

Country Roads & City Streets

WV Transportation Technology Transfer Center

December 2001

College of Engineering & Mineral Resources

Vol. 16 No. 4



WINTER TRAVEL AND SAFETY

By: Steven Jenkins, Director Montana LTAP Program



A common danger facing winter travelers is being stranded in their automobiles. Statistics show that of those fatalities that occurred while stranded, 85% died of carbon monoxide poisoning while 15% died of hypothermia. Carbon monoxide is odorless, colorless, and tasteless. If a vehicle is running, carbon monoxide is building up. Carbon monoxide then replaces the oxygen at the exchange into the lungs. Precautions need to be taken if you remain in your vehicle while it is running for an extended period of time.

Hypothermia is another area of concern that we are confronted with during the winter months. Hypothermia is simply the lowering of core body temperature so that the body loses heat faster than it can generate it. This can happen at 45 degrees or

even 50 degrees if it is windy and you have wet clothes on. There are five stages of hypothermia. During the first stage, the body temperature drops to 95 degrees. During this state, shivering occurs and recognition of hypothermia symptoms begins. When the body temperature drops to 95-90 degrees, sluggish thinking

takes over. Your body decreases circulation and you lose muscle control. In the next stage, temperature drops to 90-86 degrees. At this time, the victim becomes disoriented and most don't survive alone in the field. When core temperature drops to 86-78 degrees, muscles become rigid. The final stage of hypothermia occurs at 77 degrees. At this point, death is almost certain as you enter cardiac arrest.

When trying to help someone suffering from hypothermia there are some dangers. Re-warming the body too rapidly can cause the victim to have circulatory problems, resulting in heart failure.

Hypothermia is much easier to prevent than it is to treat. One should insulate themselves from the cold and wind. Moisture trapped near the body is the number



IN THIS ISSUE

Winter Travel and Safety

National Weather Service

Implements a New Wind Chill Temperature Index

Some Winter Technology

Cold, Hard Facts

Protect Yourself From Winter Work Hazards

Winter Storm Survival Kit

Weather Web Page Resources

2001 Snow and Ice Control Workshop in Review

Nature's Wrath Strikes Mullens, WV

Roadway Management

Conference Announcement

Country Roads and City Streets is a quarterly publication of the West Virginia Transportation Technology Transfer Center (T² Center). The purpose of this newsletter is to provide information that is beneficial to highway construction and maintenance personnel. The material and opinions contained in this newsletter are those of the West Virginia Transportation Technology Transfer Center, and do not necessarily reflect the views of the Federal Highway Administration or the WV Department of Transportation. Material contained in *Country Roads and City Streets* is a combination of original and borrowed material. Every effort has been made to ensure the integrity and accuracy of this material. However, the WV T² Center does not assume responsibility for any incorrect material.

one enemy. Drink warm fluids loaded with calories. Make sure that your body gets enough glucose, salt, and potassium to produce heat.

An excellent fabric to wear in the winter is wool. Wool absorbs as much as 30% of its weight without feeling wet to the touch. Cotton only absorbs about 8%. A single gram of wool gives off 27 calories of heat when it goes from dry to wet and is also naturally flame resistant.

Another important topic is that of frostbite. Frostbite is the result of frozen tissues. When frostbite first occurs, the skin will turn red. Later, it turns a pale gray or waxy white. The treatment of light frostbite is fairly simple. To treat light frostbite on the facial area, simply apply warm hands over the area. If the hands are the area that is affected, place the uncovered hands or fingers next to your skin in your armpits or stomach. A very common area for frostbite is the feet. To treat frostbite of this area, place bare feet under clothing and next to skin.

Winter is upon us. Some of you may enjoy outdoor sports, and many may have no choice but to work in the extreme conditions of the outdoors. Just remember that prevention and early treatment are best.

If you have additional questions on this topic of winter travel and safety, please contact the WV T² Center.

INSTRUCTOR - Steve Jenkins PE, Montana LTAP Director, has been teaching winter survival skills in Western states for 10 years. He has worked with law enforcement, search and rescue, fire departments, tribal governments and local agencies to ensure safe practices in winter operations. In his many years of travel, Steve has been required to use and perfect his winter survival skills, and has had to spend many cold winter nights outdoors or stranded in a vehicle.

5 STAGES OF HYPOTHERMIA

Stage	Characteristics	Body Temp.
Initial Symptom:	Shivering (may become uncontrollable), stage of recognition and self-help.	95° F
Second Stage:	Sluggish thinking, irrational reasoning, false feeling of warmth may occur. Body cuts circulation, loses muscle control.	95° - 90° F
Third Stage:	Disoriented, stumbling, uncoordinated, most don't survive alone in the field.	90°-86° F
Fourth Stage:	Muscle rigidity, unconsciousness and barely detectable signs of life.	86°-78° F
Fifth Stage:	Death is almost certain. Cardiac arrest.	77° F and Below

Each individual spends a different amount of time at each level.
If you reach level one, ask yourself:

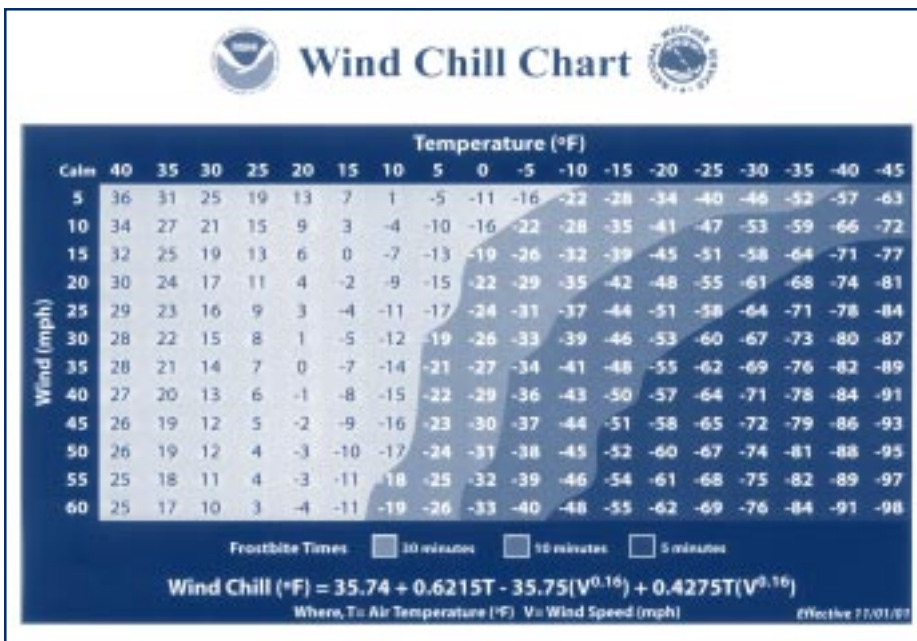
1. Am I wet? Is it windy?
2. Are my body fuel reserves high?

On November 1, 2001, the National Weather Service (NWS) implemented a replacement Wind Chill Temperature (WCT) index for the 2001/2002 winter season. The reason for the change was to improve upon the current WCT Index used by the NWS and the Meteorological Services of Canada (MSC, the Canadian equivalent of the NWS), which was based on the 1945 Siple and Passel Index.

For over a year, there has been discussion within the NWS and MSC about updating the WCT. During the Fall of 2000, the Office of the Federal Coordinator for Meteorological Services and Supporting Research (OFCM) formed a special group consisting of several Federal agencies, MSC, the academic research community (Indiana University-Purdue University in Indianapolis (IUPUI), University of Delaware, and University of Missouri), and the International Society of Biometeorology to evaluate the existing wind chill formula and make necessary changes to improve upon it. The group is called the Joint Action Group for Temperature Indices (JAG/TI) and is chaired by the NWS. The goal of JAG/TI is to internationally upgrade and standardize the index for temperature extremes (e.g. Wind Chill Index).

After the October 2000 and February 2001 meetings, the JAG/TI reached agreement on a new wind chill formula, discussed a process for scientific verification of the new formula, and developed plans for implementation of the new formula. The new WCT index was presented at the JAG/TI meeting in Toronto, Canada, on August 2, 2001.

The new formula made use of advances in science, technology, and computer modeling to provide a more accurate, understandable, and useful for calculating the dangers from winter winds and



freezing temperatures. In addition, clinical trials have been conducted and the results of those trials have been used to verify and improve the accuracy of the new formula.

Standardization of the WCT Index among the meteorological community is important, so that an accurate and consistent measure is provided and public safety is ensured. Our goal was to implement the new wind chill formula in Canada and the United States during the same time frame in order to have a consistent WCT Index for North America.

Specifically, the new WCT index will:

- use calculated wind speed at an average height of five feet (typical height of an adult human face) based on readings from the national standard height of 33 feet (typical height of an anemometer);
- be based on a human face model;
- incorporate modern heat transfer theory (heat loss from the body to its surroundings, during cold and breezy/windy days);
- lower the calm wind threshold to 3mph;
- use a consistent standard for skin tissue resistance; and

- assume no impact from the sun (i.e. clear night sky).

The new formula was incorporated into the latest software build installed on the NWS Advanced Weather Interactive Processing System (AWIPS) on November 1, 2001.

In 2002, adjustments for solar radiation (i.e. the impact of sun) for a variety of sky conditions (sunny, partly sunny and cloudy) may be added to the calculation model.

*Article and Chart reprinted
Courtesy of the National Weather
Service/NOAA*

To access this information, visit the National Weather Service Wind Chill web page at:

<http://205.156.54.206/om/windchill/index.shtml>

WV T² ADVISORY BOARD

Robert Amtower
WVDOT
Burlington, WV

Kevin Burgess
FHWA
Charleston, WV

Michael DeMary
Public Works Director
Fairmont, WV

Bob Gordon
Region 9 Planning and
Development Council
Martinsburg, WV

Ed Grace
Public Works
Weirton, WV

Kathy Holtsclaw
WVDOT
Charleston, WV

Terry Hough
City Engineer &
Public Works Director
Morgantown, WV

Jack Justice
FHWA
Charleston, WV

Marvin Murphy
WVDOT
Clarksburg, WV

Pat Parsons
WV Asphalt Pavement
Association
Charleston, WV

Buddy Shreve
Public Works Director
Philippi, WV

Mike Skeens
Interstate Traffic Control
Huntington, WV

Rodney Welder
WVDOT
Charleston, WV

Donald Williams
WVDOT
Clarksburg, WV

Gary Winter
WV Governor's Highway
Safety Program
Charleston, WV

SOME WINTER TERMINOLOGY

What to Listen For...

WINTER STORM WATCH:

Severe winter conditions, such as heavy snow and/or ice, are possible within the next day or two. Prepare now!

WINTER STORM WARNING:

Severe winter conditions have begun or are about to begin in your area.

BLIZZARD WARNING:

Snow and strong winds will combine to produce a blinding snow (near zero visibility), deep drifts, and life-threatening wind chill. Seek refuge immediately!

WINTER WEATHER ADVISORY:

Winter weather conditions are expected to cause significant inconvenience and may be hazardous. If caution is exercised, these situations should not become life-threatening. The greatest hazard is often to motorists.

Snow

FLURRIES - Light snow falling for short durations. No accumulation or light dusting is all that is expected.

SHOWERS - Snow falling at varying intensities for brief periods of time. Some accumulation is possible.

SQUALLS - Brief, intense snow showers accompanied by strong, gusty winds. Accumulation may be significant. *Snow squalls are best known in the Great Lakes region.*

BLOWING SNOW - Wind-driven snow that reduces visibility and causes significant drifting. Blowing snow maybe snow that is falling and/or loose snow on the ground picked up by the wind.

BLIZZARD - Winds over 35 mph with snow and blowing snow reducing visibility to near zero.

*Source: National Weather Service Web site: A Guide to Survival ;
U.S. Department of Commerce: NOAA, NWS, Warning and
Forecast Branch, Nov. 1991
Reprinted with permission*

COLD, HARD FACTS

Here are some of the physiological changes that happen in your body when it's exposed to the cold:

- Frostbite literally is your tissue freezing. Ice crystals form between cells and cause the affected area to turn white and cold.
- When your body's core temperature of 98.6 degrees lowers even just 3.6 degrees, you'll experience symptoms like lethargy, shivering, mental confusion and decreased motor function. When the body temperature falls below 90 degrees, humans run the risk of heart failure.

*-Adapted from Occupational Health & Safety
Included in LTAP Matters, Vol.19 No. 1 Montana's Local Technical Assistance Program Newsletter.*

PROTECT YOURSELF FROM WINTER WORK HAZARDS



When you work in the cold, your body uses 60 percent of its fuel just to keep itself warm. Because of this, you can tire more easily than you notice. As you get more tired, you're more prone to the dangers of winter weather-hypothermia, frostbite and poor awareness. Here's how to protect yourself:

Acclimate to the cold. Before you launch fully into outside work, give your body a chance to get used to the cold.

Take enough breaks. Take turns with a co-worker on being outside. As one person tries to warm up, the other is outside working.

Wear layers. The Occupational Safety and Health Administration recommends that workers wear three specific layers of clothing to stave off the cold and wet:

1. An outer layer that serves as a windbreaker, but allows for ventilation.
2. A second layer that absorbs sweat and still insulates.
3. A third layer close to the skin that is thinner and allows for ventilation.

Get extra protection for hands and head. Your mother was right to make you wear a hat in the winter. It can help retain the 40 percent of body heat that otherwise would escape from your head.

If you have to wear a hard hat, use a hard-hat liner that covers your ears, cheeks, and chin. Always wear the proper hand gloves. Make sure they're neither too small, which can further restrict blood flow to your fingers, or too large, which can get caught in machinery.

Insulate your feet. In addition to wearing warm woolen socks, use insulating muffs around your ankles and over the top of your work shoes.

*Source: First Draft, January 2001
Included in LTAP Matters, Vol 19, No. 1, Montana's Local Technical Assistance
Program Newsletter.
Reprinted with permission.*

CENTER STAFF & CONTACT INFORMATION

WV Transportation

Technology Transfer Center
West Virginia University
PO Box 6103
Rm. 651 and 653-B
Morgantown, WV 26506-6103

Phone: (304) 293-3031 x 2612

Fax: (304) 293-7109

www.cemr.wvu.edu/~wwwtt/

STAFF

Dr. Ronald Eck, P.E.

Director

(304) 293-3031 x 2627

reck@wvu.edu

Michael Blankenship, P.E.

Program Manager

(304) 293-3031 x 2629

mblanken@wvu.edu

Kim Carr

Public Relations Specialist

(304) 293-3031 x 2612

kcarr@wvu.edu

Andrew Morgan, E.I.

Technical Assistant

(304) 293-3031 x 2662

amorga10@wvu.edu

Sandy Wotring

Administrative Assistant

(304) 293-3031 ext. 2630

Bill Wyant

Senior Volunteer

wwyant@hsc.wvu.edu

WINTER STORM SURVIVAL KIT

In cars and trucks...

Plan your travel and check the latest weather reports to avoid the storm!

Fully check and winterize your vehicle before the winter season begins.



Carry a **WINTER STORM SURVIVAL KIT:**

blankets/sleeping bags;



flashlight with extra batteries;

first-aid kit;

knife;



high-calorie, non-perishable food;



extra clothing to keep dry;

a large empty can and plastic cover with tissues and paper towels for sanitary purposes;

a smaller can and water-proof matches to melt snow for drinking water;

sack of sand (or cat litter);



shovel;

windshield scraper and brush;



tool kit;

tow rope;

booster cables;

water container;



compass and road maps.

Keep your gas tank near full to avoid ice in the tank and fuel lines.

Try not to travel alone.

Let someone know your timetable and primary and alternate routes.



*Source: National Weather Service Web site: A Guide to Survival ; U.S. Department of Commerce NOAA, NWS, Warning and Forecast Branch, Nov. 1991
Reprinted with permission*

WEATHER WEB PAGE RESOURCES

<http://www.nws.noaa.gov/>

NATIONAL WEATHER SERVICE – The National Weather Service is the primary source of weather data, forecasts and warnings for the United States. Television weathercasters and private meteorology companies prepare their forecasts using this information. The NWS is the sole United States official voice for issuing warnings during life-threatening weather situations.

<http://www.weather.com/>

The web page of The Weather Channel

<http://www.accuweather.com>

The web page of AccuWeather

Two additional resources to check for weather in your region or areas you are planning to travel.

2001 SNOW AND ICE CONTROL WORKSHOP IN REVIEW

October 3, 2001, was the date of the 2001 Snow and Ice Control Workshop. This year's workshop had a nice combination of classroom sessions and several pieces of equipment on display. Of course, participants were able to enjoy some down home cooking fixed by Jackson's Mill - No one left hungry!

Sixty attendees, consisting largely of municipal transportation employees, attended this day workshop. The T² Center was fortunate to have Alan Gesford as our key presenter. Alan is a Training Engineer in the Pennsylvania Local Roads Program, and personally has several year of experience as a Public Works Director in York and Lancaster, PA.

The first session of the program began with Alan discussing the topic of Public Relations for Winter Operations. This is an issue that always needs to be stressed. Alan discussed different media to use, such as radio and newspapers. He also discussed the importance of being proactive and informing the public anytime your department is implementing a new practice. For instance, some de-icers look like water. Educate your public about these materials, and you'll save yourself a lot of phone calls from angry citizens wondering why you are putting water on an icy road!

In the afternoon, Alan focused on Equipment, Operations, and Materials. This session highlighted proper salt storage, pre-wetting materials, and anti-icing strategies, among other things.

Attendees also had the chance to get a hands-on look at actual snow removal equipment. Mike DeMary of the Fairmont Public Works Department brought the city's four-wheeler, which is equipped with a plow, spreader box, and spray unit. This vehicle is used for clearing the city's sidewalks along the streets and on several bridges. Clearing these sidewalks allows

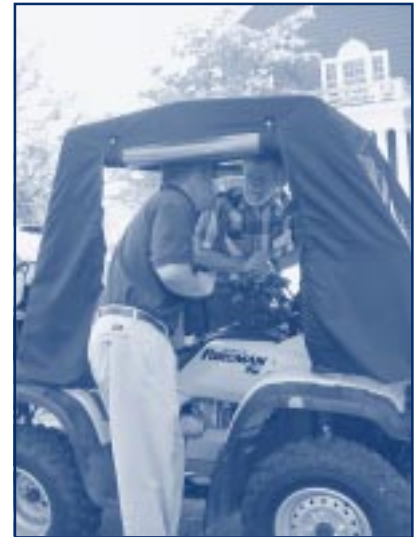
the Public Works Department to provide a safer walking environment for all pedestrians.

Sam Gallo of the Clarksburg Public Works Department brought one of the city's snow removal trucks that was equipped with a liquid spray unit. The City of Clarksburg uses this spray unit to treat their roads with natural salt brine

Bill Rumble of the Morgantown Public Works Department brought the city's renovated fire engine, which is converted in the winter to carry a brine tank and spreader. This engine is a year round service vehicle that is used during the other seasons for carrying guardrail, pipe and other maintenance supplies.

Jeff Balyeat of Snow Equipment Sales Inc. displayed a truck bed spreader. This piece of equipment attaches to a regular size pick-up truck and can be used to help increase the number of spreader units.

Next year, the WV T² Center is working with the Federal Highway Administration and the WV Department of Transportation to host the 2002 Eastern Winter Road Maintenance Symposium and Equipment Expo. This is a huge event that incorporates one day of sessions with three separate tracks- Managers Track, Operator Track, and General Track. In addition to these sessions, over 100 vendors exhibit their materials and equipment. So, mark your calendars for September 4 and 5! You don't want to miss this event. In order to be able to exhibit all of the large equipment, this event is being held at the Charleston Civic Center.



Mike Blankenship and Alan Gesford check out the City of Fairmont's four-wheeler.



City of Clarksburg's sprayer unit.



A steady stream of a de-icing agent can be applied to sidewalks or roadways.

NATURE'S WRATH STRIKES MULLENS WV

This has been a very difficult and trying year for the entire nation. In addition to the terrorist attacks of September 11, 2001, many areas of the United States have also been ravaged by severe natural catastrophes, including flooding, fires, and tornadoes. One such area was the WV community of Mullens. This community was the victim of not one, but two floods, the second of which was the worst flood in recorded history to hit Mullens.

Terry Hough, City Engineer and Public Works Director of Morgantown, WV, and a member of the T² Advisory Board, sent a copy of the following journal kept by a city employee who traveled to Mullens to assist with the flood cleanup. This is a very compelling look at the emotional and physical toll that coincides with any disaster. More importantly though, it reminds us that we can lean on others in our times of need and that while, at first, cleanup and life after a disaster seem impossible, it is possible. Often the individuals and communities who have faced these tragedies come out even stronger and better than before.

The following is a journal kept by Rod Squires, an employee of the City of Morgantown, detailing seven days of flood cleanup in the WV Community of Mullens.

The photos are by Mullens resident, John Carr. More photos and details of the devastating flooding and recovery efforts can be found at the following web site: <http://web.mountain.net/~carrpool/flood2.htm>. The Center extends a special "Thank You" to John for granting permission to reprint these photos.

July 13, 2001

Trip to Mullens, West Virginia

Rod Squires- Truck 180 John Schumber- Truck 163

July 13, 2001

Departed Morgantown City Hall around 10:30 and arrived at Mullens, WV at 2:30 pm. Went to City Hall of Mullens and talked to Serrinia Bowling. She put us hauling right away. Rod and John using Truck 163 and 180. Worked to 8:00 PM on the hauling. We both made about 35 loads each. It was a short haul. It was a good day. A long day.

July 14, 2001

Today was a long day. Most Mullens City Workers did not show up. John and I worked on Main Street. I got to use a new John Deere skid loader to load John all day. Truck 180 got a flat tire. There is a man who fixes tires all day long. Fuel is real hard to find. We did find 16 gallons.

July 15, 2001

Sunday we had the day off. The town went to church to give thanks for not dying. Their church is gone. They all will go to Beckley. This is the first day of rest they have had for a week straight. There is still no water, electric or phone. Even after a week the town is in real bad condition.



Floating house-top on the Slabfork at Moran Avenue.



Torn-up streets near City Hall.

July 16, 2001

Today was a little different kind of day. We hauled out of town today. We worked with contractors today and not the city workers. It was a very dirty day. The trucks are not white...they are brown. Fuel is still hard to get. The Red Cross is still feeding the town of Mullens. The state troopers take care of traffic and not people and their homes now. I don't think town will ever be right.



8/21/01- Flood Recovery Continues.

July 17, 2001

On this day, Tuesday, it did not start out very good. John got me up at 5:30 to take him to the hospital. He could not breathe. It has been so dusty in Mullens that John had breathed in some bad dust that swelled his throat. This was a very long day. We worked outside of town today. The town looks like a ghost town with people. We made about 35 loads each. I did find about 39 gallons of fuel at this little station. I hope it is really fuel. I will be glad to go home.

July 17, 2001

Today we went to another part of town. Just when you think you've seen it all, it gets worse. The water got over top of these houses. We worked at the City garage. There were cars and trucks still in the creek. Some were city worker's trucks. I watched a woman walk into her house with a foot of mud in her home. We hauled into town about 40 loads each. Bugs are real bad today. Instead of dust, it was mud. It had rained all night the night before.



Progress is being made on replacing the Davis Street Bridge crossing Slab Fork Creek, near the caution light in West Mullens.

July 19, 2001

Today was one of the hardest days yet. We helped people get their stuff out of their houses. They all had nightmare stories about being trapped in their houses by water. We worked late to help as many as possible. Everyone was so thankful. This was a very sad day for me. Not one day has gone by that I almost did not cry.

July 20, 2001

I'm glad to see this day come. The final DAY has come. We went back to Mullens to haul a few loads and pick up the big truck. I felt so bad for the people of Mullens. The town will never be the same. Most small shops are gone for good.

I will never forget the town of Mullens.



Picture taken 9/20/01 showing completed concrete work and reframing of Dr. Barit's office.

2002 SCHEDULED ROADS SCHOLAR 1 COURSES

Moundsville Course Dates

January 22

- Risk Management / Tort Liability
- Dealing with People / Successful Supervision

January 29

- Winter Maintenance
- Equipment Operation and Worker Safety

February 5

- Asphalt Roads: Common Maintenance Problems
- Drainage: The Key to Roads That Last

February 12

- Work Zone Traffic Control
- Control of Utility Cuts

February 19

- Signs and Markings
- Use of Automatic Traffic Counting Equipment

Princeton Course Dates:

January 23

- Risk Management / Tort Liability
- Dealing with People / Successful Supervision

January 30

- Winter Maintenance
- Equipment Operation and Worker Safety

February 6

- Asphalt Roads: Common Maintenance Problems
- Drainage: The Key to Roads That Last

February 13

- Work Zone Traffic Control
- Control of Utility Cuts

February 20

- Signs and Markings
- Use of Automatic Traffic Counting Equipment

UPCOMING EVENTS

2002 Roadway Management Conference
Virginia Beach, VA, March 11-13

TRB

Washington, D.C., January 13- January 17, 2002

2002 Eastern Winter Road Maintenance Symposium and Equipment Expo
Charleston, WV, September 4-5

*If you have an event you would like added to our listings, please contact
Kim at the WV T² Center.*

ROADWAY MANAGEMENT CONFERENCE ANNOUNCEMENT

Roadway Management Conference March 11-13, 2002, Virginia Beach, Virginia

It's Virginia's turn to host the Annual Roadway Management Conference, which will be held on March 11-13, 2002, at the beautiful Cavalier Hotel in Virginia Beach. The conference is intended to provide a broad array of useful technical sessions that will give elected and appointed officials, managers, engineers, technicians, supervisors, contractors, and suppliers the knowledge and information that they need to operate, construct, and maintain their transportation network. In addition, we will have pre-conference workshops, vendors displaying the latest transportation technology and products and live demos. With over 20 technical sessions, there is sure to be something for everyone. You may find it useful to have several people from your agency to attend because this would make it possible for different individuals to attend different breakout sessions, which will, of course, be held simultaneously. Please plan to attend. A conference registration form and preliminary program will be mailed out in the next few weeks.

Location

The conference will be held at the Cavalier Hotel on the oceanfront at 42nd Street in Virginia Beach. The room rate will be \$55 if reservations are made prior to February 18, 2002. You must mention that you are attending the Roadway Management Conference to receive this special rate. Reservations may be made by calling (800) 466-8199.

WE WANT TO KNOW

We are always looking to improve our program to better serve your needs. The T² Center welcomes any ideas, comments, or suggestions you have regarding our program.

To provide the Center with feedback, or to make changes to your mailing address, please fill out the following form and fax it to Kim at 304-293-7109, email to kcarr@wvu.edu, or mail to WV T² Center, WVU, PO Box 6103, Morgantown, WV 26506-6103.

1. Please list information you'd like to receive:

2. Please provide us with training workshop suggestions that would benefit you and your agency.

3. Please list topics for publications, videos, and/or cd-roms that you would like the Center to obtain for our lending libraries.

4. Please list any additional comments on how the T² Center could better serve you.

5. Please fill out the following to update your mailing information or to request information.

Name: _____

Job Title: _____

Company: _____

Address: _____

City: _____ State: _____ Zip Code: _____

Phone: _____ Fax: _____

E-mail: _____

The West Virginia T² Center is a part of the nationwide Local Technical Assistance Program (LTAP), which is funded by the Federal Highway Administration. The Center also receives funding from the West Virginia Department of Transportation.

Mission:

The mission of the West Virginia T² Center is to foster a safe and efficient transportation system. The T² Center's mandate is to improve the transportation system by improving the professional skills of those involved in highway design, construction and maintenance, and to act as a resource for them by keeping up-to-date training libraries and constantly seeking/developing new technologies.

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 T² Center does the following:

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

*Wishing You and Your Family a
Peaceful and Happy Holiday Season.*



From The WV T² Center

*Ron, Mike,
Kim, & Andrew*

West Virginia Transportation Technology Transfer Center
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

Change Service Requested

**Please share this newsletter
with others.**

- Road Supervisors
- Council Members
- Public Works Dept.
- Road Crew
- Managers
- City Engineers
- Mayors
- Others

