to SCOHTS on these and other important safety related issues.

The next SCOHTS-SM annual meeting will be held in Portland, Oregon, September 2007.

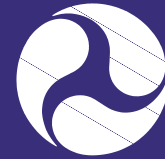
Each state was afforded 3 minutes to present the highlights of its Safety program along with a 2- page overview. The 2-page overviews are part of the meeting minutes and are posted on the SCOHTS-SM (<http://www.transportation.org/?siteid=81>) website. Recurring topics of the States' reports include:

- Status of state SHSPs – Virtually all the states' development efforts are underway with about 30 states expecting to have approved SHSPs by January 2007.
- States are increasing their financial and technical support of the local road safety programs.
- Road Safety Audits, Median Barriers, and Rumble Strips/Stripes are being widely used.
- State DOT's are supporting primary safety belt laws and automated enforcement.
- Many state traffic record systems are being developed or enhanced.

The SCOHTS-SM will meet annually, with the next meeting scheduled for September 2007 in Portland, Oregon. The task groups will continue their work through periodic conference calls, web-conferences, and electronic correspondence throughout the year. If you would like more general information, please contact:

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Saving Lives



A Vital Goal

VISION

Improving Transportation for a Strong America

GOAL

To continually improve highway safety by reducing the number of highway fatalities and serious injuries. Ensuring safe travel on highways is a guiding principle throughout the FHWA.

FOCUS

Improve safety performance through program delivery, technical assistance, research, training, data analysis, and public information. The FHWA works with safety partners to heighten safety awareness within the highway community, business, industry, and travelers.

PRIORITIES

Reducing roadway departure, intersections, and pedestrian fatalities and serious injuries.

FHWA Works with PennDOT to Study Pavement Marking Treatments on Rural Two-Lane Roads

by Dr. Ken Opiela, Federal Highway Administration

The FHWA staff at Turner-Fairbank Highway Research Center (TFHRC) worked with the Pennsylvania Department of Transportation (PennDOT) to conduct a two-phased effort aimed at understanding how varying pavement marking treatments affect driver performance. The first phase involved experiments with driving subjects in the FHWA's instrumented field research vehicle. The second phase involved replicating the field experiments in the highway driving simulator (HDS) at TFHRC. PennDOT made a section of rural, two-lane road available for nighttime test runs and provided a contractor to apply the various pavement marking treatments over a three week period.



FHWA's Digital Highway Measurements Vehicle

The field experiment took place on a six-mile segment of two-lane rural road. Sixteen drivers not familiar with the section of road were recruited as participants. Each participant drove the same road section in each direction at night in an instrumented vehicle eight times over a three-week period during which incremental changes were made to the pavement markings. These incremental changes included increasing the brightness of the centerline or adding wider edge lines. Detailed data was gathered for speed, lane position, and forces acting

on the vehicle for each run, as well as driver ratings about the ease of driving each section of the road. Penn State University is collaborating on the data analysis and generating measurements for factors such as centerline or edge line encroachments, speed profiles and variance, and driver deceleration (braking) as indicators of the influence of the pavement markings treatments on safe driving behavior.

The second part of the study involved the development of a computer model of the same road section using the detailed geometrics and roadside data gathered by the FHWA's Digital Highway Measurements Vehicle. The detailed digital data not only provided an engineering quality description of road geometry, but also allowed for rapid creation of a digital model of the road for the driving simulator at TFHRC.

Another group of sixteen participants was recruited to drive the HDS representation of the road and experience the same set of pavement marking treatments. The HDS study captured driver performance measures and subjective ratings similar to those collected in the field. The validation exercises indicated a high level of correlation between driver performance measures for similar road sections between the field and HDS, which implied that the results are comparable. The success of the validation efforts provided confidence that using the simulator could be a safe and cost-effective way to explore the effectiveness of other potential safety improvement treatments of interest to the DOT.

The researchers plowed through the mountain of data gathered in this study to analyze subjective and objective measures of performance.

The analysis of driver preference rankings from both the field and simulator studies led to the subjective finding that drivers favor more and brighter markings as they negotiate curves on two-lane rural roads at night. The analysis of objective data found that drivers were prone to drive 2-4 miles per

The analysis of driver preference rankings from both the field and simulator studies led to the subjective finding that drivers favor more and brighter markings as they negotiate curves on two-lane rural roads at night.

hour faster with better markings on the same road. The analyses of lane positioning performance measures or combinations of measures failed to yield any strong conclusions on the nature of the pavement marking treatments. Continued analysis is planned to see if there may be useful insights gained by considering effects of pavement marking treatments on the tangents and curves. Further HDS studies are anticipated to assess the effects of modifications of the pavement marking treatments such as longer extension into tangent sections or greater use of roadside delineators.

An FHWA report integrating the results of the various contractor and staff efforts is planned, but the individual research papers and contractor reports are available upon request. For more information contact:

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Roadway departure crashes cause 60% of all roadway fatalities and are the largest highway safety problem in the U.S. A high priority for Federal, state and local transportation agencies and other organizations; roadway departure crashes include:

- Run-off-the-road (ROR) crashes
- Head-on crashes
- Opposite direction front-to-side crashes
- Opposite direction sideswipe crashes

Of the 43,443 highway fatalities in 2005, 25,473 were roadway departure fatalities.

Of those, 17,295 were single-vehicle ROR crashes, comprising 40% of all fatalities.

Eighty percent of ROR fatalities occur on rural roadways, with about 90% of these occurring on 2-lane roads (based on current available data).

In addition, there were almost 8,178 fatalities from head-on, opposite direction front to side, and opposite direction sideswipe crashes accounting for 19% of all fatalities in 2005.

**Roadway
departure
crashes cause
60% of all
roadway
fatalities**

The key strategies for reducing roadway departure crashes and crash severities are to:

- (1) Keep vehicles safely on the roadway
- (2) Provide recovery areas off the roadway to reduce the likelihood of a crash
- (3) Reduce the severity of crashes when vehicles leave the roadway.

Learn more about roadway departure crashes at: http://safety.fhwa.dot.gov/roadway_dept/index.htm

Local Program Support

Local Roadways

Local agencies own and operate over three quarters of the nation's public roadways. Over 60 percent of fatalities occur on rural roads (79 percent of the 60 percent fatalities are on local roads) even though they carry less than 40 percent of the VMT. In order to achieve meaningful safety results, we as a nation need to improve safety on local roadways. To assist with reducing fatalities and incapacitating injuries on local roads, the FHWA provides training tools and technical assistance to localities and tribal entities in a variety of ways. If you should have any questions, please contact Leslie Wright, Program Manager, at 202-366-2176. You may also see more information online at: http://safety.fhwa.dot.gov/local_program/index.htm.

FHWA Conducts Effectiveness Studies of Cable Median Barrier Placement

by Dr. Ken Opiela, Federal Highway Administration

Cable median barriers are being installed widely in response to the increasing frequency of cross median crashes on freeways with narrow medians. This has raised questions about the most appropriate placement of cable median barriers in sloping medians. While all the systems being installed have met the crashworthiness criteria in NCHRP Report 350, the cable barriers cannot often be installed on level terrain, as is used in the National Cooperative Highway Research Program (NCHRP) 350 testing. Crash studies have shown that there is potential for vehicles to override or underide cable median barriers in some placement configurations in medians with mild downslopes. Studies of North Carolina crash data have noted that certain small to medium sized vehicles are more prone to underide the barrier particularly if they have sloped front ends.

Upon validation of the model, simulations were conducted to evaluate the barrier's safety performance under varying design and placement options, impact conditions, and vehicle types. The impact conditions investigated included impacts at 100 km/hour and at impact angles of 25 and 45 degrees, with small, medium, and

large vehicles. Varying barrier post spacing, median geometry, post location, and cable tension were studied for impacts from both sides. The simulations revealed that the vehicle will underide the cable barrier in a down sloping median profile when it is placed at a 4-foot offset beyond the invert of the median. Under these conditions, it was found that the front suspension of the vehicle is fully compressed at the time of impact with the barrier, thus limiting the contact with the cables permitting the vehicle to underide all three cables. Crash simulations with the posts placed one foot beyond the invert of the median did not show the same underide tendencies. Underriding was found to be more common for small and midsize sedans with sloped front ends.

Two full-scale crash tests were performed at the FOIL to confirm the simulation findings. The tests involved a Ford Crown Victoria sedan striking a North Carolina cable median barrier



Crash Test striking a North Carolina cable median barrier

at 100km/hour and 25 degrees. In the first test, the cable median barrier was placed on a 6:1 sloped terrain with the posts at a 4-foot offset beyond the invert of the median. The vehicle underrode the barrier. In a similar test with the cable barrier placed 1 foot beyond the invert of the sloped median the vehicle was contained and redirected. These results validated the simulation analyses and indicated that the finite element model can be used to analyze cable median barrier design and placement options.

This research concluded that the effectiveness of low tension, three strand cable median barriers is influenced by their positioning in the median. Additional computer analyses are underway in a second research project to develop retrofit treatments and to analyze alternative placement designs for cable median barriers for various median cross sections. It is expected that the research report will be released in December 2006.

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The objectives of the National Crash Analysis Center (NCAC) effort were to:

1. Develop a finite element model for a typical low-tension cable median barrier
2. Validate the model by comparison to previously conducted crash tests
3. Apply the model to evaluate the effectiveness of cable barriers in varying placements within the median cross sections, and
4. Confirm the modeling results with full scale crash tests. A finite element model of low-tension, three-strand cable median barrier was developed and validated by comparing crash simulation results to test data from the similar Washington State design.

Highway Safety and Trees - The Delicate Balance

FHWA has a new DVD titled "Highway Safety and Trees - The Delicate Balance." It is designed to educate the public on the real hazards caused by trees located adjacent to the roadway, and on the variety of options available to reduce this toll. It stresses the importance of communication between highway agencies and the public, and the involvement of Context Sensitive Design/Solutions in developing highway projects that fully and objectively consider safety as well as other community concerns. In short, it is intended to help gain public acceptance of highway projects that include reducing tree crashes as an element of the project goals.

Safer Sign Supports - Are Yours Breakaway Yet

This brochure advocates the replacement of rigid sign poles with breakaway supports in compliance with the MUTCD. Signs along highways posted 50 mph or greater need to be upgraded by 2013, but signs on lower speed highways can be replaced when obsolete signs faces are being upgraded. For more information contact:

Matt Lupes at matt.lupes@dot.gov, or Nick Artimovich at nick.artimovich@dot.gov.

Both DVD and brochures are ready for distribution and are available FREE of charge by contacting:

FHWA RD&T
Product Distribution Center (PDC)
ARTI
9701 Philadelphia Ct. Suite Q
Lanham, MD 20706-4436

Email: report.center@fhwa.dot.gov
or Fax: 301-577-1421

Ask for product numbers:

FHWA-SA-06-12
(Brochure announcing Trees DVD)
FHWA-SA-06-13
(for the Trees DVD)

FHWA-SA-06-14
(for the Signs brochure)

New! Updated Pedestrian and Bicycle Crash Analysis (PBCAT) Tool

PBCAT version 2.0 is a software application designed to assist state and local pedestrian and bicycle coordinators, planners, and engineers in addressing pedestrian and bicyclist crash problems. PBCAT accomplishes this goal by enabling users to develop a database of details associated with crashes between motor vehicles and pedestrians or bicyclists. One of these details is crash type, which describes the pre-crash actions of the involved parties. After developing a database of crash information, PBCAT users can analyze the data, produce reports, and select countermeasures to address the problems identified by the software.

PBCAT Version 2.0 includes significant improvements in functionality and has an enhanced design that makes the software easier to use. Find out more about the new features and download PBCAT Version 2.0 at: www.walkinginfo.org/pc/pbcats.htm.

RSAs Making Roads Safer

FHWA's Office of Safety has a new Road Safety Audit Peer-to-Peer Program (RSA P2P). The P2P program puts agencies in touch with transportation professionals across the country who can address questions that might arise when an agency is considering performing an RSA, or is conducting an RSA for the first time.

The RSA P2P program is provided at no cost to state, local, and tribal governments and offers the opportunity to receive first hand information and lessons learned from their peers who are successfully performing RSAs.

Assistance can also include a site visit as needed.

For assistance, call 866-P2P-FHWA or send an email to SafetyP2P@fhwa.dot.gov.

For information on other RSA resources, contact Louisa Ward, RSA Program Manager at Ph: 202-366-2218 or Louisa.Ward@dot.gov, or Craig Allred, FHWA Resource Center, at Ph: 720-963-3236 or Craig.Allred@dot.gov.

You may also find additional information at: <http://safety.fhwa.dot.gov/rsa/index.htm>.

Highway Safety Improvement Program “Five Percent Report”

The Federal Highway Administration recently posted reports required by the *Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)*. The “5 percent report”, an element of the new **Highway Safety Improvement Program (HSIP)**, requires states to submit an annual report describing not less than five percent of their highway locations exhibiting the most severe highway safety needs.

In addition to identifying the locations, the reports include potential remedies to the hazardous locations identified, estimated costs of the remedies, and impediments to implementation of the remedies other than costs.

These reports will help raise public awareness of the highway safety needs and challenges in the states. “The reports are important to better understand the safety challenges each state faces, and to encourage public discussion and action,” noted Jeff Lindley, FHWA Associate Administrator for Safety. “With the death toll over 43,000, we must commit to strategies available today, and be aggressive in finding new approaches for tomorrow to save lives.

The Five Percent Reports are available at: <http://safety.fhwa.dot.gov/fivepercent>

The reports represent a variety of methods utilized, and various degrees of road coverage. More information about the program, including the guidance provided by FHWA to the states, may be found at: <http://safety.fhwa.dot.gov/safetealu/fiveguidance.htm>.

Strategic Highway Safety Plan (SHSP)

The new Highway Safety Improvement Program (HSIP) requirements have made it a busy year for State DOT’s. Many States have already completed their SHSP development and are moving on to implementation. To date, FHWA has approved the development process for 28 plans. FHWA would like to make these plans available to all states by creating a collection of SHSP web links on the FHWA Safety website (<http://safety.fhwa.dot.gov/>) in the near future. For more information, or for posting your state’s SHSP web link, please contact Erin Kenley by email: erin.kenley@dot.gov.

Safe Routes to School State Coordinators hold National Meeting

Safe Routes to School (SRTS) State Coordinators gathered in Washington, D.C., from July 31 – August 2 for their program’s first national meeting. The State Coordinators will oversee the distribution of \$612 million authorized over the next five years to fund SRTS programs. Forty-one states and the District of Columbia were represented.

Coordinators discussed program plans, application procedures, evaluation issues, and heard about example programs. The National SRTS Program is administered by FHWA with the assistance of the National Center for Safe Routes to School (NCSRTS), which is led by the University of North Carolina Highway Safety Research Center in partnership with AASHTO, GHSA, ITE, America Walks and Toole Design Group.

For more information, please visit www.saferoutesinfo.org.

Safety Compass Newsletter

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Your comments and highway safety related articles are welcomed. This newsletter is intended to be a source to increase highway safety awareness, information and provide resources to help save lives. You are encouraged to submit highway safety articles that might be of value to the highway safety community. Send your comments, questions and articles for review (electronically) to: timothy.barkley@dot.gov.

Please review [guidelines](#) for article submittals.

If you would like to be included on the distribution list to receive your **free** issues, please send your email address to: timothy.barkley@dot.gov.

National Conferences / Events / Meetings
2007

Dates	Location	Event
January 17-19	Arlington, VA	NCUTCD Annual Meeting http://www.ncutcd.org/meetings-200701.shtml
January 21-27	Washington, DC	TRB 86th Annual Meeting http://www.trb.org/meeting/
January 26-30	San Antonio, TX	ATSSA 36th Annual Convention and Traffic Expo http://www.atssa.com/index.wv
January 31-February 4	Washington, DC	NSA National Sheriffs Association Mid-Winter Conf. http://www.sheriffs.org/home.shtml
February 26-28	San Diego, CA	Strategic Highway Safety Plan (SHSP) Peer Exchange
March 14-16	Washington, DC	National Bike Summit http://www.bikeleague.org/index.php
March 25-27	Chicago, IL	Lifesavers 25th National Conference http://www.lifesaversconference.org/
March 25-28	San Diego, CA	ITE 2007 Technical Conference and Exhibit http://www.ite.org/conference/
April 2-6	Kick-Off Site - TBD	National Work Zone Awareness Week
April 22-26	Milwaukee, WI	NACE National Association of Counties & Eng. http://www.countyengineers.org/
April 29-May 2	Branson, MO	AASHTO Standing Committee on Highway Traffic Safety (SCOHTS) http://www.transportation.org/?siteid=35
June 4-6	Palm Springs, CA	ITS America's 2007 Annual Meeting & Exposition http://www.itsa.org/annualmeeting.html
June 23-27	Salt Lake City, UT	NSA National Sheriffs Association Annual Conference http://www.sheriffs.org/conf-annual.shtml
June 25-29	Baltimore, MD	National FHWA Safety & Operations Leadership Conference (Open <i>ONLY</i> to federal employees)