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Improving Motorcycle Travel Data

By Harshad Desai and Ralph Gillmann, FHWA

The good news is that both the number of fatalities and the overall fatality rate on our Nation's highways have been declining in recent decades. In 1980, there were over 50,000 fatalities and a fatality rate of 3.3 per 100 million vehicle miles traveled (VMT). By the year 2006, total fatalities were below 43,000 with a fatality rate of 1.4 per 100 million miles traveled.



While highway safety has improved for passenger vehicles and trucks, crashes and fatalities involving motorcycles continue to rise. In 2006, motorcycle rider fatalities increased for the ninth consecutive year, climbing from 2,116 in 1997 to 4,810 in 2006—an increase of 127 percent. In 2006, for the first time, motorcycle fatalities exceeded pedestrian deaths.

Since 2000, as motorcycle fatalities have increased, motorcycle sales and registrations have also grown steadily. According to official Federal Highway Administration (FHWA) figures, however, the number of motorcycle miles traveled has not grown nearly as much during that period. Researchers suspect that motorcycle travel is undercounted, and this possibility has prompted the safety research community to begin to examine how motorcycle travel data are collected.

Among the possible explanations for undercounting motorcycle travel miles is the fact that many State traffic monitoring programs focus on weekday peak travel for design and operational purposes; weekend use of motorcycles is not captured. Also, automatic vehicle classification systems identify and classify cars and trucks quite effectively, but at times may not count a motorcycle at

Message From The FHWA Associate Administrator for Safety

Welcome to this quarter's edition of the *Safety Compass*. We have once again compiled an issue packed with useful information on tools and success stories to help the safety community build effective highway safety programs. I continue to encourage all of you to submit information on your success stories and experiences, to help all of us improve our safety programs and reduce crashes and fatalities.

Our feature story discusses needed and planned improvements to motorcycle travel data collection. Motorcycle fatalities have continued an upward trend in recent years and in 2006 exceeded pedestrian fatalities for the first time. One of the issues complicating the analysis of motorcycle safety problems and development of effective countermeasures is the lack of consistent, high quality motorcycle travel data. I encourage you to read about ongoing and planned actions to address this issue.

This issue also includes additional stories on last year's National Roadway Safety Award winners, Georgia's "Click It or Ticket" campaign, child transportation safety, Arizona's Tribal Safety Summit, and median barrier standards, in addition to our regular features. As always, 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, please share those as well. Have a safe and enjoyable summer!



Jeffrey Lindley
FHWA Associate Administrator for Safety

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Improving Motorcycle Travel Data

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all, or may detect the motorcycle but classify it as another type of vehicle.

In April 2008, the FHWA updated the Travel Monitoring Guide with a supplement on vehicle classification monitoring, focusing on the special considerations that apply to monitoring motorcycles. (To see the full supplement, go to: http://www.fhwa.dot.gov/ohim/tmguide/tmg_supp.htm) Among the issues this supplement highlights are the differences between weekday and weekend motorcycle usage patterns, and monitoring motorcycle traffic on lower functional class roads. This supplement clearly articulates the importance of accurate motorcycle travel information.

“In order to assess motorcycle safety it is necessary to know the number of crashes as well as the corresponding exposure to determine a fatality rate. One of the key exposures is the motorcycle miles traveled:

- Motorcycle exposure data are used to inform national decisions and establish motorcycle related policies and safety countermeasure programs.
- Motorcycle exposure data are an important part of current safety performance measures, which measure the number of motorcycle fatalities per vehicle registrations and per million miles traveled.
- Motorcycle travel data, especially by roadway functional system, helps the DOT to better understand the distribution of travel and devise effective design and operational measures for both reliable and safe travel of motorists. Motorcycle travel data is a critical element used in developing effective safety countermeasures.”

Understanding how motorcycles are used is fundamental to identifying the causes of injury suffered by riders, and to developing effective safety countermeasures. Starting with the 2007 reporting year, reporting motorcycle travel information is also a requirement of the Highway Performance Monitoring System (HPMS). For these reasons, the FHWA is joining with the National Highway Traffic Safety Administration (NHTSA), State highway agencies, State and local safety offices, private safety advocacy groups, motorcycle manufacturing associations, and traffic monitoring manufacturers and vendors in developing a research roadmap to address motorcycle travel safety in a comprehensive manner, with data collection issues among the first to be addressed.

Kicking off Motorcycle Safety Awareness Month, the Motorcycle Travel Monitoring Equipment Demonstration, sponsored by the FHWA and NHTSA, was held at the FHWA's Turner-Fairbank Highway Research Center (TFHRC)



**Denny Judycki, FHWA
Associate Administrator for Research,
Development and Technology.**

on May 5, 2008. Denny Judycki, FHWA Associate Administrator for Research, Development and Technology, welcomed the 108 attendees representing the motorcycle industry, motorcycle safety organizations, consultants, vendors, and State and Federal governments. Kathy Van Kleeck of the Motorcycle Industry Council provided a historic perspective on motorcycle production.

Representatives from State highway agencies in Maryland, Pennsylvania, and Virginia spoke about their challenges in collecting motorcycle travel data. The objective of this event was to focus renewed attention on the need for accurate counting and classification of motorcycle traffic.

For the demonstration, participating manufacturers set up their respective sensor systems on a section of road on the TFHRC campus, in McLean, Virginia. The traffic sensor technologies demonstrated included inductive loops, laser, road tubes, piezoelectric, and video. Participating companies were Control Specialists Company, International Road Dynamics Inc., MetroCount (USA) Inc., Quixote Traffic Corporation, and Sensys Networks, Inc. As well, a team from Clemson University showed their new video technology.

Over the course of the day, participating motorcyclists rode through the instrumented road section in both directions, in different riding patterns, with and without automobiles in the traffic mix, in order to test the capabilities and limitations of the different sensor technologies on hand.

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Improving Motorcycle Travel Data

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Motorcyclists ride past sensors.

While the demonstration did not result in a recommendation on specific equipment, a summary will be prepared from which States will be able to draw their own conclusions as to what equipment might work best for them.

It is the FHWA's goal to work with States to enhance vehicle classification capability and motorcycle travel monitoring.

For further information, please contact Harshad Desai, PE, of the FHWA's Travel Monitoring and Surveys Division, at 202-366-2236 or Harshad.Desai@dot.gov. +

Safe Roads for a Safer Future
Investment in Roadway Safety Saves Lives



Safe Roads for a Safer Future
Investment in roadway safety saves lives



NATIONAL ROADWAY SAFETY AWARD WINNER Utah DOT - *Operational Improvements*

Student Neighborhood Access Program (SNAP)

The Utah Student Neighborhood Access Program (SNAP) supports the most vulnerable road users, the children who walk and bike to school. Although Utah had mandated that schools must produce plans that establish the safest routes for children to walk or bike to school, the schools had little to no guidance as to how this plan should be created or what should be included. Schools were left to “fill in

the blanks,” usually without the assistance of traffic professionals. This became a confusing



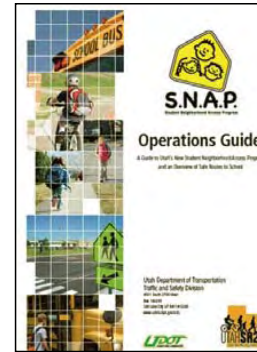
S.N.A.P.
Student Neighborhood Access Program

and intimidating exercise, often resulting in less than ideal or even non-existent routing plans.

SNAP fills this void by incorporating four main components:

- **An Operations Guide** (which includes, among other items, traffic safety principles and a step-by-step process to create an effective and safe routing plan);
- **Mapping software** that facilitates the creation of accurate, consistent route maps;
- **Electronic submittal of plans** to UDOT and storage of the plans to guard against loss; and

- **A public relations campaign** targeted at schools and parents to ensure they are aware of the resources available to them.



For more information, contact:
Michael Kaczorowski
Utah Department of Transportation
Division of Traffic and Safety
Telephone: 801-964-4521
Email: mkaczorowski@utah.gov +



NATIONAL ROADWAY SAFETY AWARD WINNER Mid-America Regional Council - *Program Planning, Development and Evaluation*

Destination Safe Coalition

Destination Safe is a Coalition of local, regional, State and Federal stakeholders within Missouri and Kansas working together to improve transportation system safety in the greater Kansas City region. Participating organizations include two State highway patrols and other groups with broad expertise ranging from healthcare and emergency medical services to law enforcement,

planning, engineering and education. Integral partners providing staff support are the Missouri and Kansas Departments of Transportation, and the Mid-America Regional Council, which is the metropolitan planning organization for the greater Kansas City area.

A resulting product of the coalition's bi-monthly meetings is the Kansas City Regional Transportation Safety Blueprint, which outlines six high priority safety areas including unbelted motorists, aggressive drivers, youth and young adults, impaired drivers, pedestrians and transportation safety data. The Coalition programs address the

six high priority safety areas in the Kansas City region as part of Missouri's Blueprint for Safer Roadways and Kansas Section 402 Funding. These projects support State and regional goals to reduce fatalities and disabling injuries.

Destination Safe Coalition continues to examine transportation planning processes for opportunities to influence flexibility of funds in improving safety among the Kansas City area transportation system.

For more information, contact:
Michael Briggs
Mid-America Regional Council
Telephone: 816-474-4240
Email: mbriggs@marc.org +





NATIONAL ROADWAY SAFETY AWARD WINNER

Vermont AOT - Operational Improvements

Work Zone Working Group

The Vermont Work Zone Working Group (WZWG) was established in 2002 by the Vermont Agency of Transportation (VAOT) with the goal of promoting uniformity and Manual for Uniform Traffic Control Devices (MUTCD) compliance for work zones on public roads within Vermont. The diverse membership of the group includes VAOT, FHWA, Associated General Contractors of Vermont, Vermont Occupational Safety and Health Administration, Vermont League of Cities and Towns, Vermont Local Roads Program, law enforcement, fire service, contractors and utility companies. The WZWG has enjoyed many hard-earned successes, including consistency in work

zones across the State; providing work zone training and support; public outreach; and creating a clearinghouse and discussion forum for work zone issues.

Since its creation, the WZWG has expanded its role to include any issues dealing with work zones and traffic control for small projects contracted by municipalities, contractors and utility companies. Currently the group is working on its plan for the next three to five years, which includes producing more instructional videos on work zone design and setup. Further, the group plans to develop a system to measure the effectiveness of its training, outreach and support.

For more information, contact:
Rob Gentle
Vermont Agency of Transportation
Telephone: 802-828-2585
Email: rob.gentle@state.vt.us +



Georgia's 2008 "Click It Or Ticket" Campaign: The Top 10 Excuses for Not Buckling Up

spotlight +

As an extra boost for Georgia's 2008 Click It Or Ticket (CIOT) Campaign, the following "letter to the editor" was sent out to Georgia newspapers as a statewide campaign teaser in the lead-up to the May 19 CIOT kickoff. Jim Shuler, Director of Public Affairs in the Governor's Office of Highway Safety (GOHS), started with an idea which was conceived by the Delaware Office of Highway Safety, then adopted by the national Governor's Highway Safety Association (GHSA).



"The body of this letter was offered up to all highway safety communications offices as a CIOT campaign support piece on the GHSA website (<http://www.ghsa.org>). I then re-worked the original concept and localized it a bit, wrote the Georgia introduction and turned it into a CIOT Letter to the Editor, tagging it with the Georgia stats," Shuler explained. Reflecting on the path of a safety idea traveling from Delaware to Georgia, passing through many hands along the way,

Shuler continued, "This is truly an example of a collaborative highway safety education and awareness effort."

For more information contact Jim Shuler, Director Public Affairs, Governor's Office of Highway Safety, at jshuler@gohs.state.ga.us or 404-656-6996.

For more about GOHS, go to <http://www.gahighwaysafety.org>.

"This is truly an example of a collaborative highway safety education and awareness effort."

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Georgia's 2008 "Click It Or Ticket" Campaign: The Top 10 Excuses for Not Buckling Up

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LETTER TO THE EDITOR: GEORGIA'S TOP TEN EXCUSES FOR NOT BUCKLING-UP

Dear Editor,

Here, in no particular order, are the Top Ten Excuses known to law enforcement officers and highway safety offices across the country for NOT buckling-up. Sure, we're showing you these just for fun. But below each one is the reason that excuse won't get you out of a ticket if you don't click it. And we're showing you that too, just to save your life.

EXCUSE #1: "I'm afraid of getting trapped in a crashed car." If you're not buckled-up at the time of a crash, you're more likely to be killed or knocked unconscious and unable to get out of the car at all. If you are buckled-up, you're more likely to stay in place and remain conscious, in control of the vehicle, and able to make smart decisions that will save your life. (Please move on to the next excuse.)

EXCUSE #2: "It irritates the skin on my neck or chest." Most newer vehicles have adjustable shoulder height positioners that allow you to adjust the shoulder belt up or down for a more comfortable fit. For older cars, some drivers wear clothes with a higher neck to provide some extra padding. But affordable after-market safety belt neck pads are also available at most stores where auto parts and accessories are sold. (This works for me.)

EXCUSE #3: "It makes me feel restrained." Incredible! That's what it's supposed to do. In a crash, this remarkable device actually holds you in your seat so you won't be tossed around or thrown out of the vehicle where you're four times more likely to be killed than if you remain in the car. **FUN FACT:** Driver side seat belts are designed to allow free movement of the occupant until a crash occurs (or until you slam on the brakes!)

EXCUSE #4: "I'm too large to wear a seat belt. It doesn't fit." It's back to the auto parts store for you! You can purchase a seat belt extender for just a few dollars, which usually resolves this issue, restores your comfort, and makes you a law-abiding driver again.

EXCUSE #5: "I can't look over my shoulder before turns." Yes, you can! A seat belt restrains your chest, NOT your head. (Please try another excuse.)

EXCUSE #6: "I Forgot." Really? Most cars now come equipped with those annoying seat belt reminder systems that keep beeping when the seat belt isn't buckled. So after you forgot it, you must have ignored it.

EXCUSE #7: "Nobody tells me what to do in my car." Well, nobody but the folks who issued your driver license. Under the law, driving is still considered a privilege, NOT a right. So many states have traffic laws that mandate what motorists can and cannot do. It's illegal to drive drunk; it's illegal to speed; and yes, with few exceptions, it's illegal to drive or ride without a seat belt in Georgia.

EXCUSE #8: "I have an airbag. I don't need a seat belt." These new car safety devices can be confusing until you understand how airbags really work. They're designed to function in conjunction with seat belts, NOT as independent restraint systems. They are NOT soft, cushy pillows. Air bags inflate at an amazing 250-miles-an-hour (the blink of an eye) and begin to deflate immediately after deployment. If you're not buckled-up, you'll land in the airbag. Since it starts to deflate immediately, you'll still be at risk to crash into the steering column or through the windshield.

EXCUSE #9: "I can't wear a seatbelt because I can't feed my baby with it on." We call this Distracted Driving, and it's a killer. If you're driving, your eyes should be on the road. If you're trying to feed your baby who is safely secured in the backseat, you can't possibly be focusing your attention on the road ahead and you're risking both of your lives! So here are a couple safe parenting tips: If you're a passenger and need to feed your baby a bottle, sit in the back seat with the baby. Both of you should be properly restrained. Nursing mothers should never feed a baby while the vehicle is moving. If someone crashes into your car, the laws of physics will make it impossible for you to hold onto your baby. Pull over to a safe location to nurse.

EXCUSE #10: "I have a medical condition. I can't wear it." Finally, here's a valid excuse! But only if you can show a medical note written by your doctor. Be sure to carry it in your purse or wallet so it remains with you if you are a passenger in someone else's vehicle. But remember, in our 2006 crash count, 1,308 Georgians were killed in motor vehicle crashes. About half of those fatalities died in collisions where the victims weren't wearing safety belts and didn't live to warn you about their mistakes. But ask any of Georgia's 8,215 motor vehicle crash victims who were unrestrained and injured in 2006 and they'll tell you, NO EXCUSE is worth the knowledge that all their pain and suffering might have been avoided in the two seconds it takes to buckle a seat belt.

Please remember to buckle-up this Memorial Day. Every seat. Every Trip. Every Time.

Bob Dallas, Director
Georgia Governor's Office of Highway Safety

FHWA Aids Maryland SHA in Developing New Median Barrier Standard

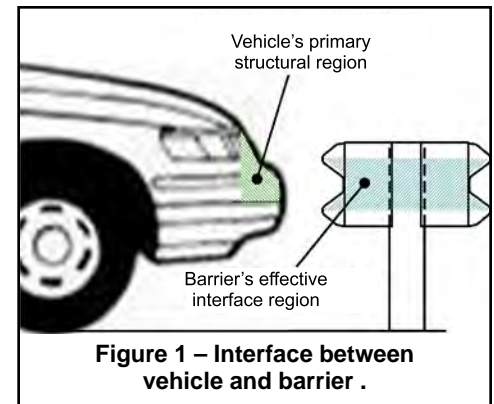
By Ken Opiela, FHWA

A recent vehicle dynamics analysis sponsored by the Federal Highway Administration helped the Maryland State Highway Administration (SHA) finalize the design and positioning of a w-beam median guardrail on the proposed MD 4 Suitland Parkway Improvements Project, and prompted planned additions to the Median Barrier Placement Section of the State's *Guidelines for Traffic Barrier Placement and End Treatment Design*.

Within the Maryland SHA, the Design Technical Services Division of the Office of Highway Development sets policy and provides design guidance to all of SHA, as well as to local MD governments. Thomas Kelly is involved with Traffic Barrier / End Treatments Design Review for the Design Technical Services Division. In November of 2007, he was considering a new median cross section which would contain a flat-bottom ditch that just falls within the boundary of the *Preferred Channel Cross Section* region of *Figure 3.7 (Preferred cross sections for channels with gradual slope changes)* of AASHTO's *Roadside Design Guide*, rather than a V-Ditch that would fall outside the boundary of the *Preferred Channel Cross Section* region of *Figure 3.6 (Preferred cross sections for channels with abrupt slope changes)*. Kelly began to wonder what effect the new median cross section might have on the trajectory of vehicles crossing the median, and how this might influence the performance of the median barrier when impacted from the back side.

Kelly asked Nick Artimovich, a Highway Engineer in the FHWA Office of Safety Design, whether FHWA could provide any insight into his questions. Artimovich immediately contacted Ken Opiela, FHWA Office of Safety Research and Development. Opiela is the FHWA Program Manager for the National Crash Analysis Center (NCAC), and Artimovich knew that NCAC had developed barrier analysis methodologies directly applicable to Maryland's inquiry. The NCAC is part of The George Washington University (GWU), but funded by FHWA and the National Highway Traffic Safety Administration (NHTSA).

The design challenge underlying Maryland's question is that key elements of a median barrier, such as the w-beam rails on a median guardrail installation, are mounted at a static height above ground, but a vehicle crossing the median does not stay at a constant height above ground. For a barrier to effectively contain and redirect an impacting vehicle, the barrier's effective interface region must engage with



the structural elements at the front of the vehicle. In Figure 1, the primary structural region of the nose of a large sedan and the effective interface region of a guardrail median barrier are highlighted. As shown, those two regions would clearly be engaged during an impact, indicating a successful vehicle-barrier interface. However, this vehicle-barrier interface is on level ground. For depressed medians, the vehicle could be quite a bit higher or lower, relative to the barrier, at the instant it makes contact with the barrier.

In Figure 2 a large sedan has entered the median at 100 km/hour and at a

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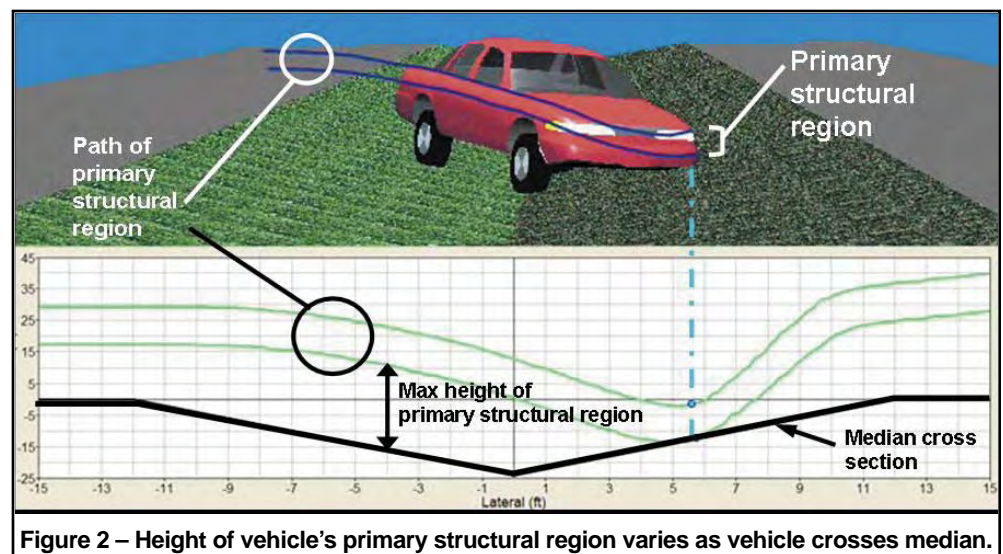


Figure 2 – Height of vehicle's primary structural region varies as vehicle crosses median.

FHWA Aids Maryland SHA in Developing New Median Barrier Standard

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25 degree angle with respect to the median centerline. When the vehicle first leaves the road and enters the median, the median surface slopes downward, the median surface slopes downward, the vehicle's suspension droops, and the vehicle may even become airborne for a short distance. When the car lands, however, its suspension will be compressed. (In Figure 2 the vehicle has just reached the far side slope of the median, so it's left front suspension is fully compressed.) In combination with the upward inclination of the far slope of the median, the rebound of the suspension system will push the vehicle upwards again as it continues across the median, very possibly even projecting the vehicle back into the air.

In the upper panel of Figure 2, the dark blue lines represent the paths of the top and bottom edges of the primary structural region of the front of the car. The light green lines in the plot at the bottom of Figure 2 show the height of the vehicle's primary structural region as the vehicle crosses the median.

In Figure 3, several possible placements of the median barrier are shown. The left-most barrier placement is at the edge of the level roadway, and indicates a good vehicle-barrier interface. However, at the middle barrier placement the vehicle's primary structural region is entirely above the barrier's effective interface region. Vaulting is likely. On the other hand, for the right-hand barrier placement, the vehicle's primary structural region is below the barrier's effective interface region, indicating a high potential for the vehicle to snag on a guardrail post.

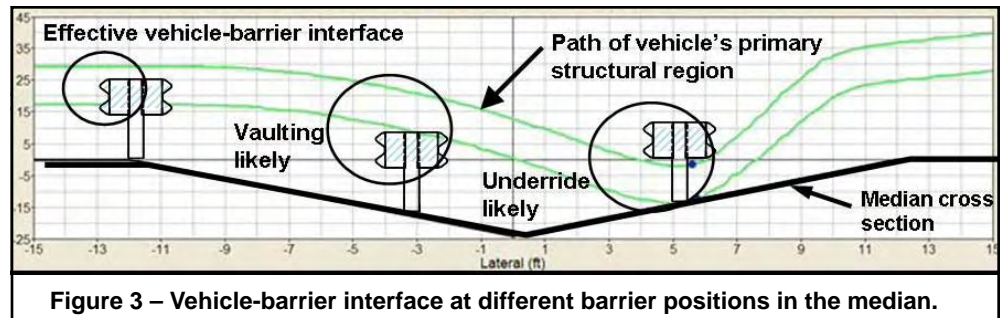


Figure 3 – Vehicle-barrier interface at different barrier positions in the median.

Further complicating the issue, different vehicles have different suspension characteristics, and medians have varying widths, side slopes, and shapes. Clearly, a median barrier cannot be placed just anywhere in the median cross section. For a particular median design, the ideal placement of a median barrier will allow it to function effectively during hits from either side by different types of vehicles at varying speeds and angles of impact.

In an ongoing effort sponsored by FHWA, NCAC has refined the application of vehicle dynamics analysis (VDA) to just this sort of median and median barrier design questions. This form of VDA utilizes a commercially available software package which inputs a vehicle's size, weight, inertial properties, suspension characteristics, and initial speed and angle of approach, and calculates the vehicle's trajectory as it crosses terrain defined by the user. (Figure 2 is a snapshot from the output of one run of that VDA software package.) The end result is that the position of the primary structural region of the vehicle can be estimated at any moment during the vehicle's passage across a median. Wherever in the median cross section a given barrier is placed, VDA lets the analyst see how well the vehicle's primary

structural region would engage the barrier's effective interface region at the instant of impact.

The limitations of this sort of analysis must be kept in mind. This application of vehicle dynamics analysis is strictly an interface analysis – it considers only whether the vehicle and the barrier are well aligned at the instant of impact. Separate consideration of the “strength” of the barrier is also needed to insure effective barrier performance capturing or redirecting an errant vehicle. In the real world, other factors not considered in this analysis -- such as the softness of the soil, the wear on the vehicle's suspension system, the loading of the vehicle, and the installed and maintained tolerances of the barrier itself -- will influence the barrier's performance. Finally, for angles greater than 25 degrees, vehicles are likely to hit the ground quite hard while crossing a depressed median, an effect not modeled in this VDA protocol, making results less reliable.

For the Maryland analysis, a total of 27 runs of the VDA software were conducted for each of two median designs considered, covering the following range of vehicles, speeds, and approach angles.

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FHWA Aids Maryland SHA in Developing New Median Barrier Standard

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Vehicles:

Chevrolet C2500 pickup truck;
Ford Crown Victoria sedan;
Honda Civic.

Speeds: 50, 70, and 100 km/h.

Angles: 5, 15, and 25 degrees.

In Figure 4, an existing Maryland median design is considered. The barrier in this design is offset 5 feet from the median centerline. (Two barriers are shown so that near-side and far-side vehicle barrier interfaces can be seen on a single plot. Only one median barrier would actually be installed.) As before, these plots assume that the vehicle crosses the median from left to right. The barrier's effective interface region is indicated by the dotted black lines. For near-side impacts, the vehicle's primary structural region overlaps the barrier's effective interface region in every case considered. This implies that the barrier will work as intended. For the far side hits, most vehicle trajectories are near their low points where they intersect with the barrier face. Without the "rub rail" mounted below the primary w-beam on this barrier design, there would be considerable risk of underride. However, because this barrier design includes a "rub rail," it is likely to capture the vehicles.

Figure 5 shows the new median cross section Maryland was considering, including a different barrier position. The traces show that there is good interface for all vehicles for near side impacts, but the bounce effect associated

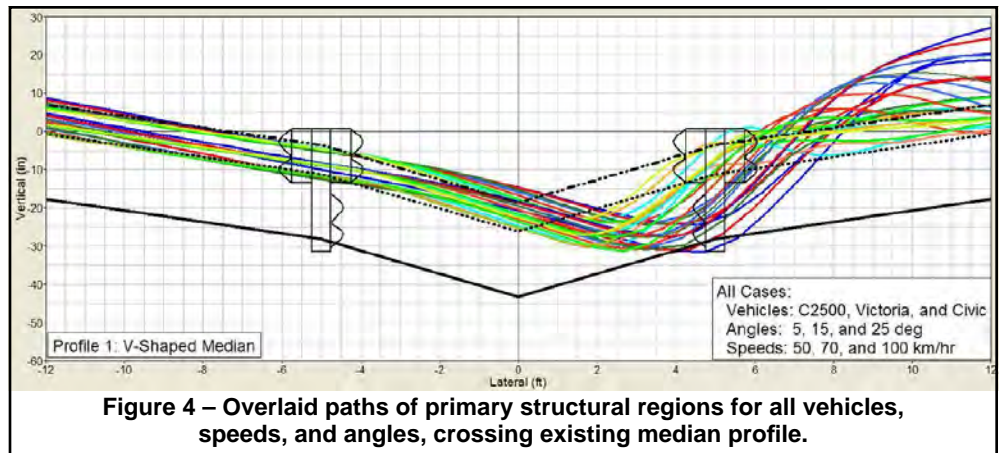


Figure 4 – Overlaid paths of primary structural regions for all vehicles, speeds, and angles, crossing existing median profile.

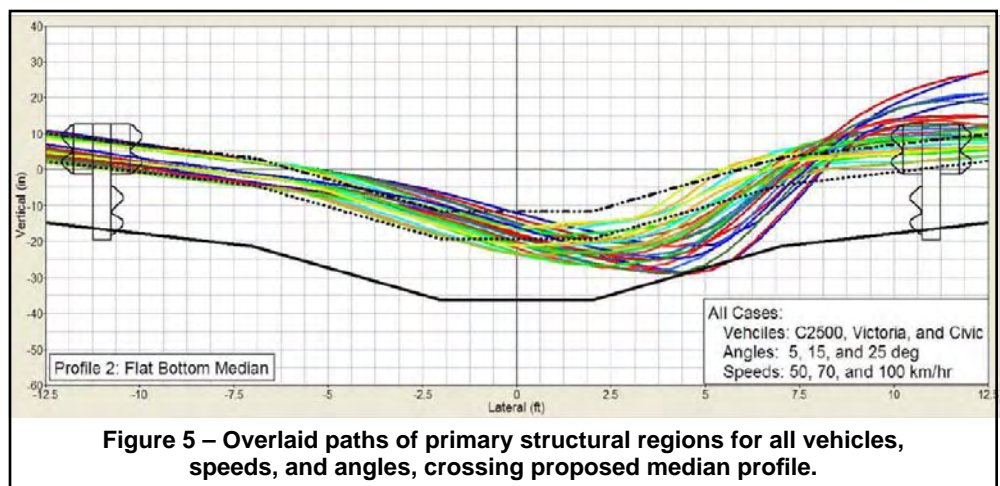


Figure 5 – Overlaid paths of primary structural regions for all vehicles, speeds, and angles, crossing proposed median profile.

with the median shape will result in some vehicles being likely to vault in far-side hits. However, by locating the barrier closer to the median centerline, the likelihood of vaulting could be greatly reduced. The new design that Teri Soos's team from Maryland SHA came up with as a result of this study utilizes a median barrier which includes a rub rail (lower panel) on the back (downslope) side of the barrier and is positioned closer to the median centerline. "This has been a cooperative effort all the way" said Kelly. "I am very thankful to Nick Artimovich and Ken Opiela of FHWA and Dr. Dhafer Marzougi of NCAC, as well as the Maryland SHA staff members who encouraged and supported the study: Barb

Solberg, Teri Soos, Christina Lavoie, Chris Weber, Leroy Tyree, Andrew Kaufmann and Lindsay Bobian."

Refinement of this form of vehicle dynamics analysis will continue. Among the additional applications under consideration are further analyses using larger vehicles, such as those proposed for the Manual for Assessing Safety Hardware (MASH 08).

For more information about this application of vehicle dynamics analysis, contact:

Ken Opiela,
Team Leader – Roadside Team,
FHWA Office of Safety R&D,
202-493-3371. +

Arizona Tribal Safety Summit

Injuries and fatalities resulting from motor vehicle crashes are a particular concern within the Native American community. American Indians suffer far more from motor-vehicle-related deaths and injuries than would be expected given their proportion of the population. In general, American Indians have the highest risk of motor-vehicle-related deaths of all ethnic groups. For ages four through 44, motor-vehicle-related injuries are the leading cause of death among American Indians. Fatal crashes on Tribal lands increased by 52.2 percent between 1975 and 2002.

Tribes have unique safety needs and therefore require targeted solutions. In an effort to address Tribal transportation safety issues, the FHWA Office of Federal Lands - in collaboration with the FHWA Arizona and Montana Division Offices, the Tribal Technical Assistance Program (TTAP) in Colorado, and the Arizona Department of Transportation (ADOT) - sponsored a Tribal Safety Summit in Arizona on May 14 and 15. The summit objectives were as follows:

- Review Arizona's priority Tribal transportation safety issues and challenges;
- Identify safety resources available to the Arizona Tribes; and
- Develop and endorse a process for continuing the dialogue among the Tribal, State, and Federal transportation communities for discussing safety issues and solutions.

This summit built upon other efforts initiated by various agencies, particularly the Tribal Safety Working Group (TSWG), chaired by the Inter Tribal Council of Arizona (ITCA). Prior to the summit, the TSWG members identified safety issues which were grouped

in four categories: engineering, enforcement, education, and data.

The participants fine tuned the issues, shared success stories, and presented information on available resources. Most importantly, they joined forces in developing solutions for these safety problems. The participants also agreed to continue the collaboration and develop Tribal components in each of Arizona's statewide Strategic Highway Safety Plan emphasis areas and specifically address safety problems on Arizona Tribal lands.

The participants included the Arizona Tribes, ITCA, ADOT, Arizona Governor's Office of Highway Safety, TTAP, Bureau of Indian Affairs, Indian Health Service, National Highway Traffic Safety Administration, and FHWA.

As ADOT Director Victor Mendez put it, this "Tribal Safety Summit is the first meeting of its kind in Arizona where we've invited representatives from all 22 of the tribes in Arizona to come together to discuss transportation safety on Tribal roadways. It will certainly not be the last."

For more information, please contact Chimai Ngo, FHWA, chimai.ngo@dot.gov.



Francis Bradley, Chief of Police, describes a safety data collection effort in the Hualapai Nation.

Saving Lives



A Vital Goal

VISION

Our Agency and Our Transportation System Are The Best in the World

GOAL

Enhance public health and safety by working toward the elimination of transportation-related deaths and injuries.

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, intersection, pedestrian, and speeding related fatalities and serious injuries.

Child Transportation Safety Promoted at Denver Scout Show

On April 26, 2008 the FHWA Colorado Division Office hosted two events promoting child safety at Scout Show 2008 in Denver. The **3rd Annual Bicycle Safety Rodeo** featured lessons in the importance of wearing a bicycle helmet, hand signals and their proper use, understanding traffic signs, rules of the road, and a riding course for each child to practice their signals and riding skills. Numerous informative displays and safety materials were also available to the kids and adults. Approximately 300 children successfully completed the riding course while many other kids and adults watched. All riding participants completed a pre- and post-event survey to gauge their knowledge of helmet use and rules of the road. Key lessons learned included “always use hand signals,” “always wear a helmet,” “watch for cars and trains,” and “stop at intersections and look both ways.”

Also during the Scout Show, the FHWA Colorado Division partnered with the Safe Kids Denver Metro coalition to host the **2nd Annual Scout Automotive Safety Patch Circuit**. The primary goal of this automotive safety program is to

educate families with children ages six to ten about being safe inside and outside of moving and parked vehicles. Some 287 kids participated in the event, joined by their parents. Some of the most important safety messages adults felt they had learned with their children included: “My child is a little too small to be in a booster seat – she should still be using her 5 point (harness system);” “Don’t play behind cars;” “Never sit in the front seat under age 13;” “The proper way to wear seatbelts;” and “Didn’t realize that 20 feet back I still couldn’t see the kids.”

The FHWA Colorado Division, the Colorado Department of Transportation (CDOT) and Safe Kids Denver Metro plan to continue holding these safety events at future Boy Scout Shows. The Colorado Division is proud to be able to leverage the resources of its safety partners in order to expand the safety education efforts in Colorado. It is expected that these safety outreach efforts will grow in magnitude as more safety stakeholders become aware of this tremendous opportunity to reduce preventable accidents in children



Rick Santos, FHWA ITS Program Manager, instructing a child to stop and look both ways before crossing railroad tracks.

through hands-on education and training of young children.

Many people helped make this event a success, including: CDOT - Betsy Jacobsen, and Lenore Bates; FHWA - Marcee Allen, Bill Haas and wife Pam, Rick Santos, Craig Larson, Aaron Bustow, Michael Davies and son Evan, and Shaun Cutting.

For more information, contact Marcee Allen, FHWA-Colorado Division Safety & Traffic Engineer, at 720-963-3007 or marcee.allen@fhwa.dot.gov.

Resources, Tools and Technology Deployment

horizons +

2008 National Access Management Conference

The 8th National Access Management conference will be held July 13-16, 2008, at the Renaissance Harborplace hotel in Baltimore’s Inner Harbor.

This year’s theme is “Sustainable Solutions for Transportation.”

The biennial conference is sponsored by the Transportation Research Board’s Access Management committee, and is hosted this year by the Maryland State Highway Administration. The conference brings together planners, engineers, developers, consultants, and academia, to discuss current practices and case studies.

For information, visit <http://www.accessmanagement.info>.



Task Force 13 Meets in Hershey, PA

Task Force 13, which supports the Joint AASHTO-AGC-ARTBA Subcommittee on New Highway Materials and Technologies, met May 4 and 5 in Hershey, Pennsylvania, to further its goal of road and bridge hardware standardization. The Joint Subcommittee is a combined effort of the American Association of State Highway and Transportation Officials (AASHTO), the Associated General Contractors of America (AGC), and the American Road and Transportation Builders Association (ARTBA). The Task Force is currently working on revising its publications that address standardized barriers, bridge railings, sign and luminaire supports, and drainage products. Those publications are:

- “A Guide to Standardized Highway Barrier Hardware”
- “A Guide to Small Sign Support Hardware”
- “A Guide to Standardized Highway Lighting Pole Hardware”
- “A Guide to Standardized Highway Drainage Products”

These publications are available on the Task Force’s web site, <http://www.aashtof13.org/Publications.asp>. Updated editions will be posted to that web site beginning in 2009. The Task Force’s Hershey meeting pulled together 80 highway safety researchers, design engineers, manufacturers, agency officials, and others involved in roadside safety issues focusing on the proper design and crash performance of highway and bridge hardware.

Working in subcommittees on the first day, Task Force members conducted detailed discussions on the various publications, as well as crash test laboratory certification. On the second day members were briefed on the current status of roadside safety research and viewed presentations on recent crash testing and research into steel beam and cable barrier systems.

The next meeting is scheduled for September 29-30, in Savannah, Georgia, in conjunction with the AASHTO Subcommittee on Design’s Technical Committee on Roadside Safety.

Membership in Task Force 13 is open to anyone in the highway community interested in standardization and roadside safety. For additional information, please contact Task Force Secretary Nick Artimovich at nick.artimovich@dot.gov.

NHI Web Conference: “Safety Considerations for Interstate Access Changes”

Tuesday, July 8, 2008, 2:00pm – 3:30pm (EDT)

The FHWA Resource Center is pleased to announce a live web conference, titled “Safety Considerations for Interstate Access Changes.” This webinar will cover the principles for performing a meaningful safety assessment of proposed Interstate System access changes. The FHWA policy “Access to the Interstate System” requires the consideration of safety when reviewing proposed access changes. This webinar will present an overview of a six-step process for conducting a meaningful safety assessment that will result in improved designs for freeway interchanges and better decision-making. The webinar is appropriate for staff from FHWA, State highway agencies, local agencies, and consultants involved in preparing Interstate System Access Reports who seek information on strategies to consider safety as part of the informed decision making process.

Please register ASAP at the NHI web conference registration site:

https://www.nhi.fhwa.dot.gov/resources/webconference/web_conf_learner_reg.aspx?webConfID=14282

Due to anticipated high demand, 100 connections have been established for this webinar. If demand warrants, additional sessions will be schedule at future dates. (Please pass this invitation along to your State DOTs and other partners that are involved in preparing the safety analysis for Interstate System Access Reports.)

For more information contact: Mark A. Doctor, Safety and Geometric Design Engineer, FHWA - Resource Center, (404) 562-3732 or mark.doctor@dot.gov.

AAA Foundation's United States Road Assessment Program to Expand into Four More States

The AAA Foundation for Traffic Safety's United States Road Assessment Program (usRAP) announced plans to expand its pilot program into Illinois, Kentucky, New Mexico, and Utah. The usRAP program maps the relative risk of road segments based on available crash data using a unique protocol first tested in Europe's EuroRAP program. These risk maps are then used by State and local road agencies to guide strategic investments in highway infrastructure and the allocation of enforcement resources, as well as benchmark progress over time. Designed to foster collaboration, usRAP is now active in eight states. The long-term plan envisions expanding the pilot into a fully operational program across the country, which will lead to fewer deaths and serious-injury crashes on our nation's road network.

"We are delighted to be collaborating with these State departments of transportation to enhance their road safety efforts," said Peter Kissinger, President and CEO of the AAA Foundation. "Working together we can make a difference and reduce the risks to the motoring public."



In the recently completed usRAP pilots in Florida and New Jersey, both State Departments of Transportation pilot tested usRAP to enhance ongoing safety management programs, which included confirming the location of high crash road segments and identifying road segments for comprehensive engineering studies. Those pilots also provided guidance for State police to better target enforcement strategies, as well as the enhancement of federally-required State reports to identify the five percent of public roads that have the most serious traffic safety needs.

The usRAP program is very timely as recent Federal mandates have placed new emphasis on evidence-based safety management and transparency of the decision-making process on all public roads. "These tools will be invaluable for State, county, and local engineers across the country looking to maximize the safety benefits from their limited resources," said Roger Wentz, President and CEO, American Traffic Safety Services Association. "We think that usRAP is such a valuable tool that we recommend it as the data standard for planning the effective use of Highway Safety Improvement Program funds."

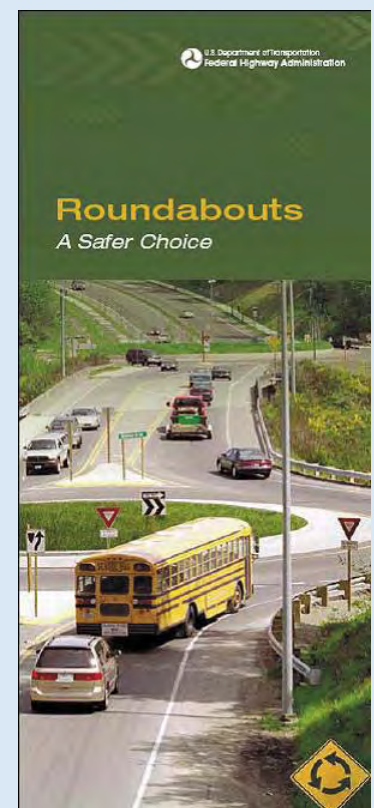
Pilot programs have already been completed in Florida, Iowa, Michigan, and New Jersey. Similar mapping already exists throughout much of Europe and Australia.

For more information, contact Fairley Mahlum, AAA Foundation for Traffic Safety at 202.638.5944, ext. 4, or fmahlum@aaafoundation.org. To learn more about usRAP, go to <http://www.usRAP.us>. The AAA Foundation's website is at <http://www.aaafoundation.org>.

Roundabouts Brochure

The FHWA Office of Safety Design announces the publication of a new brochure, "Roundabouts - A Safer Choice," to support roundabout programs at the State or municipal level. This brochure lists the dramatic safety and congestion mitigation benefits of modern roundabouts, and it provides guidelines to help motorists become more comfortable driving through roundabouts.

For copies of



"Roundabouts - A Safer Choice" contact Ed Rice, (202) 366-9064, Ed.Rice@dot.gov.

Visit <http://safety.fhwa.dot.gov> to learn more about roundabouts.

Pedestrian and Bicycle Intersection Safety Indices Available

The Federal Highway Administration has produced two new tools to help States gauge pedestrian and bicycle safety



at intersections: the Pedestrian Intersection Safety Index (Ped ISI) and the Bicycle Intersection Safety Index (Bike ISI). These ISIs identify potentially hazardous intersections and provide an objective method to prioritize intersections so that agencies can focus first on those where the benefits of a design amendment are likely to be the greatest. An important feature of the ISIs is that they enable users to evaluate each leg of an intersection separately, rather than evaluating the intersection as a whole. The ISIs rely on observable characteristics of each crossing and approach leg to generate safety index scores, with the highest scores indicating the greatest need for in-depth safety assessment.

The ISIs are available as part of the *Pedestrian and Bicyclist Intersection Safety Indices Final Report* (FHWA-HRT-06-125, <http://www.tfhrc.gov/safety/pedbike/pubs/06125/index.htm>) and *Pedestrian and Bicyclist Intersection Safety Indices User Guide* (FHWA-HRT-06-130, <http://www.tfhrc.gov/safety/pedbike/pubs/06130/index.htm>). Included in each document are links to downloadable Microsoft Excel spreadsheet files to make the ISIs as easy to use as possible.

For more information, contact Ann Do, ann.do@dot.gov.

Highway Safety Manual Data Needs Guide

A Highway Safety Manual (HSM) Data Needs Guide is now available via the HSM website (www.highwaysafetymanual.org). The purpose of the guide is to help potential users of the future First Edition HSM anticipate the data needs for using the HSM. The guide focuses on the data needed to use the HSM Part C methodologies for predicting the safety performance of rural two-lane roads, rural multilane highways, and urban and suburban arterials. The guide provides information for HSM users to assess whether their existing data sources contain the data needed to apply the HSM safety prediction methodologies to highways of interest.

The HSM -- under development via a series of NCHRP projects and guided by the Transportation Research Board's Task Force on the Development of the Highway Safety Manual and the AASHTO Highway Safety Manual Joint Task Force -- represents an effort to identify and assemble the best currently available information on safety and the provision of measures of performance, prediction, and evaluation of highway safety. The information in the HSM is intended to assist highway agencies in all aspects of safety decision-making during policymaking, planning, programming, project development, construction, maintenance, and operational activities.

Recent advancement in the science of safety analysis, safety impact prediction, and improved understanding of the statistical analysis of crashes has led to significant gains in safety knowledge. Coupled with new analytical tools, these advancements make it possible to produce usable estimates of the impact of geometric design elements, safety related planning, and traffic operations on the frequency and severity of crashes.

While highway safety information changes on a continual basis, the HSM is intended to provide accepted knowledge, methods, and processes usable by the highway safety community at the time of publication.

The HSM will consist of four parts:

- Part A: Introduction and Fundamentals
- Part B: Roadway Safety Management Process
- Part C: Predictive Methods - tools for predicting safety levels of rural two-lane roads, rural multilane highways, and urban and suburban arterials
- Part D: Accident Modification Factors



The HSM is designed for a wide audience of users and does not override or supersede State and local design manuals or any other related guidance documents in use by transportation authorities. Information, processes and procedures contained in the HSM, when used with sound judgment, will provide transportation professionals with the best known tools to improve safety decision-making and knowledge.

An interim version of the First Edition HSM is anticipated to be available in summer 2009.

For more information, visit <http://www.highwaysafetymanual.org>.

Conferences / Events / Meetings
2008

July 11-15	Kansas City MO	National Association of Counties Annual Meeting (NACo) http://www.naco.org/
July 13-16	Baltimore , MD	2008 National Access Management Conference http://www.accessmanagement.info
July 14-17	Breckenridge, CO	National Local Transportation Assistance Program (LTAP) http://www.ltapt2.org/
July 25-31	Orlando, FL	34th Traffic Records Forum http://atsip.org/index.php/2008forum/index/
August 3-9	National	National Stop On Red Week http://www.stopredlightrunning.com/
August 17-20	New Orleans, LA	American Public Works Association (APWA) http://www.apwa.net/
August 17-20	Anaheim, CA	ITE Annual Meeting & Exhibit http://www.ite.org/meetcon/index.asp
August 15-September 1	National	“Drunk Driving. Over the Limit. Under Arrest.” http://stopimpaireddriving.org/
September 2-5	Seattle, WA	Pro Walk/Pro Bike Conference http://www.bikewalk.org/2008conference/index.html
September 7-10	Scottsdale, AZ	Governors’ Highway Safety Association (GHSA) Annual Meeting http://www.ghsa.org/html/meetings/annual/2008/index.html
September 10-12	Scottsdale, AZ	American Association of State Highway and Transportation Officials (AASHTO) Subcommittee on Safety Management Meeting http://www.transportation.org/meetings/182.aspx
September 19-26	Anaheim, CA	National Safety Council (NSC) 2008 Congress and Expo http://congress.nsc.org/nsc2008/public/mainhall.aspx?MMID=17&ID=17
October	International	International Walk to School Month http://www.iwalktoschool.org/
October 6-10	National	Drive Safely Work Week http://www.trafficsafety.org/dsww.asp
October 10	National	Put The Brakes on Fatalities Day http://www.brakesonfatalities.org/
October 16-20	Hartford, CT	AASHTO Annual Meeting http://www.transportation.org/
October 21-24	Chicago, IL	American Road and Transportation Builders Association (ARTBA) National Convention http://www.artba.org/pdf/2008 National Convention Flyer.pdf

SAFETY COMPASS

HIGHWAY SAFETY SOLUTIONS FOR SAVING LIVES

A Publication of the Federal Highway Administration Safety Program



Working Together to Save Lives!