

# COUNTRY ROADS & CITY STREETS

VOL. 37 NO. 1 WEST VIRGINIA UNIVERSITY BENJAMIN M. STATLER COLLEGE OF ENGINEERING AND MINERAL RESOURCES SPRING/SUMMER 2022

## DON'T GIVE A FREE RIDE TO THE SPOTTED LANTERNFLY

The transportation sector's role in eliminating the SLF's spread.

Carlos Quesada and Karen Cox, WVU Extension, West Virginia University



Adult spotted lanternflies on a Tree of Heaven. Photo courtesy of James Watson, WV Dept of Ag.

The spotted lanternfly (SLF), scientific name *Lycorma delicatula*, is an invasive insect that has the potential to cause the loss of several hundred million dollars per year for agriculture and related businesses and entities if not contained. It is an excellent hitchhiker that travels on trains, vehicles, and materials that are being transported. It is vital for the public works sector, freight transportation businesses, and the general traveling public to be aware of this invasive insect and become knowledgeable about ways to help eliminate its spread.

Spotted lanternfly insects feed on many different plants and prefer plants with a high sap flow. This includes, but isn't limited to, grape vines; hops; fruit trees; maple, black walnut, birch,



WV Local Technical Assistance Program

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WV Local Technical Assistance Program

**CENTER STAFF AND CONTACT INFORMATION**

WV LTAP  
West Virginia University  
PO Box 6103  
Engineering Sciences Building  
Room 651A  
Morgantown, WV 26506  
P: 304.293.9924  
F: 304.293.7109  
E: wvltap@mail.wvu.edu  
W: wvltap.org

**STAFF**

**Dr. Ron Eck, P.E.**  
*Director*  
304.293.9931  
ronald.eck@mail.wvu.edu

**Kim Carr**  
*Program Coordinator*  
304.293.9924  
kim.carr@mail.wvu.edu

**Andrew Morgan, P.E.**  
*Program Coordinator*  
304.293.9939  
andrew.morgan@mail.wvu.edu

**Ashley Peterson**  
*PR and Administrative Assistant*  
304.293.9930  
acolli15@mail.wvu.edu



This photo shows SLF eggs, which on first glance, look like mud.

**masses** and hitch-hiking adults. Eggs look like cracked mud because females cover the egg masses in a white putty-like substance that ages over time. Eggs should be smashed or scraped downward using a plastic card or putty knife. Don't leave them on the ground; the eggs should be put into a bottle or bag filled with rubbing alcohol and disposed of in a trash receptacle.

**Spotted lanternfly adults** are great at hanging on at high speeds, so in the summer when the adults are flying, check your vehicles, equipment and any items that have been stored outdoors before leaving or after passing through an area that may have SLF adults. You should check for SLF adults on, but not limited to, windshield wiper and roof rack areas, bumpers, wheel wells, and under your vehicle. If you find SLF adults, they must be killed or removed before leaving. Stomping or smashing them will work. While it may seem obvious to inspect after spending some time in an area to complete a job, it is also important if you simply stopped for lunch, to refuel, to pick up a load, or deliver a package to

and willow trees; and the Tree of Heaven (Ailanthus). While nobody would be upset if the pest Tree of Heaven went away, this insect has destroyed well established vineyards and decreased the vigor of many of our fruit and nut producing trees. The impact to the wine industry is already being felt, and this insect is putting an additional strain on an already struggling agricultural system.

**The public works sector, along with the freight transportation sector, has a crucial role in stopping the spread of the SLF, because it can be transported on any object in any life stage.**

Lumber, stones, patio furniture, plant containers, plant materials, tires and vehicles are examples of places where SLF eggs have been found. Rest areas and fueling locations are excellent places to stop for a few minutes and look at wheel wells, bumpers, cargo, and sides of trailers for **egg**



The putty-like substance that covers the SLF eggs becomes darker as it ages. These spots all contain eggs.

an area with SLF. If you have spent an extended period in an SLF area, know that the insect may be inside your vehicle or may have laid eggs inside your vehicle. Do not park under trees that are infested with SLF or leave windows open during your stop in areas where SLF has been reported. Trains and railways are also prime inspection sites, as the SLF is a prevalent hitchhiker on rail cars.

## QUARANTINES AND REGULATIONS

In West Virginia, the spotted lanternfly has been reported in Mineral, Hampshire, Berkeley and Jefferson counties. It has been also detected in several counties in Pennsylvania, Ohio, New York, New Jersey, Maryland, Delaware, Connecticut and Indiana. It is important to know ahead of time if the counties you are working in and around are under quarantine and what regulations you will be expected to follow. Many states have quarantines and monitoring stations established. For example, in Pennsylvania, Virginia, Maryland and New Jersey you are required to have a permit if you are conducting business in the quarantine zone or if your company is in an area with SLF populations. If you do not originate from a SLF infested area, the load is covered or contained, and you do not stop in the quarantine zone for business or for anything except quick stops (i.e., fueling), you are not required to get a permit.

The state of West Virginia does not currently have any SLF quarantine or SLF permit requirements. While each state has their own website set up for this information, you can find a link for all states with quarantines by searching [Spotted Lanternfly APHIS Hungry Pests](#). This site will show you where to report findings and link you to regulatory information regardless of your location.

## ADDITIONAL INFORMATION

- The insects do not bite, sting or transmit disease to humans or pets.
- SLF insects overwinter as eggs, with females laying eggs from September to December (or the first frost of the year).
- Nymphs hatch from eggs during May and June.
- The first, second and third nymph instars have black legs and bodies, and their bodies are covered in bright white spots.
- In contrast, the fourth nymph instar has a black and red body. They are about ½ inch long and can be present from July to September. Adult spotted lanternflies have black bodies, four wings and are about 1-inch-long. Their forewings are gray with black spots at the base and black with gray veins at the tips. The hindwings are red with a black spot near the base, have a white band in the middle and black tips. Wings remain closed while they are feeding and walking.
- If the SLF is located on your property, trapping can be effective during the nymphal stage. The SLF nymphs move up and down tree trunks, making them easy to capture by wrapping the tree trunks with SLF circle traps or specialized bands that have an adhesive outer layer; they can be purchased online or from your local garden center. While some bands may catch adults, banding trees is most effective for nymphs. Be advised that it has been reported that birds and small mammals have gotten stuck to the bands. Insecticides can also be used to control nymphal and adult stages. The SLF is susceptible to several commercially available insecticides, but federal laws indicate that the site of application must be listed in the pesticide label.



Notice the forewings of this adult SLF are gray with black spots at the base and black with gray veins at the tips. The hindwings are red with a black spot near the base, have a white band in the middle and black tips.

The invasive spotted lanternfly is native to southern Asia. It was first detected in the United States in 2014.

The SLF is an excellent hitchhiker! It lays eggs and travels on vehicles and trains, as well as on materials that are being transported.

Due to the insect's excellent ability to travel from one location to another, its current distribution largely follows transportation corridors and routes.

The SLF is a threat to agriculture, ornamental plantings, forests, and forest health in general.

*- James Watson coordinates the Spotted Lanternfly Program for the West Virginia Department of Agriculture.*

**You can help stop the spread of the SLF by checking vehicles and any items or loads being transported.**

**Please report any stage of the spotted lanternfly to [bugbusters@wvda.us](mailto:bugbusters@wvda.us) or call 681-313-9140.**

# FINDING, KEEPING & TRAINING COMMERCIAL DRIVERS

Information adapted from "Challenges Facing Local Highway Agencies in 2022 and Beyond" article by Adam Howell, published in the NY LTAP's Spring 2022 *Nuggets & Nibbles* Newsletter.



## RECRUITMENT & RETENTION

Finding and keeping commercial driver's license (CDL) drivers has been, and will continue to be, a challenge for local departments. Whether the job is to plow snow or haul and dump loads of gravel, maintaining a workforce that is qualified to safely operate heavy commercial vehicles is critical to the work of local highway agencies. While the essential local transportation workforce continued to work throughout the pandemic, the industry, as a whole, suffered during the height of the pandemic with large numbers of truckers being laid off due to a drop in demand. As was the case in many industries, many of those workers didn't return when the pandemic-driven slump abated.

Fast forward to today and the opposite problem has occurred. The economic bounce-back has created a demand for freight and a shortage of truckers. The specific issue as it relates to local agencies is that higher demand for qualified CDL drivers means that private companies are paying better wages or even offering sign-on bonuses which siphon away the available pool of potential applicants for municipal jobs.

To illustrate the growing issue surrounding the shortage of truck drivers, the American Trucking Association estimated that in 2021 the truck driver shortage hit a historic high of just over 80,000 drivers and that by 2030, the shortage could surpass 160,000.

### ***There are potential solutions to this problem.***

- When advertising openings, communicate the unique benefits of local agency work. For instance, as opposed to the long-haul trucker sector of the CDL profession, local transportation agencies typically do not require their drivers to spend long stretches of time away from their homes and families.
- Consider reaching out to underrepresented pools of workers and connect them with training resources. For example, according to the Women in Trucking Association, women make up only about 10% of all truck drivers in the United States.
- At the end of the day, you may need to make the case to your board, county legislature, or community that the only way for you to attract qualified truck drivers is to increase pay and other compensation.

## ENTRY-LEVEL DRIVER TRAINING (ELDT)

On February 7th, 2022, new federal Entry-Level Driver Training (ELDT) requirements went into effect and created a nationwide minimum standard of training for all new CDL applicants. The ELDT requirements apply to individuals who obtain a commercial learner's permit on or after February 7, 2022. The training must be completed before applicants are permitted to take certain CDL skills or knowledge tests. The basics of the requirements are as follows:

Under the regulations, individuals are considered "entry-level" if they are applying to:

- Obtain a Class A CDL or Class B CDL for the first time;
- Upgrade an existing Class B CDL to a Class A CDL;
- Obtain a school bus (S), passenger (P), or hazardous materials (H) endorsement for the first time.

The ELDT regulations are not retroactive; individuals who were issued a CDL or an S, P, or H endorsement prior to February 7, 2022 are not required to complete training for the respective CDL or endorsement.

## ABOUT THE TRAINING PROVIDER REGISTRY

To complete the required training, applicants must receive training through a provider that is registered with the Federal Motor Carrier Safety Administration (FMCSA) Training Provider Registry. After the course is completed, an applicant's certification will be filed with the Training Provider Registry where the record of completion is retained and can be retrieved.

For more information about the ELDT regulations and the Training Provider registry, visit <https://tpr.fmcsa.dot.gov>.

### CDL Training Materials from Clear Roads [clearroads.org](https://clearroads.org)

For many transportation agencies, the new February 7th, 2022 federal rule will mean changes to the way they train equipment operators who need to obtain or upgrade a commercial driver's license (CDL). To help state and local agencies comply with the new CDL requirements, Clear Roads has developed entry-level CDL training materials for instructor-led classroom and behind-the-wheel training.

The training materials focus on operators who are obtaining an initial Class B CDL, upgrading from a Class B CDL to a Class A CDL, or obtaining the hazardous materials endorsement for the first time. If your agency is looking to become a registered provider and offer your own inhouse CDL training, please visit the Clear Roads website at [clearroads.org](https://clearroads.org). The request form to obtain the free training materials is located on the Entry-Level CDL Training Materials project page.

### How is Your Local Agency Handling CDL Training?

The WV LTAP staff would love to hear how your agency is handling CDL training for existing or new employees.

- Are you becoming a registered provider and offering training in-house?
- Are you paying to send drivers to an existing program through a community college or private provider?
- Are you unsure about the process you will use and are interested in additional guidance?

Please email [wvltap@mail.wvu.edu](mailto:wvltap@mail.wvu.edu) or call 304-293-9924. You can also visit [wvltap.org](https://wvltap.org) to complete a brief survey.

### Commercial Driver's License Drug and Alcohol Clearinghouse (DACH)

Another relatively recent regulation involving CDL holders is the FMCSA Commercial Driver's License Drug and Alcohol Clearinghouse (DACH). The clearinghouse is a database that contains drug and alcohol testing violations for CDL holders.

Overall, the regulation requires employers and others to report drug or alcohol violations to the Clearinghouse for CDL holders. Employers must also search the Clearinghouse for prospective employees to discover potential drug and alcohol violations before allowing them to operate a commercial motor vehicle on public roads. For current workers, employers must annually search the Clearinghouse for each driver they employ.

<https://clearinghouse.fmcsa.dot.gov/>

# EMBRACING CHANGE

Information adapted from "The Road May Not Get You There" article by David Orr, published in the NY LTAP's Spring 2022 *Nuggets & Nibbles* Newsletter.

*If the last two years have taught us anything, it's sometimes plans need to change, and we might need to find a new road or way to get where we want to go — figuratively and literally. Our LTAP colleague, David Orr from the NY LTAP, was gracious enough to let us borrow some thoughts he had on change to share with our WV audience.*

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Having a plan in 2022 is still a great idea, but we all need to remember a few things we need to have in our plan so we can be ready for the next big change.

## Change is inevitable.

Inflation is hitting hard for the first time this century. Many people in the local highway community don't remember the last time inflation was over 10 percent (or 25 percent in the energy sector). It was 1981 for those who are counting. You may want to do more maintenance than ever this year to stretch those limited dollars.

## There will always be new rules, but also new opportunities.

New regulations on CDL training, drug, and alcohol testing, and even minimum wage rules may make it harder for you to get your work done because it may be harder to find good employees. Now is the time to look for opportunities. Can you find a way to recruit young people looking for work by helping them get their CDL, showing the value of working in the community, and doing work that gives back a feeling of pride in a job well done? Maybe you can keep the great resignation at bay by giving those who are older an assignment to help train and recruit the next generation of highway workers and crew supervisors.

## Know where you want to go.

If you are not sure what choice to make, figure out where you are, where you want to go, and then plan. Way too often, we just go with the flow and when change comes along, we can't adjust and take advantage of the opportunity. Just know that the road you are on, may not be the one you take in the end.

## Don't assume you know the answer.

This can be the hardest lesson because we must admit we need help. Michael Jordan may have been a great basketball player, but he knew he needed a coach to make him better. Go find a colleague to help you see the big picture, to figure out how to fix those potholes, and to plan the best route forward.

## Communication is the key.

We do best when we work together and learn from each other. Make a plan but be ready for change. Having no plan is not going to work, but rigidly following the plan will lead down a road that will not get you and your community where you want to go. The right road will get you there! Go out and find it!



# MEET TWO OF OUR NEWEST ADVISORY BOARD MEMBERS



Jake Bumgarner  
WVDOT/WVDOH

## **As the WVDOH Operations Division Director, what are your main responsibilities?**

The Operations Division implements and manages operations programs and supports the Districts in administering and adhering to those programs. Here are a few of the programs to give you an idea: budgeting for maintenance operations, core maintenance programs, National Bridge and Tunnel Inspection Programs, oversized/overweight hauling permits, bridge preservation projects as required by the transportation management plan, buildings and grounds program, oil and gas permitting, maintaining contracts for materials and services, disaster recovery and reimbursement, safety program, and field crews to do various activities statewide. As Director, it is my job to make sure all these programs are functioning to meet the goals and missions of the DOH.

## **Why did you decide to accept the invitation to join the WV LTAP Advisory Board?**

The Secretary of Transportation asked me to coordinate with WV LTAP to have every District Maintenance Engineer go through the Road Scholar Course so they could have first hand knowledge of the good work this group was doing training our employees along with the local government's employees. Working so close with folks like Kim, Andrew and Dr. Eck coordinating that effort showed me how valuable this partnership can be to the DOH and conversely the DOH can be to WV LTAP. I was honored to be asked to join the board.

## **What skills and knowledge do you bring with you?**

I have worked for the Division of Highways just under 16 years. Ten of those years were spent in District 3 within the construction section and then moving to the maintenance and design section. The other 6 years have been with Operations Division with 3.5 of them being in the Director role. I view myself as sort of a jack of all trades when it comes to my knowledge, and have learned that I don't have to know everything but just need to find and surround myself with folks who do have in-depth knowledge about a specific topic. I have been fortunate to learn, and continue to learn, from some of the best. I'm excited to work with the WV LTAP.

## **What are some of your hobbies or interests?**

With 3 kids under the age of 11 and a job that can be 24/7, I don't get much time to put towards hobbies at the moment. My wife and I bought a camper a couple of years ago and we have enjoyed staying at the many state campgrounds. I love to fish. I still live on my family's farm, and while I don't consider myself a farmer, I am always willing to lend my dad a hand. I am a graduate of West Virginia University and take every opportunity to watch and cheer on the Mountaineers. I am also an active member of the church I attend.



Derrick Johnson  
FHWA-WV Division

## **As an FHWA Safety and Operations Engineer, what are your main responsibilities?**

As the Safety and Operations Engineer my main responsibilities are the oversight of the Highway Safety Improvement Program, HSIP, here in West Virginia. This includes the review of all safety projects and authorization of all safety funding for the state of West Virginia. I also provide assistance and technical guidance on a multitude of areas such as the MUTCD, Work Zone Safety, Traffic Incident Management, Road Safety Audits, Rail Highway Crossing Program, and many others. I work closely with the WVDOH Traffic Engineering Division, Governors Highway Safety Program, National Highway Traffic Safety Administration and FHWA Headquarters office in Washington D.C.

## **Why did you decide to accept the invitation to join the WV LTAP Advisory Board?**

To help spread awareness and training opportunities to all local and state agencies in West Virginia that are available on a national level.

## **What skills and knowledge do you bring with you?**

As a member of the advisory board representing the Federal Government, I can bring national news and updates as they relate to safety and operations. I can also assist in gathering national training and FHWA sponsored training to West Virginia as well as provide answers to technical requests by the board.

## **What are some of your hobbies or interests?**

I enjoy working on cars, spending time with my family, and enjoying the outdoors.

# 2022 ROADWAY MANAGEMENT CONFERENCE

**OCTOBER 11-13**  
**OGLEBAY • WHEELING, WV**

**Registration Information - Register Today!**



<https://roadwaymanagementc.wixsite.com/home>

## Attendee Registration Fee



**\$150 per person until Sept. 1**  
**\$200 per person after Sept. 1**

Attendees from the Mid-Atlantic LTAP Region states will be given preference through July 31. Register today to secure your spot!

*Cancellation Policy: Refunds will not be issued unless notice of cancellation is received by September 9, 2022. An administrative fee of \$25 will be retained.*

## Lodging

The conference is being held at Oglebay Resort.  
465 Lodge Drive • Wheeling, WV 26003

Lodging reservations can be made by phone.  
(877) 436-1797

To get the conference rate:

Group Name - WV Local Technical Assistance Program  
Reservation ID - 45363 • Cut-off Date - Sept. 10, 2022

## Room Rates\*

**\$96 per night plus taxes & fees**

*\* All rates are per night. The City Hotel Tax is 6%. The WV State Sales Tax is 6%. The historical/resort fee is 3%. A deposit equal to one night's rate plus taxes and fees will be due upon booking.*



**2022 RMC Hosted by the Mid-Atlantic LTAP Region**

Delaware T2/LTAP Center

Maryland Transportation T2 Center

Pennsylvania Local Technical Assistance Program

UVA Transportation Training Academy (VA LTAP)

West Virginia Local Technical Assistance Program



# Roadway Management Conference Preliminary Agenda

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## Tuesday, October 11

10:00 am to 5:15 pm	Vendor Area Open
12:45 pm to 1:00 pm	Welcome & Logistics
1:00 pm to 1:30 pm	Opening General Session: Moving the Wellsburg Bridge
1:45 pm to 2:45 pm	<b>Breakout Session 1</b> Pavement Preservation   Curves on Local Roads   Snow Plow Safety
2:45 pm to 3:15 pm	Refreshment Break with Vendors
3:15 pm to 4:15 pm	<b>Breakout Session 2</b> Reducing Your Agency's Risk   Cost Effective Aspects of Accelerated Bridge   Load Securement
4:30 pm to 5:15 pm	<b>Demonstrations:</b> Equipment, Products, Safe Practices and Processes
6:00 pm to 9:00 pm	Reception and Dinner

## Wednesday, October 12

7:45 am to 3:00 pm	Vendor Area Open
7:00 am to 8:00 am	Breakfast
8:00 am to 9:00 am	General Session: Workforce Development Best Practices
9:15 am to 10:15 am	<b>Breakout Session 3</b> Repurposing Streets   Grant Writing   Concrete & Asphalt Inspection
10:15 am to 10:45 am	Refreshment Break with Vendors
10:45 am to 11:45 am	<b>Breakout Session 4</b> Traffic Calming   Gravel Road Maintenance   Roadside Vegetation
Noon to 1:00 pm	Lunch & Hot Topics
1:00 pm to 2:00 pm	General Session: Unmanned Aerial Vehicles/Drones
2:00 pm to 2:30 pm	Overview of Demonstrations
2:30 pm to 5:00 pm	<b>Demonstrations:</b> Equipment, Products, Safe Practices and Processes

## Thursday, October 13

7:00 am to 8:00 am	Breakfast
8:00 am to 9:00 am	<b>Breakout Session 5</b> e-Ticketing   Pedestrian Safety and Policy   Pipe Maintenance and Relining
9:15 am to 10:15 am	<b>Breakout Session 6</b> Dealing with Different Personalities   Stormwater   Curb Ramp Inspection
10:15 am to 10:45 am	Refreshment Break
10:45 am to 11:45 am	General Session: Electric Vehicle Infrastructure Planning
11:45 am to Noon	Closing General Session and Conference Concludes

# ADDITIONAL TRAINING OPPORTUNITIES



## **WORK ZONE TRAFFIC CONTROL FIELD CLASS - CONTACT THE WV LTAP TO SCHEDULE**

WV LTAP is now offering a field version of our popular Work Zone Traffic Control class. During this half day course, we cover many of the same topics included in the classroom version, but with more of a hands-on approach. The class is held outdoors and participants setup a mock work site in accordance with the standards, recommendations, and best practices discussed. The class follows planning a **PRIMO** job site. (Plan Layout, Review Standards, Inventory Devices, Measure, Organize Crew.)

By walking through the process from start to finish and setting up a work zone, participants leave with a better understanding of what it takes to set up a quality work zone that accounts for their safety and the needs of the public which pass through.

This course is offered free of charge to public agencies. Twelve participants are our minimum, but we can help find other participants in your area, if needed. We ask that host agencies identify a site where we can hold the class; the location should be a long paved area such as a closed street, park, or parking lot which can simulate the road. To learn more about this training, or schedule a class, please contact Andrew Morgan at [andrew.morgan@mail.wvu.edu](mailto:andrew.morgan@mail.wvu.edu) or 304-293-9939.

## **2023 TRANSPORTATION RESEARCH BOARD (TRB) INTERNATIONAL CONFERENCE ON LOW VOLUME ROADS**

Mark your calendars for the 13th TRB International Conference on Low Volume Roads, being held next year, July 23-26, 2023 in Cedar Rapids, Iowa.

This event will provide a global forum to examine new technologies and techniques in the planning, design, construction, operation, maintenance, and administration of low-volume roads.

### **CALL FOR PAPERS**

TRB is soliciting manuscripts for this event until September 9, 2022 — either full papers or extended abstracts are being accepted. For more details on both the conference and call for papers visit <https://trb.secure-platform.com/a/page/lowvolumeroads>.



# 2022 SNOW & ICE CONTROL WORKSHOP

September 20, 2022 in-person event  
Summersville, WV Arena and Conference Center

Registration information, workshop agenda, and additional details will be available on our website.

The attendee registration fee will be \$60 per person.

[wvltap.org](http://wvltap.org)

# EVENT RECAP: FROM DRONES TO TRANSPORTATION PLANNING

## 2022 TRANSPORTATION PLANNING CONFERENCE



Ray Patrick of the WVDOT presented a breakout session focused on ADA compliance and upgrades.

The WV LTAP partnered with the WV Association of Metropolitan Planning Organizations (WVAMPO) and the WV Department of Transportation/Division of Highways (WVDOT/WVDOH) to host the 2022 Transportation Planning Conference. This in-person event was held at Cacapon Resort State Park in Berkeley Springs, WV, April 26-28.

The Planning Conference provides a forum for statewide conversations regarding transportation planning and related topics. The format for the first day of the conference was a morning business meeting for WVAMPO, followed by an afternoon of general sessions. Topics ranged from an update on the infrastructure bill, the Cacapon State Park Mountain Bike Trail Project, and Enhancing Complete Street Designs.

The second conference day provided attendees with the opportunity to choose from 18 different breakout session topics – everything from Roadway Departures, to Crosswalk Decision Making, Calming Traffic on Neighborhood Streets, to the WVDOT STIP, and so on.

The third day of the conference included four general sessions and attendees were able to learn more about the FHWA Every Day Counts Program, Unmanned Aerial Systems and how the WVDOT/WVDOH is using this technology, Active Transportation, and Alternative Fuel Corridors & EV Charging Stations.

The conference program was filled with a variety of topics, presented by local, state, federal, and private agency presenters from many different agencies. It was wonderful to get together in-person, network, and hear a variety of perspectives on several diverse topics.

If you would like to access the presentation pdfs from the conference sessions, please visit [wwampo.org](http://wwampo.org).

## WEST VIRGINIA UNMANNED AERIAL SYSTEMS (UAS) WORKSHOP



On April 7 the West Virginia Unmanned Aerial Systems (UAS) Workshop was held in South Charleston at BridgeValley Community & Technical College. This event was offered simultaneously in an in-person and virtual format. Approximately 100 local, state, federal, and private agency attendees participated in this one-day event. Attendees heard from a variety of subject area experts from several different states.

Unmanned Aerial Systems technology is one of the FHWA Every Day Counts (EDC) 5 initiatives and was included as a topic at the beginning of the workshop. Other session topics included various applications such as surveying, supplementing bridge inspection, work zone traffic monitoring, construction quantities, incident management, and more.

The use of UAS technology and how it can be used in the public works setting is constantly expanding, and while this technology can be rather expensive, inexpensive models offer possibilities for smaller public works agencies. The FHWA EDC UAS website is a great resource for more information on this technology, including a fact sheet, materials library, webinar recordings, and more. This website is located at [https://www.fhwa.dot.gov/innovation/everydaycounts/edc\\_5/uas.cfm](https://www.fhwa.dot.gov/innovation/everydaycounts/edc_5/uas.cfm).

The event sponsors for this April 7 workshop were FHWA, WVDOT/WVDOH, and the WV LTAP. If you would like to access the presentation pdfs from the conference sessions, please visit [wvltap.org](http://wvltap.org).

# FLAGGER SAFETY & INNOVATIVE VEST DESIGNS

Todd Morrison P.E. - ATSSA Flagging Instructor, TCS, and TCDS



This is an example of a Class 3 safety vest, which must have at least 1,240 sq. inches of safety yellow or safety orange background and at least 310 square inches of reflective striping.

When thinking about flagging, the main thing to consider is safety. You want to do all you can to remain safe on the job and keep others safe. One thing you can do to be safer is to be visible when working on the roadway. The best way to be visible is to wear a safety vest. Below is information regarding safety vests now and for the next generation.

## DO I NEED A SAFETY VEST?

Yes. Per the National MUTCD at least a Class 2 High Visibility Safety Vest is required of anyone in the work zone exposed to construction equipment, work vehicles or traffic. Class 3 is recommended for the Flagger at night, with many states requiring Class 3 for flaggers at night. Class 2 and 3 refers to the amount of retroreflective material on the garment and where it is placed. Class 3 has more retroreflective material, and it is placed at different points on your body to make you look more like a person and less like a large traffic drum. The background of the garment shall be fluorescent orange-red, fluorescent yellow-green or a combination of the two as defined in the ANSI standard. The best way to tell [whether or not] your garment meets the requirement is to look at the tag. It will indicate whether it meets Performance Class 2 or 3 and the latest ANSI standards.

## THE NEXT GENERATION OF SAFETY VESTS

temperature and heart rate. It then sends this data to a smartphone app that alerts the user to any anomalies. It was developed to combat heat related illnesses on construction sites. The developers plan on pairing this up with glasses for the wearer. They will be able to see their own health data in real time. More information on the "Health Vest" can be found at <https://phys.org/news/2016-03-smart-vests-workers-safety-heart.html>.

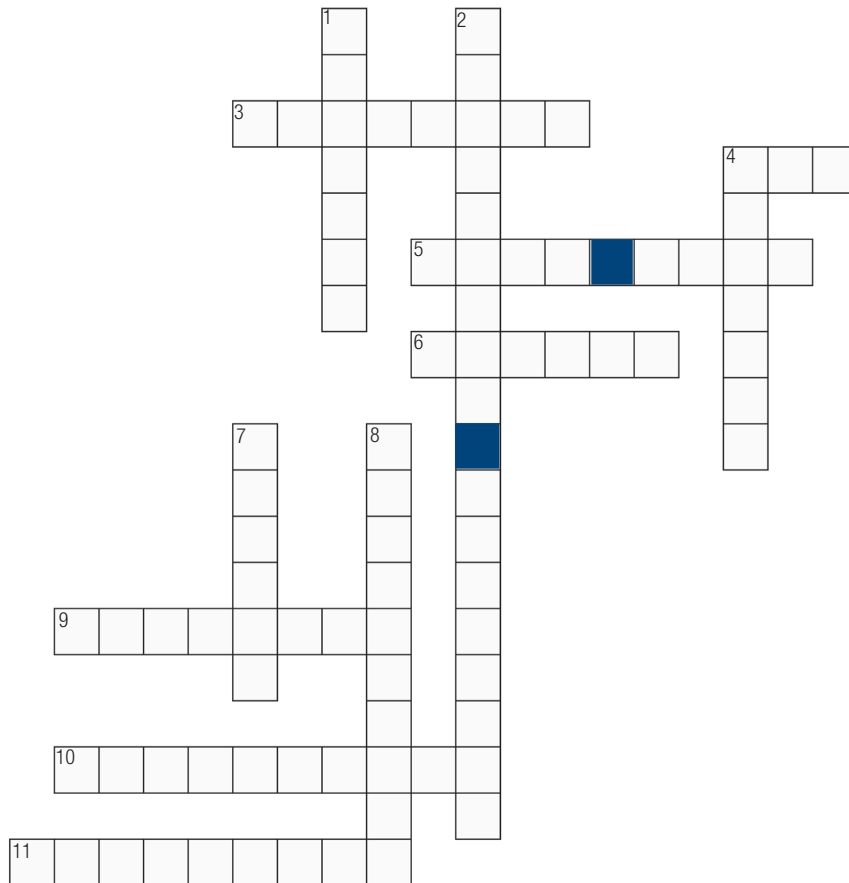
Normal Safety Vests are required to be seen at least 1000 feet away. To help with visibility you can purchase Safety Vests with LED lights. These lighted vests are not the only improvements coming to Safety Vests. The Royal Melbourne Institute of Technology is working on a "Health Vest." This vest monitors the wearers body

The InZoneAlert Safety Vest developed by Virginia Tech uses Connected Vehicle Technology to provide a two-way warning between the wearer of the vest and the motorist. When a collision is imminent, the vest will use Connected Vehicle Technology to send a message to the driver through their car. The vest will alert the wearer with LED lights, sound, and vibrations. Results from initial testing indicate that the InZoneAlert vest successfully alerts the worker and driver (91% success rate). The InZoneAlert vest also provides a valuable 5-6 second reaction time for workers before any potential collision (Forsyth, Martin, and Bowman 2014). Virginia Tech and Audi have recently teamed up to take advantage of this new technology. Here's a link to a video on how it works <https://www.youtube.com/watch?v=S-1WNCmAxDY&t=1s>.

*Today there are many options when it comes to Safety Vests. To reduce your chances of being one of the 842 individuals killed in work zones in 2019 or the estimated 39,000 individuals injured, be sure to choose one.*

# ROADWAY MAINTENANCE

## Crossword Puzzle



Created using the crossword maker on [TheTeachersCorner.net](http://TheTeachersCorner.net)

**Test your roadway maintenance knowledge with this short crossword puzzle.**

Check our website at [wvltap.org](http://wvltap.org) to see if you got the correct answers.

### ACROSS

3. These cause flat tires, bent rims, and broken axles if not repaired.
4. A \_\_\_\_\_ seal is a roadway surface treatment that has the same first name as a weather condition.
5. \_\_\_\_\_ is a liquid material that provides a bond between old and new pavement surfaces.
6. Their purpose is to help prevent cracks when concrete shrinks or expands due to temperature changes.
9. A frequent cause of a roadway base failing is inadequate \_\_\_\_\_.
10. Can be a positive environmental attribute or a negative one. Cutting, trimming, or spraying might be required.
11. The most basic material used in roadway construction that comes in different sizes.

### DOWN

1. Proper maintenance of these is important as their primary role is to divert water away from the roadway.
2. \_\_\_\_\_ is a common asphalt surface failure that looks comparable to the skin of a large reptile.
4. This person is responsible for controlling traffic in a work zone to help protect the work crew and enhance traffic safety.
7. This maintenance operation helps provide sight distance to the traveling public and makes the rights-of-way look nicer.
8. This proactive maintenance type focuses on correcting issues before they become larger and more expensive.

# GETTING UP TO SPEED

Article information excerpted from *Taking it to the Streets, Information for the Non-Traffic Engineer*, APWA, 2019. Used with permission.



## What is speed?

Fundamentally, speed is the amount of time required for a vehicle to cover a specific distance. Speed, however, can have different meanings to different people. For motorists trying to navigate across town during rush hour, speed may mean quickly and conveniently arriving at their destination. For residents who believe vehicles are traveling too fast in their neighborhood, speed may represent a safety concern.

## How are speed limits determined?

Posted speed limits that vary from the limits imposed by state statutes, such as speeds on freeways, residential zones, business districts, and streets adjacent to schools, are set by the recommendations of traffic engineers/public works officials. The speed limits are based on factors such as the prevailing speeds on a street, visibility restrictions, roadway conditions, traffic patterns, roadway designation (arterial, collector, etc.), and crash rates.

Generally, a speed limit is set at or below the speed at which 85 percent of motorists drive (based on traffic monitoring). Ultimately, the elected officials responsible for the roadway must approve the speed limit. Interestingly, studies have repeatedly demonstrated that

motorists tend to drive at a speed that they judge to be safe, regardless of posted speed limits.

Sometimes, the approved speed limit on a street may be faster than what residents want or slower than what motorists desire. In these situations, the responsible officials must be prepared to justify their decision in the face of challenges.

## How can we manage speed effectively?

Anyone driving at a speed that is unsafe for the prevailing conditions is speeding. In addition, driving over the posted speed limit is speeding. Law enforcement techniques used to manage speeding include traditional police enforcement, photo radar (according to the Insurance Institute for Highway Safety, approximately one-third of states allow the use of speed cameras), and the use of electronic speed signs or trailers, which have been found effective.

When managing speed, it is important to guard against potentially counterproductive solutions. For example, if stop signs are installed to control speed, people tend to speed up significantly between the stop signs to “make up” time. This is not truly addressing the speed issue.

Additional actions that facilitate effective speed management are public awareness efforts and traffic calming. More recently, there is a trend to design developments and neighborhoods with fewer and shorter straight roadway sections.



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## What is a warrant?

Traffic control devices or, in some cases, traffic calming cannot automatically be installed just because one or more citizens or businesses make a request. Various criteria related to traffic flow, safety, costs, federal and state standards, local ordinances, and street design must be examined. Warrants are the criteria that are used to determine the justification for installing a traffic control device. Warrants are developed in jurisdictions consistent with the warrants already established by the state. Normally, states adopt the national standards specified in the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD) or adopt a slightly amended version of the MUTCD.

# TRAFFIC SIGNAL BASICS

Article information excerpted from *Taking it to the Streets, Information for the Non-Traffic Engineer*, APWA, 2019. Used with permission.

## When is a traffic signal needed?

The decision to install a traffic signal is based on engineering assessments derived from national safety standards. Criteria include the need to assign right-of-way to conflicting traffic, engineering standards, sight distance, technical analysis, traffic volumes, potential and actual number of accidents, and space for pedestrians. These criteria are called warrants.

For a traffic signal to be authorized, it must meet at least one warrant. If a traffic signal is installed without being under a warrant, it can actually create a public safety concern. A standardized signal study is usually required which considers four factors:

- (1) the number of vehicles and pedestrians,
- (2) the intersection's accident history,
- (3) the intersection's proximity to major traffic routes, other traffic signals, school and parks, and
- (4) unusual conditions such as road curvature.

An engineering study is also required to evaluate the effectiveness of the proposed traffic signal. When a traffic signal would enhance traffic flow and/or safety, the local jurisdiction places the device on a priority list pending funding decisions. Satisfying the warrants does not automatically guarantee that a traffic signal is a good idea. Both the benefits and disadvantages of installing a signal should be considered.

### ***Benefits of signals, when installed under conditions that justify their use, can include***

- interruption of extremely heavy flows to permit the crossing of minor movements that could not otherwise move safely through an intersection
- increasing the traffic handling capacity of an intersection
- reducing certain types of accidents, most notably right-angle (broadside) collisions

### ***Disadvantages of unwarranted or inappropriately placed signals can include***

- increasing overall travel times by adding stops and delays for through traffic
- causing the diversion of traffic onto residential streets to avoid the signal
- causing a significant increase in rear-end collisions

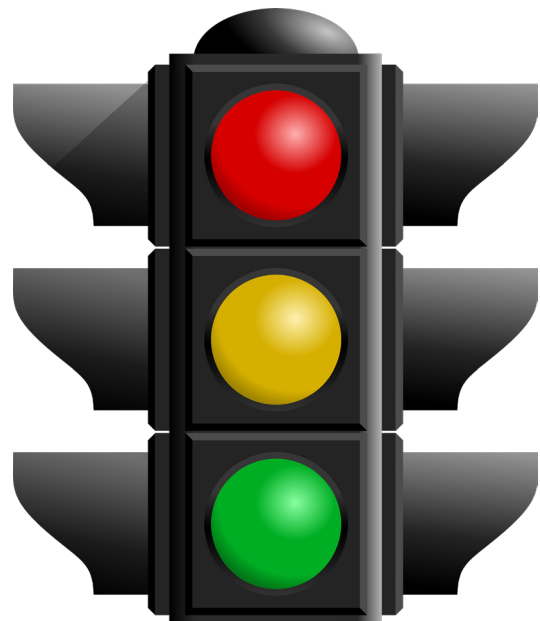
The engineering study and analysis will clarify the issue. This subsequent study may reveal additional factors or conditions that would recommend against the installation of a traffic signal.

## Do traffic signals slow traffic?

When trying to navigate quickly across town, it can seem as if that is all they accomplish. Nevertheless, it is important to understand that if all traffic signals were eliminated, traffic movement would be much slower, more difficult, and less safe.

Normally, traffic signals are timed so the overall delay motorists would otherwise experience is reduced. It is true that on a major street there could be delays, while on a side street there would be fewer delays.

The purpose of a traffic signal is to assign right-of-way for traffic on each of the vehicle legs and to assure that pedestrians may cross streets safely. Traffic signals impose an orderly, systematic, and safe coordination to all the traffic at an intersection.



## COUNTRY ROADS & CITY STREETS

A newsletter of the WV LTAP



WV Local Technical Assistance Program  
West Virginia University  
P.O. Box 6103  
Morgantown, WV 26506-6103



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The material and opinions included in this newsletter are those of the West Virginia LTAP and do not necessarily reflect the views of FHWA or the WVDOT. Every effort has been made to ensure the integrity and accuracy of both original and borrowed material. However, the West Virginia LTAP does not assume responsibility for any information that is found to be incorrect.

### THE MISSION

The mission of the West Virginia LTAP is to foster a safe and efficient transportation system which enhances the economic development of West Virginia by improving skills and increasing knowledge of the transportation workforce and decision makers.

To help achieve this mission, training, demonstrations, technical assistance, and resource materials are provided.

# WV LTAP SERVICES

## your TO DO LIST

- Register for the Snow & Ice Control Workshop
- Register for the Roadway Management Conference
- Contact WV LTAP staff to request training
- Visit the WV LTAP website weekly at [wvltap.org](http://wvltap.org)
- Read this edition of *Country Roads & City Streets*

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