



# *T<sup>2</sup> Roads on the Range*

2011: Issue 1

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## SETTING SPEED LIMITS ON UNPAVED ROADS

By Khaled Ksaibati and Josh Jones

On July 1st, 2011 a new law will come into effect that will lower the statutory speed limit on unpaved roads from 65 mph to 55 mph. In response to the new law, standards and guidelines were developed to help counties conduct speed studies on unpaved roads. Counties can lower the speed limit from the statutory speed limit on unpaved roads as long as they follow the standards and guidelines.

The standards were developed by WYDOT and the Wyoming T<sup>2</sup> Center. They were then reviewed and approved by the Wyoming County Commissioners Association and the Wyoming Association of County Engineers and Road Superintendents. These standards are posted on the Wyoming T<sup>2</sup> web site ([wwweng.uwyo.edu/wyt2](http://wwweng.uwyo.edu/wyt2)), but they might be slightly modified by the anticipated implementation date. The standards include the necessary data collection and analysis needed to set the appropriate speed limits on unpaved roads. There are two forms: the data collection form and the declaration of speed limit form. These forms will help in the data collection as well as providing speed limit recommendations. County technicians can collect the necessary data as long as they have been trained by the T<sup>2</sup> Center. Conducting the analysis and recommending speed limits can only be performed by professional engineers who do not need any prior training as long as they abide by the standards and guidelines.

For most cases, the recommended speed limit shall be the 85th percentile speed rounded to the nearest 5 mph. A professional engineer can lower the speed limit from the 85th percentile if it can be justified based on crashes, geometric conditions, or other relevant factors. But the lowest acceptable speed limit can only be up to 10 mph less than the rounded 85th percentile speed. The Wyoming T<sup>2</sup> Center can analyze the data and recommend speed limits for counties after they collect the necessary data. The Center can also provide the standards and guidelines as well as any equipment that might be needed for the study. WYDOT provided special funding to the Center to help in conducting these speed limit evaluations.

For the engineering studies, vehicle speeds and traffic volumes should be determined using automated traffic counters. For most low volume unpaved roads, seven consecutive days of traffic counts are required. The T<sup>2</sup> Center can provide the automated traffic counters free of charge as part of the traffic counting program for Wyoming counties.

As part of the program, the T<sup>2</sup> Center will provide workshops to train county technicians and

**Check out “The Streets Corner”  
for municipalities on page 7 . . .**

engineers on how to set speed limits on unpaved roads. If counties want to set speed limits on unpaved roads before the training sessions are available, they may do so if their engineers conduct the studies. The following are the dates of the workshops in 2011:

- November 1 – Laramie, College of Engineering
- November 3 – Rock Springs, Outlaw Inn

- November 8 – Buffalo, Bozeman Trail Steakhouse
- November 9 – Casper, Parkway Plaza

If you are interested in setting speed limits on your unpaved roads, you can contact us at the T<sup>2</sup> Center and we can provide you with the standards and guidelines and any help that is needed for conducting the engineering studies.

### Example of a Completed Unpaved Road Speed Limit Form

GENERAL INFORMATION	
LOCAL JURISDICTION:	Smart County
ROUTE:	700
LOCATION:	MP 16.1 to MP 26.1
DATE:	7/1/2011

AUTOMATED TRAFFIC COUNT VALUES	
85th PERCENTILE:	43.9
50th PERCENTILE:	35.7
UPPER BOUND OF THE PACE SPEED:	40.4
AVERAGE DAILY TRAFFIC:	141
AVERAGE DAILY TRUCK TRAFFIC:	4

ROADWAY CHARACTERISTICS	
ROADWAY LENGTH:	10
NUMBER OF ACCESS POINTS:	23
ACCESS POINTS PER MILE:	$23 / 10 = 2.3$
ROADWAY WIDTH:	20
ADJACENT LAND-USE:	Recreation/Scenic
TYPE OF TERRAIN:	Rolling

HISTORICAL CRASH DATA	
FATAL:	0
INJURY:	5
PDO:	8
EPDO:	$9.5 \times 0 + 3.5 \times 5 + 8 = 25.5$
EPDO PER MILE:	$25.5 / 10 = 2.55$

RANGE OF SPEED LIMIT (MAXIMUM = 55 MPH)	
PREFERRED SPEED LIMIT:	43.9 rounded to nearest 5 = 45
LOWEST ACCEPTABLE SPEED LIMIT:	$45 - 10 = 35$

## 16th ANNUAL TRANSPORTATION & SAFETY CONGRESS

The congress began with opening remarks from the FHWA Wyoming Division Administrator, Joe Dailey, from the President of the Wyoming Association of County Engineers and Road Supervisors (WACERS), Gary Korell, and from WYDOT's Chief Engineer, Del McOmie. Joe noted that national highway fatalities in 2010 dropped to their lowest level since 1949 in spite of the 21 billion additional miles driven. Del described WYDOT's use of pre-wetted sand to reduce winter maintenance costs on I-80.

The opening session concluded with the announcement of the Roads Scholar 'Class of 2011.' This year's Roads Scholar recipients were Wayne, Fox, WYDOT; Stephen Harold, Town of Torrington; DelRay Jones, Park County; Steve Nelson, City of Laramie; Dave Pendleton, Fremont County; Jeffrey Taylor, City of Worland; and Dave Westling, City of Green River. This year's Master Roads Scholar recipients are Dan Blakeman, Town of Moorcroft; Robert Jaure, WYDOT; Bill Masson, Fremont County; Martin Mayfield, WYDOT; Scott Pehringer, Johnson County; Leo Rodell,

City of Gillette; Jody Sandoval, City of Rawlins; and William Schoening, WYDOT.

After an update on the statewide sign program by WYDOT's State Highway Safety Engineer, Matt Carlson, a panel discussion led by Don Beard of Laramie County, Gary Korell of Goshen County, Scott Pehringer of Johnson County and John Radosevich of Sweetwater County discussed and addressed the issues their counties and others face when oil and gas drilling operations impact county roads.

The rest of the afternoon consisted of breakout sessions. The 'Nuts & Bolts' session covered work zone traffic control, sign retroreflectivity, and a discussion of asset management software, emphasizing its role in addressing risk and liability. The 'By the Book' session addressed roadway departures and the safety edge, part of the FHWA 'Every Day Counts' program, the speed limit evaluation on unpaved county roads, and an update on the new County Road Fund Manual.



John Radosevich, Sweetwater County engineer, describes some of the technical aspects of maintaining roads with heavy oil and gas drilling traffic as Don Beard, Scott Pehringer and Gary Korell, the rest of the drilling impacts panel, look on.



The second day began with a presentation about some of the roadway-related applications of geotextiles by Scott Dunn of TenCate



Geosynthetics. This was followed by a description of the local project administration certification training presented by WYDOT's State Planning Engineer, Martin Kidner. This training will be needed for local agencies receiving and spending federal money. Fremont County engineer, Dave Pendleton, described some of the processes and problems faced during the flooding in Fremont County last June. The final presentation consisted of a description of WYDOT's equipment buy back program, presented by WYDOT's Bernie Kushnir.

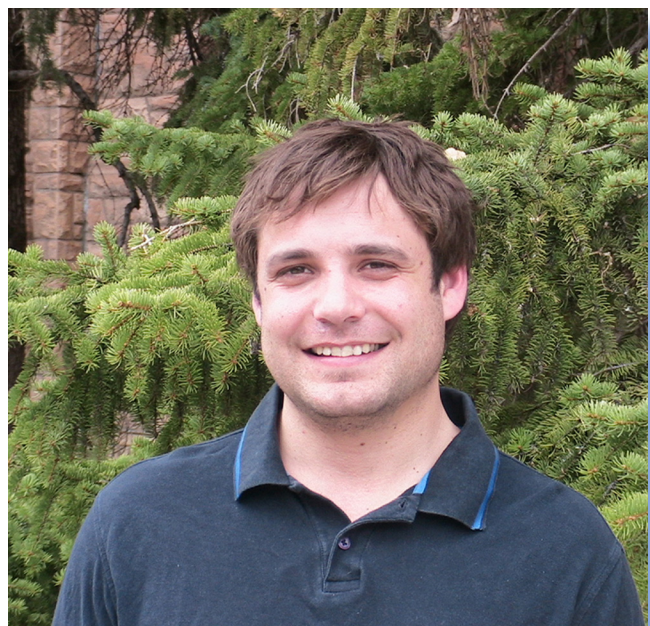
The congress was attended by more than 100 participants, including 16 vendors whose booths were visited by most of the participants.

## New WYT<sup>2</sup>/LTAP Staff Member

Josh Jones grew up in Provo, Utah where he spent his summers AT Lake Powell and his winters skiing in the Rocky Mountains. During his teens he played tennis at Provo High School and studied pre-engineering. For college, he enrolled at Utah State University where he completed a master's degree in transportation engineering. His thesis was based on conducting road safety audits and low cost safety measures. During his college years he worked for the Utah Technology Transfer Center as a technician where he worked on various projects that included: road safety audits, sign management, pavement preservation, transportation planning, and speed studies.

Josh was hired by the Wyoming T<sup>2</sup> Center on February 1, 2011 and has been mostly helping in developing standards and guidelines for setting speed limits on unpaved roads. This includes the necessary data collection and the analysis that needs to be done for the engineering study.

This summer, Josh will begin helping counties with their speed studies and safety needs. If you have any speed study needs, or just any general questions, don't hesitate to give Josh a call.



## Updates on the Statewide Sign Program

The T<sup>2</sup> Center, WYDOT, and FHWA have been working with counties around the state to help improve the safety of rural roads. In the past few years, low cost safety projects have been implemented in several counties. These projects included pavement markings, advanced warning signs, guard rails, as well as shoulder widening. In an effort to continue safety improvements that help reduce fatal and incapacitating injury crashes, a new statewide sign program is being implemented. The steps for this program are shown in the figure on the next page. Eligible signs for this program include:

- All standard warning signs listed in Part 2C of the 2009 MUTCD.
- Special attention should be given to advanced warning signs on horizontal curves.
- Stop & Yield signs for new intersection control.
- Speed Limit signs (speed study required).

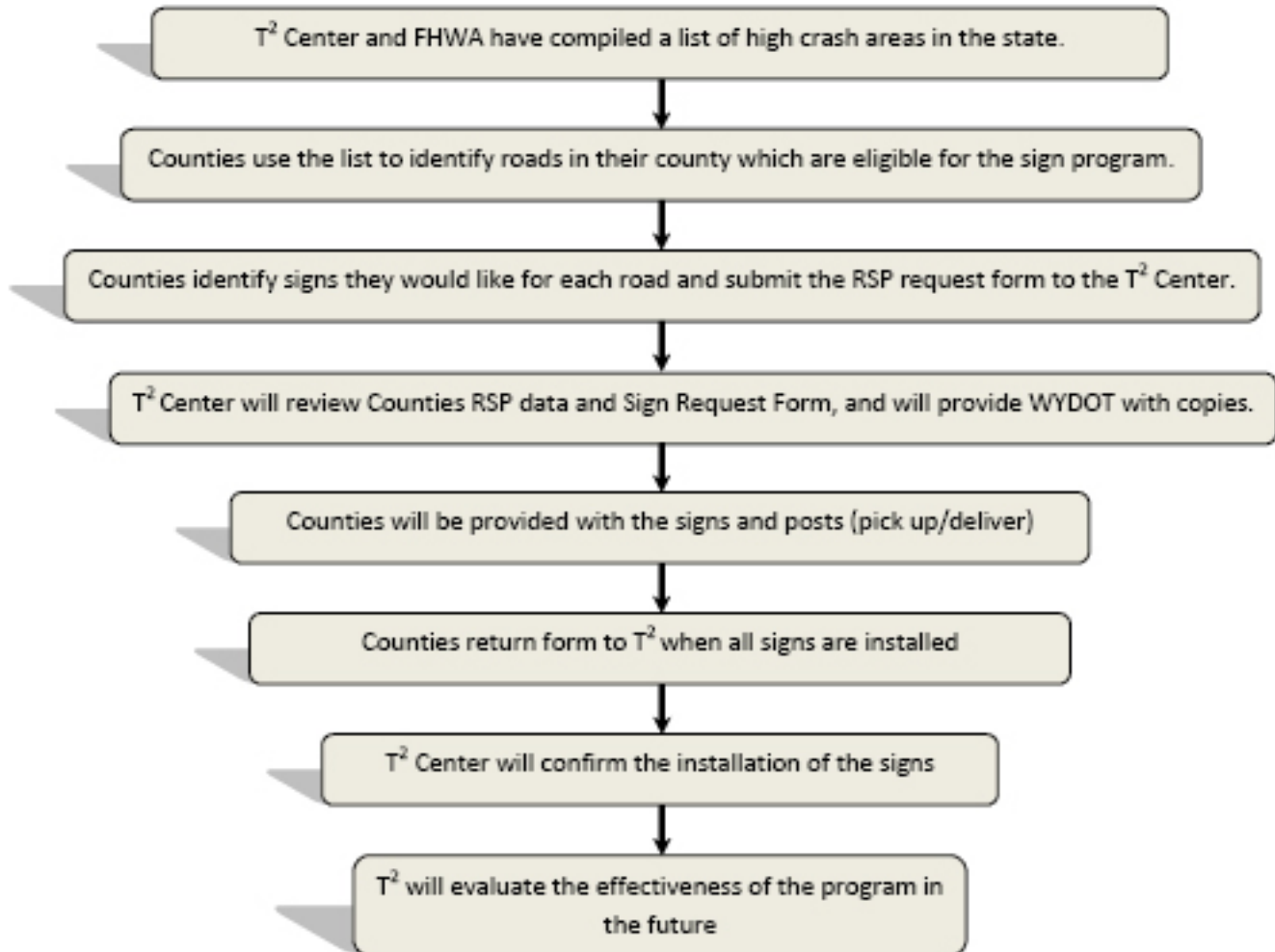
Earlier this year, the T<sup>2</sup> Center provided each Wyoming county with a list of rural roads where a significant number of serious crashes took place between 2000 and 2009. As shown in the Table 1, 10 out of the 23 counties submitted requests for 1,812 signs on 136 rural roads in the state. The WYDOT safety committee and the Transportation Commission will approve these requests in their upcoming meetings. Shortly after that, WYDOT will advertise for bids for the signs. It is anticipated that the signs will be delivered to the counties early in the Fall. The counties will be required to sign simple agreements with WYDOT and then inform the T<sup>2</sup> Center when the installations of the signs are completed. The T<sup>2</sup> Center will confirm that all signs are installed. In addition, the center will evaluate the effectiveness of the program in reducing crashes on rural roads statewide.

**Table 1: Counties Participating in the Sign Program**

COUNTY	# SIGNS	# POSTS	# ROADS
Big Horn	471	444	22
Campbell	494	404	33
Fremont	123	123	6
Hot Springs	50	49	8
Laramie	76	76	19
Sheridan	63	56	10
Sublette	7	7	4
Sweetwater	250	220	31
Washakie	34	22	3
Weston	244	194	12
<b>TOTAL</b>	<b>1812</b>	<b>1595</b>	<b>136</b>



# ROAD SIGN PROGRAM (RSP)



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## Upcoming Workshops

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The Center is planning a very busy workshop schedule for this Fall. The workshops that will be broadcast over the Transportation Learning Network are indicated by (TLN). The following workshops are in the planning stage:

### **Asset Management**

Laramie, Sheridan, Rock Springs, Casper,  
Cheyenne, Basin, Riverton, Gillette, Rawlins  
– September 20 (TLN)

### **Concrete Maintenance**

Riverton - October 11  
Douglas - October 12

### **Winter Survival**

The locations and dates for these workshops have not yet been determined.

### **Setting Speed Limits**

Laramie – November 1 (TLN)  
Rock Springs – November 3  
Buffalo – November 8  
Casper – November 9

### **County Road Fund Manual**

Laramie – December 1  
Buffalo – December 6  
Rock Springs – December 8



## THE STREETS CORNER

Over the past several years, the need for better communication among those responsible for Wyoming's municipal streets and alleys has come to the forefront. The T<sup>2</sup> Center has organized and promoted discussion among streets supervisors, public works directors, and others who maintain our state's streets. While other organizations, such as the Rocky Mountain Chapter of the American Public Works Association (APWA) and the Wyoming Association of Municipalities (WAM), address streets and alleys issues, their focus is much broader. We hope to facilitate better communication among those responsible for our streets by improving the exchange of information.



Getting together the old fashioned way – face-to-face – is a challenge in a state as large and sparsely populated as ours. We have tried to choose meeting times and sites that let us get together in conjunction with events many of us already attend. So far, meeting each year in Casper right after our annual Transportation and Safety Congress in late March or early April has been the most successful. Around a dozen of us have met there each of the past three years. We have covered a variety of topics such as revision of the Wyoming Public Works standards, cooperative purchasing agreements, maintenance techniques, dealing with tight budgets, and more. While they have certainly been instructive, these discussions haven't been available to most of our state's streets workers.

Entering the computer age has its advantages. In the summer of 2008, we called around and assembled email addresses from many streets supervisors and public works directors throughout the state. This list has been used to communicate the times and places of our face-to-face meetings. More recently, it has been used to address various topics of interest, such as the planning and use of chip seals and slurry seals, and dealing with lawsuits brought by landowners who feel they have been wronged by street improvements. This method of communicating doesn't allow for as much give and take of ideas as an across-the-table discussion, but no travel time is involved either.

The T<sup>2</sup> Center will continue fostering the exchange of ideas about solutions to the challenges faced by those responsible for our streets. We plan to continue meeting right after Safety Congress each year. We look to you for other suggestions on how we might work towards the common good by facilitating discussions and sharing ideas, information, and experiences.

If you would like to be added to our municipal streets email list or if you have a streets-related question, contact George Huntington at [georgeh@uwyo.edu](mailto:georgeh@uwyo.edu) or give him a call at (307) 766-6783.



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*Change Service Requested*

**Did you know . . .**

**The Red Desert in south central Wyoming drains neither to the east nor to the west. The continental divide splits and goes around the desert on all sides leaving the basin without normal drainage.**

*The national Local Technical Assistance Program mission is to foster a safe, efficient, and environmentally sound surface transportation system by improving skills and increasing knowledge of the transportation workforce and decision makers.*

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