



U.S. Department
of Transportation
Federal Highway
Administration

Northern TTAP 2026 Issue 3



NDSU UPPER GREAT PLAINS
TRANSPORTATION INSTITUTE
NORTHERN TRIBAL TECHNICAL ASSISTANCE PROGRAM

CO-DIRECTOR UPDATE

Each year, it seems like every agency or organization across the country is facing the same thing – Workforce turnover. People leave for numerous reasons, but they shouldn't leave because their employer doesn't invest in their development. Agencies that invest in their employees usually see lower turnover rates, more productive employees, higher moral, and numerous other benefits. Agencies that invest in their employee's development and learning lead to the follow benefits:

- Helps retain quality employees
- Reduces your operational costs
- Leads to innovation
- Keeps them healthy
- Leads to self-efficiency
- Training your future leaders

Investing in your employees shows that you care and they have value at work. NTTAP is here to help with your training needs.

Take care everyone.

If you have a training or a technical assistance request please reach out.

Training link form or contact directly:

- Montana: Matt Ulberg, matthew.ulberg@montana.edu
- Nebraska: Megan Patent Nygren, mpatentnygren2@unl.edu
- North Dakota: Ron Hall, ronald.hall@ndsu.edu
- South Dakota: Greg Vavra, gregory.vavra@sdstate.edu
- Wyoming: Khaled Ksaibati, khaled@uwyo.edu

2026 CALENDAR OF EVENTS

NDLTAP Tire Safety and Selection Training

- Aug 12, 2026 – Northwest Tire, 1001 Weiss Ave, Bismarck, ND

Hot-In-Place Recycling Lunch, Learn and Site Visit

- Aug 18, 2026 – BankNorth Community Room, 100 First Ave SW, LaMoure, ND

NTTAP at United Tribes Technical College Leadership Summit

- September 9 and 10, 2026- Bismarck, ND

Signing on Local Roadways

- Sep 9, 2026 – Stark County Family & Ag Campus, 2680 Empire Road, Ste B, Door C, Dickinson ND
- Sep 10, 2026 – McClusky City Hall, 117 Ave B East, McClusky ND

Bridge Basics: Inspection and Maintenance

- Sep 15, 2026 – Stark County Family & Ag Campus, 2680 Empire Road, Ste B, Door C, Dickinson ND

41st Annual Local Road Conference

- Oct 19-21, 2026 – Denny Sanford Premier Center, Sioux Falls, SD

Please feel free to contact either NTTAP Co-Director, Ron Hall (ronald.hall@ndsu.edu) or Bryon Fuchs (bryon.fuchs@ndsu.edu). Our team of transportation training experts has a wide range of experience and expertise, and we are here to help however we can. We appreciate the opportunity to work with you and look forward to staying connected in the months ahead.

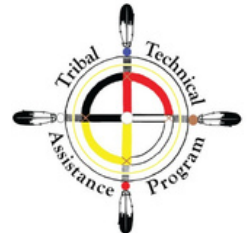
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Summer is here for the next couple months, and we should discuss maintenance and management of your gravel roads. Over the next few months, you will be blading, laying gravel, and mowing ditches as part of your summer maintenance routine. Keep in mind that blading roads on a dry 100-degree day is not beneficial in most cases. Material cut loose during the heat of summer rarely lays down prior to winter and causes increased corrugation and gravel loss. Try blading your roads when moisture is available to be most efficient. If you can't get your entire system when you have moisture, try your best to get the most traveled roadways done while moisture is present.

When graveling in the summer, moisture and compaction are always beneficial. We realize we don't all have water trucks and mother nature doesn't always cooperate. The most important aspect of laying gravel is choosing quality material and always blading it into a windrow and equalizing it prior to laying it down. Simply fly dumping the material is not a good practice. When you fly dump material and leave it, you create segregation in the material as all the heavy material (rocks) are thrown to the outside and the lightweight (sand and clay) are left in the middle. It is important that we windrow all the material together to provide the best result.

My last note on graveling or blading is the requirement of straight cutting edges. This reduces secondary drainage issues along the shoulder and creates a better roadway crown. Straight blades also reduce corrugation and muddy spots along the shoulder.

Mowing in the fall is best achieved with a rotary mower. Sickle mowers often lay the grass over the windrow and is then picked up in the next blading. This adds large clumps to the windrow which take time and effort to dispose of.

Please remember as you prepare for winter, to reduce your windrow and if you do have a windrow left, always place it on the east and south of road to prevent drifting from the prevailing winds in the winter.

Have a great maintenance season and always remember to alert the traveling public if you are performing duties which require a warning sign.

Greg Vavra
NTTAP

ADVISORY SPEED PLAQUES

Advisory speed plaques are used to supplement an advanced warning sign to inform the driver of the safe speed to navigate an approaching condition. The plaques are mostly used on curve/turn signs to tell the driver the safe speed to travel around the curve/turn.

The speed posted on the advisory plaque is determined by doing a speed study using a "ball bank indicator" or "safe curve speed indicator". The one shown in the picture is an older design which is still usable for determining safe speed. It also works well for explanation purposes. There are electronic ball bank indicators available that will produce safe speed, location, beginning and ending points of the curve, and other information that can be printed out. Also, there are cell phone apps available that provide accurate information. Do not confuse the "safe curve speed indicator" with a "slope meter" such as those used in a motorgrader. They are on a different scale and are intended to provide different information. Also, SLOPE METER is a brand name. They make several different types of meters. Make sure you are using a meter the is labeled "Safe Curve Speed Indicator" in the description for this purpose.

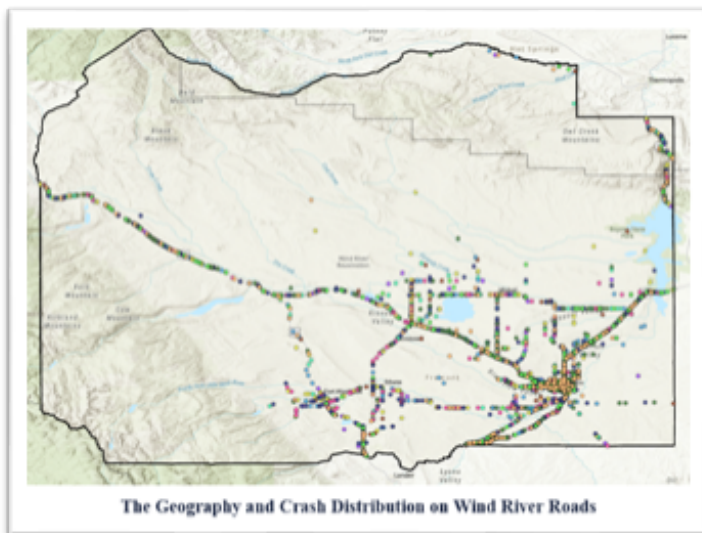
Cliff Reuer
NTTAP



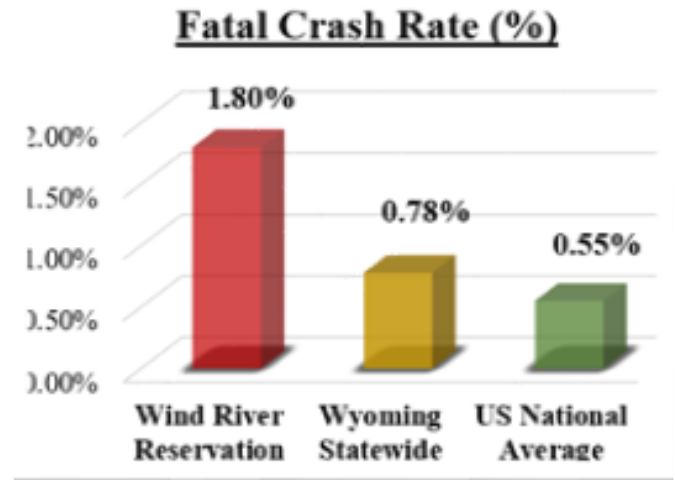
Safe Curve Speed Indicator

Wind River Reservation Updated Transportation Safety Plan 2026

Dr. Raghupathi Kandiboina and Dr. Khaled Ksaibati
NTTAP in conjunction with the Wyoming LTAP Center

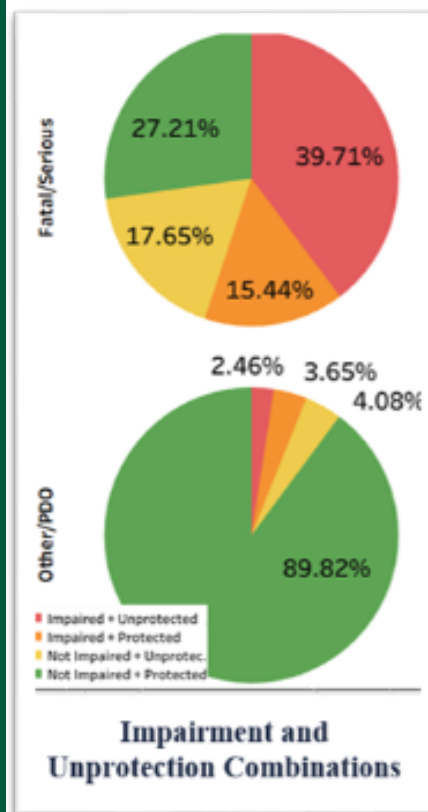


Safety plans are essential tools for any region to identify road safety issues and develop scientific strategies to reduce high-severity crashes. The Wind River Reservation (WRR) is one such region. Home to the Eastern Shoshone and Northern Arapaho Tribes, the WRR covers approximately 2.2 million acres in west-central Wyoming. Its road network includes both state-managed and locally managed roads spread across a large, rural landscape, presenting unique safety challenges that demand a targeted, data-driven response. The NTTAP Center updated the WRR transportation safety plan in 2026, building on a plan developed in 2015 and incorporating the most recent crash data to reflect current conditions. The 2026 plan uses crash data from 2015 to 2021 to identify key safety issues, rank them by severity, and recommend strategies across engineering, enforcement, education, and emergency response. During this period, 3,333 crashes were recorded on the WRR roadway network. Of those, 150 (just 4.5%) were fatal or serious injury crashes, yet they account for more than 84% of the total economic burden, estimated at approximately \$1.32 billion in 2024 dollars using FHWA comprehensive crash cost factors. Severe crash environments in the country.



The scale of the problem becomes clear when comparing fatal crash rates across regions. The WRR fatal crash rate of 1.80% is 3.3 times the US national average of 0.55% and 2.3 times Wyoming's statewide rate of 0.78%.

The estimated fatality rate of 33.4 per 100,000 population exceeds even the elevated American Indian and Alaska Native national baseline of 28.51, placing the WRR among the most severe crash environments in the country.



Behavioral factors are the primary drivers of this severity. Alcohol or drug impairment was present in 77% of fatal crashes, compared to only 5 to 6% of property-damage-only crashes. Lack of occupant protection (no seatbelt or helmet) was present in 65% of fatal crashes, a rate 15 percentage points above the US national average. Taken together, about three-fourths of all fatal and serious injury crashes involved at least one of these two factors, making their combination the deadliest pattern on the network.



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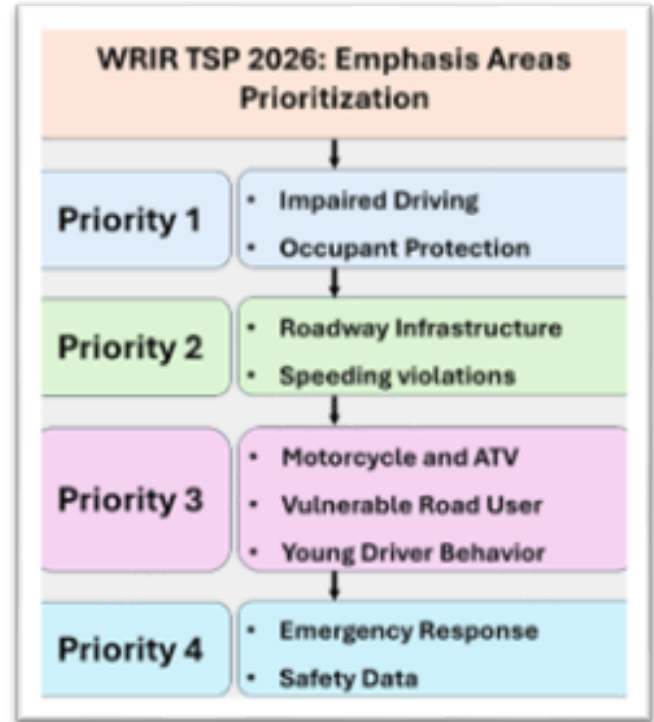
Young drivers add another layer of concern. While not major contributors to fatal outcomes overall, 16% of their crashes involve alcohol or drug impairment despite being below the legal drinking age. Their pattern of reckless driving, speeding, and violations is also notably more elevated on county roads than on state-managed roads. Pedestrian and non-motorized crashes are low in number but consistently fall in the highest severity category. This may reflect the vulnerability of unprotected road users. Limited pedestrian infrastructure and high vehicle speeds are likely contributing factors.

For safety engineers and WYDOT partners, roadway geometry deserves particular attention. Crashes on curved segments show a fatal and serious injury rate of 16.4% , more than twice the rate on straight segments (7.2%) and more than four times the rate at intersections (3.7%). Locations that combine horizontal curvature, non-level grade, and higher vehicle speeds are the highest-risk environments on the reservation. The plan recommends prioritizing curve treatments, delineation upgrades, high-friction surface treatments, and speed feedback signs on these corridors.

Beyond physical infrastructure, two non-engineering challenges require sustained focus. Emergency response times remain a concern, with median EMS response times for fatal crashes of approximately 15 minutes, hospital transport times around 31 minutes, and several cases exceeding 60 minutes, figures that have not improved consistently over the study period. Data quality is the second challenge with consistent missing records, data duplications and missing information for low severity crashes; improved crash reporting and record linkage are essential for tracking progress and refining future interventions.

The chart ranks the emphasis areas by their contribution to fatal and serious injury outcomes. Impaired driving and unprotected drivers rank highest, not simply because they are common, but because crashes involving these factors are dramatically more likely to result in death or serious injury.

The plan will be approved by the Wind River Inter-Tribal Council and implemented through the WRR Safety Task Force, a multidisciplinary committee that includes tribal agencies, the Bureau of Indian Affairs, Fremont County Sheriff's Office, Wyoming Indian Schools, Wind River Family and Community Health Care, WYDOT, and the University of Wyoming LTAP. With focused, coordinated effort across all nine emphasis areas, the WRR community has a real opportunity to reduce the human and economic toll of crashes on its roads.



Ongoing Evaluation: The analysis identified horizontal curves as one of the most consequential infrastructure factors in crash severity on the WRR network. A comprehensive curve safety study is currently underway, examining curve geometry, speed conditions, and crash patterns across the reservation to develop targeted engineering countermeasures along with cost benefit analysis of the recommended safety improvement on curves by the "Community Safety Action Plan". Results will be integrated into future updates of the safety plan.

The WRR transportation safety plan demonstrates that even in regions with severe crash problems, the causes are well understood and the interventions are known. A structured safety plan provides the framework to act on them. This work can serve as a model for similar regions across Wyoming, including rural counties, tribal jurisdictions, and other underserved networks. A data-driven plan tailored to local conditions gives any region the foundation to prioritize problems, target resources effectively, and build a credible case for state and federal safety funding. The NTTAP Center has the expertise to support this kind of work.