TTAP in Brief

Virginia's Newly Recognized Tribes Focus on Transportation Funding

The Native Americans of Virginia were among the first to encounter European settlers and among the last to be recognized by their descendants. After two decades of effort, the Pamunkey secured recognition by the Bureau of Indian Affairs in 2015, followed three years later by the Chickahominy, Chickahominy Indians Eastern Division, Monacan, Nansemond, Rappahannock, and Upper Mattaponi.

Federal recognition brought with it a host of benefits, including federal funds for housing, education, transportation, and medical care. But to receive these benefits, the newly recognized tribes realized that they must become skilled at navigating the federal bureaucracy and following prescribed procedures. "When you never have had any significant interaction with the government, just getting acquainted with your responsibilities in meeting its requirements can be daunting," says Remedios Holmes, tribal administrator for the Chickahominy Indians Eastern Division.

Getting Oriented

To get up to speed, Holmes joined a group of officials from Virginia's newly recognized tribes for TTAP planning and procurement training at the end of October. Knowing that she was going to work with tribal members who were unfamiliar with federal requirements, TTAP subject matter expert Diann Wilson recast the four-day session as an orientation, combining overviews with specific tips to help tribes satisfy government standards.

Equally important, she created a welcoming environment. "We all really appreciated Diann's approach," Holmes said. "We felt free to ask as many questions as we wanted without worrying about slowing the group down."

An important factor that contributed to the informal give-and-take atmosphere of the sessions was the ability to utilize meeting space hosted on Chickahominy Tribal Grounds. "I think it made the entire program more relaxed and more effective," Wilson says.

Tribal Technical Assistance Program

Mastering the Basics

In the course of the four days, Wilson walked participants step-by-step through the solicitation and selection process, provided detailed analyses of transportation funding sources, and familiarized them with the steps needed to prepare for an audit. She also emphasized the following topics:

The value of encouraging tribal businesses to secure 8(a) certification: Minority-owned businesses that qualify for 8(a) certification by the U.S. Small Business Administration are eligible for set-asides and sole-source contracts from the Federal government. By assisting tribal members establish 8(a) companies, tribes encourage economic development while gaining access to a suite of vendors who can respond quickly to tribal needs.

The importance of having current, comprehensive procurement policies: Wilson stressed that a tribe's procurement policies must comply with the requirements and standards of the Davis-Bacon Act as well as the Equal Employment Opportunity Commission and the Occupational Safety and Health Administration. She also emphasized the need to include a written protest policy to discourage frivolous complaints.

The benefits of cost estimating when managing transportation spending: In addition to reviewing cost estimating, Wilson provided a spreadsheet that simplifies the calculation of cost-per-unit and lump-sum transportation project materials.

Holmes and her colleagues appreciated the thoroughness of the program. "Federal recognition was something we had been pursuing for a long time, but unless you already know how the government works, it can be a challenge taking advantage of the benefits that recognition brings," Holmes says. "The TTAP training offered an amazing amount of information in a limited amount of time."

Tribal Seals of Virginia's Newly Recognized Tribes

Photo Credit: Sarah J. Stebbins

https://www.nps.gov/jame/learn/historyculture/virginia-indian-tribes.htm

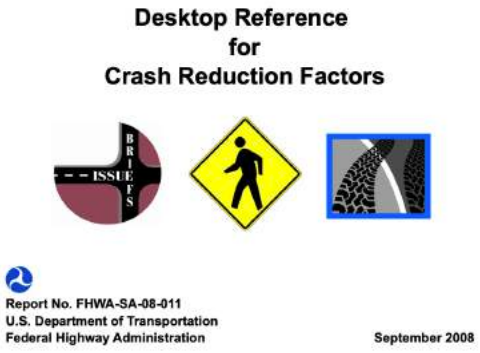
The Essential Resources for Low-Cost Safety Improvements

Successful tribal transportation managers know that for the most part, they must make the most of the roads they were given. Knowing that the funds needed for moving or realigning a specific road may be long in coming, they focus at least in the short term, on common-sense improvements that have been shown to be effective in improving safety. "Except in very few cases, simple improvements can significantly reduce accidents at intersections and dangerous sections of roadways," says TTAP safety expert Ed Demming. "And because they tend to be relatively inexpensive, they can be applied widely, raising the overall system safety."

Five Key Online References

Demming recommends a number of key FHWA resources that can help tribal transportation managers identify interventions that are both effective and inexpensive:

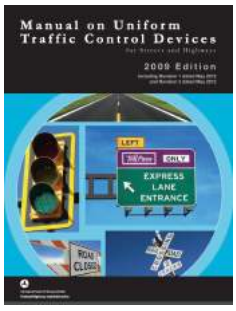
Desktop Reference for Crash Reduction Factors. A crash reduction factor (CRF) is the percentage crash reduction that might be expected after implementing a given countermeasure at a specific site. The Desktop Reference has CRFs for countermeasures that mitigate accidents at intersections, reduce roadway departures, and diminish injuries to pedestrians.



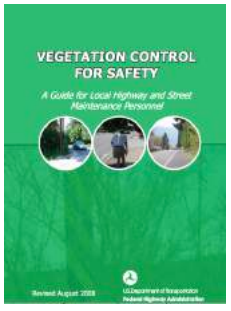
Low-Cost Safety Enhancements for Stop-Controlled and Signalized Intersections. Nationally, at least 21 percent of all fatalities, 52 percent of injuries, and 45 percent of property damage crashes occur at or near intersections. Developed from intersection safety research results and input from an intersection safety expert panel, these countermeasures reduce intersection crashes, fatalities, and serious injuries.

Low-Cost Safety Improvements for Horizontal Curves. In a typical year, more than one-quarter of all fatal highway crashes in the United States occur on curves, especially at horizontal curves on the two-lane rural roads often found on tribal lands. These roads tend to have unforgiving shoulders and less access to emergency services. This guide features effective countermeasures for two-lane roads emphasizing those that are relatively low-cost.

Manuel of Uniform Traffic Control Devices (MUTCD). The MUTCD defines the standards for all traffic control devices that help regulate, warn, and guide drivers safely on the nation's roadways and streets. It is comprehensive and covers signs, markings, traffic signals, devices for low-volume roads, temporary traffic control devices, traffic control for schools, railroad crossings, and bicycles.



Vegetation Control for Safety. When allowed to grow uncontrollably, vegetation can obscure roadside hazards as well as signage and make navigating intersections and curves particularly dangerous. When sightlines are obscured, the likelihood of vehicles hitting pedestrians or other vehicles entering the roadway increases dramatically.Tribes can use this guide to identify locations where vegetation control is needed to improve traffic and pedestrian safety and heighten awareness of safe ways to mow, cut brush, and otherwise control roadside vegetation.



Every tribe faces the challenge of getting the highest value from its transportation dollar. In terms of safety, this means employing low-cost but effective countermeasures that enable it to transition from a site-specific, hotspot approach to a more systematic one. "The visible difference is much less dramatic," Demming says, "but the ultimate result — in terms of lives saved — is even more impressive."

TTAP Technical Assistance: A Customized Resource to Build the Skills of Your Transportation Workforce

The TTAP team of subject matter experts (SMEs) is a wonderful tribal resource, providing customized support to help build the technical knowledge and capabilities of tribal work forces. Serving as technical mentors, SMEs help with specific tribal questions. They provide guidance and resources for transportation workers to expand their skills and increase their capabilities to resolve future issues in-house.

Contact 833-484-9944 or info.ttap@virginia.edu to consult with a TTAP expert.

Going with Good Gravel

As the authors of the FHWA's Gravel Roads Construction and Maintenance Guide note, the role of good gravel is often underappreciated: "The use of the grader to properly shape the road is obvious to almost everyone, but the quality, volume, and size distribution of gravel needed is not as well understood." Poor gravel causes a variety or problems, including washboards and potholes.

Good gravel is a mixture of three sizes of material--stone, sand and fines — and the proper proportion among them depends on the material being used. Each of the three components performs a key function:

1. **Stone**, in the form of coarse aggregate, gives roads the strength they need to support loads. It should be crushed into uneven fragments, which will embed in the surface and provide superior stability. One disadvantage of using river rock is that it is impossible to eliminate all smooth, rounded surfaces that resist binding.

2. **Sand** fills the void between the.aggregate, providing stability.

3. **Fines** bind these materials together, allowing a gravel road to form a crust and shed water. To retain fines over time, roads are often treated with dust abatement products like magnesium chloride.

Gravel mixtures for road surfaces are not the same as those used as base layers, which have a higher proportion of coarse aggregates, or as fill material, which has a higher proportion of sand for drainage. When used for surfacing a gravel road, fill gravel will remain loose and unstable.

Sourcing Your Gravel

But as TTAP maintenance and operations expert Scott Johnson notes, not every tribe has ready access to good gravel. "If you have to have gravel delivered," Johnson says, "you should make the investment in having it tested." Testing provides information on such qualities as hardness or soundness, gradation, percentage of fractured stone and plasticity index, all of which affect the performance of surface gravel.

In order to reduce these costs, some tribes mix recycled asphalt in their surface gravel. The FHWA has found that mixtures containing between 30 and 60 new surface gravel have performed well and that combinations of recycled asphalt and concrete can produce acceptable results.

Some tribes consider developing their own source of gravel — and rock from the specific site they want to develop should always be tested as there can be considerable variability. For instance, for roadway applications, most engineers require material with a Los Angeles Abrasion score of at least 50.

"It just makes sense for a tribe to use good gravel even if it costs a little extra," Johnson says. "The long-term maintenance savings will more than pay for the extra cost."

The Right Treatment for the Right Pavement at the Right Time

The formula for pavement preservation is well known among tribal transportation professionals: provide the right treatment to the right road at the right time — before the road has had a chance to deteriorate. When applied in a systematic way over the lifecycle of a road, this approach will increase performance, decrease lifetime costs, and improve predictability in budgeting and operations.

But as TTAP maintenance and operations expert Scott Johnson notes, following this advice is easier said than done. "The public is not used to transportation agencies spending money on what look like perfectly good roads," he says. "Fortunately, advances in preventive maintenance demonstrate the value of periodic preservation."

A Range of Choices

Microsurfacing is used routinely as a scratch course, leveling course, surface treatment and rut fill. It is less expensive than an overlay and has a four-to-seven-year service life. It is typically applied to surfaces without base issues or alligator cracking that are fewer than eight years old. It is applied with specialized equipment and is designed to be open to traffic in an hour.

Ultrathin Friction Courses (UTFC), known by the trade name, Nova Chip, UTFC lowers noise while restoring friction and reducing hydroplaning and sprays on wet surfaces. UTFC can be applied with just a single lane closure and lasts up to 10 years with periodic crack sealing. Its cost, however, reflects its superior durability.

Slurry Seal lasts for three and five years and is best performed on pavements in good condition. The three types of slurry seal are defined by their maximum aggregate size. The finer slurry seal is used to seal cracks on low-volume roads while the coarsest variety is applied to remove minor surface irregularities and to restore friction.

Bituminous Fiber-Reinforced Seal Coating consists of a polymer-modified emulsion, glass fiber strands, and aggregate. It is more forgiving of stresses caused by pavement movement, flexing rather than cracking.

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Scott Johnson is one of TTAP's Maintenance and Operations experts. Contact Scott at scott.ttap@virginia.edu for assistance with maintenance and operations questions.

TTAP Online Learning: A Free Resource to Extend Your Transportation Knowledge

TTAP online learning modules are a terrific resource to complement or extend classroom learning. Check out our 2-hour on-demand learning modules.

Asset and Data Management
Foundations for Using GIS
Introduction to GPS
Maintenance and Operations
Gravel Road Maintenance and Design
Erosion and Sediment Control
Pipe Installation and Maintenance
Safety
Crash Data Analysis
Improving Safety at Intersections
Low Cost Safety Improvements
Road Safety Assessments

Planning and Procurement
Developing Your TIP
Procurement 101
Project Prioritization
Single Audit
Project Delivery
Introduction to Construction Inspection
Emergency Relief Projects
Getting Your Project Started
Utility Coordination
Motor Vehicle Injury Prevention
Basic Child Passenger Safety Awareness

Find out more about online learning and register at ttap-center.org/online-training-schedule/.

Pavement continued from page 3

Liquid Bituminous Seal Coating has become a maintenance treatment for low- and high-volume flexible pavements. It provides a waterproofing layer and is used to plug voids and bond aggregate particles to the pavement surface, restoring weathered surfaces and giving new life to oxidized ones. A seal coat is an economical alternative lasting about five years.

Before deciding on a material and building a preventive maintenance schedule around it, Johnson recommends that tribes secure an informed opinion about the treatment alternatives for their roads, consult the International Slurry Surfacing Association website for connections to qualified contractors, and submit their aggregates for testing. "These upfront costs have long-term benefits," he says. "You want to make sure that the approach you choose will in fact prevent structural damage to your roadway."

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Overview

The Federal Highway Administration (FHWA) Office of Innovative Program Delivery's Center for Local Aid Support launched the Tribal Technical Assistance Program (TTAP) Center 2-year pilot project in 2018 as a transportation resource for tribal communities across the country.

The TTAP Center provides comprehensive transportation training, both in the classroom and online, as well as technical assistance to tribal communities. These activities help to build skills and expertise to ensure the safety and performance of tribal roads and the continuous professional development of tribal transportation workforces.

U.S. Department of Transportation
Federal Highway Administration

Tribal Technical Assistance Program