



## Upcoming Workshops:

- Low Cost Safety Improvements
  - October 18th; Holiday Inn, Riverton
- Concrete Training
  - October 19th; Holiday Inn, Riverton
  - October 20th; Hampton Inn, Buffalo
- LPA Certification
  - November 9th; Parkway Plaza, Casper

## Workshops in the future:

- Soil stabilization
- Work Zone Safety/Flagger Certification

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

*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.*

## From the Desk of the Director



We have just completed working on the pavement condition data for the western side of the state and Pathways Incorporated is in the process of collecting the pavement data on the eastern side of the state. The county reports are being compiled and they will be mailed to the following 10 counties soon: Big Horn, Fremont, Hot Springs, Lincoln, Park, Sublette, Sweetwater, Teton, Uinta and Washakie. Make sure that you check out the reports and consider the changes in pavement conditions between 2014 and 2015 when you are lining up resources for maintenance and rehabilitations. On a different front, we have mailed all

counties updated crash data on all county roads over a ten-year period. Several counties have considered the crash data and they are requesting assistance for safety projects. Remember that the Wyoming Rural Roads Safety program (WRRSP) provides funding for low cost safety project such as: signs, pavement marking, delineators, guardrails, and etc. Projects in this program are limited to \$100,000 and the counties would need to match less than 10 percent of the projects. If you need assistance with this program, please feel free to contact us at the center and we will be glad to help. The speed limit program is still in place despite of the fact that Josh Jones left the Center. Trena Terrill has been hired to fill in the gap and she can help you with your need to set up speed limits on county roads. Remember, speed limits cannot be set without conducting proper speed limit studies according to the standards specified in the state law. I hope that your summer was as busy/rewarding as mine, I am looking forward to seeing you at the various T2 events in the near future. Please check out the various training workshops coming up this Fall.

By Dr. Khaled Ksaibati

### Inside this issue

- 1 From the Desk of the Director
- 2 The 2016 Annual Transportation and Safety Congress
- 6 The North Central Regional LTAP Conference
- 7 Fort Peck Reservation Safety Improvement Program
- 8 Goodbye Josh Jones, Welcome Trena Terrill

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## The 2016 Annual Transportation and Safety Congress



*Joe Dailey, the FHWA Wyoming division administrator*

The 21<sup>th</sup> Annual Transportation and Safety Congress started with opening remarks from the Wyoming T<sup>2</sup>/LTAP Center. The five arms of the Wyoming T<sup>2</sup>/LTAP Center were presented including: safety studies, asset management, traffic studies, loan programs, and training.

Joe Dailey, the FHWA Wyoming division administrator, spoke next about new rules and guidelines pertaining to FHWA funding.

Ken Muller talked next about the Wyoming Association of County Engineer and Road Superintendents (WACERS). He emphasized that WACERS is always trying to get more involvement from all the counties. If you are not a current member of WACERS, become a member, participate in the association and help advance county engineering, road maintenance and management. Ken presented John

Radosevich, Sweetwater County Engineer, who is retiring from Sweetwater County with a Wyoming Cowboy jacket for his years of service to the Wyoming T<sup>2</sup>/LTAP Center and WACERS.

Road Scholars "Class of 2016" was presented with five participants earning their Road Scholars as shown in the picture below. Being recognized as a Roads Scholar requires the successful completion of at least twelve (12) Wyoming Technology Transfer Center workshops. Of these, one must be the Annual Transportation and Safety Congress and one must be Work Zone Traffic Control.

Seven people successfully completed the requirements for a Master Road scholar Recognition, two of the people are shown in the picture below, as a Master Roads Scholar requires the successful completion of at least twenty (20) Wyoming Technology Transfer Center workshops, with the same two required workshops as for Road Scholar recognition.

Bill Mason with W. H. Smith & Ass., Inc. gave a presentation on UAV/UAS (Drone) Surveying. UAV stands for Unmanned Aerial Vehicle, and UAS stands for Unmanned Aerial Systems, and occasionally you see the abbreviation "SUAS", which stands for Small UAS's. With this technology you can perform a topographical survey on hundreds of acres of land in minutes that would've normally taken days or weeks, and with thousands of times better detail.

Kyle Kovar with 3M Traffic Safety and Security Division presented on the science of Retro Reflectivity of signs. Kyle stated that signing materials have changed a lot over the years. In the 1940s, glass beads were used in Engineer Grade; the "new technology" and was reflective than painted signs. High Intensity Beaded sheeting came along in the 1970s and consisted of "encapsulated glass beads". The prismatic (truncated cube and full cube) sheeting's are the ones used today. Full cube sheeting (such as DG cubed) is



*2016 Road Scholars. From left to right. Khaled Ksaibati, Tyann Woodall, Jimmy Jay Hinckley, Jason Clark, Dale Barrett, and Randy Chenoweth*

# The 2016 Annual Transportation and Safety Congress,

Continued from p.2



2016 MasterRoad Scholars. From left to right. Craig Nottage, Mitchel Snyder, and Khaled Ksaibati.

the brightest sheeting on the market and can be seen from extreme observation angles, such as left shoulder mounted signs and overhead street name/guide signs. Retroreflective signs help address nighttime driving safety issues such as older drivers, glare, visual clues and driver expectations. Kate Vitale, Ten Cate Geosynthetics gave a presentation about stabilization and reinforcement geotextiles. She talked about the various geosynthetic reinforcement technologies and their products. Geosynthetics can be utilized for roadway reinforcement and stabilization, mechanically stabilized earth systems and erosion control, the focus of Tencate's presentation was on the use of geosynthetic interlayers for asphalt pavement rehabilitation. Interlayer geosynthetics can be utilized to extend the useful life of an asphalt overlay and reduce overall maintenance

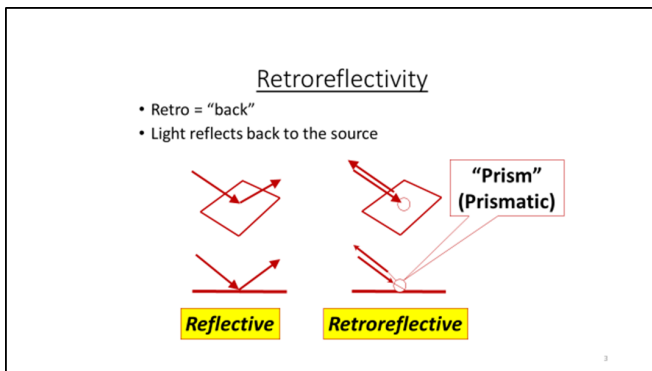
offers free consultation services to employers who want to meet OSHA standards and Wyoming OSHA works toward ensuring that employers are in compliance with OSHA's rules & regulations. There are numerous programs that assist in this effort, for more information contact the Wyoming OSHA office.

Steven Clark, Enviro Tech presented on the chemistry 101 winter and summer maintenance (snow removal/stabilization). The presentation focused on Enviro Tech's suite of products, real world examples, and environmental impacts of common practices.

Examples included winter deicing studies by WADOT, CDOT, ConnDOT, and the City of Fargo, ND. Summer soil stabilization and dust control examples comprised applications by Larimer County Colorado, Fremont County Wyoming, City of Cheyenne WY, and a winery in Bend, OR.



Tip Over Accident



costs. Interlayers preserve the base structure by delaying deterioration of the asphalt and thereby extending asphalt pavement life. By keeping moisture from penetrating through the asphalt and into the base, the load bearing capacity of the pavement is preserved and deterioration is slowed.

Dan Buckley, Wyoming OSHA spoke next about workers safety and health in Wyoming. Touching on the difference between Consultation and Compliance. Wyoming OSHA

Enviro Tech has road and surface solutions to manage all environments; both natural and man-made. They help the industry in delivering innovative soil stabilization products, erosion and dust control, as well as anti-icing and deicing solutions.

Andrei Bedoya PE, Tensar discussed geo grid for stabilization and proportion. Tensar invented and introduced geogrids in 1983. The presentation provided an outline of the application development of Tensar geogrids in pavement design and construction. Several large project profiles were covered. In addition, the improved/reduced maintenance of geogrid-stabilized pavements was also discussed along with the durability of installation. In closing, a case history in technology, highlighting the format battle of Betamax vs. VHS was discussed as an analogy for the choice that designers face today when selecting alternative products in geosynthetic applications.

The second day started with Kyle Kovar, of 3M Traffic Safety and Security Division, talking about guard rail reflectivity. Guardrails are used as a safety mechanism for the motoring public. However, they are also a road object. Delineation through application of reflective materials such as Linear Delineation System (LDS Panels) helps the motorists see



# The 2016 Annual Transportation and Safety Congress

Continued from p.3



*LDS Panel on Guardrail*



*LDS at dark*

guardrail at night which can reduce the amount of guardrail hits significantly.

Dr. Khalad Ksaibati from the Wyoming T<sup>2</sup>/LTAP Center gave an overview of the Pavement Management System (PMS). The T<sup>2</sup>/LTAP Center was able to analyze the data for all county paved roads and pavement condition reports were submitted to all counties. The statewide pavement condition report was presented to the Wyoming County Commissioners Association as well as the Transportation, Highways and Military Affairs Legislative Committee. It is hoped that raising the awareness about the conditions of the 2,444 miles of counties paved roads would result in a comprehensive strategy to maintain and upgrade this important infrastructure which supports not only local residential traffic but also the energy/industrial traffic in the state. Although that energy traffic is decreasing due recent drop in oil prices, this is a golden opportunity for us to get caught up and to upgrade our pavement infrastructure so that we are ready for the next cycle of energy activities. It is not a matter if it will happen, it is a matter of when it will happen.

The analysis of the condition of our county paved roads clearly shows that a high percentage of these roads are in poor condition. Bringing these county paved roads to acceptable conditions should be our priority for the coming few years. Billions of dollars were invested in the construction of these roads and a little maintenance and rehabilitation should keep these roads serviceable for decades to come.

Wyoming T<sup>2</sup>/LTAP collected pavement condition data in 2015 and received data in February, 2016. Started processing to generate PCI, performed a descriptive analysis on IRI and Rut Depth, and compared the IRI and Rut Depth between 2014 and 2015. Work to be

performed by Wyoming T<sup>2</sup>/LTAP is to complete PCIs generation, calculate PSI, prepare a combined database, analyze road condition data for each county, prepare road condition reports for each counties in west part of the state, and host website containing raw data and combined database.

Matt Carlson from WYDOT provided an update on a couple of safety issues, the new FHWA rules and guidelines for the Wyoming Rural Road Safety Program, "WRRSP", were discussed, as well as the statewide sign program. The 2016 sign program has delivered 376 wooden posts, 882 tubular steel posts with anchors, 1,764 aluminum signs. For the 13 participating counties the signs were delivered to each county shop this past winter. Let the Wyoming T<sup>2</sup>/LTAP Center know when the signs are installed so they can be inspected.

Bart Evans with the T<sup>2</sup>/LTAP Center provided information about the new Manual on Temporary Traffic Control on Unpaved Roads, FHWA published the manual in June 2015. The purpose of the guidance document is to assist agencies for maintenance and construction on unpaved roads. The manual covers traffic control regulations comparable to the MUTCD. Bart gave several references to contact for more information.

Hitomi Bush, Greene Geo Innovations spoke next about soil stabilization and dust control, they provide various options for soil stabilization and dust control. A typical application or installation of the products require limited equipment including a water truck, motor grader, and roller. It's unnecessary to remove soil, or add gravel/aggregate, both of which is costly and time/labor intensive. In some situations, it might be necessary to add a small amount of soil (normally

# The 2016 Annual Transportation and Safety Congress

Continued from p.4

County	East			West		
	Roads	Segments	Paved Mileage	Roads	Segments	Paved Mileage
Bighorn				48	106	110
Fremont				71	177	222
Hot Springs				19	32	77
Lincoln				94	210	179
Park				100	315	265
Sublette				32	59	72
Sweetwater				74	149	154
Teton				29	58	66
Uinta				32	61	42
Washakie				26	57	44
Albany	18	38	43			
Campbell	28	79	179			
Carbon	10	17	53			
Converse	26	54	94			
Crook	8	22	52			
Goshen	41	118	125			
Johnson	26	50	105			
Laramie	126	367	231			
Natrona	40	113	140			
Niobrara	3	4	3.3			
Platte	32	103	159			
Sheridan	28	53	25			
Weston	6	8	5			
<b>Total</b>	<b>392</b>	<b>1,026</b>	<b>1,214</b>	<b>525</b>	<b>1,224</b>	<b>1,229</b>

Summary of Roads in East and West

around 5% of the total volume) to raise or lower the soil's plasticity index. The product they provide is delivered in 5-gallon buckets, 55 gallon barrels, and 250 gallon totes. A typical application of 24' wide roadway 1 mile long, stabilized to a 6" depth requires 150 gallons of product, which can be easily transported on site in 5-gallon buckets.

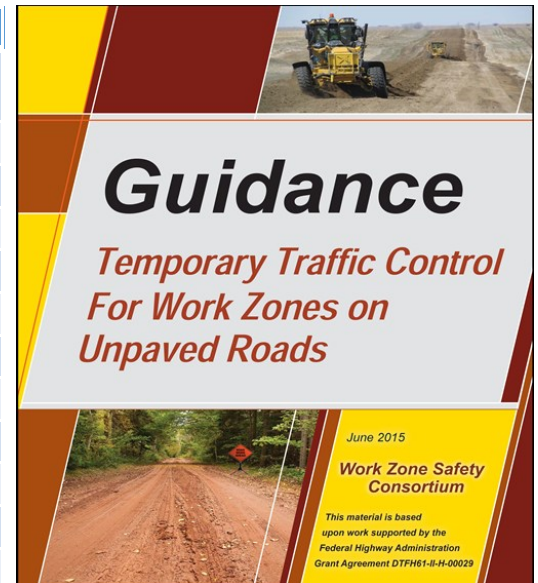
One of the key benefits to using soil stabilizing products is the speed in which it can be applied, and the fact that the process minimizes disruption to the roadway itself. Minimal traffic is permissible to flow during construction\installation, as the roadway does not need to be completely shut down during

application. This has the side benefit of further cost reductions with traffic rerouting.

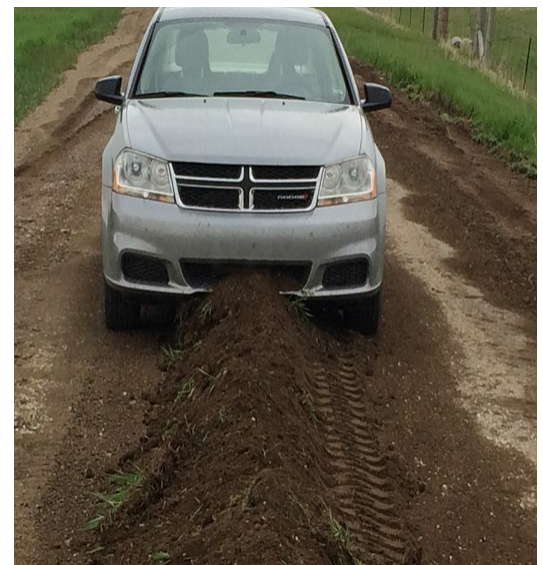
The final presentation was from John Currie, Honnen Equipment, on safety and operating features for the new John Deere motor graders.

As in the past Safety Congress gave several great door prizes provided by Wyoming T<sup>2</sup>/LTAP and vendors were given away during the Congress. Thanks for all the participants and speakers for the 21<sup>th</sup> Annual Transportation and Safety Congress. We look forward to seeing you all again next year. We plan to make some minor changes to the Congress next year.

By Morgan "Bart" Evans



FHWA Manual



Berm is too high to be easily traversed.

## The North Central Regional LTAP Conference

The North Central Region LTAP (Local Technical Assistance Program) Conference was held in Laramie, Wyoming on June 1<sup>st</sup> and 2<sup>nd</sup>, 2016 at the Gateway Center on the campus of the University of Wyoming. There are nine states in the North Central Region LTAP, Montana, Wyoming, Colorado, North Dakota, South Dakota, Nebraska, Kansas, Iowa, and Missouri. Montana and Missouri were not able to attend this meeting.

After each Center shared their accomplishments, future goals, and things that have worked for their centers we held conversations with the Federal Highway Association; Jeff Zaharewicz, Susan Monahan, and Cameron Ishaq.

Below is some of the key information that was discussed.

Changes in eligibility for certain safety activities per the FAST Act: Confirmation of what was suspected from Nicole and others about some changes in what HSIP funding can be used for. The so-called “softer side” activities are no longer eligible but are still eligible under NHSTA programs. For additional questions or for deeper clarification please contact Rosemarie Anderson with the FHWA Office of Safety.

Next, the Stakeholder Partnering initiative under EDC-3. In the weekly EDC News just issued there is the following blurb about Stakeholder Partnering:

### **Stakeholder Partnering**

The Every Day Counts innovation of the month for June is stakeholder partnering, which helps local, state and federal agencies collaborate to increase program compliance and streamline the project delivery process under the Federal-Aid Highway Program.

Local agencies own about 75 percent of all roads and more than half of the nation’s bridges. About 20 percent of the Federal-Aid Highway Program budget goes to fund local projects.

Partnering has been used to improve delivery of local transportation projects since the late 1980s. The focus in the third round of EDC is on applying that model of success at the programmatic level to enhance delivery of local projects.

Stakeholder partnering on local projects is an institutionalized practice in 17 states, according to the Federal Highway Administration’s latest report on EDC-3 progress. Another 21 states are making progress on their efforts to establish stakeholder partnering groups or developing an implementation process.

*By Caroline Johnson*





## Fort Peck Reservation Safety Improvement Program



Roadway safety on Indian reservations has become a significant concern for the United States government. Over the past several years there has been a steady decline in fatal crashes across the country, yet fatal crash rates continue to increase on Tribal Lands. In collaboration with the goal to eliminate fatal and serious crashes, the DOTs and other agencies have partnered with the Wyoming Technology Transfer Center/Local Technical Assistance Program (WYT2/LTAP) and the Northern Plain Tribal Transportation Program (NPTTAP) to address the high fatality rates on multiple reservations in the Northern Plains and Rocky Mountain region in response to the Strategic Highway Safety Plan.

After successfully implementing highway safety improvement programs on reservations in Wyoming, and North and South Dakota, the WYT2/LTAP center was invited to assist the Fort Peck Reservation (FPIR) in northeastern Montana. Like the other Tribes and reservations, the FPIR has been suffering from high crash rates linked to behavioral concerns and outdated infrastructure. The Fort Peck Reservation is home to two separate Indian nations, each composed of numerous bands and divisions. The Sioux divisions of Sisseton/Wahpetons, the Yanktonais, and the Teton Hunkpapa are all represented. The Assiniboine bands of Canoe Paddler and Red Bottom are represented. The Reservation is located in the extreme northeast corner of Montana, 40 miles west of the North Dakota Border and 50 miles south of the Canadian border, with the Missouri river bordering its southern perimeter. The Reservation is 110 miles long and 40 miles wide, encompassing 2,093,318 acres (approximately 3,200 square miles). Of this, approximately 378,000 acres are tribally owned and

548,000 acres are individually allotted Indian lands. The total of Indian owned lands is about 926,000 acres. There are an estimated 10,000 enrolled tribal members, of whom approximately 6,000 reside on or near the Reservation. On the FPIR there are roughly 1,500 miles of roads, of which 375 miles are BIA system and Tribally-owned roads. Of the 211 miles of BIA-owned roads, over half are gravel and dirt roads.

The objective of this project was to develop a methodology for identifying high risk locations on tribal owned roads on the Fort Peck Indian Reservation. Such methodology would result in implementing a low cost safety improvement program proposing a reduction in the high crash rates on their reservation. Since the local roads on the reservation are similar to rural local roads, the WYT2/LTAP worked in coordination with the Montana Department of Transportation, the tribal council, and the NPTTAP to develop a similar methodology to the Wyoming Rural Road Safety Program. Bart Evans and Trenna Terrill, with the WYT2/LTAP center, performed field reviews of fifteen selected Tribally-owned roads on the reservation. Since the review, safety countermeasures and improvements have been recommended to the Tribes. Final steps in this safety study are currently being implemented. The methodology has helped supply the Tribes with the opportunity to evaluate the safety of their tribally owned roads in the higher risk areas. It is our goal and our mission to present a developed methodology that can be used as a model for other state departments and Indian Nations across the country in improving the safety of their roadway systems on Indian Reservations.

By Trenna Terrill

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*Return Service Requested*



## Goodbye Josh Jones, Welcome Trenna Terrill

Goodbye to Josh Jones, he has taken a position in Denver, CO. Trenna will be taking over most of Josh's duties on Speed Studies, Pedestrian and Bikes, working with counties in Wyoming and work with Tribal issues. Welcome Trenna as the WYT2C's new engineer.



Trenna L. Terrill is an entry level engineer at the Wyoming Technology Transfer Center housed at the University of Wyoming within the College of Engineering and Applied Science. Trenna is a

University of Wyoming graduate, earning a B.S. degree in Civil Engineering, as well as a Master of Science in Civil Engineering with a direct focus on transportation. While studying as an undergraduate, Trenna gained extensive knowledge and experience working for the Wyoming Department of Transportation Design Squad at the University of Wyoming. Here she was able to assist lead designers with the design and plan production of state highway projects.

Trenna's technical passions are exploring the challenges that engineering can bring, and applying her problem solving skills to reach a final product which may serve our culture and our community. She enjoys finding solutions to the societal and economic difficulties the transportation field can bring to engineering. While studying at the University of Wyoming, Trenna applied her skills to assist the Wind River Indian Reservation in developing a highway safety improvement program on their reservation.

Outside the office, Trenna enjoys spending time with her family and friends, playing sports and being active, and supporting Laramie's local teams. She spent a majority of her undergraduate degree as the Junior Varsity volleyball coach for Laramie High School. This job allowed Trenna to engage in her passions outside of engineering, and gain a widespread amount of communication and collaboration skills she hopes to apply to her future career.

*By Trenna Terrill and Caroline Johnson*