Tribes, States, and Feds Meet at Lac Courte Oreilles to Coordinate Education Efforts

Robert Gagnon
Michigan Tech TTAP Manager

On April 15th a small group of transportation specialists met at Lac Courte Oreilles to discuss future collaboration between tribal colleges, Michigan Tech TTAP, FHWA, and WisDOT. The goal of the meeting was to ensure quality transportation-related education at tribal colleges throughout the region.

Among those gathered were Tim Penney, FHWA; Dr. Bernard Alkire, TTAP Director; Martha Florey, WisDOT; Todd Kennedy, BIA Regional Roads Engineer; Greg Newhouse, BIA Engineer; Lisa Boyd, College of Menominee; Skye Newhauser, President of Lac Courte Oreilles Ojibwa Community College (LCOOCC); Tracey Mofle, LCOOCC GIS Coordinator; and Amber Marlowe, and Ariana Barber, LCOOCC students. Kevin Chesnik, WisDOT, and Bruce Matzke, FHWA-WI Division, joined via videoconference from Madison.

First day discussions centered on improving efficiencies between the agencies in the areas of communication and meetings. Presentations were given by Michigan Tech TTAP, LCOOCC, FHWA, and WisDOT. The presentation by LCOOCC, “Programs to Enhance Transportation Departments at Tribal Colleges,” was particularly pertinent.

Martha Florey chaired a meeting on the subject of Tribal Traffic Records and Safety Management Systems on the second day. The group was joined by Dick Hartmann, St. Croix Planner; Dick Reese, Northern Native American Health Alliance; and the Lac Courte Oreilles Chief of Police. Topics discussed were transportation safety, GIS data sharing, data collection, traffic records data management, difficulties coordinating Townships and Tribal joint efforts, and working across multiple jurisdictions. A larger statewide meeting was also planned (no date has been set) and the group resolved to continue meeting in the future.

Who Regulates Worker Safety in Indian Country?

Federal safety regulations are the minimum standard for worker safety throughout the USA. Laws, rules, and regulations regarding worker safety are administered by the U.S. Department of Labor, Occupational Safety and Health Administration (OSHA) in Indian Country and in most states. Twenty-four states, Puerto Rico, and the Virgin Islands have their own labor safety administrations. Some state administrations, such as Oregon’s OSHA, have jurisdiction over worker safety on tribal lands1, while others, such as Minnesota’s OSHA, do not2. Indian-owned enterprises operating off tribal lands fall under state jurisdiction. Regardless of jurisdictional authority, workers may file complaints with any OSHA office when they believe that they are working in unsafe conditions.

To find out more about the rules and responsibilities for worker safety, visit the federal OSHA web site at <www.osha.gov> or call TTAP.

Editor's Corner

Spring is Finally Here!

While some of you may be working on your tans already, up here in the Copper Country, spring is just getting started! With spring comes the beginning of construction and maintenance seasons, and although it may be too early to begin large construction projects, you can begin lighter maintenance duties like sign maintenance. Before you get started on the maintenance, you might want to order the sign installation guide on page 3 and download the MUTCD from FHWA at <mutcd.fhwa.dot.gov/kno-2003.htm>. These materials will help you choose the correct sign for your needs as well as guide you in the correct installation and location of signs.

As you gear up for spring and summer work in your area, you might need to make some repairs on equipment. Check out our training schedule on page 8 and see what you can learn about fixing up your equipment with some fancy welding, or learn some heavy equipment operation skills. This year’s welding instructor is Tom Cook, whose experience and depth of knowledge can teach even the oldest dogs new tricks.

Don’t forget, if you would like training in your area, give us a call at 888-230-0688. We can arrange just about any training related to transportation planning, administration, maintenance, and operations, and most of the classes are free-of-charge.
**A Citizen’s Guide to Transportation Decisionmaking**

“Have you ever wondered how decisions are made about transportation projects that affect your life? How do government officials decide where to put a bus stop, road, or bridge? How are these and other transportation projects planned? And how can you make sure your opinions are heard and considered by the planners, road designers, elected officials, and other citizens?”

“The Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) wrote this guide to give you the answers to these and other transportation-related questions.”


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**Community Impact Assessment, A Quick Reference for Transportation**

“Community impact assessment is a process to evaluate the effects of a transportation action on a community and its quality of life. The assessment process is an integral part of project planning and development that shapes the outcome of a project.”

“The community impact assessment process alerts affected communities and residents, as well as transportation planners and decisionmakers, to the likely consequences of a project, and ensures that human values and concerns receive proper attention during project development.”


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**Sign Installation Guide**

A small, durable guide that is handy for sign installation and maintenance personnel to keep in their vehicles for field reference. The illustrations quickly show how signs are correctly installed on rural roads.

“Includes eighteen color photographs showing the specifications for placing signs along Forest Service roads. Intended to help new employees or volunteers install road signs.”


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**What is it? It’s a “погрузчик непрерывного действия”**

The answer to last issue’s “What is it?”. This is a pogruzchik neprirvnego deistviya, [constant action loader], and as Denis Baker correctly guessed, it’s used to pick up furrows of snow or other loose materials into a dump truck. The machine is widely used throughout the former Soviet Union to clear snow, and it’s flailing collection arms (seen on the front scoop) amaze observers young and old. It has a top speed of TEN miles per hour and can move up to 230 cubic meters of material per hour. Retail price in Russia is approximately $17,000.

Denis Baker won a Michigan Tech sweatshirt and some TTAP work gloves for submitting the right answer.

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Sorry, no room for a new “What is it?” in this issue. Look for them in future issues.
Springtime Sign Maintenance Tips

Adapted for Pathways by John Velat TTAP Editor

Winter takes a toll on more than you and your roads, it’s also a time when signs may get more abuse than usual. Snow plows and skidding vehicles may skew or knock over signs, and some hunters may have “tagged” a sign or two during hunting season. As part of your spring maintenance program, you should check sign performance and make simple repairs using some of these tips. Most of this text is excerpted from FHWA’s Maintenance of Signs and Sign Supports for Local Roads and Streets, A Guide for Street and Highway Maintenance Personnel, and pictures are from Michigan Tech TTAP.

Importance of Maintaining the Sign Face

Doing a good job of maintaining regulatory and warning signs makes the road safer for all drivers. You should keep in mind that an accident can occur because of a missing or unreadable sign. Good sign maintenance will improve traffic safety, reduce the chances of a lawsuit against the community, and increase traffic capacity. Remember TRAFFIC SIGNS MUST HAVE A PURPOSE—they must:

- Fulfill a need.
- Command attention and respect.
- Convey a clear, understandable message.
- Provide enough time for the driver to respond correctly.

Where Do I Start?

Damaged or missing regulatory signs (especially STOP, YIELD, DO NOT ENTER, ONE WAY and WRONG WAY signs) should be replaced or repaired as soon as possible. Generally, these signs should be replaced or repaired within hours of the agency having notice of them missing, down, or damaged. The date and time of notification should be documented, and should be followed up with the date and time the sign was repaired or replaced.

Damaged or missing warning signs (especially speed advisory plates, sharp curve signs, railroad crossing and stop ahead signs) should be replaced or repaired as soon as possible. Generally, a sign should be replaced as soon as it is identified as being lost or damaged. As a general rule, the situation should be corrected within three calendar days and the action taken, date and time documented.

When signs are damaged, bent or vandalized, you have to determine if the sign should be repaired, replaced or left as is. This is usually a field judgment—more often than not, it is cheaper to replace a badly damaged or unreadable sign than attempt many repairs. Consider the repair costs, remaining service life of the sign face after repairs and the value of the sign blank (when it is reusable) against replacing it with a new or recycled sign. Do not leave a sign down or take a sign away and leave nothing. Always try to have a replacement sign or sufficient repair materials with you.

If you decide a field repair is appropriate or you have to repair the sign until a replacement sign can be obtained, consider what effect the damage has on the sign’s performance, and how it might be repaired.

Cleaning and Checking Signs and Sign Supports

Perhaps the easiest, but least performed maintenance, is sign cleaning and inventory. Signs can fade, be painted over, get knocked down, be stolen, be blocked from view by vegetation or man-made features, cease to apply to the current situation, or be dirty. Occasionally, someone may even add unauthorized signs that affect the control of traffic or driver’s needs. Checking existing signs against sign inventory can identify any discrepancies and resolve those discrepancies before they contribute to an accident.

Signs should be checked at least twice a year as conditions dictate. Desirable times are after winter and before the start of the school year. This cycle provides for identifying winter damage and blocked visibility as a result of new vegetation growth. Special reviews should be conducted after bad storms when drifting snow blocks visibility or trees are blown down.

During sign checks, you can clean dirty signs and refurbish faded or damaged signs. Sign cleaning may require sign removal, but can usually be performed from a ladder or from the ground. Use a mild soap or detergent without abrasives to clean signs, and never use a pressure washer as the high pressure may separate the face from the blank. The inspectors should keep a record of all actions taken and recommended. These records should be added to the sign inventory.
Accident Damaged Signs and Sign Supports

Retroreflective surfaces that have splits, breaks, peels, or separations should be replaced as soon as practical with a new sign. Sign supports should be repaired or replaced to original conditions. When a sign requires repeated maintenance, you may consider relocating it.

Repair and Replacement of Small Sign Supports

The location of signs is usually established by the guidance in the current edition of the Manual on Uniform Traffic Control Devices, local standards and/or directives, and legal procedures and/or requirements.

Each damaged sign should be evaluated to determine if it requires replacement, an additional sign should be added or the sign and supports require replacement. When replacing the sign and/or supports, do not rely on original position and height of the sign as appropriate criteria. It is important to check the location of the support and the mounting height of the sign above the roadway to ensure the sign is legible and crashworthy. Additionally, it is essential to locate small, crashworthy sign supports so they function properly while ensuring there are no utility problems or sight obstructions. Before changing the location of a support or the height of a sign, check with your supervisor.

Repairing Bent Signs

While many bent signs can be read in the daylight, some bent signs, even signs with minor bending, are difficult to see at night because they no longer reflect the light from the vehicle’s headlights back to the driver’s eyes.

A bent sign can often be fixed simply by straightening. If after straightening the message remains clear, legible, retroreflective and the sign surface is not opened, cracked or separated from the sign face, it may be reused. Remember, if a sign is so badly bent that it will take several hours to fix, it is often cheaper to replace the sign and leave any repair or salvage to a shop operation. To repair a sign with minor bends, you should:

1. First try to straighten the sign. If possible, bend the sign back in place on the sign post with hand pressure (wear leather gloves).
2. If the sign can’t be straightened sufficiently with hand pressure, remove the sign from the support and place it on a flat surface such as a truck bed, trailer bed, or fender dolly. Use cardboard or cloth to protect the sign face and pound it flat with a rubber mallet. (The cloth and rubber mallet will minimize further damage to the reflective sheeting.)
3. You must use your judgment to determine if the sign remains serviceable; remember, this means it is legible both day and night (retroreflective) and there is no cracking or separation of the sheeting material.
4. If, in your opinion, the sign is no longer serviceable, replace it immediately. If no sign is available at the site, remount the existing sign until you return later with a satisfactory replacement.

Repairing the Sign Face

Bullet holes, snow and aggregate abrasion, impacts, and age all affect the face of a sign. If left unrepaired, holes and scrapes may lead to peeling and separation of the sign surface from the blank. Its best to perform a simple repair with a patch before peeling and bubbling occur. Holes and scrapes can be repaired using the following procedures:

1. Once the sign has been straightened and any bullet holes pounded flat (when necessary), new sheeting can be applied to the face of the sign.
2. Clean the area(s) to be patched with Xylol, then Varnish naphtha.
3. If you carry replacement sign faces or patching materials, make sure that the retroreflective material being used for patching is the same as the material on the face of the sign. There are different grades of retroreflective sheeting; generally the manufacturer’s material will have a certain mark or pattern which will allow you to determine the type of retroreflective material on the sign face. (It is important to use the same retroreflective materials to ensure the sign will remain legible at night.) If in doubt about what type of sheeting to use, replace the sign.
4. Follow the manufacturer’s recommendations. Cut background field patches slightly larger than the damaged area. Pressure sensitive material should be extended at least 1/2-inch beyond the damaged area.
5. Replace the damaged legend with die-cut, pressure sensitive, pre-spaced letters, borders and symbols and firmly squeegee into place.
6. Seal the hole on the back of the sign by applying aluminum foil tape to stop moisture from reaching the adhesive on the sign sheeting patch. For large holes, start placing the

Identifying Bent Signs

Daytime sign surveys might not reveal bent signs, unless you also look from the back. Nighttime surveys may be the most revealing. Bent and leaning signs that appear adequate during the day might be out of alignment with headlights and not be visible at night. This sign can probably be repaired in the field without tools.

Continued on page 6
foil at the bottom of the hole, overlapping about 1/2-inch in a shingle fashion as you move up covering the hole.

7. If the sign is subject to snow burial and the replacement sheeting extends to the top edge of the sign, place transparent film along the top edge to seal out any moisture. Of course, if signs can be relocated to an area to avoid burial, they should be.

**Vandalized Signs**

Sign vandalism includes painting, theft, gunshot holes, impacts by bottles and rocks, bending, and any other intentional damage. Most vandalism affects both daytime and nighttime effectiveness. Signs over-sprayed with paints are difficult to read, particularly at night, and do not demand the respect and attention of a driver. Cleaning paint from a sign may improve its daytime effectiveness, but the cleaner or residue from the paint may damage the sign’s nighttime effectiveness. Painted signs and signs damaged as a result of shot holes or being struck by other objects (such as bottles) must be checked for retroreflectivity after repairs are complete.

Overpainted signs can often be cleaned but may also require replacement. Generally, a combination of the following approaches is recommended for communities with recurring or increasing vandalism problems. Although sign vandalism in some cases seems to be an overwhelming problem, it is a situation that cannot be ignored.

1. Paint can sometimes be removed from the face of signs without damaging or reducing the sign’s retroreflective properties. Several manufacturers have developed sign protective overlays that are more tolerant to paints and cleaning agents, and they have also developed improved cleaners.

2. Paint should not be removed with abrasive compounds or implements that will leave the sign face scratched (i.e. steel wool). After cleaning off paint, signs should be inspected under night conditions to determine if they have retained sufficient retroreflective characteristics to remain legible at night.

**Missing Signs**

Sign vandalism also includes the theft of signs. Missing signs can be the result of storms or traffic incidents; however, the primary reason in many areas is simply theft. While theft can’t be eliminated it may be substantially reduced by making it difficult to remove a sign and by developing and implementing laws to penalize vandals.

Specific fasteners can be used to attach signs to support posts which make it far more difficult for vandals to remove sign panels. Among the more common special fasteners in use are:

- Expanding anchor bolts and blind aluminum rivets.
- Bolts (or nuts) that require special tools to install and remove them (such as fluted nuts or star bolts).
- Nuts with shear-off heads.
- Simply hammering down the excess portion of the threaded bolt so that it cannot be easily unscrewed.

**Checking Retroreflectivity**

Remember, a sign works 24/7, and may be more important at night than during the day. If the sign surface is not clean, in good repair, and aligned to the roadway properly, it might be invisible at night. You must check retroreflectivity of all of your signs. There are special electronic retroreflectometers available to measure the amount of light being reflected by a sign and, when available, these devices facilitate the inspection process; however, most of the inspection done at the local level can also be done effectively with visual inspection techniques.

A practical method is to use a series of retroreflective inspection guide panels and a flashlight at night or during hours of relative darkness. Agencies should assemble their own field repair kits, and include all tools and materials, such as adhesive sheeting and aluminum tape, that they need for common field repairs.

a) Use masking tape or a spring clip to hold the appropriate 8” X 10” sign inspection guide panel to the clean area of the sign face.

b) Stand back about 30 feet from the sign, hold a flashlight about 2 inches from your eye and shine it on the sign.

c) If the inspection guide panel is brighter than the sign face or the sign is illegible, the sign should be replaced.

d) If the inspection guide panel blends with the sign and is about the same brightness, the sign should be considered marginal and inspected again after a year.

**Importance of Nighttime Sign Surveys**

Luckily this Stop sign’s retroreflectivity is much better than the Stop Ahead sign that precedes it. Nighttime sign surveys easily identify retroreflectivity problems, and the repair may be as simple as a straightening of the sign or its support.
General Sign Inventory Procedures

1. A record of all signs (in use and belonging to the agency) should be maintained. Larger communities should maintain a computer inventory of all signs and the essential information about each sign. Smaller communities with a limited number of signs (say 200 or less) should either maintain a computer inventory or a file card inventory of each sign in service. The essential information that should be maintained includes, but is not limited to:
   - Type sign (e.g. R-1, STOP)
   - Size of sign (e.g. 24" X 24")
   - Location (e.g. NW corner of First and Main and/or GPS location)
   - Date of installation (or how long sign panel has been in use)
   - Accident/maintenance history (e.g. each event of repair due to accidents and maintenance activities, including changes made)
   - Inspection dates (e.g. day/night or cleaning dates)
   - Sign support type
   - Any other signs mounted on the same support

2. Each sign should have a unique inventory serial number firmly attached or engraved on the back of the sign (this helps in maintaining signs, relocating sign panels that are found, and enforcing legal actions when stolen signs are recovered).

3. Signs essential to driver, pedestrian and bicycle safety (such as regulatory and warning) should be reviewed for visibility and legibility annually, and as appropriate after severe wind and snow storms (reviewers should be prepared to clean signs that have salt and road oil buildup).

You can order the complete sign maintenance manual from TTAP, or download it at <http://safety.fhwa.dot.gov/media/sign_support.htm>. The guide contains more pictures and detailed examples of damaged signs and supports, and what to do about them.

Sign Maintenance Kit

You can assemble the materials below to take along for field repairs. Remember to properly sign your work area during any field work!

Supplies and Sign Hardware Items

You should take enough hardware to replace a minimum of 20 sign panels and 10 sign supports. When your hardware supply falls below this level, obtain more before beginning a patrol. You will also need to carry a supply of:

1. Anti-theft, vandal-resistant fasteners.
2. Oversized neoprene or nylon washers.
3. Several boxes of bolts with nuts.
4. Two rolls of transparent film (one 2 inch width, one 3 inch width).
5. Four one-quart cans of clean sealer or equal.
6. Four one-quart cans of thinner.
7. One container of naphtha, and a sealer or equal.
8. One rolls each of reflective tape and numbers.
9. One package of assorted arrows and numbers.
10. Two rolls of transparent film (one 2 inch width, one 3 inch width).
11. Two rolls of aluminum foil tape for backing sign holes.
12. Two rolls of masking tape.

Hand tools

Suggested hand tools for sign maintenance patrols:

1. Several different size adjustable wrenches and a pair of adjustable pliers.
2. Weed cutter for clearing vegetation that blocks signs.
3. Loppers for clearing vegetation.
4. 3-cu. ft. utility wheelbarrow as there may be a need to mix concrete for sign bases, move hole spoil, or bring in material to fill holes.
5. Brace and bits to drill holes in wood posts.
6. Set of woodworking chisels for trimming wood posts.
7. Hacksaw to cut bolts and rivets.
8. Crosscut saw for cutting wood posts.
9. Post hole auger, posthole digger, and posthole breaker bar for preparing new postholes and resetting posts.
10. Double-handed slip hammer of suitable size for driving posts, usually U-channel and square tube.
11. 16-lb. or 20-lb. double-faced sledgehammer.
12. 6-lb. double-faced hammer.
13. 16-oz. or 20-oz. curved claw hammer.
15. Heavy-duty tall stepladder or an extension ladder.
17. Fender dolly.
18. Cold chisels, various sizes.

Sign Posts

For routine patrols, take several sign posts commonly used in your patrol area. Remember there may be several types in common use in the area including wood, steel U-channel, perforated square tube, etc. Suggested numbers of posts for large areas include (vary quantities accordingly):

1. Wood post 4" X 4" X 12', 6 pcs.
2. Wood post 4" X 6" X 14'- pre-drilled, 4 pcs.
3. Wood post 4" X 6" X 16' - pre-drilled, 4 pcs.
4. U-channel 8' long, 4 pcs.
5. U-channel 10' long, 4 pcs.
6. Square steel tube 2.25" X 2.25" X 10, 4 pcs.
7. Others as unique to your area.
Upcoming Training and Events

Remember, you can request ANY training or conference you like, and most of them are offered free-of-charge to participants. Call or write us to request an event in your area or to sign up for existing events.

May 17-18, 2004
Sault Ste. Marie Welding Training, Kinross, MI

CANCELLED May 19-21, 2004 CANCELLED
BIA Annual Roads Meeting (Minnesota), Bois Forte, Nett Lake, MN

May 20-21, 2004
KBIC Welding Training, Baraga (Tech College), MI

May 24-25, 2004
Bad River Welding Training, Ashland, WI

CANCELLED May 27-28, 2004 CANCELLED
Welding Training, Leech Lake, MN

June 16-17, 2004
Forklift Training, Oneida, WI

There are planned events without firm schedules at press time, so be sure to check the TTAP Web site <www.ttap.mtu.edu> for the latest calendar of events.