Country Roads & City Streets
WV Local Technical Assistance Program
Summer 2008 College of Engineering & Mineral Resources Vol. 23 No. 2

WestVirginiaUniversity.

Roadside Mowing Operations

by Anthony Ford and Mark Franz, WV LTAP

Photo Source: Idaho DOT

Some folks know this time of year as the lazy days of summer. For those involved in vegetation management, summer is anything but lazy. The following article presents tips and safety reminders to help make your summer mowing a safe undertaking.

TRAFFIC CONTROL FOR ROADSIDE MOWING

When setting-up a work zone for roadside mowing, there are several available options in the West Virginia Manual on Temporary Traffic Control for Streets and Highways (the authoritative document for work zone setup on public roads in the state of West Virginia). The manual has guidelines for establishing temporary traffic control for roadway mowing operations in Chapter G, Sections G.06 - G.20. Some of the available procedures are described below.

Mobile Mowing Operations with Lane Encroachment

The first option—depending on the work, location, duration, and activity—is mobile traffic control for work with lane encroachment. For mobile operations that move at speeds less than 3mph, mobile signs on a trailing vehicle

ltap West Virginia

http://wvltap.wvu.edu

In This Issue

Country Roads & City Streets is a quarterly publication of the West Virginia Local Technical Assistance Program (WV LTAP). The purpose of this newsletter is to provide information that is beneficial to roadway construction and maintenance personnel.

ltap West Virginia

Enhancing Transportation in Your Community

National LTAP & TTAP Programs
Serving America's Local Road & Bridge Agencies

may be used (such as PASS WITH CARE and MOWING or SPRAYING AHEAD). The trailing vehicle will normally maintain visual contact (approximately 500 ft) behind the work vehicle. On curves, the trailing vehicle will drop back further so that approaching traffic will see the lane is blocked. Alternatively, stationary signage that is periodically collected and repositioned in advance of the work zone may be used. Warning signs such as MOWING AHEAD, MOWING AREA, or ROAD WORK AHEAD should be placed no more than one to two miles ahead of the mowing operation.

For mobile operations with lane encroachment that move faster than 3mph, trailing vehicles should be used as components of the work zone. The trailing vehicle may be equipped with signs, flags, lights, impact attenuators, arrow panels, or a portable changing message sign, if available. Note that in all cases during daytime operations, all work vehicles shall be equipped with at least one rotating high intensity amber light and a slow moving triangle mounted on the rear of the vehicle.

Mowing Operations On- or Off-Shoulder

Another option for work zone setup is for work on or off the shoulder with partial or no lane encroachment. For mowing operations on the shoulder with partial encroachment, warning signs on a trailing vehicle, as noted above, should be used. Alternatively, for work off the shoulder that is 15ft or more from the edge of the traveled way, temporary traffic control is not necessary unless the environment is complex or confusing to road users. In this case, a single warning sign, such as ROAD WORK AHEAD or MOWING AHEAD, should be used.

Once the work zone is setup and the appropriate temporary traffic control devices are properly placed, you are almost ready to begin the mowing operation. Before beginning, take a look at these additional tips.

MOWING OPERATOR SAFETY TIPS

1. Read the operator's manual of any machinery before using it.

2. Only operate mobile machinery equipped with a roll over protection system (ROPS) and a seatbelt. It is also important to keep all the guards in place and to never carry any riders.

3. When mowing, be aware of the "danger zone" for rotary blades (the right rear of the tractor), where debris can be projected into the air.

4. Raise mower blades when crossing driveways or roadways.

5. Always plan your roadside mowing operations. This means incorporating safety and efficiency into your operations.

VEGETATION TIPS

1. When possible, use numerous grass species on the roadside right-of-ways and medians. Multiple species will prevent vegetation loss in drought and high water periods.

2. Set the height of the mower according to the terrain and species of grass. This will help prevent the grass from drying out and eliminate "scalping" of the ground with the blades set at appropriate heights.

3. Coordinate mowing and chemical spraying applications. This is important for the safety of the tractor operator. This is also important so the chemicals applied can be used effectively.

WV LTAP Assistant Changes

Sabrina DeVall joins the WV LTAP team as a graduate assistant pursuing a master's degree in professional writing and editing. She will be writing and editing published materials for the Center and will also assist Kim with event planning and outreach.

Sabrina received a BA in English with a concentration in professional writing and editing and a minor in communication studies from West Virginia University in 2007. She is a member of the Professional Writing and Editing Graduate Student Association (PWEGSA) and has completed many service projects in writing and communication for local non-profit organizations.

The WV LTAP staff is also happy to report that Weslie Boyd graduated with a master's degree in professional writing and editing in May, and is now living in Atlanta, GA where she is interning at *Atlanta Magazine*. Without the hard work and dedication of our graduate student assistants, the WV LTAP would not be nearly as successful. Thank you to both our current assistants, Mark and Sabrina, and to all of our past assistants.

WV LTAP Traffic Counting Assistance

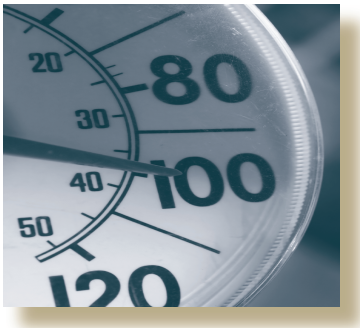
Are you getting questions from concerned citizens or elected officials about traffic counts, vehicle speeds, or other traffic data issues? Are you a West Virginia municipality that needs traffic data for a project you are considering or planning? If the answer to these questions is yes, the WV LTAP may be able to help.

The WV LTAP has portable traffic analyzers available for loan that can collect and compile vehicle counts, speeds, classification, and so on. In some cases, depending on your proximity to the Center or staff travel demands, we may be able to program, install, and remove the counters for you. For more information, please contact Mark Franz by email: mark.franz@mail.wvu.edu or by phone 304-293-3031, ext. 2611.

Protecting Workers from Effects of Heat

OSHA Fact Sheet, U.S. Department of Labor

Roadway and construction workers often work outside during extremely hot temperatures. Being knowledgeable regarding the various factors that contribute to heat related illnesses and knowing the appropriate treatment options can help make the summer construction and maintenance season a healthy one.



Protecting Workers from Effects of Heat is a fact sheet produced by the U.S. Department of Labor, Occupational Health and Safety (OSHA). The following information has primarily been taken from this government document.

continued on page 4

Protecting Workers from Effects of Heat

continued from page 3

Factors Leading to Heat Stress

• High temperature and humidity; direct sun or heat; limited air movement; physical exertion; poor physical condition; some medicines; inadequate tolerance for hot workplaces; and insufficient water intake can all lead to heat stress.

Possible Heat Disorders, Health Effects, and Proper Treatment

• **Heat Stroke** is the most serious heat related disorder and occurs when the body's temperature regulation fails and body temperature rises to critical levels. It is a medical emergency that may result in death.

The primary signs and symptoms of heat stroke are confusion; irrational behavior; loss of consciousness; convulsions; a lack of sweating (usually); hot, dry skin; and an abnormally high body temperature.

If a worker shows signs of possible heat stroke, professional medical treatment should be obtained immediately. Until professional medical treatment is available, the worker should be placed in a shady, cool area and the outer clothing should be removed. Douse the worker with cool water and circulate air to improve evaporative cooling. Provide the worker fluids (preferably water) as soon as possible.

• **Heat Exhaustion** is only partly due to exhaustion; it is a result of the combination of excessive heat and dehydration.

The primary signs and symptoms of heat exhaustion are headache, nausea, dizziness, weakness, thirst, and giddiness. Fainting or heat collapse is often associated with heat exhaustion. Workers suffering from heat exhaustion should be removed from the hot environment and given fluid replacement. They should also be encouraged to get adequate rest, and when possible, ice packs should be applied.

• **Heat Cramps** are usually caused by performing hard physical labor in a hot environment. Heat cramps have been attributed to an electrolyte imbalance caused by sweating and are normally caused by the lack of water replenishment. It is imperative that workers in hot environments drink water every 15 to 20 minutes and also drink carbohydrate-electrolyte replacement liquids (e.g., sports drinks) to help minimize physiological disturbances during recovery.

• **Heat Rashes** are the most common problem in hot work environments where the skin is persistently wetted by unevaporated sweat. Heat rash looks like a red cluster of pimples or small blisters. It is more likely to occur on the neck and upper chest, in the groin, under the breasts, and in elbow creases. The best treatment for heat rash is to provide a cooler, less humid environment. Keep the affected area dry. Dusting powder may be used to increase comfort, but avoid using ointments or creams—they keep the skin warm and moist and may make the condition worse.

Administrative or Work Practice Controls to Offset Heat Effects

• **Acclimatize workers** by exposing them to work in a hot environment for progressively longer periods.

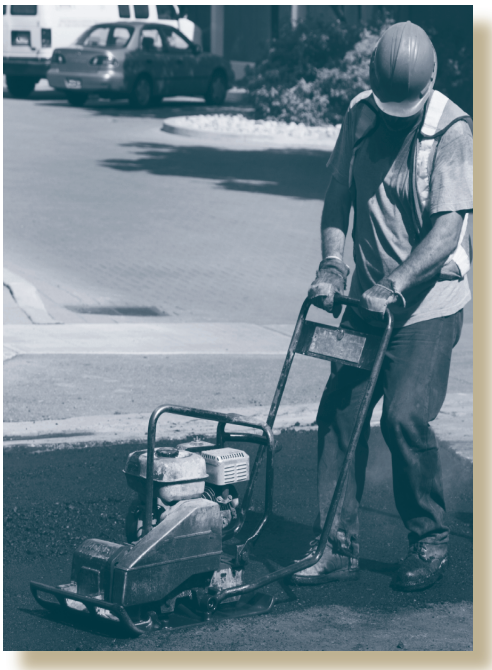
• **Replace fluids** by providing cool water or any cool liquid (except alcoholic and caffeinated beverages) to workers and encourage them to drink small amounts frequently, (e.g., one cup every 20 minutes). Ample supplies of liquids should be placed close to the work area.

• **Reduce the physical demands** by reducing physical exertion such as excessive lifting, climbing, or digging with heavy objects. Use relief workers or assign extra workers, and minimize overexertion.

• **Provide recovery areas** such as air-conditioned enclosures and rooms and provide intermittent rest periods with water breaks.

• **Reschedule hot jobs** for the cooler part of the day. Routine maintenance and repair work in hot areas should be scheduled for the cooler seasons of the year.

• **Monitor workers** who are at risk of heat stress, such as those wearing semi-permeable or impermeable clothing when the temperature exceeds 70°F, while working at high energy levels. Personal monitoring can be done by checking the heart rate, recovery heart rate, and oral temperature.



16th Annual Roadway Management Conference

by Weslie Boyd, Public Relations Assistant, WV LTAP

The WV LTAP hosted the 16th Annual Roadway Management Conference in Wheeling, W.Va. on March 31 - April 2, 2008. Nearly 250 roadway personnel from Maryland, Virginia, Delaware, Pennsylvania, and West Virginia gathered for two-and-a-half-days of presentations and catching up with old friends.

There were 15 breakout sessions during the conference with topics ranging from media relations and crisis communication to the technology of warm-mix asphalt.

Speakers from West Virginia included Dave Ross, chief of the Kanawha County Sheriff's Office; Scott Byars, West Virginia State University Extension program leader; Aaron Gillespie and Mike Mance, WVDOH Materials Division engineers; Dave Sada, WVDOT bridge engineer; Diana Martinelli, WVU public relations professor; Mike DeMary, City of Fairmont stormwater manager; Terry Hough, City of Morgantown city engineer and public works director; and John Zaniewski, WVU civil and environmental engineering professor.

The conference kicked off during a noon luncheon with speakers from FHWA and WVDOH, preceded by pre-conference workshops on traffic sign retroreflectivity, chainsaw safety,

WV attendees Bill Rumble and Bob Amtower seem to be enjoying the RMC.

and effective technical writing.

Nearly 30 exhibitors were on hand to demonstrate the latest in highway technology. Many offered live demonstrations on Tuesday afternoon.

In the evening, participants attended a dinner with entertainment from Morgantown-based The Halftime String Band one night and a reception at Cabela's the next.

On Wednesday morning, lawyers from Pittsburgh, PA re-enacted a mock deposition to show participants how the legal process works. "I think participants learned a lot," said Terry Hough, City of Morgantown city engineer and public works director. Terry and two other participants helped recreate the case.

WV LTAP staff recorded this mock-deposition, which is now available for loan. The two disc DVD set presents the depositions of two motor vehicle cases, explaining what to expect in a deposition, general guidelines when being deposed, and examples of good and bad witnesses. To borrow these DVDs, or for more information, please contact Mark Franz.

For copies of the 2008 RMC presentations, visit our website: http://wvltap.wvu.edu.

These four RMC attendees have a good seat for the mock deposition.

Center Staff & Contact Information

WV LTAP
West Virginia University
PO Box 6103
Engineering Sciences Building
Rm. 651 and 653-B & C
Morgantown, WV 26506-6103

Phone: (304) 293-3031 x 2612
Fax: (304) 293-7109
http://wvltap.wvu.edu

Staff

Dr. Ronald Eck, P.E.
Director
(304) 293-3031, ext. 2627
Ronald.Eck@mail.wvu.edu

Kim Carr
Program Coordinator
(304) 293-3031, ext. 2612
Kim.Carr@mail.wvu.edu

Anthony Ford, P.E.
Program Coordinator
(304) 293-3031, ext. 2629
Anthony.Ford@mail.wvu.edu

Mark Franz
Technical Assistant
(304) 293-3031, ext. 2611
Mark.Franz@mail.wvu.edu

Sabrina DeVall
Public Relations Assistant
(304) 293-3031, ext. 2662
Sabrina.DeVall@mail.wvu.edu

Bill Wyant
Senior Volunteer
WWyant@hsc.wvu.edu

The West Virginia LTAP Center is a part of the nationwide Local Technical Assistance Program (LTAP), which is funded by the Federal Highway Administration. The program also receives funding from the WV Department of Transportation.

Mission:

The mission of the WV LTAP is to foster a safe, efficient, and environmentally sound surface transportation system by improving skills and increasing knowledge of the transportation workforce and decision makers.

Overall Goal:

The Center's overall goal is to improve the transportation system by focusing on professional training, technical assistance, and information dissemination.

To achieve this goal, the WV LTAP does the following:

- Provides on-site training and demonstrations
- Publishes a quarterly newsletter
- Maintains a video, CD-Rom, and publications library
- Provides technical assistance via mail, telephone, fax, email, or site visits

Poison Ivy: A Summertime Nuisance

by Sabrina DeVall, Public Relations Assistant, WV LTAP

Working outdoors can lead to many hazardous situations, such as coming into contact with poisonous plants. West Virginia is home to one of the most widespread poisonous plants, poison ivy.

Poison ivy can cause an allergic reaction in approximately 85% of the population and plants can be toxic if burned. If the leaves or the stalk of poison ivy are damaged, do not let the plant come into contact with your skin. Here are some tips for identifying and avoiding poison ivy, as well as some information for treatment in the case of an allergic reaction.

"Leaves of 3, Let It Be"

Identifying poison ivy can be tricky, but following these guidelines is one way to help you spot the plant and avoid contact with it. Poison ivy normally has three leaves but may have up to nine leaves on the same stem. Leaves are green and grow on a vine, a trailing shrub on the ground, or a free standing shrub. If you are unsure whether a plant is poisonous or not, avoid contact with the leaves and stem.

How to Avoid an Itchy Rash

Getting rid of the poisonous plant is the most effective means of avoiding an allergic reaction. Some chemical killers such as Roundup or Ortho Poison Ivy Killer are effective. The plants can also be removed by carefully cutting out the stem, vine, and roots. Be sure to wear protective clothing when attempting to remove the plant.

What to do after contact

If contact occurs, take these steps to reduce the risk of an allergic reaction.

1. Clean your skin thoroughly with isopropyl (rubbing) alcohol.
2. Rinse affected area with water.
3. Shower with soap and warm water.
4. Wear protective gloves to clean clothes, shoes, and tools with alcohol and water. Discard after use.

If a Reaction Occurs

Redness and swelling will appear in 12 to 48 hours followed by blisters and itching. These symptoms should go away on their own in 14 to 20 days. However, listed below are some things you can do to find more immediate relief.

For mild cases:

- Apply wet compresses or soak in cool water
- Take an oral antihistamine
- Use an over-the-counter topical corticosteroid

For severe cases:

- Seek medical attention if the blisters are severe or the rash covers more than 30% of your body.
- Your physician may prescribe antibiotics or corticosteroids.

The "Do-It-Right" Method for Patching Potholes in Asphalt Pavements

Six Steps to Long-lasting Pothole Repair

Photos taken at the 2008 RMC. Special thanks to the WVDOH D-6 for their assistance with this demonstration.

1. Set-up Temporary Traffic Control

• Place signs, cones, flaggers, etc. according to the WV Manual on Temporary Traffic Control for Streets and Highways.

2. Mark the Area to Remove

• Use paint or chalk to mark a straight-sided rectangle or polygon 8-12 inches beyond visible deterioration.

3. Prepare the Pothole

• Make vertical cuts using a pavement saw, pneumatic jack-hammer, or milling machine.
• Remove damaged material to firm base.
• Remove dirt, debris, and water using a broom or compressed air.

4. Apply Tack to Sides & Bottom

• If using hot-mix, use a hot mop, brush, or spray to apply a thin coat of asphalt emulsion to improve the bond.
• Cold-mix is self-tacking.

5. Place & Compact the Mix

• Fill in 2-3 inch lifts, compacting each layer using a vibratory roller, vibratory plate, or steel- or rubber-tired roller.

6. Seal the Edges of the Patch

• Apply a six-inch wide coat of asphalt emulsion blotted with sand or fine aggregate (<#4) to keep water out.

Dr. Ron Eck Retires from WVU

by Sabrina DeVall, Public Relations Assistant, WV LTAP

Dr. Ronald Eck, Ph.D., P.E. and long-time director of the WV LTAP Center retired from the faculty of West Virginia University on May 15, 2008. He is, however, planning to be actively involved with the WV LTAP.

Dr. Eck graduated from Clemson University with a BSCE in 1971 and a Ph.D. in 1975. He began teaching in the Civil and Environmental Engineering Department with the College of Engineering and Mineral Resources at West Virginia University in 1975. In addition to his numerous responsibilites as a professor, he has also served as the director of the WV LTAP since 1991.

Dr. Eck is a member of the Transportation Research Board and an active participant in the WVU Community Design Team program. He also conducts continuing education workshops and training courses for practitioners in these areas. Dr. Eck's research interests include highway design, traffic engineering, highway safety, pedestrian and bicycle transportation, and railroad-highway grade crossings.

We are very sad to see Dr. Eck leave his faculty position, but are pleased to announce that he has been granted emeritus faculty status and has agreed to remain an active participant with the WV LTAP Advisory Board. He will also continue to serve as Interim Director until a new director has been appointed.

West Virginia Local Technical Assistance Program
West Virginia University
College of Engineering and Mineral Resources
Department of Civil and Environmental Engineering
PO Box 6103
Morgantown, WV 26506-6103

Non-Profit Organization
U.S. Postage Paid
Morgantown, WV
Permit No. 34

It's a Girl!

Welcome, Augusta Harding Ford! Born June 13, 2008, Augusta is the daughter of WV LTAP program coordinator Anthony Ford and his wife Jennifer. She weighed 7 lbs, 15 oz. and was 19.5" long.