Simply stated, pavement preservation strategies can save money in maintaining an agency’s highway network. Today, instead of individual projects and pavements, the focus is on sustaining infrastructure through whole-life investments and quantifying risks. Pavement preservation plays a key role in managing pavement systems in these whole-life programs.

“We are in a pavement preservation mode,” said James Gray of the Federal Highway Administration Office of Infrastructure and a leader of the Every Day Counts round four (EDC-4) team on pavement preservation (when, where, and how). “We are not adding substantial new capacity to our road networks. We are trying to preserve what exists.”

For the past two decades, pavement preservation concentrated on doing projects with the “right treatment on the right road at the right time” mantra. This resulted in a substantial body of evidence that these treatments work when properly applied.

Now, many agencies are considering preservation as an essential strategy for managing pavement networks. In doing this, the focus is not on projects and how long a treatment might add to a project’s life. Instead, agencies look at the network, the age and condition of the pavements, and the amount of preservation appropriate to minimize overall costs. They also consider the risk that not doing enough preservation can end up being more costly.

(Continued on page 4)
The National Indian Justice Center is located in Santa Rosa, California. NIJC’s building also houses the administrative offices of the California Indian Museum and Cultural Center, the Intertribal Court of California and the Regional Tribal Justice Center. Construction is currently underway for the California Indian Museum and Cultural Center, which will include a storytelling venue, Native plants garden, California Indian foods, a small Native village, audio-visual displays that highlight California Indian history and the contributions of California Indians, as well as Edward Curtis prints and traveling exhibits. If you are in the area, please come visit and tour the facilities.

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Western TTAP is administered by the NIJC. If you would like to submit an article or graphic (jpg or tiff format) for publication in Tribal Transportation News, please send a text file (PC format) to Barry Litchfield, TTAP Coordinator/Editor, barry@nijc.org, along with a cover email giving us permission to print your article. We appreciate your submissions!

Table of Contents
The Math Proves the Savings in Pavement Preservation Strategies ........................................... 1
TTAP Staff Directory .......................................................... 2
News and Announcements .................................................... 3
Smartphone Apps That Can Improve Safety ....................... 5
Report to Congress Recommends Safety Data Improvements for Tribal Roads.......................... 6
U.S.DOT releases New Automated Driving Systems Guidance............................................. 6
Staying in Your Lane Just Got Easier ................................. 7
Litterbugs Still Foul Roads, Local Waters ....................... 7
Capacity Building In Child Passenger Safety: Become a Proxy............................................. 8
Summer Camps Spark Students’ Interest in Transportation ...................................................... 8
Pathway to Healthy Movement and Travel ...................... 9
Manual on Pedestrian and Bicycle Connections to Transit ...................................................... 9
Research Shows Glulam Timber Bridges May be an Economic Fast and Sustainable Solution for Local Roads.................................................. 10

TRANSPORTATION RESOURCES
Recent Transportation Legislation ....................................... 12
Transportation Events Calendar ......................................... 13
Tribal Transportation Partners Directory ................................ 14
Tribal Transportation Resources ........................................ 16
Tribal Transportation Funding Resources ......................... 29

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If you would like to join our TTAP Mailing List and subscribe to our quarterly publication of Tribal Transportation News, go to www.nijc.org/ttp.html and click on - join our mailing list. You can also call Barry Litchfield at (707) 579-5507 x 224.
Western TTAP is Closing

The Federal Highway Administration (FHWA), Center for Local Aid Support (CLAS) is changing the model for delivery of Tribal Transportation Training and Technical Assistance Program (TTAP). The seven existing TTAP centers serving all tribes will be eliminated and replaced with a single National Tribal Technical Assistance Program which will administer five virtual centers focused on specific subjects, the National Tribal Roads Scholar Program, three Safety Circuit Rider/Injury Prevention programs, NTTC agenda development, and the Build a Better Mouse Trap competition.

The Western TTAP Center is suspending all services at the close of business on September 30, 2017 and is working with the Federal Highway Administration (FHWA) to both ensure a smooth and orderly transition between the Western TTAP Center and the FHWA and to minimize any disruption of support to the tribal communities. FHWA is also undertaking a review to determine those services of greatest need to the tribal community and how best to provide them moving forward. Accordingly, please direct all communications regarding TTAP services, resources and requests to: Victoria Peters and Danielle Mathis-Lee, (720) 963-3522, or CLAS@dot.gov.

To view the NIJC and Tribal Transportation Safety and Planning Program list of current projects go to: http://www.nijc.org/projects.html

It has been our honor to work with all of you and our transportation partners. The National Indian Justice Center will continue to administer its own Tribal Transportation Safety and Planning Program. We look forward to working with you in the future!

Sandi Tripp Leaves Karuk Department of Transportation for FEMA Region 9 Position

For further assistance or coordination with the Karuk Tribe Department of Transportation, beginning August 21, 2017, please contact Misty Rickwalt at 530-627-3016 or by email at mrickwalt@karuk.us.

The Center for Tribal Transportation (CTT)

CTT is an Indian owned and operated non-profit corporation with principle offices in Gilbert, Arizona and will strive to reach all 567 Federally Recognized Tribes.

The CTT website is up and fully active and hope that you find their monthly newsletter and weekly outreaches informational.

To view the newsletter go to http://pub.lucidpress.com/CTTOCTOBERNEWSLETTER/
Agencies have experience with preservation treatments and can tabulate the costs and expected impacts from using them. Each agency also can predict the need for preservation treatments from the age, condition, usage, climate, and other factors unique to sections of the pavement network. The EDC-4 pavement preservation initiative helps agencies pull together the information for their networks and identify strategies that take whole-life costs into consideration.

“‘It’s not about selecting pavement preservation project locations. It’s not about specific materials or treatments,” said Steve Gaj of the FHWA Office of Infrastructure and a leader of the EDC-4 team. “It’s about developing preservation as a whole-life strategy for pavement networks. It’s about getting more out of your investments.”

In EDC-4, 16 States and the U.S. Virgin Islands plan to demonstrate and assess the “when and where” component of pavement preservation. Another 27 States and Federal Lands Highway (FLH) expect to make it a standard practice to manage pavements proactively to preserve highway investments.

Eleven States, Puerto Rico, and the U.S. Virgin Islands plan to demonstrate and assess the “how” component of pavement preservation in EDC-4. Another 30 States and FLH plan to institutionalize the use of quality construction and materials practices to preserve pavements.

State Savings

From 2007 to 2012, the Kentucky Transportation Cabinet embarked on a process of diamond grinding—a treatment that corrects surface imperfections in pavements—for all 536 State-maintained lane miles of concrete pavement. The program reduced the average International Roughness Index (IRI) value—a method used to measure ride quality or comfort—from 112.1 to 74.5 over the 5-year program. The cost of the program was about $100 million, but the comparable cost of non-preservation treatments to achieve the same IRI values would have been in excess of $1 billion.

The North Carolina Department of Transportation (NCDOT) has a long-standing chip seal program and has invested heavily in measuring performance, improving specifications, and training the workforce. Of NCDOT’s 60,000 miles of paved secondary roads, about 44 percent have been treated with a chip seal, a surface treatment that combines layers of asphalt binder and aggregate.

The average cost of a chip seal treatment is $25,000 per lane mile, compared to $100,000 per lane mile for a traditional 1.5-inch mill-and-overlay project. By ensuring proper construction techniques and materials are used on chip seal projects, NCDOT is able to treat significantly more lane miles of paved roadways in a year than it could with a traditional mill-and-pave program.

The Washington State Department of Transportation (WSDOT) has a strategic maintenance policy under which $13 million applied to 3,500 lane miles between 2009 and 2015 resulted in $15 million in annual savings by delaying major resurfacing projects. In 2014, WSDOT implemented a policy that requires at least one maintenance treatment before a capital rehabilitation or resurfacing project can be programmed.

WSDOT found that when a chip seal is applied at the right time, the cost is 20 percent of the cost of asphalt resurfacing and 30 to 40 percent of the life-cycle cost of asphalt resurfacing. Because of that, WSDOT applied 1,500 lane miles of chip seal conversion between 2010 and 2015. The agency plans to convert at least 1,500 lane miles more over the next 10 years.

WSDOT estimates that applying preservation strategies to its network will save the agency $80 million a year through 2025. That comes from an estimated difference between $324 million as an average annual network cost baseline and a $244 million average annual network cost with preservation strategies applied.

Learn More

For an overview of the innovation and how States are using it, watch the EDC-4 summit sessions on pavement preservation: when and where and pavement preservation: how. To view the session go to: https://www.youtube.com/watch?amp=&index=8&list=PL5_sm9g9d4T3-OIJt3q4ZW8Hzcwjl6uR&utm_content=&utm_medium=email&utm_source=govdelivery&v=WcfH4aoWLLQ

For information and technical assistance on the when and where component of pavement preservation, contact Thomas Van or Steve Gaj of the FHWA Office of Infrastructure. See the FHWA Asset Management Web page for resources.

For information and technical assistance on the how component of pavement preservation, contact James Gray of the FHWA Office of Infrastructure. Visit the FHWA Pavement Preservation Web page for resources.

This article is from the Innovator Newsletter, September / October 2017, Vol. 11, Issue 62. Reprinted with the permission of the U.S.DOT-FHWA.
Smartphone Apps That Can Improve Safety

Amy I. Terry, Marketing, Outreach and Publications Manager

Smartphone apps are not just about playing games. They can now increase safety and efficiency in the workplace. It’s important to get employees engaged about safety. Use of technology, especially smartphone apps, can play a big role in employee engagement. Once they are engaged, they participate in a meaningful way and take ownership of their personal safety, as well as the safety of others at the company. When smartphones are properly utilized, workplace safety will improve for the better. Below are a list of smartphone apps that are worth evaluating to see how they can benefit your organization. They can be found at app stores for applicable devices.

**AccuWeather**
The AccuWeather app works not only as a general forecasting tool, but also as a severe weather advisory. It puts alerts on your home screen automatically if an alert is issued in your area.

**American Red Cross**
The American Red Cross provides free apps specifically geared towards certain severe weather events such as tornadoes, floods, wildfires and earthquake. In addition, they have apps for general first aid, pet first aid and blood donation.

**Tornado by American Red Cross**
Get your family and home ready for a tornado. The American Red Cross tornado app is the complete solution you need to understand and prepare for a tornado and all that comes with it.

**Flood by American Red Cross**
The Flood app helps you understand and prepare for flooding. With interactive quizzes and simple step-by-step advice it’s never been easier to be ready.

**Emergency Alerts & Notifications**
Keep your family safe in severe weather, man-made natural hazards with this app. Monitor conditions in your area and prepare your family and your home.

**First Aid by American Red Cross**
Accidents happen. The official American Red Cross First Aid app puts expert advice for everyday emergencies in your hand. With videos, interactive quizzes and simple step-by-step advice, it’s never been easier to know first aid.

**ATSSA Work Zone Safety**
ATSSA’s Work Zone Safety app can help you to quickly determine both minimum device spacing and minimum number of devices needed for merging, shifting, shoulder, or flagger operations. It can customize your results to incorporate local standards.

**EPA AirNow**
Provides real-time air quality information that people can use to protect their health. The app allows the user to get location specific reports on current air quality and air quality forecasts for both ozone and fine particle pollution.

**EPA UV Index**
The Ultraviolet (UV) Index predicts the ultraviolet radiation levels on a 1-11+ scale. The UV Index provides a daily forecast of the expected intensity of UV radiation from the sun.

**NIOSH Ladder Safety**
This app uses visual and audio signals to make it easier for workers using extension ladders to check the angle the ladder is positioned, as well as access useful tips for using extension ladders safely.

**OSHA Heat Safety Tool**
When you are working in the heat, safety comes first. With the OSHA Heat Safety Tool, you have vital safety information available whenever and wherever you need it – right on your mobile phone. The App allows workers and supervisors to calculate the heat index for their worksite and displays a risk level to outdoor workers.

**Waze**
Waze is the world’s largest community based traffic and navigation app. Join other drivers in your area who share real time traffic and road info, saving everyone time and gas money on their daily commute.

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Reprinted with permission from T2, Kentucky Transportation Center. To visit the website go to: [http://www.kytr2.com](http://www.kytr2.com)
Report to Congress Recommends Safety Data Improvements for Tribal Roads

By: Adam Larsen, Office of Tribal Transportation

The safety data available for Tribal roadways is often low quality, making it difficult to fully understand the transportation safety problem in Tribal areas and develop appropriate countermeasures. With improved information, better tailored programs and projects can help to reduce transportation incidents that result in fatalities and serious injuries. On May 24, 2017, FHWA published a report to Congress titled Tribal Governments and Transportation Safety Data. To view the report go to: https://flh.fhwa.dot.gov/programs/ttp/safety/documents/2016-tribal-governments-safety-data.pdf

The report contains several recommendations to help improve the quality and availability of safety data in Tribal areas. Already FHWA and NHTSA have coordinated on changes to the Traffic Records Assessment Manual that reflect the need for States to involve Tribal data when assessments are being conducted. In addition, the Tribal Transportation Program Safety Fund will now encourage Tribal governments to conduct crash data self-assessments to evaluate the benefits of improved crash data collection, sharing, and use. Guidelines for conducting such an assessment can be found in National Cooperative Highway Research Project Report 788. The Tribal Transportation Safety Management Steering Committee plans to serve as a national-level traffic records coordinating committee.

This report to Congress is the first in a series of two required by the Fixing America’s Surface Transportation (FAST) Act. The second report will provide a list of options for improving transportation safety in Tribal areas. This second report will be based on a National Strategic Highway Safety Plan for Tribal Areas that is under development by the Tribal Transportation Safety Management Steering Committee. This national safety plan will be based on an analysis of data in Tribal areas from the Fatality Analysis and Reporting System.

To learn more about the committee’s activities, please visit: TribalSafety.org, or contact Adam Larsen at Adam.Larsen@dot.gov.

U.S. DOT Releases New Automated Driving Systems Guidance

Transportation Secretary Elaine L. Chao Announces Vision for Automated Vehicle Technology, Emphasizes Safety Benefits and Consumer Education Focus


“The new Guidance supports further development of this important new technology, which has the potential to change the way we travel and how we deliver goods and services,” said U.S. Transportation Secretary Elaine L. Chao. “The safe deployment of automated vehicle technologies means we can look forward to a future with fewer traffic fatalities and increased mobility for all Americans.”

A Vision for Safety 2.0 calls for industry, state and local governments, safety and mobility advocates and the public to lay the path for the deployment of automated vehicles and technologies.

“In addition to safety, ADS technology offers important social benefits by improving access to transportation, independence and quality of life for those who cannot drive because of illness, advanced age or disability,” continued Secretary Chao.

Vision for Safety 2.0 builds on the previous policy and incorporates feedback received through public comments and Congressional hearings. 2.0 paves the way for the safe deployment of advanced driver assistance technologies by providing voluntary guidance that encourages best practices and prioritizes safety. The document also provides technical assistance to States and best practices for policymakers.

Specifically, the new Voluntary Guidance:

- Focuses on SAE International Levels of Automation 3-5 – Automated Driving Systems (ADSs) – Conditional, High, and Full Automation;
- Clarifies the guidance process and that entities do not need to wait to test or deploy their ADSs;
- Revises unnecessary design elements from the safety self-assessment;
- Aligns Federal Guidance with the latest developments and industry terminology;
- Clarifies Federal and State roles going forward.

As automated technologies advance, so will the Department’s guidance. It is intended to be flexible and to evolve as technology does. In fact, DOT and NHTSA are already planning for 3.0. A Vision for Safety is the newest version replacing previous guidance and offers a more flexible approach to advancing the innovation of automated vehicle safety technologies.

The Guidance and more information on automated vehicles can be found at: https://www.nhtsa.gov/technology-innovation/automated-vehicles
Staying in Your Lane Just Got Easier
Clean Renewable Energy Bonds Program 2017 Annual Report

Wider, Brighter, Longer-Lasting Road Striping To Help Drivers Today, in Future

Caltrans’ new, 6-inch-wide, highly reflective road striping was introduced on Interstate 80 through Sacramento as part of a statewide effort to restripe the 50,000-plus lane miles of state highway system in the next decade.

Motorists in many areas will notice the difference that the higher-profile striping makes on their driving experience. The new road demarcation lines, which consist of tape or thermal plastic embedded with glass beads, are replacing the longtime standard 4-inch-wide stripes.

Also disappearing, as the new striping is laid, are the raised, non-reflective pavement markers known as Botts Dots, named after the Caltrans scientist who invented them in 1953. With the advent of the new striping, the ubiquitous little bumps have outlived their usefulness as lane separators.

The wider, brighter striping debuted as part of the “Across the Top” I-80 project that made various improvements across a 10-mile section of heavily traveled interstate through the capital city. In the next few years, all of the state’s 27,000 lane miles that make up the freight corridors — Interstates 5, 10, 15 and 80 — will be restriped. It is expected that all of state highway system will be restriped within a decade, funded in part by revenues from the Road Repair and Accountability Act of 2017 (Senate Bill 1).

Both the thermoplastic material and tape used in striping contain tiny glass beads that enhance reflectivity, particularly when illuminated by vehicle headlamps or in rainy conditions. The materials have proven very durable, and is expected to retain a minimum level of reflectivity despite constant heavy wear.

The new striping, with its wider and brighter profile, is expected to enhance safety for older drivers and truckers, and in challenging conditions such as rain.

It also will be a better roadway guide for autonomous vehicles. Caltrans has consulted with auto manufacturer Tesla and Google, two major players in the autonomous vehicle industry, about the striping changeover.

Not all parts of the state will see the new striping material. It will not be applied on roadways above 3,000 feet in elevation where snow removal equipment is used. The shovels that scrape snow and ice off the roadway also would remove the thermoplastic striping, so Maintenance Division crews will repaint those lines when damage occurs.


Litterbugs Still Foul Roads, Local Waters
Ana Serrano, Caltrans Senior Stormwater Engineer

Despite Awareness Campaigns, Many Still Tossing Out Trash, Survey Finds

Californians know they shouldn’t trash their roadways, but many still admit doing it despite efforts by Caltrans and other groups to educate the public about how roadside garbage pollutes area waters.

As part of the “Protect Every Drop” campaign, more than 300 California drivers were surveyed in June on their highway and water pollution awareness, attitudes and behaviors. While 84 percent of those surveyed said they know there is a connection between highway pollution and water quality, only 53 percent said they never litter on highways, and just 43 percent said they never pour automotive fluids in the trash or on the ground.

Caltrans, the State Water Resources Control Board and the California Stormwater Quality Association are steering the Protect Every Drop campaign’s public relations, advertising and community outreach programs, urging Californians to:

- properly dispose of trash, recyclables and pet waste;
- cover truckloads to keep debris from flying out;
- maintain vehicles and tires to reduce pollution; and
- properly dispose of cigarette butts.

Despite awareness campaigns, Caltrans still fights an uphill battle against roadside trash. Caltrans spent more than $67 million in 2016 keep garbage from reaching storm drains and waterways.

(Continued on page 32)
Motor vehicle crashes are an epidemic in Indian County. American Indians/Alaska Natives die in motor vehicle crashes at almost twice the rate of any other racial group in the U.S. Furthermore, Native American children are also at an increased risk for death and injury due to low child safety seat use rates. It is estimated AI/AN infants have 8 times the rate of motor vehicle related deaths than non-Hispanic whites (2005, Pukkaa et al.). Measures taken by tribes to prevent motor vehicle related deaths in their communities include best practices in child passenger safety. Passage of new laws pertaining to use of child safety seats, providing caregivers education on the proper use of safety seats, certifying local child passenger safety (CPS) technicians and conducting community outreach events are just a few of the activities. However, tribes can and must do more to build their capacity in delivering and sustaining a CPS program. One way to increase capacity is to identify, certify, and utilize a CPS Technician Proxy.

In order to maintain CPS technician certification, a technician must complete 6 Continuing Education Credits and have an instructor OR a technician proxy sign off on 5 specific and separate car seat installations. These requirements must be met every 2 years in order to maintain CPS technician certification. A barrier in keeping CPS technicians certified in tribal communities is the lack of instructors and proxies in rural areas – areas that are home to many tribal communities. Without available instructors or proxies in tribal communities, CPS technicians cannot get all of the seat sign offs required for recertification. Thus, certifications lapse, and tribes are set back pragmatically and financially.

At face value, it would appear that Indian Country needs more instructors. While this observation may be true, Indian Country would also benefit from technician proxies. Proxies can sign off on CPS installations and provide feedback to technicians on how to improve their communication and installation skills. Instructors do the same duties; however, maintaining instructor certification is more rigorous and expensive. Instructors must teach a minimum of 20 hours per certification cycle and pay a larger fee on a regular basis in addition to their seat sign offs and CEUs to recertify. Additionally, many CPS technicians who would be comfortable being a proxy, would not be comfortable being an instructor.

If you are interested in becoming a CPS Technician proxy, you must:

1. Have been a CPS technician for at least 6 months.
2. Complete the online application through the Safe Kids website.
3. Pay a one-time $15 fee.

The Technician Proxy status does not expire, as long as they maintain their CPS Certification. Technicians who fail to recertify and wish to become Technician Proxies again are required to certify as Technicians then complete the Technician Proxy application process. For more information on this process and the benefits of being a CPS Technician Proxy, visit: http://cert.safekids.org/resources-faqs/faqs/technician-proxy#FAQIC3.

### Summer Camps Spark Students' Interest in Transportation

By CTS Senior Editor Christine Anderson

Hands-on lessons, field trips, and other activities introduced a diverse group of elementary and middle school students to transportation topics in programs held throughout the summer.

In June, the Roadway Safety Institute (RSI) participated in the White Earth Indian Reservation Summer Academy of Math and Science for the third consecutive year. The two-week day camp teaches students in grades 4 to 8 about math, science, and engineering using American Indian culture and interactive lessons. It is offered in partnership by the White Earth Nation and the University of Minnesota Extension.

This year’s RSI session included a lesson co-taught by Tom Nixon, Minnesota Toward Zero Deaths East Central and West Central regional coordinator, focused on safety and distraction. Nixon explained that since most of the students are often pedestrians and bicyclists, it was important to discuss with them how to be safe and visible. The students also spent time wearing "concussion goggles," which helped underscore the need for helmet use. "The students were engaged and seemed to enjoy the lesson,” Nixon said. Another lesson focused on how plants used in roadside vegetation can improve the environment, help pollinators, and control snow.

In July, the Roadway Safety Institute sponsored a safety-themed day as part of the National Summer Transportation Institute (NSTI), during which students took part in a demonstration with the Minnesota State Patrol, toured the Minnesota Department of Transportation (MnDOT) Regional Traffic Management Center, learned about crash analysis, and “drove” a plow in MnDOT’s snowplow simulator.

During its two-week run on the University of Minnesota campus, the NSTI day camp featured classroom activities, lab sessions, and field trips around the Twin Cities for 31 middle-school students. NSTI is part of a national program designed to attract a diverse range of students to education and career opportunities in transportation. The camp was sponsored by the Center for Transportation Studies with funding from the Federal Highway Administration administered by MnDOT.

Pathway to Healthy Movement and Travel
By Scott Forsythe, Caltrans Division of Transportation Planning

In the near future, Californians around the state can expect it to be easier and safer to walk and bike.

This May, Caltrans released its first statewide bicycle and pedestrian plan Toward an Active California, which identifies how Caltrans will meet its ambitious goal to double walking and triple bicycling in the state between 2010 and 2020.

Including such a high-priority active transportation goal in the plan is significant. It emphasizes the importance of walking and bicycling to meet multiple statewide objectives and sets an expectation that walking and bicycling be considered Department-wide in performance management, sustainability and innovation. The plan identifies policies and actions that Caltrans and its partners will take to achieve this goal and improve the safety and comfort of pedestrians and bicyclists throughout the state, making walking and biking an appealing option for many everyday trips.

Toward an Active California is the culmination of a 16-month process led by the Office of Multimodal System Planning. This statewide policy plan was guided by an advisory group of 50 subject matter experts from Caltrans headquarters divisions and districts, state and federal agencies, regional and local agency partners, active transportation advocacy groups, and included an extensive statewide public engagement effort.

At the core of the plan are four objectives: safety, mobility, preservation and social equity. These objectives are supported by a corresponding set of 60 actions that identify the appropriate Caltrans function or partner state agency to lead with its implementation. Also identified in the plan are performance measures and examples of active transportation best practices being used in California and nationally.

Toward an Active California complements local and regional active transportation plans being developed across the state, supporting agencies as they undertake their own efforts to improve the walking and bicycling environment in California. While Caltrans has the greatest control over state transportation facilities, it exerts considerable influence on bicycling and walking facilities on local roads through funding programs, design, and design guidance. Only through partnerships, coordination, and funding can the state achieve the By Scott Forgoals set in the California Transportation Plan 2040 and the Caltrans Strategic Management Plan.

You can read the plan at www.cabikepedplan.org. Reprinted from Caltrans, CT News, 2017, Issue III.

Manual on Pedestrian and Bicycle Connections to Transit

The Federal Transit Administration (FTA) recently published a "Manual on Pedestrian and Bicycle Connections to Transit." The publication provides best practices to help transportation professionals improve pedestrian and bicycle safety and access to transit, including information on evaluating, planning for, and implementing improvements to pedestrian and bicycle access to transit. To read the manual go to: https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/64496/ftareportno0111.pdf
Research Shows Glulam Timber Bridges May be an Economical, Fast, and Sustainable Solution for Local Roads

U.S.DOT-UTC Spotlight newsletter August 2017

With thousands of bridges structurally deficient or functionally obsolete across the nation, owners need replacement options that are affordable, require minimal skilled labor to construct, especially in rural areas, and are sustainable. Glued laminated timber, or glulam timber, bridges provide an answer for local roads, research at South Dakota State University (SDSU) shows. SDSU is a member of the Region 8 Mountain Plains Consortium led by North Dakota State University. “Timber has been used as a building material for hundreds of years,” noted Mostafa Tazarv, SDSU assistant professor of civil and environmental engineering and one of the principal investigators for the project. There are approximately 25,000 timber bridges in the United States. However, data on the structural and long-term performance of timber bridges, especially those built with glulam, are scarce.

What is the benefit? The study identified several advantages of glulam timber bridges over concrete and steel bridges:
- they are sustainable and environmentally friendly;
- economical with superstructure costing up to 50% less than similarly sized concrete bridges;
- lightweight, easy to transport, and installable in a day, making them excellent candidates for accelerated bridge construction (ABC);
- relatively easy to install, minimizing requirements for skilled labor or special equipment;
- naturally resistant to deicing agents; and
- can be constructed in almost any weather condition.

Two options tested
Tazarv, graduate research assistant Zachary Carnahan, and Nadim Wehbe, professor of civil and environmental engineering, studied the performance and feasibility of two primary forms of glulam timber bridges as alternatives to steel and concrete bridges.

“Most DOTs, including the South Dakota DOT, don’t usually use timber bridges, most likely, because of a lack of performance data and the misconception that wood is not a durable material,” Tazarv said. “However, we found five glulam bridges in Minnesota that have survived for 60 years and are still in good condition. Our study is the first system testing to confirm that glulam bridges are also structurally viable.” The study was funded by the South Dakota Department of Transportation and the Mountain-Plains Consortium University Transportation Center.

Modern glulam construction material is pound-for-pound stronger than steel according to the Engineered Wood Association (formerly the APA). The SDSU research indicates that bridges constructed with glulam timber may be an option for replacing bridges on local roads. The Federal Highway Ad-

ministration estimated that 25% of the nation’s bridges need rehabilitation, repair, or total replacement. Of South Dakota’s 5,870 bridges, 20% (1,208) are structurally deficient and 4% (237) are functionally obsolete. About 70% of South Dakota’s bridges are owned by local governments, many of which face funding shortages and limited access to skilled labor.
A girder bridge consists of transverse glulam deck panels supported on longitudinal glulam girders (Fig. 1) and is usually used for spans of up to 80 ft. The second bridge type, a slab bridge, consists of longitudinal glulam deck panels connected together by transverse glulam stiffeners (Fig. 2) and can be used for shorter spans of up to 30 ft. The system performance of both bridge types was experimentally investigated for the first time in this study.

Full-scale glulam timber bridges, one of each type, were constructed and tested for structural performance. The girder bridge (Fig. 3) was 50-ft long and 9.5-ft wide. The slab bridge (Fig. 4) was 16.5-ft long and 9.5-ft wide. The width of the test bridges, which was approximately equal to the width of one lane of a typical road, was limited due to the test setup. The girder bridge test specimen (Fig. 3) was constructed with 3 girders each 30.25 in. deep, by 8.75 in. wide, by 50 ft. long; and 13 deck panels each 5.5 in. deep, by 110.75 in. wide, by 48 in. long. The deck panels were connected to the girders by a strong epoxy. The slab bridge test specimen (Fig. 4) was constructed using two longitudinal glulam deck panels each 10.75 in. deep, 48 in. wide, and 16.5 ft. long. Three glulam beams were used underneath the bridge deck as stiffeners. Each stiffener was 5.5 in. deep, by 5 in. wide, by 7.5 ft. long. The deck panels were connected to the stiffeners using four lag bolts.

Both bridges were first tested for 75 years of service loads (based on a fully loaded truck) then loaded to failure at the J. Lohr Structures Laboratory at SDSU. Both bridges showed satisfactory structural performance and minimal damage under the service loads. The test results confirmed that current timber bridge design specifications by American Association of State Highway and Transportation Officials (AASHTO LRFD, 2014) are adequate. Furthermore, the two types of glulam timber bridges were found to be viable solutions for local roads with low traffic volume."

For more information, including videos of the bridge testing at the SDSU Structures laboratory, visit the project website at: https://sites.google.com/people.unr.edu/mostafa-tazarv/research/alternative-to-dt-bridges.

**About This Project**

The Mountain-Plains Consortium University Transportation Center and the South Dakota Department of Transportation sponsored this research, which was performed by South Dakota State University graduate student Zachary Carnahan with co-PIs Mostafa Tazarv and Nadim Wehbe. Additional information may be obtained from: mostafa.tazarv@sdstate.edu, nadim.wehbe@sdstate.edu, or zachary.carnahan@jacks.sdstate.edu.

The Mountain-Plains Consortium, administered by the Upper Great Plains Transportation Institute at North Dakota State University, includes consortium members Colorado State University, South Dakota State University, University of Colorado Denver, University Denver, University of Utah, University of Wyoming, and Utah State University. For information on the consortium’s work, visit www.mountain-

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For more information, including videos of the bridge testing at the SDSU Structures laboratory, visit the project website at: [https://sites.google.com/people.unr.edu/mostafa-tazarv/research/alternative-to-dt-bridges](https://sites.google.com/people.unr.edu/mostafa-tazarv/research/alternative-to-dt-bridges).

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Figure 4. Glulam slab bridge test specimen.

(credit: Zach Carnahan)

Both girder and slab glulam timber bridges are structurally viable and cost effective choices for local roads and deserve consideration by local governments striving to make the best investments of public funds,” Tazarv said.
This information is provided expressly for educational purposes. The Western TTAP hopes to inform and educate tribal communities about legislation that may impact California and Nevada tribal communities and their tribal transportation programs. The following legislation was current at the time of publication. Legislation may change or be repealed. For further information, please check the status of the legislation at the respective website sources noted below.

Due to the overwhelming number of pending transportation related bills in the California, Nevada, and Federal Legislatures we have created a downloadable file on the NIJC Website that lists each bill, the sponsor, the status, and a brief summary. To view and download the file go to: http://www.nijc.org/ttap_legislation.html

STATE LEGISLATION

NEVADA LEGISLATION
(For more information, go to http://www.leg.state.nv.us/Session/79th (2017) Session: All Bills that Became Law
To visit the website go to: https://www.leg.state.nv.us/Session/79th2017/Reports/AllBillsThatBecameLaw.cfm


FEDERAL LEGISLATION
(For more information go to: https://www.congress.gov/)

Browse Public Laws 114th Congress (2015-2016) and prior congressional sessions go to: https://www.congress.gov/public-laws/114th-congress


ANNOUNCEMENTS

Senate Bill 1116: Indian Economic Enhancement Act 2017

New Bill Aims to Stimulate Economic Development in Indian Country

On May 11, 2017 a new bill was introduced by the Senate Committee on Indian Affairs (SCIA) aims to stimulate growth in Indian Country by improving access to capital, encouraging investment in tribal communities, and increasing opportunities for Native businesses. The Indian Economic Enhancement Act of 2017 (S.1116) would help define capital needs for Indian Country and address some of the persistent challenges to economic growth. The bill is sponsored by SCIA Chairman John Hoeven (R-ND). NAFOA urges tribal governments to support the efforts of the Committee by contacting your Senators to co-sponsor the bill.

On May 17, 2017 the bill was sent to the Senate Committee on Indian Affairs.

To view the Senate Bill go to: https://www.congress.gov/bill/115th-congress/senate-bill/1116?q=%7B%22search%22%3A%5B%22s1116%22%5D%7D&sr=1

President Proposes $2.5 Billion Budget for Indian Affairs in Fiscal Year 2018 Budget

Invests in Education, Resource Development, Construction and Infrastructure

President Donald Trump proposed a $2.5 billion Fiscal Year 2018 (FY18) budget for Indian Affairs, which includes the Bureau of Indian Affairs (BIA) and the Bureau of Indian Education (BIE). The President’s budget reaffirms his support of tribal sovereignty and self-determination across Indian Country by focusing on core funding and services to support ongoing tribal government operations, including an emphasis on infrastructure repair and improvements.
Please visit the National Indian Justice Center web site to view more upcoming transportation events. go to: http://www.nijc.org/ttap_calendar.html

OCTOBER 2017

October 9-11
American Public Transportation Association's (APTA) Annual Meeting, EXPO
Georgia World Congress Center
Atlanta, GA
For more information go to:
ID=10638&sortMenu=102000

October 20-November 1
3rd National RTAP Technical Assistance Conference
Hilton Omaha
Omaha, NB
For more information go to:
http://nationalrtap.org/conference2017

NOVEMBER 2017

November 4-8

November 13-17

Traffic Incident Response Week

DECEMBER 2017

December 7-8
2017 National Accelerated Bridge Construction Conference
Hyatt Regency Hotel
Miami, FL
For more information go to:
https://abc-utc.fiu.edu/conference/

JANUARY 2018

January 7-11
Transportation Research Board (TRB) 97th Annual Meeting
Walter E. Washington Convention Center
Washington, D.C.
For more information go to:
http://www.trb.org/AnnualMeeting/AnnualMeeting.aspx

January 26-30
ATSSA 48th Annual Convention and Traffic Expo
Henry B. Gonzalez Convention Center
San Antonio, TX
For more information go to:
http://expo.atssa.com/about.html
TRIBAL TRANSPORTATION PARTNERS DIRECTORY

FEDERAL

Federal Highway Administration
United States Department of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590
http://www.fhwa.dot.gov/index.html

Federal Highway Administration (FHWA) is charged with the broad responsibility of ensuring that America’s roads and highways continue to be the safest and most technologically up-to-date. Although State, local, and tribal governments own most of the Nation’s highways, FHWA provides financial and technical support to them for constructing, improving, and preserving America’s highway system.

Office of Federal Lands Highway
Federal Highway Administration
1200 New Jersey Avenue, SE
Washington, DC 20590
(202) 366-9494
http://flh.fhwa.dot.gov/

The Office of Federal Lands Highway (FLH) provides program stewardship and transportation engineering services for planning, design, construction, and rehabilitation of the highways and bridges that provide access to and through federally owned lands.

The primary purpose of the FLHP is to provide financial resources and technical assistance for a coordinated program of public roads that service the transportation needs of Federal and Indian lands.

Central Federal Lands Highway Division
Federal Highway Administration
12300 West Dakota Ave.
Lakewood, CO 80228
(720) 963-3500
E-mail: cfl.fhwa@dot.gov

The Central Federal Lands Highway Division (CFLHD) operates as part of the Federal Lands Highway Program, serving the needs of all central states. CFLHD actively administers the surveying, designing and constructing of forest highway system roads, parkways and park roads, Indian reservation roads, defense access roads, and other Federal lands roads. CFLHD also provides training, technology, deployment, engineering services, and products to other customers.

Federal Transit Administration
1200 New Jersey Avenue, SE
4th & 5th Floors East Building
Washington, DC 20590
http://www.fta.dot.gov/

Federal Transit Administration (FTA) is one of 10 modal administrations within the U.S. Department of Transportation. Headed by an Administrator who is appointed by the President of the United States, FTA administers federal funding to support a variety of locally planned, constructed, and operated public transportation systems throughout the U.S., including buses, subways, light rail, commuter rail, streetcars, monorail, passenger ferry boats, inclined railways, and people movers.

FTA Region 9 Offices
Federal Transit Administration
201 Mission Street Suite 1650
San Francisco, CA 94105
(415) 744-3133
http://www.fta.dot.gov/about/region9.html

Rural Transit Assistance Program (RTAP)
The mission is to address the needs of rural, small urban and tribal transit operators across the nation.
Union Station Business Center
Ten G Street NE, Suite 710
Washington, DC 20002
Main: 202-248-5043
Fax: 202-289-6539
http://www.nationalrtap.org/

National Local Technical Assistance Program Association (NLTAPA)
A not-for-profit organization representing and serving the 58 LTAP and TTAP Member-Centers in the United States and Puerto Rico. All staff of Member-Centers are entitled to Association services and opportunities to serve. www.nltapa.org
TRIBAL TRANSPORTATION PARTNERS DIRECTORY

Bureau of Indian Affairs
There are millions of acres of land held in trust by the United States for American Indians, Indian tribes, and Alaska Natives. There are 566 federal recognized tribal governments in the United States. Developing forestlands, leasing assets on these lands, directing agricultural programs, protecting water and land rights, developing and maintaining infrastructure and economic development are all part of the agency's responsibility. In addition, the Bureau of Indian Affairs provides education services to approximately 48,000 Indian students.

Bureau of Indian Affairs
1849 C Street, N.W.
Washington DC 20240
(202) 208-7163
www.bia.gov

Pacific Regional Office
Bureau of Indian Affairs
2800 Cottage Way
Sacramento, CA 95825
(916) 978-6000

Western Regional Office
Bureau of Indian Affairs
400 N. 5th Street, 2 AZ Center, 12th Floor
Phoenix, AZ 85004
(602) 379-6600

CALIFORNIA

California Department of Transportation
Division of Transportation Planning, Native American Liaison Branch
1120 N Street
Sacramento, CA 95814
(916) 653-3175
http://dot.ca.gov/hq/tp/offices/rcp/nalb/

The Native American Liaison Branch was created in 1999 in the Department of Transportation to serve as a liaison between the Department, federal, state, local, and regional transportation agencies to establish and maintain government to government working relationships with Tribal Governments throughout California

California Department of Transportation
Division of Local Assistance
http://www.dot.ca.gov/hq/LocalPrograms/index.htm

California LTAP
California State University, Sacramento
3000 State University Drive East, Napa Hall
Sacramento, CA. 95819
Contact: Michelle Gianini
Phone: (916) 278-6174, E-mail: gianinim@csus.edu
Website: http://www.californialtap.org/

NEVADA

Nevada Department of Transportation
1263 South Stewart Street
Carson City, NV 89712
(775) 888-7000
http://www.nevadadot.com

The Nevada Department of Transportation is responsible for the planning, construction, operation and maintenance of the 5,400 miles of highway and over 1,000 bridges which make up the state highway system.

Inter-Tribal Council of Nevada
680 Greenbrae Dr., Suite 280
Sparks, Nevada 89431
Phone: (775) 355-0600 Fax: (775) 355-0648
http://itcn.org/

Nevada Indian Commission
5366 Snyder Avenue
Carson City, NV 89701
(775) 687-8333 Fax: (775) 687-8330
http://nvculture.org/indiancommission/

Nevada LTAP
TMCC Meadowood Campus
5270 Neil Road, Room 302
Reno, NV 89502
Program Director: Randy Bowling
Phone: (775) 829-9045
E-mail: rb Bowling@tmcc.edu
Program Director: Jim Nichols
Phone: (775) 829-9022
E-mail: jnichols@tmcc.edu
Website: http://www.tmcc.edu/ltap/
TRIBAL TRANSPORTATION RESOURCES

CALIFORNIA

California State Transportation Agency (CalSTA)
A new state agency focused solely on transportation.
To visit the website go to:
http://www.calsta.ca.gov/

California Department of Transportation (Caltrans)
Native American Liaison Branch
http://dot.ca.gov/hq/tpp/offices/ocp/nalb/

California Department of Transportation:
Division of Mass Transportation
http://www.dot.ca.gov/hq/MassTrans/

California Transportation Commission
http://www.catc.ca.gov/

California Bay Delta Authority
http://www.calwater.ca.gov/calfed/Tribal.html

California Environmental Protection Agency
http://www.calepa.ca.gov/

California Rural Transit Assistance Program (RTAP)
California Association for Coordinated Transportation
(CalAct) is under contract to Caltrans to implement RTAP in California.

NEVADA

Nevada Department of Transportation (NDOT)
Local Governmental Liaison
http://www.nevadadot.com/

Southern Nevada Regional Transportation Commission
http://www.rtc southernnevada.com/

Regional Transportation Commission (RTC) of Washoe County, Nevada.
https://www.rtcwashoe.com/

FEDERAL

US DOT Federal Highway Administration (FHWA)
http://www.fhwa.dot.gov/

US DOT Federal Transit Administration (FTA)
http://www.fta.dot.gov/

FTA Region 9 Offices
http://www.fta.dot.gov/about/region9.html

Office of Federal Lands Highway &
Central Federal Lands Highway Division
http://flh.fhwa.dot.gov/

Bureau of Indian Affairs
http://www.bia.gov/

US DOT/FHWA Federal Lands Highway
Coordinated Technology Implementation Program (CTIP)
The Federal Lands Highway Coordinated Technology Implementation Program is a cooperative technology deployment and sharing program between the FHWA Federal Lands Highway office and the Federal land management agencies. It provides a forum for identifying, studying, documenting, and transferring new technology to the transportation community.
For more information go to:
http://www.ctiponline.org/

National Transportation Library (NTL)
Follow link: VDOT One Search
http://ntl.bts.gov/exit/vdot.html

ORGANIZATIONS

California Indian Basketweavers Association
http://www.ciba.org/

California Indian Manpower Consortium, Inc.
http://www.cimcinc.org/

California Indian Museum & Culture Center
http://www.cimcc.org/

National Indian Justice Center
http://www.nijc.org/

Center for Excellence in Rural Safety
Launched a new interactive Web tool called Safe Road Maps. It was developed by CERS researcher Tom Horan and his team at Claremont University. Visit the CERS home page for links to the releases and to Safe Road Maps: www.ruralsafety.umn.edu

Office of Indian Energy and Economic Development
Tribal Energy and Environmental Information Clearinghouse (TEEIC)
The site includes information about energy resource development and associated environmental impacts and mitigation measures; guidance for conducting site-specific environmental assessments and developing monitoring programs; information about applicable federal laws and regulations; and federal and tribal points of contact.
http://teeic.anl.gov/

National Rural Transit Assistance Program (RTAP)
The program operates today under a cooperative agreement between the Federal Transit Administration and the Neponset Valley Transportation Management Association. Our overarching mission is to address the needs of rural, small urban and tribal transit operators across the nation.
http://www.nationalrtap.org/Home.aspx
TRIBAL TRANSPORTATION RESOURCES

TribalGIS.com
A technical forum for (and by) Tribal GIS Professionals across the country.
For more information go to:
www.tribalgis.com

Community Transportation Association of America
Technical Assistance for Rural and Tribal Communities
For more information go to:
http://web1_ctaa.org/webmodules/webarticles/anmviewer.asp?a=49&z=36

National Association of County Engineers
To visit the website go to:
http://www.countyengineers.org/

Northern California APWA Chapter
To visit the website go to:
http://northernca.apwa.net/

ENVIRONMENTAL

US Environmental Protection Agency Region 9
http://www.epa.gov/region09/tribal/index.html

US EPA American Indian Environmental Office
http://www.epa.gov/indian/

US EPA Online Mapping Tool
Interactive web-based mapping tool that provides the public with access and information on Environmental Impact Statements (EIS).
To visit the website go to:
https://www.epa.gov/ejscreen

US DOT FHWA Roadside Vegetation Management
A technical resource for the care of the land and vegetation management.

US DOT FHWA Livability Initiative
This webpage is intended to provide information on the FHWA Livability Initiative as well as provide updates on the HUD/DOT/EPA Partnership for Sustainable Communities.
To view this website go to:
http://www.fhwa.dot.gov/livability/index.cfm

General Climate Change Information
Arnold & Porter Climate Change Litigation Summary Chart
http://www.climatecasechart.com/

SAFETY RESOURCES

Tribal Road Safety Audits: Case Studies
Sponsored by FHWA (Office of Safety and Office of Federal Lands)
Road Safety Audits (RSAs) are an effective tool for proactively improving the future safety performance of a road project during the planning and design stages, and for identifying safety issues in existing transportation facilities.
For additional information and resources on RSA’s go to:
https://safety.fhwa.dot.gov/rsa/resources/casestudiesflh/

Arizona Department of Transportation
By Esther Corbett & Robert Mickelson at the Intertribal Council of Arizona, Inc.
592 Building Tribal Traffic Safety Capacity
And,
592 Tribal Traffic Safety Funding Guide
http://azmemory.azlibrary.gov/cdm/ref/collection/statepubs/id/7181

National Highway Traffic Safety Administration (NHTSA)
Fatality Analysis Reporting System (FARS)
SAFETY RESOURCES (Continued)

FARS Native American Traffic Safety Facts

National Institute for Occupational Safety and Health (NIOSH)
Construction Equipment Visibility
http://www.cdc.gov/niosh/topics/highwayworkzones/BAD/

Interactive Highway Safety Design Model – 2016 Release
Includes a Beta version of crash prediction capabilities for freeway ramps/interchanges (including ramps, C-D roads and ramp terminals based on draft HSM Par C material developed under NCHRP Project 1-45. Available for free downloading at: https://www.fhwa.dot.gov/research/thrc/projects/safety/comprehensive/ihsdm/

Work Zone Law Enforcement
Safe and Effective Use of Law Enforcement in Work Zones
For more information go to http://safety.fhwa.dot.gov/wz/law_enforce/

FHWA Office of Safety

Local and Rural Road Safety Program
The FHWA Local and Rural Safety Program provides national leadership in identifying, developing, and delivering safety programs and products to local and officials and governments to improve highway safety on local and rural roads.
To visit the site go to: http://safety.fhwa.dot.gov/local_rural/

♦ Improving Safety on Rural Local and Tribal Roads — Safety Toolkit
The Safety Toolkit provides a step-by-step process to assist local agency and Tribal practitioners in completing traffic safety analyses, identify safety issues
To view the toolkit go to: http://safety.fhwa.dot.gov/local_rural/training/fhwasa14072/isrlrst.pdf
Site Safety Analysis – User Guide #1
Network Safety Analysis – User Guide #2
http://safety.fhwa.dot.gov/local_rural/training/fhwasa14074/isrltr2.pdf

♦ Safety Circuit Rider Programs-Best Practices Guide
This guide is intended to provide state DOT and LTAP/TTAP centers with an easy-to-use resource for implementing or enhancing a Safety Circuit Rider (SCR) program.

♦ Nighttime Visibility Policy/Guidance
http://safety.fhwa.dot.gov/roadway_dept/night_visib/

♦ Sign Visibility: Training, Technical Guidance, & Research
http://safety.fhwa.dot.gov/roadway_dept/night_visib/sign_visib/

♦ Maintenance of Drainage Features for Safety
A guide for local street and highway maintenance personnel
To view the guide go to: http://safety.fhwa.dot.gov/local_rural/training/fhwasa09024/

♦ Intersection Safety Resources
To visit the web page go to: http://safety.fhwa.dot.gov/intersection/resources/

♦ Work Zone Mobility and Safety Program
Work Zone Training Compendium
The U.S. Federal Highway Administration has released a compendium of information on available work zone training and guides.
To view the training program go to: http://www.ops.fhwa.dot.gov/wz/outreach/wz_training/index.htm

♦ Roundabouts
Roundabouts are circular intersections. Roundabouts reduce traffic conflicts (for example, left turns) that are frequent causes of crashes at traditional intersections. Unlike a traffic circle or a rotary, a roundabout's incoming traffic yields to the circulating traffic
For more information visit the website at: http://safety.fhwa.dot.gov/intersection/roundabouts/

♦ Roundabout Outreach and Education Toolbox
This Toolbox is designed to be a highly useable, online reference that connects transportation professionals with outreach resources from across the country to help them obtain public support for roundabouts.
To utilize the tool box go to: http://safety.fhwa.dot.gov/intersection/roundabouts/toolbox/

♦ Roadway Worker Safety Website
The U.S. Federal Highway Administration’s Office of Operations has launched a new page on its Work Zone Safety website designed to be a central source of data and links to information and technical resources on roadway worker safety.
To visit the website go to: http://www.ops.fhwa.dot.gov/wz/workersafety/index.htm

♦ Training, Tools, Guidance and Countermeasures for Locals
Local and Rural team is continuously looking for new ways to meet the needs of local and rural road owners and operators. Insuring that tools meet the needs of the users and that they have the resources and training they need to effectively use the tools is a critical part of the solution.
To visit the web site go to: http://safety.fhwa.dot.gov/local_rural/training/
TRIBAL TRANSPORTATION RESOURCES

- **Local & Rural Road (LRR) Safety Peer-to-Peer (P2P) Program**
  Open to public highway agencies seeking to adequately address safety problems on their local and rural road network.
  To visit the website go to: http://safety.fhwa.dot.gov/local_rural/training/p2p/

- **Proven Safety Countermeasures**
  New website from the Office of Safety
  To visit the website go to: http://safety.fhwa.dot.gov/provencountermeasures/

- **Resources: Crash Modification Factors in Practice**
  To visit the website go to: http://safety.fhwa.dot.gov/tools/crf/resources/cmfs/index.cfm

- **Roadway Safety Noteworthy Practices Database**
  To visit the website go to: http://rspcb.safety.fhwa.dot.gov/noteworthy/

- **Horizontal Curve Safety**
  A focus on horizontal curves can prove to be a cost effective approach to reducing roadway departure crashes.
  To visit the website go to: http://safety.fhwa.dot.gov/roadway_dept/horicurves/

- **Road Diets: A Proven Safety Countermeasure (Long version) 2016**
  A Road Diet is a roadway reconfiguration that increases safety and livability at a low cost. Implementing Road Diets improves mobility and accessibility for all users, including pedestrians and bicyclists.
  To view the video go to: https://www.youtube.com/watch?v=n3ucpaCigig

- **Unsignalized Intersection Safety Strategies**

- **Pedestrian Safety Guide and Countermeasure Selection System (Pedsafe)**
  An online toolbox that communities can use to improve pedestrian safety in their area.
  To visit the website go to: http://www.pedbikesafe.org/PEDSAFE/index.cfm

- **The National Work Zone Safety Information Clearinghouse**
  The National Work Zone Safety Information Clearinghouse is dedicated to providing the transportation construction industry and the general public with comprehensive information to improve motorist, worker and pedestrian safety in roadway work zones. Now a new international section in six languages.
  For more information go to: http://www.workzonesafety.org/

- **Work Zone Safety and Flagger Tutorial**
  The purpose of this tutorial is to provide the fundamentals of work zone safety and to explain the concepts of flagging in a work zone. It is not intended to replace comprehensive instruction of the topic.
  To view the tutorial go to: https://www.workzonesafety.org/training/work-zone-safety-and-flagging-tutorial/

- **3M Roadway Safety**
  Guidance for Improving Roadway Safety: Understanding Minimum Reflectivity Standards go to:
  http://solutions.3m.com/wps/portal/3M/en_US/NA_roadway/safety/safetyinitiatives/minimumretroreflectivity/

- **Federal Transit Administration**
  Transit Bus Safety Online resources and tools, designed to help rural and small urban transit bus providers develop and strengthen their programs.
  To access the website go to: https://www.transit.dot.gov/regulations-and-guidance/safety/fta-sponsored-training-courses

- **Utah DOT and the Utah Highway Safety Office**
  Zero Fatalities
  To visit the website go to: http://ut.zerofatalities.com/

- **Crash Modifications Clearinghouse (CFM)**
  The CMF Clearinghouse is funded by the U.S. DOT-FHWA and maintained by the University of North Carolina Highway Safety Research Center. A CMF is an estimate of the change in crashes expected after implementation of a countermeasure.
  To visit the website go to: http://www.cmfclearinghouse.org/

- **Impact Teen Driver**
  Impact Teen Drivers was organized for the purpose of providing awareness and education to teenagers, their parents, and community members about all facets of responsible driving, with the goal of reducing the number of injuries and deaths suffered by teen drivers as a result of distracted driving and poor decision making.
  To view the website go to: http://www.impactteendrivers.org/

- **Road Safety Foundation**
  To visit the website go to: http://www.roadsafety.org/about-us/

- **Center For Disease Control (CDC)**
  Native American Road Safety
  To visit the website go to: http://www.cdc.gov/Motorvehiclesafety/native/index.html

- **Distraction.gov**
  The official U.S. Government website for distracted driving.
  To visit the website go to: http://www.distraction.gov/index.html
SAFETY RESOURCES  (Continued)

Safety Edge Resources
New Mexico DOT
To visit the website go to: http://dot.state.nm.us/content/dam/nmdot/LTAP/NMLTAP_Safety_Edge_Resources.pdf

Safe Routes to School Local Policy Guide
An additional effort to bring public health considerations into the development of transportation policies and practices. To view the guide go to: http://www.saferoutespartnership.org/media/file/Local_Policy_Guide_2011.pdf

California Active Transportation Program (ATP) Resource Center
Assists local communities with creating Safe Routes to School (SRTS) programs by providing trainings, technical assistance, and resources to implement safe and successful SRTS strategies throughout California. To visit the website go to: http://www.casaferoutestoschool.org/

Department of Labor-OSHA
OSHA Construction Focus Four Hazards Training materials For more information go to: http://www.osha.gov/dte/outreach/construction/focus_four/index.html

Everyone is a Pedestrian
A one-stop shop website safety tips and resources for local leaders, city planners, parents and others involved in improving pedestrian safety. To visit the website go to: http://www.nhtsa.gov/nhtsa/everyoneisapedestrian/index.html

University of Minnesota Center for Transportation Studies
"Distraction Dodger" Game
Distraction Dodger is an online game designed to help teens and young adults understand the importance of concentrating on driving. To view the game go to: http://www.its.umn.edu/DistractionDodger/

National Highway Traffic Safety Administration (NHTSA)
Emergency Medical Services
To reduce death and disability by providing leadership and coordination to the EMS community in assessing, planning, developing, and promoting comprehensive, evidence-based emergency medical services and 9-1-1 systems. To visit the website go to: http://www.ems.gov/

LTAP/TTAP Safety Toolkit
To visit the website go to: http://www.ltap.org/resources/safety/

Federal Government
Data.gov - Empowering People
Data.gov increases the ability of the public to easily find, download, and use datasets that are generated and held by the Federal Government. To visit the website go to: http://www.data.gov/

High Friction Roads
The Transtec Group is a pavement engineering firm for Surface Enhancements At Horizontal Curves (SEAHC) To visit the website go to: http://www.highfrictionroads.com/

National Highway Traffic Safety Administration (NHTSA)
Native American Data available in FARS
Native American fatalities, Native American fatalities on Tribal reservations, and all fatalities on Tribal reservations from 2007-2015. To visit the website go to: http://www-nrd.nhtsa.dot.gov/departments/nrd-30/ncsa/STSI/USA_WEB_REPORT.HTM

California Department of Public health
WalkSmartCA is part of the It's Up to All of Us public education campaign, which is designed to educate both pedestrians and drivers on what steps they can take to keep our streets safe. To visit the website go to: https://archive.cdph.ca.gov/HealthInfo/injviosaf/Pages/WalkSmartCA.aspx

California Pedestrian Safety (PedSafe) Program
PedSafe aims to create environments where these activities can happen safely by implementing a multi-faceted approach of education, media outreach and messaging, technical assistance, and training and facilitation. To visit the website go to: http://www.pedbikesafe.org/pedsafe/

Centers for Disease Control and Prevention (CDC)
CDC’s WISQARS™ (Web-based Injury Statistics Query and Reporting System) CDC’s WISQARS™ (Web-based Injury Statistics Query and Reporting System)
To visit the website go to: http://www.cdc.gov/injury/wisqars/

National Road Safety Foundation (NRSF)
To Visit the website go to: http://www.nrsf.org/

Animated Traffic Law
Visualizing traffic law
TRIBAL TRANSPORTATION RESOURCES

To visit the website go to:
http://animatedtrafficlaw.org/atlc/

Teens In The Drivers Seat
Texas A&M Transportation Institute
To visit the website go to:
http://www.t-driver.com/

Tribal Transportation Safety
To visit the website go to:
http://www.tribalsafety.org/

California Department of Transportation (Caltrans)
Caltrans has begun the process of creating the State’s first Bicycle and Pedestrian Plan. They are seeking feedback and will be conducting public outreach over the next year. Caltrans has posted a public survey to provide input on their website here: http://goactiveca.org/

National Center for Rural Road Safety
The center was created to identify the most effective current and emerging road safety improvements and deploy them on rural roads.
To visit the center’s website go to:
http://ruralsafetycenter.org/

Indian Health Service (IHS) Injury Prevention Program
To visit the website go to:
https://www.ihs.gov/InjuryPrevention/

National Aging and Disability Transportation Center
To visit the website go to:
http://www.nadtc.org/

University of Minnesota-Road Safety Institute (RSI)
To visit the website go to:
http://www.roadwaysafety.umn.edu/

UC Berkeley-Transportation Injury Mapping System
To visit the website go to:
https://tims.berkeley.edu/

Centers for Disease Control and Prevention (CDC)
Roadway to Safer Tribal Communities. Toolkit
To view the toolkit go to:
https://www.cdc.gov/motorvehiclesafety/native/toolkit.html

Institute of Transportation Engineers (ITE)
Unsignalized Intersection Improvement Guide
To visit the website go to:
http://www.ite.org/uiig/

National Center for Rural Road Safety
Road Safety Audits (RSA) on Tribal Lands: Making Roads Safer An introduction video discussing the relatively high fatality rates on Tribal lands due to road traffic crashes.
To view the video go to:
https://www.youtube.com/watch?v=Cis6wRSHkKA

CONSULTATION

BIA-Tribal Leaders Directory
Provides contact information for each federally recognized tribe. The electronic, map based, interactive directory also provides information about each BIA region and agency that provides services to a specific tribe. Additionally, the directory provides contact information for Indian Affairs leadership.
For more information go to:
http://www.indianaffairs.gov/WhoWeAre/BIA/OIS/TribalGovernmentServices/TribalDirectory/index.htm

California Office of the Tribal Advisor
Responsible for overseeing and implementing effective government-to-government consultation between the Governor's Administration and California Tribes on policies that affect California tribal communities.
To visit the website go to:
http://tribalgovtaffairs.ca.gov

TRB Committee on Native American Transportation Issues
TRB has provided links to examples of federal, state and non-governmental organization online resources related to tribal consultation policies and guidelines.
To view the resources go to:
http://sites.google.com/site/trbcommitteeabe80/WELCOME/links

FHWA-Transportation Planning Capacity Building (TPCB) Tribal Planning Resources
Delivers products and services that provide information, training, and technical assistance to the transportation professionals responsible for planning for the capital, operating and maintenance needs on Tribal lands.
To visit the website go to:
https://www.planning.dot.gov/focus_tribal.asp

U.S. Department of Housing and Urban Development (HUD)
Tribal Directory Assessment Tool (TDAT) v2.0
TDAT was designed to help users quickly identify tribes and provide appropriate tribal contact information to assist with initiating Section 106 consultation.
To visit the website go to:
https://www.huduser.gov/portal/egis/apps/tdat.html

FHWA-Tribal Transportation Self-governance Program (TTSGP)
As required by Section 1121 of the Fixing America’s Surface Transportation (FAST) Act, the Secretary shall, pursuant to a negotiated rulemaking process, develop a Notice of Proposed Rulemaking (NPRM) that contains the regulations required to carry the TTSGP.
TRIBAL TRANSPORTATION RESOURCES

CONSULTATION RESOURCES (Continued)

For more information go to:
https://flh.fhwa.dot.gov/programs/ttp/tsgp/

Washington State Department of Transportation-Washington Indian Transportation Policy Advisory Committee
Tribal Consultation Best Practices Guide for Metropolitan and Regional Transportation Planning Organizations in Washington State. This guide was developed to help Tribes, MPOs and RTPOs who may not be familiar with one another’s purpose or planning processes to work together. It draws from best practices currently utilized across the state.
To view the guide go to:

MORE TRANSPORTATION RESOURCES

U.S. DOT
U.S. Research and Innovative Technology Administration (RITA)
Research Program and Project Management Website
To visit the website go to:
http://www.rita.dot.gov/

U.S. DOT
U.S. Research and Innovative Technology Administration (RITA)
ITS ePrimer
Provides transportation professionals with fundamental concepts and practices related to ITS technologies.
To visit the website go to:
http://www.peb.its.dot.gov/ePrimer.aspx

U.S. DOT
Research Hub Website
A searchable database of the latest U.S.DOT-sponsored research, development and technology projects
To visit the website go to:
http://ntlsearch.bts.gov/researchhub/index.do

U.S. DOT-Transportation.gov
Transportation and Health Tool
Developed by the U.S. DOT and the Centers for Disease Control and Prevention to provide easy access to data that practitioners can use to examine the health impacts of transportation systems.
To visit the website go to:
https://www.transportation.gov/transportation-health-tool

FHWA
National Highway Specifications

For more information go to:
http://www.fhwa.dot.gov/construction/

Resource Center Planning and Air Quality Team
The Planning Technical Service Team at the Federal Highway Administration (FHWA) Resource Center helps support the planning process through the provision of training, technical assistance, technology deployment, and partnerships.
For more information go to:
http://www.fhwa.dot.gov/resourcecenter/teams/planning/

Federal-Aid Program Administration
The guide is intended to provide basic information for FHWA and State personnel involved in the administration of the Federal-Aid Highway Program. It is not intended to be an eligibility guide, but contains basic descriptions and historical information on active and inactive programs.
This guide should be of interest to FHWA, State highway agencies, local governments, and private sector personnel interested in a basic understanding of Federal-Aid programs, projects, or other program characteristics. In addition to basic information, sources of additional information are provided.
For more information go to:
http://www.fhwa.dot.gov/federalaid/

Soil Nail Analysis Program (SNAP) & Users Manual--Geotechnical.
FHWA-HIF-14-016
A program for designing soil nail earth retaining structures, including both the nail and wall-facing elements of the structure.
To download the program go to:

Bureau of Indian Affairs (BIA)
Indian Reservation Roads Program: Stewardship Plan
To view the plan go to:
http://www.ewu.edu/Documents/CBPA/NWTTAP/StewardshipPlan.pdf

Planning for Transportation in Rural Areas
To view the guide go to:
http://www.ewu.edu/Documents/CBPA/NWTTAP/RuralGuidebookfinal_7.10.01.pdf

Office of Planning, Environment, & Realty (HEP)
Livable Communities
To visit the website go to:
http://www.fhwa.dot.gov/livability/

The Federal-aid Highway Program Policy & Guidance Center
The PGC provides a central location of laws, policies, and guidance about the Federal-Aid Highway Program (FAHP)
To visit the website go to:
http://www.fhwa.dot.gov/pgc/
INVEST (Infrastructure Voluntary Evaluation Sustainability Tool) was developed by FHWA as a practical, web-based, collection of voluntary best practices, called criteria, designed to help transportation agencies integrate sustainability into their programs (policies, processes, procedures and practices) and projects. To visit the website go to: https://www.sustainablehighways.org/

Tribal Transportation Planning
To visit the website go to: http://www.fhwa.dot.gov/planning/processes/tribal/

Federal-aid Essentials for Local Public Agencies
To visit the homepage go to: http://www.fhwa.dot.gov/federal-aidessentials/
♦ Civil Rights: Title VI/Nondiscrimination  17 videos http://www.fhwa.dot.gov/federal-aidessentials/catmod.cfm?category=civilrig
♦ Project Development: Required Approvals  19 videos http://www.fhwa.dot.gov/federal-aidessentials/catmod.cfm?category=develop

Asset Management
The mission of the Asset Management team is to provide leadership and expertise in the systematic management of highway infrastructure assets. To visit the website go to: http://www.fhwa.dot.gov/asset/about.cfm

National Transportation Atlas Database (NTAD) 2016
To visit the website go to: https://www.bts.gov/maps/

Federal Lands Highway (FLH)
Strategic Transportation Safety Plan Toolkit for Tribal Governments
To visit the web site go to: http://flh.fhwa.dot.gov/programs/tp/safety/stsp-toolkit.htm

FTA

National Transit Data Base
To visit the website go to: https://www.transit.dot.gov/ntd

Transit Asset Management Guide
Updated 2016
To view the guide go to: https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/FTA_Report_No._0098.pdf

National Resources & Technical Assistance For Transit-Oriented Development (TOD)
The TOD Technical Assistance Initiative is a project of the Federal Transit Administration administered by Smart Growth America that provides on-the-ground and online technical assistance to support transit-oriented development, improve access to public transportation, and build new economic opportunities and pathways to employment for local communities.
For more information go to: https://todresources.org/

Strategic Highway Research Program (SHRP 2)
Non-Destructive Testing (NDT) Toolbox
Web-Based electronic repository now available. To visit the site go to: http://shrp2.transportation.org/Documents/SHRP2_R06_Renewal_NDT_Toolbox_Resources.pdf

Rural Transit Assistance Program (RTAP)
National RTAP proudly serves tribal communities residing in rural areas. Tribes are encouraged to access all of the National RTAP best practices, reports, training videos, workbooks, surveys and direct one-on-one technical assistance through our resource center.
To visit the center go to: http://www.nationalrtap.org/Tribal-Transit

Victoria Transportation Policy Institute
Transportation Cost and Benefit Analysis
A guidebook for quantifying the full costs and benefits of different transportation modes. A comprehensive study of transportation benefit and costing research, and a guidebook for applying this information in planning and policy analysis.
To view the guide book go to: http://www.vtpi.org/tca/

Partnership for Mobility Management
The Partnership for Mobility Management is a joint effort of technical assistance partners that work with local, state and
TRIBAL TRANSPORTATION RESOURCES

MORE TRANSPORTATION RESOURCES (continued)

Regional leaders and organizations to realize the possibilities of improving transportation options for all Americans wherever they live and to assist those especially in need of alternative transportation options.

For more information visit the website at:
http://web1.ctaa.org/webmodules/webarticles/anmviewer.asp?a=2620

University Transportation Centers
The U.S. DOT invests in the future of transportation through its University Transportation Centers (UTC) Program, which awards and administers grants to consortia of colleges and universities across the United States. The UTC Program advances the state-of-the-art in transportation research and technology, and develops the next generation of transportation professionals To view the UTC website go to:
https://www.transportation.gov/utc/

Montana State University, Western Transportation Institute, (WTI)
The country’s largest National UTC focused on rural transportation issues. Because we live and work in rural communities, we understand the critical roles rural transportation plays in the lives of people, in the environment and in the economy. To visit the website go to:
http://www.wti.montana.edu/

ArcGIS Online—Map Services
ArcGIS Online base maps published and hosted by Esri are now freely available to all users regardless of commercial, non-commercial, internal, or external use. This means that you no longer have to pay a subscription fee for including ArcGIS Online base maps in your commercial-use web applications. Base maps included in this new business model are World Imagery Map, World Street Map, World Topographic Map, USA Topographic Maps, and DeLorme World Base map. To visit the website go to:
http://www.esri.com/

Go! Exploring the World of Transportation
A dynamic online magazine for teens ages 13–19 on careers in transportation. Published by the Institute for Transportation, Iowa State University. Top visit the web site go to:
http://www.go-explore-trans.org/

Rural Transit Assistance Program (RTAP)-Procurement Pro
Designed to give Indian tribes, non-profit organizations, municipalities and transportation agencies the appropriate federal clauses and certifications regarding federal procurement requirements and processes when utilizing federal funds. To visit the website go to:
http://webbuilder.nationalrtap.org/WebApps/ProcurementPRO.aspx

Pedestrian and Bicycle Information Center
Provides resources and information to promote bike to work events and bike commuting. To visit the website go to:
http://www.pedbikeinfo.com/

Traffic Sign Retroreflectivity Maintenance Program
This resource publication/package was developed to assist Ohio local agencies in their efforts to meet the national January 2012 compliance date for implementing a program that can regularly address the new sign Retroreflectivity maintenance requirements. To download the program go to:
http://www.dot.state.oh.us/Divisions/Planning/LocalPrograms/LTAP/Pages/ImplementingaTrafficSignRetroreflectivityMaintenanceProgram.aspx

Indian Land Tenure Foundation (ILTF)
A national, community-based organization focused on American Indian land recovery and management. To visit the website go to:
http://www.iltf.org/

Roadside Revegitation
An Integrated Approach to Establishing Native Plants To visit the website go to:
http://www.nativerevegetation.org/

Interactive Map for Supplemental Transportation Programs
Beverly Foundation's Interactive Map of 1038 Supplemental Transportation Programs (STP), community-based organizations providing transportation. To visit the website go to:
http://beverlyfoundation.org/map-of-stps-in-america/

One Call - One Click Transportation Services Toolkit
Community Transportation Association of America (CTTA) Provides information for communities interested in working together-whether locally, regionally or statewide-to develop a one-call or one-click service for transportation. To visit the website go to:

ASHTO Systems Operations & Management Guidance
An online tool that uses self-evaluation and best practice experience that managers can use to identify key program, process and institutional preconditions to achieve more effective SO&M. To visit the website go to:

Small Urban and Rural Transit Center (SURTC)
The purpose is to increase the mobility of small urban and rural residents through improved public transportation. To visit the website go to:
http://www.surtc.org/
TRIBAL TRANSPORTATION RESOURCES

**Transportation for Communities - Advancing Projects Through Partnerships (TCAPP)**
The CAPP website provides a systematic approach for reaching collaborative decisions about adding highway capacity that enhance the environment, the economy, and the community and improve transportation.
To visit the website go to: https://trid.trb.org/view.aspx?id=1273229

**CalTrans Earth**
GIS interface as a resource for public use.
To visit the website go to: http://earth.dot.ca.gov/

**California Department of Public Health (CDPH)**
California Environmental Health Tracking Program (CEHTP)
To visit the website go to: http://cehtp.org/page/main

**National Transportation Consortium (NTC)**
The NTC is a non-profit corporation created for one purpose: provide tribal governments and their enterprises a better method for buying buses and transportation services.
To visit the website go to: http://www.nativetransit.org/

**National Center for Mobility Management**
Focuses on transportation’s many customer groups: current and potential riders; employers, economic development groups, and local business associations; human service agencies and their clients; taxpayers and other funders; and local governments.
To visit the website go to: http://nationalcenterformobilitymanagement.org/

**American Road and Transportation Builders Association (ARTBA)**
Transportation Investment Advocacy Center (TIAC)
The program is aimed at helping private citizens, legislators, organizations and businesses successfully grow transportation infrastructure resources at the state and local levels through the legislative and ballot initiative processes.
To visit the website go to: http://www.transportationinvestment.org/

**Ready Indian Country**
The goal of Ready Indian Country is to collaborate with tribal governments to build emergency management capability and partnerships to ensure continued survival of Tribal nations and communities.
To visit the website go to: http://www.ready.gov/make-a-plan/indian-country

**CalACT**
California Association for Coordinated Transportation is a statewide, non-profit organization that has represented the interests of small, rural, and specialized transportation providers since 1984.

**California Department of Transportation (Caltrans)**
California Transportation Plan (CTP) 2040 website
CTP provides a long-range policy framework to meet our future mobility needs and reduce greenhouse gas emissions.
To visit the website go to: http://www.dot.ca.gov/hq/tpp/californiathrough2040/index.shtml

**Community Transportation Association of America (CTAA)**
FedCentral
The site offers news and analysis of Congressional hearings, regulatory news, important resources and more
To visit the website go to: http://web1.ctaa.org/webmodules/webarticles/annviewer.asp?a=2923&z=37

**TripSpark**
TripSpark makes this possible by linking the latest technologies with a dedicated focus to help you grow your operation and meet evolving community transit needs.
To visit the website go to: http://www.tripspark.com/

**National Aging and Disability Transportation Center (NADTC)**
The goal is to promote the availability and accessibility of transportation options for older adults, people with disabilities and caregivers.
To visit the website go to: http://www.nadtc.org/

**California Transportation Commission**
California Road Charge Technical Advisory Committee and Pilot Program
The Committee was established in 2014 by Senate Bill 1077 (Chapter 835, Statutes of 2014). SB 1077 created the California Road Usage Charge Pilot Program and tasked the Chair of the Commission, in consultation with the California State Transportation Agency (CalSTA) to convene a fifteen member Technical Advisory Committee (TAC) to study road usage charge alternatives to the gas tax, gather public comment, and make recommendations to CalSTA regarding the design of a road usage charge pilot program.
To visit the website go to: http://www.catc.ca.gov/meetings/Committees/Road_Charge/Road_Charge.html

**Federal Transit Administration (FTA)**
Integrated National Transit database (INTD)
The database records the financial, operating and asset condition of transit systems.
To visit the website go to: https://www.transit.dot.gov/ntd
MORE TRANSPORTATION RESOURCES (Continued)

National Cooperative Highway Research Program (NCHRP)
TRB Straight to Recording for All: Framework for a Pavement Maintenance Database System
To view the video go to:

TransitWiki.org
TransitWiki.org is developed and maintained by transit professionals for transit professionals. The goal of the site is to facilitate information transfer among transit agencies to accelerate the successful implementation of cost-effective strategies to improve transit service.
To visit the website go to:
http://www.transitwiki.org/TransitWiki/index.php/Main_Page

WEBSITE APPLICATIONS—APPS

Heat Safety Tool App
U.S. Department of Labor (DOL), Occupational Safety and Health Administration (OSHA)
The App allows workers and supervisors to calculate the heat index for their worksite.
To download the app go to:
https://www.osha.gov/SLTC/heatillness/heat_index/heat_app.html

Transportation Construction Advocate App
American Road & Transportation Builders Association (ARTBA)
Available for both Android and Apple devices.
To download the app go to:
http://www.artba.org/transcon/

Asphalt Calculator+ App
This iPhone/iPod Touch app will calculate the amount of cubic yards needed for a given job. It will also calculate hot mix tonnage. Polyclef Software.
To download the app go to:

Life Saver Apps
Distracted driving for parents and students.
Android and IPhone.
To visit the website go to:
http://lifesaver-app.com/

TC3 Free Mobile App
TC3 is an AASHTO technical service program focused on the web-based training of front-line workers in the areas of construction, maintenance, and materials.
Download the app today at:

B4UFLY App
Federal Aviation Administration
Helps unmanned aircraft operators determine whether there are any restrictions or requirements in effect at the location where they want to fly.
For more information go to:
http://www.faa.gov/uas/b4ufly/

# Hands Off App
A project developed by the Milt Olin Foundation to raise awareness about the dangers of distracted driving. Users commit to safe driving by downloading #HandsOff and taking the #HandsOff pledge, then sharing their video pledge with friends. Download the app from iTunes or Google Play.
For more information go to:
http://miltolinfoundation.org/

Pocket Guide to Transportation App
The 50th anniversary of the U.S. Department of Transportation, Bureau of Transportation Statistics (BTS) is introducing its most innovative product yet—a smartphone app for the Pocket Guide to Transportation.
For more information go to:

SaferRide App
NHTSA’s mobile app, SaferRide, is the simplest possible way to get home safe and only has three self-explanatory buttons on the home screen. Features: Choose from a list of available taxi services in your area, and with the tap of a button call them. Call a pre-programmed contact. If you just need to know where you are, you can bring up a map of your current location.
To Download the app go to:

TRANSPORTATION PROGRAMS AND DEVELOPMENT

FHWA Resource Center
The Mission to advance transportation technologies and solutions through training, technical assistance, technology deployment, and partnerships.
For more information go to:
http://www.fhwa.dot.gov/resourcecenter/

The FHWA has developed an extensive list of resources that focus specifically on the latest culvert technology. To view this list go to:
Pavement Construction and Safety Training on Demand
New free Web-based courses sponsored by the Federal Highway Administration (FHWA)
To view the courses go to:
http://www.fhwa.dot.gov/publications/focus/13jul/13jul02.cfm

Transportation Safety Institute
Welcome to the USDOT’s Transportation Safety Institute Learning Management System. Our continuing mission is to develop and provide world-class safety, security, and environmental training, products, and/or services for both public and private sectors.
To visit the website go to:
https://www.transportation.gov/transportation-safety-institute

National Transit Institute (NTI)
Rutgers, The State University of New Jersey, The mission of the National Transit Institute is to provide training, education, and clearinghouse services in support of public transportation and quality of life in the United States.
To visit the website go to:
http://www.ntionline.com/

National Highway Institute (NHI)
As the training and education arm of the Federal Highway Administration (FHWA), the National Highway Institute (NHI) has a long and rich history of innovation and expertise in delivering transportation training. Improving the conditions and safety of our nation's roads, highways, and bridges means continuously building on the skills of highway professionals and enhancing job performance in the transportation industry across the country. To see the list of free web-based courses go to:
https://www.nhi.fhwa.dot.gov/training/course_search.aspx?tab=0&sf=1

Federal Emergency Management Agency (FEMA)
Emergency Management Institute Tribal Curriculum
To collaborate with tribal governments to build emergency management capability and partnerships to ensure continued survival of Tribal nations and communities.
To view the course go to:
https://training.fema.gov/tribal/

National Cooperative Highway Research Program (NCHRP)
Report 667
Model Curriculum for Highway Safety Core Competencies presents course materials, including the instructor’s guide and student workbook, for a fundamental highway safety training course. The course is designed to address the core competencies highway safety practitioners should have or acquire. An accompanying CD-ROM includes a brochure and short Microsoft PowerPoint presentation for marketing the training course.
To view the report go to:
https://www.nap.edu/catalog/14459/model-curriculum-for-highway-safety-core-competencies

Paul S. Sarbanes Transit in Parks Technical Assistance Center (TRIPTAC)
The TRIPTAC is available to all Federal Land Management Agencies (FLMAs), not only those applying for or receiving funds from the Transit in Parks program. State, local or tribal governments who are working in collaboration with an FLM to expand public lands access are also welcome to use TRIPTAC services to obtain alternative transportation information and assistance.
To view available training courses go to:
http://www.triptac.org/TRIPTACServices/Training/Default.html

University of California, Berkeley, Institute of Transportation Studies
Technology Transfer Program
To visit the website go to:
http://www.techtransfer.berkeley.edu/

University of California, Berkeley, Safe Transportation Research and Education Center (SafeTREC)
Affiliated with the School of Public Health and the Institute of Transportation Studies, with additional partnerships with the of City and Regional Planning, Public Policy, and Transportation Engineering.
To visit the website go to:
https://safetrec.berkeley.edu/

U.S. Small Business Administration (SBA)
Online Courses for Starting Your Business
Several free online courses are offered by the SBA to help prospective and existing entrepreneurs understand the basics about writing a business plan.
For more information go to:
http://www.sba.gov/content/online-courses-starting-your-business

Community Transportation Association of America (CTAA)
Passenger Service and Safety PASS Basic Training Program
The PASS Basic program consists of 6 modules and includes comprehensive training on the assistance that drivers should be providing to passengers with special need.
For more information go to:
http://training.ctaa.org/

Community Transportation Safety and Security Accreditation (CTSSA)
The program is designed to promote the safety and security of the customers of community and public transportation systems and also to promote the safety and security of the women and men who deliver these services and provide mobility for the riding public every day.
For more information go to:
Transportation Safety Plans. It is based on the Developing a How to conduct transportation safety planning and develop FHWA https://www.youtube.com/user/lrrbmn

To view the videos go to:

the state’s city and county engineers

sharing the latest transportation research applications with

LRRB remains true to its important mission: supporting and innovative methods for engaging the public. Today, the

range from new ways to determine pavement strength to

tion engineers throughout Minnesota. Those developments (LRRB) has brought important developments to transporta-

For more than 50 years, the Local Road Research Board

YouTube video library with 34 videos to date.

Minnesota Local Technical Assistance Program (LTAP)
Gravel Road Maintenance and Design (Online)
This course helps supervisory personnel and operators better understand the materials, techniques, and equipment needed for maintaining gravel roads.

To enroll in the course go to:

http://www.mnltap.umn.edu/training/topic/maintenance/gravel/online.html

Curbing Transit Employee Distracted Driving
The 30-minute course, was developed by FTA in con

junction with the Florida Department of Transportation It’s an excellent tool to educate, inform, and increase awareness among all transit workers about the dangers and challenges associated with distracted driving.

For more information go to:


Work-Zone Safety Tutorial
Minnesota LTAP has launched a new online free tutorial that offers a convenient opportunity for new, seasonal, or temporary staff to learn about the fundamentals of work-zone safety and the basic concepts of the work-zone area before arriving at the job site. There is no cost to take the tutorial, and registration is not required.

To view the tutorial go to:

http://www.mnltap.umn.edu/training/online/workzone/

Cal EPA
Training: California Indian Tribal Relations CalEPA’s step forward toward meeting our “commitment to educate appropriate staff, to become informed about the cultural setting of California Native Americans, their environmental issues and Tribal histories, for the purpose of improving CalEPA’s understanding of and connection to California Native American Tribes.”

To visit the website go to:

http://calepa.ca.gov/tribal/training/

Minnesota Local Road Research Board (LRRB)
YouTube video library with 34 videos to date.
For more than 50 years, the Local Road Research Board (LRRB) has brought important developments to transportation engineers throughout Minnesota. Those developments range from new ways to determine pavement strength to innovative methods for engaging the public. Today, the LRRB remains true to its important mission: supporting and sharing the latest transportation research applications with the state’s city and county engineers.

To view the videos go to:

https://www.youtube.com/user/lrrbmn

FHWA-Developing a Transportation Safety Plan
How to conduct transportation safety planning and develop Transportation Safety Plans. It is based on the Developing a Transportation Safety Plan module, which is one of 12 modules in the series Transportation Decision-making: Information Tools for Tribal Governments. The FHWA Office of Planning produced this series to educate tribal planners and decision makers about the tribal transportation planning process and to provide them with useful program information.

To visit the website go to:


Newly Revised Emergency Procedures for Rural Transit Drivers Training Module
National RTAP
The Emergency Procedures module offers the most current training on preparedness for hazards and threats that transit operators may encounter. The free module contains a Learner's Guide, a Self-paced eLearning Course Disc, an Instructor’s Guide, a disc with videos and a trainer's PowerPoint presentation. Email info@nationalrtap.org or call 888-589-6821 to order.

Center for Transportation e-Learning's Computer-Based -Educational Program
To visit the website go to:

http://www.nationalrtap.org/Training/National-RTAP-eLearning

U.S. Department of Transportation-Everyday Counts Leadership Academy
The Every Place Counts: Leadership Academy was created as part of the Ladders of Opportunity Initiative at the US Department of Transportation. We hope the Leadership Academy will provide community members and other stakeholders who have never participated in a transportation decision-making process before and are not subject matter experts with the background information and some tools to engage in the transportation decision-making process.

To visit the website go to:

https://www.transportation.gov/leadershipacademy

Fundamentals of Environmental Justice
Fundamentals of Environmental Justice (WBT) explains how environmental justice, or EJ, applies to each stage of transportation decision making. The US Department of Transportation, or US DOT, and its partners are committed to integrating the principles of EJ and nondiscrimination into all Federal programs and activities. In this course, participants are presented with a variety of strategies and resources for considering EJ throughout the transportation decision-making process. This course is free.

For more information go to:

https://www.nhi.fhwa.dot.gov/course/search?tab=0&key=environmental%20justice&sf=0&course_no=142074&utm_source=Email&utm_medium=html&utm=NHI_Course_Launch&utm_campaign=August_10_17
The nijc web site has the complete list of publications, newsletters, videos, CDs, and DVDs going back several years. To view the Tribal Transportation (TTAP) Resources data base go to: http://www.nijc.org/datasheets/vttap_resourceslist.php

Ordering Information
Printed copies of our in-house publications are available on a first-come, first served basis. Priority is given to Tribal Transportation Personnel. PDF versions of most of our publications are available on our website:

All our videos, publications and CD-ROMs in our lending library are loaned for a four-week period. Two titles may be borrowed at a time.

To order or borrow materials, please send a request to: barry@nijc.org or, tcoord@nijc.org or Fax a request to: 707-579-9019.

To view past issues of publications, videos and development programs, please visit our website library at: http://nijc.org/datasheets/ttap/TTAP_Resourceslist.asp

CALIFORNIA

CALIFORNIA DEPARTMENT OF TRANSPORTATION (CALTRANS)

On September 26, 2013, Governor Brown signed legislation creating the Active Transportation Program (ATP) in the Department of Transportation (Senate Bill 99, Chapter 359 and Assembly Bill 101, Chapter 354). The ATP consolidates existing federal and state transportation programs, including the Transportation Alternatives Program (TAP), Bicycle Transportation Account (BTA), and State Safe Routes to School (SR2S), into a single program with a focus to make California a national leader in active transportation. The ATP administered by the Division of Local Assistance, Office of Active Transportation and Special Programs. The purpose of ATP is to encourage increased use of active modes of transportation by achieving the following goals:

- Increase the proportion of trips accomplished by biking and walking,
- Increase safety and mobility for non-motorized users,
- Advance the active transportation efforts of regional agencies to achieve greenhouse gas (GHG) reduction goals,
- Enhance public health,
- Ensure that disadvantaged communities fully share in the benefits of the program, and
- Provide a broad spectrum of projects to benefit many types of active transportation users.

Cycle 4 Call for Projects is scheduled for early 2018, and includes FY 21/22 and 22/23. For more information go to: http://www.dot.ca.gov/hq/LocalPrograms/atp/index.html

California Department of Resources Recycling and Recovery (CalRecycle)
CalRecycle offers a variety of grant funding opportunities to assist public and private entities in safely and effectively managing California’s waste stream.

Application materials forthcoming:
- Beverage Container Recycling Grants.
- Farm and Ranch Cleanup Grants. Deadlines are (FY) 2017-18 November 7, 2017, and February 6, 2018.
- Local Enforcement Agency Grants.
- Illegal Disposal Site Abatement Grant Program. FY 2017-18 November 2, and February 6, 2018.
- Legacy Disposal Site Abatement Partial Grant Program. Deadlines are FY 2017-18 November 2, and February 6, 2018.
- Waste Tire Cleanup grants.
- Rubberized Pavement (TRP) Grant Program.
- Tire-Derived Aggregate (TDA) Grant Program. (FY) 2017-18 deadlines are November 1, 2017 and February 1, 2018.
- Tire Derived Product (TDP) Grant Program Additional grant information and list of active grants can be found at: http://www.calrecycle.ca.gov/Funding/

Highway Safety Improvement Program (HSIP)
It is never too early for local agencies to analyze their roadway network to 1) identify their highest crash locations and corridors, 2) consider effective and efficient countermeasures to improve the safety of these locations/corridors, and 3) identify projects that have the highest Benefit-to-Cost ratios.

Cycle 9 is expected to be announced May, 2018 http://www.dot.ca.gov/hq/LocalPrograms/hsip.html

Caltrans Transportation Planning Grant Program
Transportation Planning Grants ($25 million annually) to encourage local and regional planning that further state
goals, including, but not limited to, the goals and best practic-
es cited in the regional transportation plan guidelines adopted
by the California Transportation Commission.
Climate Change Adaptation Planning Grants ($20 million over
three years) to local and regional agencies for climate change
adaptation planning.
The deadline for applications is October 20, 2017
For more information go to:
http://www.dot.ca.gov/hq/tpp/grants.html

Nevada Department of Transportation (NDOT)
Transportation Alternatives Program (TAP)
The Nevada TAP provides federal transportation funds for
projects that improve non-motorized mobility, historic preser-
vation, scenic accessibility, safe routes to school (SRTS) and
environmental/vegetation management The FY 2016-2018
cycle is now open.
For more information go to:
http://www.nevadadot.com/tap/
and
http://www.nevadadot.com/home/showdocument?id=3291

Nevada Transportation Enhancement Program
The Nevada Department of Transportation (NDOT) and the
Federal Highway Administration (FHWA) share your interest
in these projects and others that enhance the transportation
experience in your area and make our communities more liva-
ble. The TE program was developed to fund projects that go
beyond where typical transportation projects usually stop.
Applications due the second Monday each March
For more information go to:
http://www.nevadadot.com/Projects_and_Programs/
Landscape_and_Aesthetics/
Landscape_Aesthetics_Program.aspx

FEDERAL
U.S. DEPARTMENT OF TRANSPORTATION
Transportation Alternatives Program (TAP)
• Safe Routes to School Program.
• National Scenic Byways
The Moving Ahead for Progress in the 21st Century Act (MAP-21) authorized the Transportation Alternatives Program
(TAP) to provide funding for programs and projects defined as
transportation alternatives, including on- and off-road pedes-
trian and bicycle facilities, infrastructure projects for improving
non-driver access to public transportation and enhanced
mobility, community improvement activities, and environmen-
tal mitigation; recreational trail projects; safe routes to school
projects; and projects for planning, designing, or constructing
boulevards and other roadways largely in the right-of-way of
former divided highways. The TAP replaced the funding from

IDEA Program
TRB’s Innovations Deserving Exploratory Analysis (IDEA)
annual program announcement solicits funding proposals for
the upcoming review cycles. The announcement explains
the IDEA programs, describes the types of eligible projects
and their funding structures, suggests general areas for
which IDEA proposals can be submitted, and provides
guidelines and forms for submitting proposals.
• The Transit IDEA program deadline is November 1,
2017
• NCHRP IDEA cycles deadlines March 1 and Septem-
ber 1 each year.
• The Rail Safety IDEA program has one review cycle
per year.
If the proposal submission due date for any IDEA program
falls over a weekend or on a federal holiday, the due date
automatically moves to the next business day.
The IDEA programs provide start-up funding for promising,
but unproven, innovations in surface transportation systems.
The programs’ goals are to seek out and support new transport-
sation solutions that are unlikely to be funded through
traditional sources.

Infrastructure for Rebuilding America (INFRA)
The US Department of Transportation launched a new web-
site announcing the Notice of Funding Opportunity (NOFO)
for a total of $1.5 Billion, for the “Infrastructure for Rebuild-
ning America” (INFRA) Grants Program. This is similar to
the “FASTLANE” program. Tribal or Tribal Consortium
governments may apply directly. Applications must be
submitted by November 2, 2017. For information on how
to apply, see page 2 of the NOFO.
For more information go to:
https://www.transportation.gov/buildamerica/infra

FHWA
Accelerated Innovation Deployment Demonstration
(AID)
The final notice announces the availability of funding and
requests grant applications for FHWA’s Accelerated Innova-
tion Deployment (AID) Demonstration authorized within the
Technology and Innovation Deployment Program (TIDP)
under the Moving Ahead for Progress in the 21st Century
Act (MAP-21).
Consistent with other FHWA funding provided to tribes,
federally recognized tribe identified on the list of “Indian
Entities Recognized and Eligible to Receive Services from
the Bureau of Indian Affairs” (published at 77 FR 47868) is
eligible to apply for AID Demonstration.
TRIBAL TRANSPORTATION FUNDING RESOURCES

All applications will be evaluated on a rolling basis until September 30, 2020. Applications will be assigned a rating of “Qualified” or “Not Qualified.” For more information go to: https://www.grants.gov/web/grants/view-opportunity.html?oppId=245654

To view writing proposals for AID projects webinar go to: https://connectdot.connectsolutions.com/p7zvd0q6uc2/?launcher=false&fcsContent=true&pbMode=normal

Tribal Transportation Program Safety Funds (TTPSF)
Each year under the FAST Act, 2% of the available TTP funds are set aside to address transportation safety issues in Native America. Funds are available to federally recognized Indian tribes through a competitive, discretionary program. Awarded annually, projects whose outcomes will address the prevention and reduction of death or serious injuries in transportation-related incidents, such as motor vehicle crashes. Transportation fatalities and injuries severely impact the quality of life in Indian country. The Deadline to apply is December 11, 2017.
For more information go to: https://flh.fhwa.dot.gov/programs/ttp/safety/ttpsf.htm

Bureau of Indian Affairs (BIA)

BIA IHSP-Child Passenger Safety Seat Program Grant
Tribes can apply for the Child Passenger Safety Seat Program grant with this application. Deadlines to apply are: May 1, 2018 for the FY2019, May 1, 2019 for the FY2020.
To view the application go to: https://gallery.mailchimp.com/fcf2788b524e94e746bc5dcf/files/0622d84e-568d-4029-be84-54556bcb9fc0/CPSGrantApplicationwithInstructions.pdf

BIA IHSP-Law Enforcement Grant
Tribes can apply for the full-time and over-time Law Enforcement grant with this application; use the drop down menu to select the grant the tribe is applying for. Deadlines to apply are: May 1, 2018 for the FY2019, May 1, 2019 for the FY2020.
To view the application go to: https://gallery.mailchimp.com/fcf2788b524e94e746bc5dcf/files/5692b660-268a-4852-ac28-175500c2944/LawEnforcementGrantApplicationwithInstructions.pdf

Grant Program to Build Tribal Energy Development Capacity (TEDC)
The Division of Energy and Mineral Development (DEMD) annually provides tribes an opportunity to participate in the Tribal Energy Development Capacity (TEDC) grant program. The purpose of the TEDC grant program is to develop tribal managerial, organizational and technical capacity needed to maximize the economic impact of energy resource development on Indian land.
Deadline to apply is October 9, 2017.
For more information go to: https://www.grants.gov/web/grants/view-opportunity.html?oppId=295312

U.S. Department of Agriculture (USDA)

Water & Waste Disposal Loan & Grant Program
Provides funding for clean and reliable drinking water systems, sanitary sewage disposal, sanitary solid waste disposal, and storm water drainage to households and businesses in eligible rural areas. Tribal lands in rural areas. Applications for this program are accepted through your local offices year round.
For more information go to: https://www.rd.usda.gov/programs-services/water-waste-disposal-loan-grant-program

Emergency Community Water Assistance Grants
This program helps eligible communities prepare for, or recover from, an emergency that threatens the availability of safe, reliable drinking water for households and businesses. Tribal lands in rural areas. Applications for this program are accepted through your local offices year round.
For more information go to: https://www.rd.usda.gov/programs-services/emergency-community-water-assistance-grants

Environmental Protection Agency (EPA)

Technical Assistance for Tribes to Address Brownfields
EPA has selected Kansas State University to provide technical assistance to tribal communities addressing Brownfields issues. This new grant will run through 2021 and provide support to tribes across the country on Brownfields issues. For more information visit the Kansas State university Technical Assistance to Brownfields website at: https://www.ksutab.org/
(Continued From Page 7)

Each year, Caltrans spends millions of dollars on sweeping, litter pick-up, installing trash and recycling bins at rest stops, and broadening its reach with partnerships. But litter still lines many of California highways and eventually winds up in waterways used for fishing, swimming and household consumption.

Rain and wind can carry litter and pollution from vehicles and roadways into storm drain systems. Polluted water then flows into connecting city or county storm drain systems, or to streams, rivers and lakes — and eventually to bays and the ocean.

Caltrans owns and operates the state transportation system, which includes 50,000-plus lane miles and thousands of storm drains. To keep garbage from reaching its drainage system, the Department spent more than $67 million in 2016 to remove 142,000 cubic yards of debris from California’s highways.

Caltrans maintains many partnerships, including one with the state Department of Corrections and Rehabilitation to give parolees work responsibilities as they help remove highway litter. Businesses and volunteers help combat litter through the Adopt-A-Highway Program, and in early 2017, Caltrans started a Veterans Outreach Program to employ those who served our country. This new program proved instrumental in clearing Solano County storm drains during the record-setting rainfall last winter, and keeping flooding to a minimum.

Caltrans’ Protect Every Drop campaign continues to play an important role in preventing stormwater pollution by informing and educating the public. The campaign has partnered with organizations with similar goals, such as Keep California Beautiful, Splash, and the North Coast Stormwater Coalition.

Source: Ana Serrano, Caltrans Senior Stormwater Engineer, and 2017 Caltrans Stormwater Awareness, Attitudes & Behaviors Study Reprinted from Caltrans Mile Marker Newsletter, September, 2017

WESTERN TTAP

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