

NORTHWEST TRIBAL TRANSPORTATION NEWS



SPRING 2004

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CENTER-LINE RUMBLE STRIPS REDUCE CRASH RISK ON TWO-LANE ROADS BY RICHARD RETTING - INSURANCE INSTITUTE FOR HIGHWAY SAFETY

On a national basis, rural roads account for approximately 40 percent of all motor vehicle travel but 60 percent of all fatal crashes. Approximately 90 percent of all fatal crashes in rural areas occur on two-lane roads, which typically lack physical measures such as wide medians or barriers to separate opposing traffic flows. As a result, a major crash problem on these roads involves vehicles crossing the centerline and either sideswiping or striking

opposing vehicles head-on. These types of opposing-direction crashes account for about 20 percent of all fatal crashes on rural two-lane roads and result in approximately 4,500 fatalities annually.

The risk of head-on and opposing-direction sideswipe crashes can be reduced by engineering improvements such as roadway widening and median barrier installation. However, such measures are costly and

therefore generally are applied on a limited basis to high-priority locations. Because center-line incursions can occur at virtually any point along undivided roads, spot safety improvements can provide only limited protection against widespread opposing-direction crashes. More reduce the risk of drivers inadvertently crossing roadway centerlines. One such potential countermeasure entails installation of rumble strips

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SIMPLE ROAD SAFETY CHECK YOU CAN DO...

SPECIAL POINTS OF INTEREST:

- 2004 IRR Inventory deadline. Page 4
- Fatal Motor Vehicle Crashes on Indian Reservations Page 5
- Safety Belts & Rural Communities. Page 5

Roads are safer when drivers can see as far as it takes to stop. The distance it takes to notice a problem, realize stopping is necessary, and come to a complete stop is called stopping sight distance. It is important anywhere along the road, and special attention is needed

when approaching areas like crosswalks, intersections, work zones, and driveways.

Stopping sight distance is measured using a driver's eye height of 42 inches, looking at an object 24 inches high. These correspond to the eye height of

a small adult in a small car and the brake lights on passenger cars. Trucks need more distance to stop, but the drivers' higher eye position gives them enough extra sight distance on hillcrests. It doesn't help

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seeing around an obstruction on the inside of a curve.

How to Measure Stopping Sight Distance

On crests, sight distance is measured along the center of the travel lane. Measuring stopping sight distance may require you to be in the travel lane with your back to traffic. Many times, measuring the sight distance along the shoulder is often close enough, but if you need to be accurate, use caution and if necessary, have extra persons watch or flag traffic.

You will need:

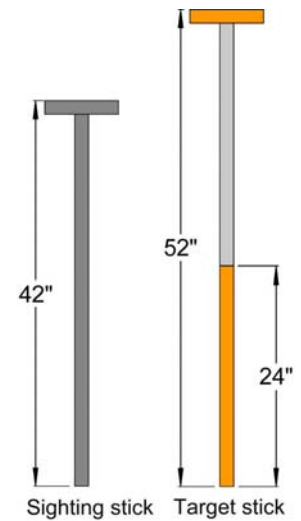
- An assistant
- High visibility clothing
- Sight distance measuring sticks (see illustration to the right)
- A measuring wheel, long steel tape measure, or surveyor's chain.
- Traffic spotters or flaggers, if needed.

To measure sight distance, kneel and use the 42-inch sighting stick to get your eyes at the proper height. Have your assistant move the target stick until you can't see the orange part

on the bottom, or the assistant reaches the distance shown in the table. (See image below)

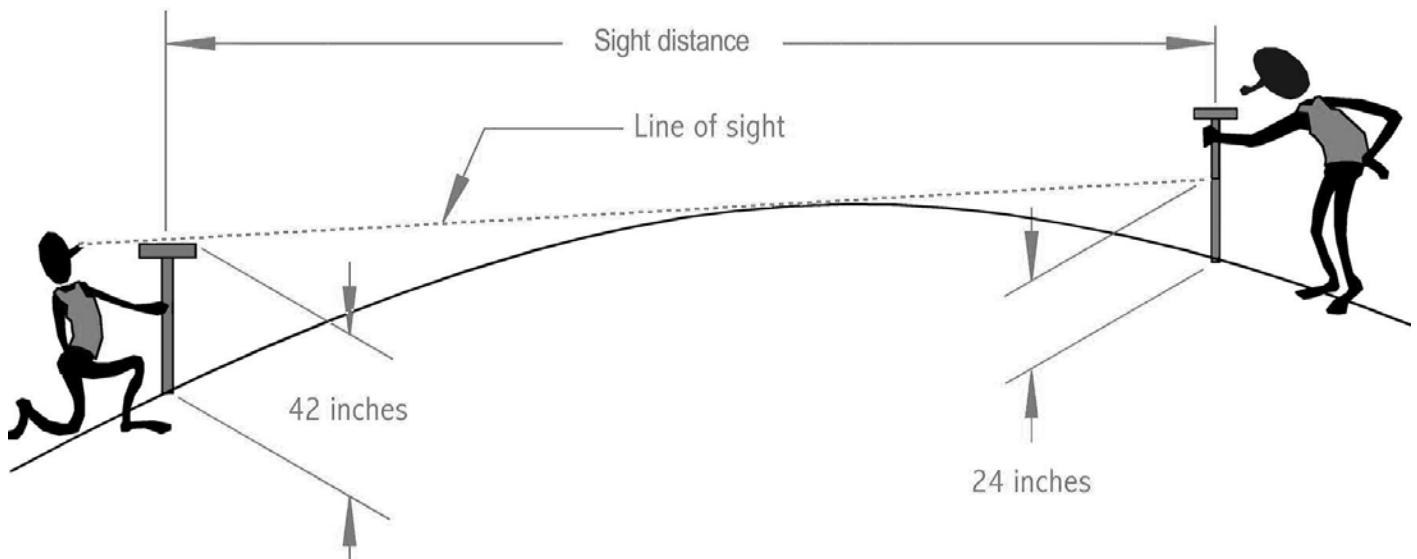
On curves, stopping sight distance is measured along the inside travel lane, not the straight-line distance across the curve. Note in the figure that the line of sight is *shorter* than the sight distance. Keep in mind that leaves and tall seasonal crops can cause problems that may not be obvious when you are taking your measurements. (See image on page 3)

If you can still see the orange part on the bottom of the target stick when your assistant reaches the



Sight distance measuring sticks can be made from 1x2 yellow pine, PVC pipe, or other lightweight materials. The orange cross piece on top of the target stick is used to measure intersection sight distance.

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Administration:

Eastern Washington
University
Urban Planning Programs

Program Administrator:

Dr. Dick Winchell, Chair,
EWU-Urban & Regional
Planning
Ph: 509-358-2214
E-Mail: dwinchell@ewu.edu

Director:

Richard A. Rolland
Ph: 509-359-6828
or 800-583-3187
Fax: 509-359-7485
E-Mail: rrolland@ewu.edu

Northwest Coordinator:

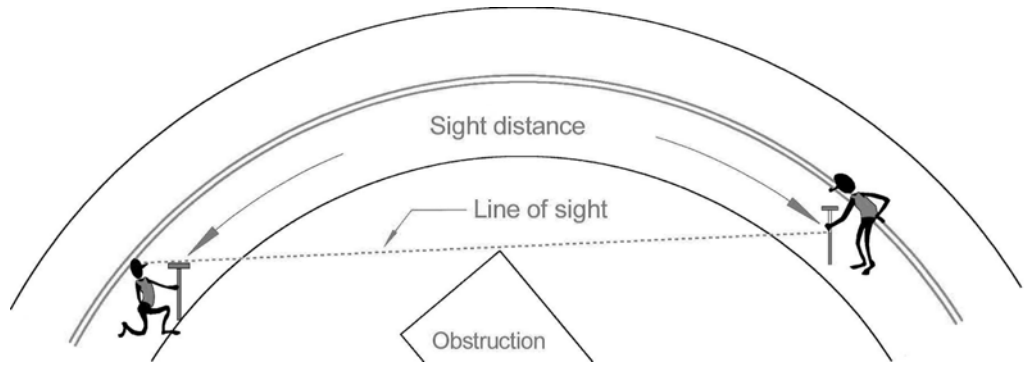
David Frey
Olympia Field Station
711 S. Capital Way,
Suite 501
Olympia, WA 98501
Phone: 360-753-9415
or 888-944-5454
Fax: 360-753-9889
E-Mail:
DFrey@mail.ewu.edu

Program Specialist:

Michele Siedenburg
Ph: 509-359-6828
or 800-583-3187
E-Mail:
msiedenburg@mail.ewu.edu

Newsletter:

Michele Siedenburg



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stopping sight distance needed, then there is adequate stopping sight distance. If you lose sight of the orange part before your assistant reaches the stopping sight distance from the table, then you may want to make some changes.

How Much Is Enough?

Stopping sight distance varies with speed and grade. On roads that carry less than 400 vehicles per day, less sight distance is acceptable because the chances of a conflict are lower. The chart on page six (6) shows stopping sight distance for various speeds and traffic volumes. These distances are for level pavement. Less

distance is needed going uphill, and more is needed going downhill. As much as 20 percent more is needed on steep downgrades. It is *always* better if you can provide a sight distance that is longer than the minimum shown in the table.

If you don't have enough...

If poor sight distance hides a safety condition, warn drivers with the appropriate warning sign. For example, where an intersection is hidden by a hillcrest or curve, install an intersection warning sign.

Sight distance improvements are often costly. Improvements may be worthwhile at places where poor sight distance

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has played a role in crashes that have occurred there. Sight distance improvements are more likely to be worth the cost if you can add them to other work at that location. For example, you might eliminate a dip during culvert replacement or lower a crest during full-depth

(Continued on page 4)

SIMPLE ROAD SAFETY CHECK YOU CAN DO (CON'T)

(Continued from page 3)

pavement repair. On the other hand, they can be very cost-effective if something simple is all that is needed, like brush clearing.

Sight distance problems can be easier to avoid than fix. Work with your planning and zoning boards so new driveways, intersections, or crosswalks are not built in locations with poor sight distance. Many municipalities have local laws prohibiting landowners from placing buildings or landscaping that will block sight distance at intersections.

Traffic speed ¹ , mph	Stopping Sight Distance, feet				
	0-100 veh/day	100-250 veh/day		250-400 veh/day	>400 veh/day
		Lower risk locations ²	Higher risk locations ²		
25	115	115	125	125	155
30	135	135	165	165	200
35	170	170	205	205	250
40	215	215	250	250	305
45	260	260	300	300	360
50	310	310	350	350	425
55	365	365	405	405	495
60	435	435	470	470	570

¹Choose a speed that includes most traffic on the road. If you know it, use the 85th percentile speed. This is the speed that 85 percent of traffic is not exceeding, and 15% is exceeding.

²Higher risk locations include features like intersections, narrow bridges, railroad grade crossings, sharp curves or steep downgrades. Lower risk locations are areas without such features

Based on AASHTO Geometric Design of Very Low-Volume Local Roads and "Green Book".

2004 INVENTORY UPDATE DEADLINE, INDIAN RESERVATION ROADS (IRR) PROGRAM.

We have just received a fax copy of a memorandum dated June 9, 2004 from Chief, Division of Transportation To All Regional Directors Attention: Regional Road Engineers.

The content of the memorandum is as follows:

This memorandum is to inform the Regions that we will be extending the traditional deadline for IRR Program inventory updates and cost to construct updates from June

1, 2004 to September 30, 2004. In the past, inventory update submittals were manually prepared and submitted in hardcopy directly to the Division of Transportation's Branch of Engineering and Operations in Albuquerque, NM. The inventory updates were manually reviewed for completeness.

We have now implemented an automated process for preparing and submitting inventory updates called the Road Inventory Field Data System

(RIFDS). With implementation of RIFDS we have moved into a new era of inventory management with a streamlined update process. Records will be complete with all required attachments in place before RIFDS will permit submittals to move ahead. The inventory update process is now properly placed at the field level with a simplified and streamlined review and approval process. RIFDS will reduce or eliminate the backlog problems that were encountered under the old

process.

Your Regional Roads Engineer and staff have received intensive training in usage of the RIFDS process. BIADOT will provide ongoing support and technical assistance for all users.

If there are any questions regarding this, please call the Division of Transportation at (202) 513-7711.

END OF MEMORANDUM

ON THE NATIONAL FRONT

REPRINT FROM "ON THE MOVE", UTAH LTAP NEWSLETTER, SUMMER 2004, VOL. 17, NO. 3

TRANSPORTATION BILL IN CONFERENCE

On June 9th after months of wrangling, the long awaited Senate-House conference committee on the reauthorization of TEA-21 began. Members of the Senate were reportedly debating the length of another short-term extension of TEA-21, which expires on June 30th. The major issue that has to be resolved is the dispute over funding - a Senate bill that calls for \$318 billion v. a House bill with \$284 billion in spending v. a White House program that includes \$256 billion and includes a veto threat if a final measure exceeds that amount. The final funding level will drive the size of the core highway and transit programs, the amount of special projects, and the all-important "donor-donee" battle among the states regarding how much each state gets back in highway funds.

Aside from opening statements, conferees approved by voice vote 12 non-controversial items related to transit and procurement. Staff was directed to produce a report for the June 23rd meeting outlining provisions not involving money.

While the House has appointed over 50 conferees from 10 committees, members of the Transportation and Infrastructure Committee have jurisdiction over the provisions of the bill that include the core highway and transit programs. Similarly, while the 21 senators who are conferees are from five committees, only those from the Environment and Public Works Committee (highways) and the Banking Committee (transit) will work on the basic program.

SAFETY BELTS AND RURAL COMMUNITIES - (2003 REPORT FROM NHTSA)

Rural Americans face greater risk of being injured or killed in a traffic crash than those who live and commute in urban areas. The facts are: only 21 percent of the population live in rural areas in the country, yet 39.5 percent of the total vehicle miles traveled are on rural roads. In 2002, rural traffic crashes accounted for 60 percent of the total fatalities on our Nation's highways.

A combination of known factors is responsible, including some that are unique to rural areas. For instance, rural crashes often occur in isolated areas, causing a delay in the time of discovery and in the delivery of emergency services to the victim. Other prominent factors contributing to the high rural crash and fatality rates include: alcohol involvement, high-speed crashes, low safety belt use, vehicle roll-overs, and ejections.

Although safety belt use in rural areas increased to 73 percent in 2002, it remains slightly lower than the national rate (about 75 percent). The lower rate may be attributable to the lower use of safety belts among pickup truck occupants - 54 percent rural areas compared with 69 percent in urban and suburban areas. Along with pickup truck occupants, another high-risk group is 15-20 years old.

Motor vehicle crashes are the leading cause of death for 15 to 20 years olds. In 2002, 8,278 15- to 20- year old drivers were involved in fatal crashes, 3,827 were killed, and an additional 324,000 were injured. More than twice as many vehicle occupants in this age group died in rural area crashes compared to urban crashes. Sixty-two percent of these young people who died in rural area crashes were unrestrained compared to 55 percent in urban areas and 54 percent of the total for all age groups.

To achieve further gains in rural safety belt use, campaigns will need to focus more directly on rural communities and among high-risk groups within those communities. Go to <http://www.nhtsa.dot.gov/people/injury/airbags/BUASBRuralWeb/images/SBs&Rrll%20Comms.pdf> for a copy of this report.

FATAL MOTOR VEHICLE CRASHES ON INDIAN RESERVATIONS 1975-2002

NHTSA TECHNICAL REPORT—APRIL 2004 NATIONAL CENTER FOR STATISTICS AND ANALYSIS

Five thousand nine hundred and sixty-two fatal motor vehicle crashes occurred on roads under the jurisdiction of Indian reservations between 1975 and 2002, an average of 213 fatal crashes per year according to a National Highway Traffic Safety Administration report. In 2002, the number of crashes on reservations reached a new high of 276, representing a 4.5% increase over the previous recorded high of 264 crashes in 1996 and a 52.5% increase over the 181 crashes in 1975. Over the years, these crashes have resulted in the loss of 7,093 lives of which 3,322 were drivers 2,717 were passengers and 1,001 were pedestrians. This report was written to provide additional information relative to these crashes. For a copy of this report go to our web site at www.cbpa.ewu.edu/~ltap/ and click on the Helpful Resources link.

CENTER-LINE RUMBLE STRIPS REDUCE CRASH RISK ON TWO-LANE ROADS

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along the centerlines of undivided rural two-lane roads to warn/alert distracted, fatigued, or speeding motorists whose vehicles are about to cross the centerlines and encroach into opposing traffic lanes.

A comprehensive before-after study was undertaken to estimate the nature and magnitude of crash reductions associated with installation of center-line rumble strips on rural undivided two-lane roads. Data were drawn from seven states: California, Colorado, Delaware, Maryland, Minnesota, Oregon, and Washington. In total, 98 treatment sites along approximately 210 miles of

road were studied. Statistical procedures were used to properly account for regression to the mean – a threat to the validity of simple before-after studies – while normalizing for differences in traffic volume and other factors between the before and after periods.

Overall, motor vehicle crashes at treated sites were reduced 14 percent; injury crashes were reduced by an estimated 15 percent. Head-on and opposing-direction sideswipe crashes – the primary target of center-line rumble strips – were reduced by an estimated 21 percent, while head-on and opposing-direction sideswipe crashes involving injuries were reduced by an estimated 25

percent. This result, taken together with the fact that installation costs are relatively low, suggest that consideration should be given to wider application of center-line rumble strips on rural two-lane roads to reduce injury crashes.

For a free copy of the full report, contact publications@iihs.org

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Image is a view of a shoulder rumble strip.

THANK YOU TO WSDOT INCIDENT RESPONSE TEAM

BY MICHELE SIEDENBURG

I was driving to work on I90 last week when I heard a loud bang and thought someone's car had backfired. A few minutes later I noticed a definite slant, so I pulled to the side of the road by an exit to check my tire and sure enough it was flat.

As I was looking through my glove box to see who to call when the Incident Response Vehicle pulled up behind me. Within 10 minutes he had my tire changed and I was back on the road.

For a single female who has had to wait up to an

hour or longer in the past for assistance or has had to accept rides to the nearest phone from strangers this was a big sigh of relief.

Thanks again and I hope to continue to see you out there on the roads.



TRIBAL TRANSPORTATION NATIONAL CALENDAR

June 2004

- 20-23 **NCAI 2004 Mid-Year Conference Renewing Connections, Strengthening Self Determination** Mohegan Sun, CT
Reservation #: 877/664-3426, group code is NCAI 1. For more information you can call NCAI at: 202-466-7767.
- 21-22 **Affiliated Tribes of Northwest Indians Economic Development Corporation (ATNI-EDC) & The Indian Land Tenure Foundation Tribal Easement and Right-of-Way Regulation and Negotiation Training** Sheraton Hotel - Portland Airport, Portland, OR Reservation #: 503-281-2500. For more information call Margie Schaff at: 303-443-0182 or mschaff@att.net
- 22-23 **TRB Native American Transportation Issues Committee 2004 Midyear Meeting.** For more information contact Ron Hall at (800) 262-7623. Coeur d'Alene Casino Hotel, Worley Idaho. Registration Fee: \$100.00
- 24-25 **Mid-Year Region 2 TTAP Meeting** (AK, CA-NV, ND, NM, CO, MI, OK) Coeur d'Alene Resort Casino, Worley, ID
For more information contact Ron Hall at (800) 262-7623
- 29-30 **NW TTAP Advisory Board Strategic Planning Retreat** Western Federal Lands Highway Office, Vancouver, WA

July 2004

- 29 **WSDOT Tribal Transportation Planning Organization Meeting** Skagit Valley Casino Resort, 5984 N Dark Lane, Bow, WA, (877) 275-2448; Contact Megan Beeby at WSDOT (360) 705-7494; Cost - Free
- 31 **National LTAP/TTAP Conference** See description in August

August 2004

- 31-4 **National LTAP-TTAP Conference Story Tellers Inspiring the Next Chapter** The Pueblo of Santa Ana Hyatt Tamaya Resort and Spa - Bernalillo, NM. For more information contact the Colorado TTAP at (800) 262-7623 or visit their web site at: ttap.colostate.edu Cost \$250
- 23-25 **2004 WSDOT Public Transportation Conference: Exploring Transportation Connections** Yakima Convention Center, 10 North 8th Street, Yakima, WA. For more Info Contact Lisa-Marie McDonald, Event Coordinator, Washington State Transit Insurance Pool. (360) 586-1800, e: lisa-marie@wstip.org or, call toll free 1-888-515-7665. Also online at http://www.wstip.org/wsdot2004/pt_2004.htm and click on "Register Now" for details; Cost - \$165 before July 23, \$195 after July 23.
- 31 **August 2004 Meeting** RTP0/MPO/WSDOT Coordinating Committee Red Lion SeaTac, 18220 International Blvd., SeaTac, WA

September 2004

- 16 **29th Annual Indian Progress in Business Awards Banquet Indian Progress in Business (INPRO)**
an evening of tribute to diversity, tradition and achievement. Millennium Biltmore Hotel, Los Angeles, CA. For more information: The National Center for American Indian Enterprise Development #800-4NCAIED ext. 243 or visit www.ncaied.org
- 22-24 **Ninth National Conference on Transportation Planning For Small to Medium Communities: Tools of the Trade**
Double Tree Hotel World Arena, Colorado Springs, CO; (719) 576-8900; For questions and further information contact A. T. Stoddard, LSC Transportation Consultants, Inc., phone (719) 633-2868, fax (719) 633-5430 or email at ATStoddard@LSCCS.com or see TRB website at <http://gulliver.trb.org/conferences/ADA30.pdf>; Cost - \$150 before August 20 and \$190 after August 20.
- 25-28 **The American Indian Alaska Native Tourism Conference** Oneida Radisson Hotel & Conference Center 2040 Airport Drive, Green Bay, WI 54313.
For more information visit the web site: <http://www.aianta.org/annual-conference/>
- 27-30 **ATNI 51st Annual Conference** Hosted by the Confederated Tribes of Salish and Kootenai at the Best Western KwaTuqNuk Resort in Polson, MT. Reservation #: 1/800/882-6363 or 406/883-3636
- 28-29 **Mendocino Road System Traffic Safety Reviews Showcase Mendocino County, CA, Reduces Road Accidents by 42%.** Ukiah, CA. More information to follow..

We are on the web!!!

www.cpba.ewu.edu/~ltap

**NORTHWEST & ALASKA
TTAP**

NW & Alaska TTAP, Urban Planning Programs
 Eastern Washington University
 216 Isle Hall
 Cheney, WA 99004
 Phone: 509-359-6828 or 800-583-3187
 Fax: 509-359-7485
 Email: NW&AKTTAP@mail.ewu.edu

The Northwest Tribal Technical Assistance Program (TTAP) is administered by the Urban Planning Program at Eastern Washington University under contract with the Federal Highway Administration. Funds are provided by the Federal Highway Administration LTAP, the Bureau of Indian Affairs Indian Reservation Roads Program, locally generated resources and individual contributions.

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