



# moving FORWARD

SUMMER 2016

A quarterly review of news and information about Pennsylvania local roads.

## PennDOT Develops New Salt and Snow Management Course

This course will provide tips for tackling winter maintenance.



LTAP, in conjunction with PennDOT and the State Transportation Innovation Council (STIC), presents a new winter maintenance course, Salt and Snow Management, to be held at locations throughout Pennsylvania this fall.

The course will provide municipalities with training and tips for tackling winter maintenance with limited resources and funding. The following topics will be explored:

- Creating a winter maintenance plan
- Salt bidding process
- Smart salting & winter operations
- Pre-wetting salt
- Anti-icing with brines
- MS4 requirements & environmental stockpile
- Winter equipment and operations

The new course will be offered in each PennDOT district and in additional locations throughout the state. Turn to page 7 for a listing of dates and locations. Please check the website, [www.ltap.pa.us](http://www.ltap.pa.us), for a complete list of course offerings.

The new winter maintenance course, Salt and Snow Management, was developed through FHWA FY15 STIC incentive funds.

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## Coming in August

### Webinar on Winter Service Agreements

Believe it or not, summer is a good time to review any winter service agreements your municipality has with PennDOT. See page 5 for more about these agreements.

Want to learn more about the different options available as PennDOT winter maintenance agreements, such as actual cost reimbursement, Agility agreements, and standard service agreements? A free recorded webinar with information on these options will become available in late August. Look for the webinar link on the LTAP website.

# Font Change Approved for Street Name Signs

by Andrew M. Robison, EIT, Pennoni Associates

The Federal Highway Administration (FHWA) has ended interim approval of the Clearview Highway font for use on highway signing. As documented in the *Federal Register* (Vol. 81, No. 15), Clearview Highway font, or simply Clearview, may no longer be used as an alternative lettering style on traffic control devices. Standard Alphabets for Traffic Control Devices, more commonly referred to as Highway Gothic, is now the only approved font for the design of traffic signs. PennDOT had updated its guidelines to reflect this ruling.

Although the FHWA has not issued a mandate on replacing signs using the Clearview font, all future sign installations are to use the Highway Gothic font. Existing signs may remain in use for their normal service life but should be replaced with a sign using Highway Gothic, when appropriate, as part of routine maintenance.

## The Story Behind Clearview

Clearview became an approved alternative font style for traffic control devices in 2004, and it had been adopted by 25 states as their preferred font style for guide signs. The Clearview font was originally developed to accomplish four key goals related to sign legibility:

1. accommodate the visual needs of older drivers without significantly increasing letter and sign sizing;
2. improve word pattern recognition;
3. improve speed and accuracy of destination recognition and legibility distance; and
4. minimize the halation of words on highly retroreflective materials.

Research conducted by the Pennsylvania Transportation Institute (PTI) (now known as the Larson Transportation Institute) and the Texas Transportation Institute (TTI) determined that the Clearview font provided a 16 percent improvement in recognition by older drivers as well as a 12 percent increase in legibility for signs using highly retroreflective materials. Research conducted at PTI also found an overall 16 percent increase in nighttime legibility, which translated to an extended reading distance.

Following the studies conducted at these two institutions, the FHWA issued interim approval in 2004 for the use of Clearview font on positive contrast guide signs (light letters on a dark background). Although research conducted on the Clearview font only used one



Under a recent FHWA ruling, Clearview font may no longer be used as an alternative lettering style on traffic signs, and Highway Gothic is the only approved font.

Photo credit: Rob Beschizza, boingboing.net

Highway Series B

Highway Series C

Highway Series D

Highway Series E

Highway Series EM

Highway Series F

Clearview 1-W

Clearview 2-W

Clearview 3-W

Clearview 4-W

Clearview 5-W

Clearview 6-W

Image credit: [jvfonts.weebly.com](http://jvfonts.weebly.com)

font style or letter series, the interim approval included a number of letter series to conform to the older Highway Gothic font. These letter series had smaller letter spacing and narrower letters. The approval was based on the assumption that these narrower fonts would have the same benefits as those that were previously tested.

Subsequent research conducted on these other letter series found, however, that narrower letter styles significantly degraded the sign legibility. A consistent finding across all research is that the brightness of the retroreflective sheeting, and not the font style, is the primary factor in sign legibility, especially during nighttime conditions. Further, there is some debate that early study findings were falsely attributed to the text style, when in actuality the change from an older faded sign to a new, more retroreflective sign was what increased legibility.

The approval of two different font styles has also led to confusion and inconsistency for highway signing. Although interim approval of the Clearview font was only for use with positive-contrast conditions (light letters on a dark background), the font was also placed on negative-contrast signs (dark letters on a light background). In addition, misunderstanding that the Clearview font coincides with the use of upper and lowercase letters had been growing, when in actuality, there is no relation between letter style and case.

#### Guidance on Sign Fonts

Based on FHWA's ruling, all future sign installations are to use the Highway Gothic font, and existing signs with Clearview font should be replaced with signs using Highway Gothic whenever these signs


reach the end of their normal service life.

Since no relationship exists between the letter style and case, signs should continue the use of upper and lowercase letters as outlined in the 2009 Manual on Uniform Traffic Control Devices (MUTCD).

Highway Gothic is a modified version of the standard Gothic font and was originally developed in the late 1940s by the California Department of Transportation. The font has six configurations known as letter series (B, C, D, E, E (modified), and F). Each series increasingly widens the individual letter sizing and expands the spacing between the letters.

To aid in the development of guide signs, the FHWA publication *Standard Highway Signs* outlines the following guidelines:

- Whenever practical, the overall dimension of the sign should be in multiples of 6 inches.
- Wider spacing between letters and narrower letter sizing is more favorable than wider letters and narrower spacing.
- Sign and letter sizing may be increased to provide additional emphasis or where there is a need for greater legibility. As a rule-of-thumb, letter height should be 1 inch for every 40 feet of desired legibility.

To assist in the design process, FHWA has created an online resource for calculating the length of text for street signs. The Standard Alphabets Highway Sign Word Length Calculator is a convenient tool to quickly determine the letter width, spacing, and total length of the text for a sign. The calculator can be found on FHWA's MUTCD webpage, [http://mutcd.fhwa.dot.gov/knowledge/hwy\\_sign\\_calculator/index.cfm](http://mutcd.fhwa.dot.gov/knowledge/hwy_sign_calculator/index.cfm). 



# Dauphin County Township Wins Build a Better Mousetrap Contest



Swatara Township's winning invention: a high-pressure undercarriage sprayer

Swatara Township in Dauphin County received first-place honors in PennDOT LTAP's 2016 Build a Better Mousetrap Contest, and Armstrong Conservation District placed as runner-up.

LTAP awarded the top honor to Swatara Township for a high-pressure undercarriage sprayer built for under \$500. The sprayer provided a solution for how to best rid the underside of trucks and equipment from corrosive salt and residue.

"We have spent thousands of dollars over the years to replace parts that have been rusted," according to the township. Mechanics had a difficult time removing the rusted parts.

Initially, the township tried using a garden hose and landscape sprinkler, but this combination did not produce enough pressure to take off the

damaging residue. An employee fabricated the high-pressure sprayer with four 45-degree sprayer nozzles to blast off the salt and residue. After pre-rinsing the undercarriage of the truck and equipment, the township treats it with a salt rinse product and then rinses it off again.

It took four hours to gather the materials and fabricate the contraption. Total cost for materials, which included galvanized pipe, fittings, end caps, and high-pressure sprayer nozzles, was \$200. Total labor costs, including fringe benefits, was less than \$240.

As the first-place winner, Swatara Township's invention will be entered in a regional competition with winners from Delaware, Maryland, Virginia, and West Virginia, as well as in the national LTAP/TTAP competition.

## Runner-up creates ditch cleaner

The Armstrong Conservation District placed as runner-up in the

Build a Better Mousetrap Contest for a road ditch cleaner it designed to help with environmentally sensitive maintenance (ESM) on dirt, gravel, and low-volume roads. The district will allow any municipality in the county that has sent a representative to attend the two-day ESM training to borrow the device free of charge.

The ditch cleaner was built from a leaf blower for under \$14,000, but the district estimates a municipality can create its own version for \$5,000 to \$6,000. The blower creates a wind stream that will clean a ditch of leaves and debris while allowing the vegetation to remain. The vegetation holds the soils, which in turn reduces sediment.

To make the device, the district mounted the blower onto a trailer and added storage boxes to hold flexible hose, tools, additional fuel, and various electrical adapters. The operator towing the trailer uses a remote control to control the engine and adjust the blower tubes from inside the vehicle.

The ditch cleaner eliminates the need for additional equipment, such as a loader, conveyor, sweeper, and additional trucks, and the operation only requires one person to complete the task. *(For safety reasons, the district recommends municipalities use a vehicle to follow behind the operator.)*

"Municipalities have found additional uses for the machine, such as cleaning road debris after severe thunderstorms and removing winter road materials...before the spring road sweeping season begins," the township's submission stated. "Weather permitting, the machine can be used year-round."

LTAP sponsors the Build a Better Mousetrap competition each year to recognize municipalities that build innovative gadgets or develop improved ways of doing a transportation-related job. The winning entry is submitted in the national competition. Look for more details later this year in how you can enter the 2017 contest. 🚧



Runner-up: Road ditch cleaner designed by Armstrong Conservation District

# Transportation News Briefs

## LATEST INFORMATION FROM PENNDOT

**Winter road service agreements:** Summer is a good time to review any winter road service agreements your municipality has with PennDOT and pursue either renewing or establishing such agreements. For agreement renewals, the cutoff date for a municipality to legally withdraw in writing is **July 31**.

Under these agreements, which can have terms of up to five years, PennDOT pays municipalities an upfront annual lump sum to remove snow and ice from state roads between October 15 and April 30. PennDOT pays a winter severity adjustment at the end of the season, depending on how the winter relates to PennDOT's five-year average historic cost. PennDOT must approve all contracts before municipalities begin this winter maintenance.

To determine if PennDOT's reimbursement rate will cover expenses, municipalities should look at the costs of purchasing salt, anti-skid materials, and other supplies and providing equipment maintenance, labor, and overhead. Municipalities should also consider the legal ramifications of entering into such an agreement and review these contracts with their solicitor.

Twelve percent of state roads are maintained through service agreements with municipalities.

For more information, including other agreement mechanisms and options, call your PennDOT district maintenance office.

**Changes to CDL program:** Act 49 of 2015 applied a number of new and revised restrictions to anyone getting a commercial learner's permit (CLP) or a commercial driver's license (CDL). Anyone with an existing CDL who is subject to any of the new or changed restrictions will have their license converted the next time they receive one.

The new or modified restrictions that may now be added to the CLP and CDL licenses are listed below:

**E** – Prohibits driving a commercial motor vehicle equipped with a manual transmission. *(New restriction.)*

Drivers who take their skills test in a truck with an automatic transmission will have this restriction placed on their CDL. Therefore, drivers should take their skills test in the type of vehicle that they will normally drive, especially if they will operate trucks with manual transmissions.

**K** – Restricts drivers to intrastate driving (within the state only). *(New restriction.)*

**B/M** – Prohibits driving a class A passenger vehicle. *(Modified restriction. This was formerly the "B" restriction.)*

**C/N** – Prohibits driving a class A or B passenger vehicle. *(Modified restriction. This was formerly the "C" restriction.)*

**O** – Prohibits a Class A driver from driving a truck/tractor-trailer combination. *(New restriction.)*

The Pennsylvania State Police have stepped up enforcement to ensure that CDL drivers only operate vehicles for which they have been licensed. All drivers should be aware of the class of license they hold and only operate the vehicles for which they are licensed.

**P** – Prohibits driving a commercial motor vehicle bus containing passengers. *(New restriction. This restriction is only for new drivers getting their CLP.)*

**Funding resources guide:** PennDOT has created a new online resource that lists details, links, and contact information about various state programs offering community and local government assistance. The guide provides important information, including deadlines for filing required reports where appropriate, on liquid fuels and other state and federal allocations. A list of grant, reimbursement, and loan opportunities is also part of the resource.

The guide is available on PennDOT's website, [www.penndot.gov](http://www.penndot.gov), by searching Local Government Assistance.

**ARLE funding awarded:** Nearly \$5.5 million in Automated Red Light Enforcement (ARLE) money was recently awarded to fund 23 safety projects in 18 municipalities across Pennsylvania. Under the ARLE program, fines from red light violations at 28 intersections in Philadelphia go toward funding projects that improve safety, enhance mobility, and reduce congestion.

PennDOT received more than 194 applications, totaling approximately \$41.5 million, and awarded the following sums to these municipalities (listed by county):

**Allegheny County:** City of Pittsburgh, \$295,000

**Bucks County:** Perkasio Borough, \$108,588

**Butler County:** Cranberry Township, \$286,199

**Centre County:** Ferguson Township, \$498,900; Philipsburg Borough, \$76,959

**Chester County:** Schuylkill Township, \$188,130; Willistown Township, \$180,000

**Clearfield County:** Huston Township, \$53,020

**Dauphin County:** City of Harrisburg, \$52,569

**Lancaster County:** Millersville Borough, \$200,000

**Monroe County:** Mount Pocono Borough, \$41,997

**Montgomery County:** Abington Township, \$264,400; Cheltenham Township, \$83,597; Limerick Township, \$15,594

**Northampton County:** East Allen Township, \$67,409; Walnutport Borough, \$24,000

**Philadelphia:** \$700,000; \$275,000; \$525,000; \$1million; \$300,000

**Venango County:** Sugarcreek Borough, \$59,769

Since 2010, the total number of projects and dollars awarded through the ARLE program has reached 298 projects and \$45.4 million.

**Traffic Control Device Challenge:** Invite high school and college students to enter the Traffic Control Device Challenge, a contest to promote innovation and stimulate ideas in traffic control

## Transportation News Briefs *continued from page 5*

devices that improve operations and safety. The focus of this year's challenge is to support advanced vehicle technologies, traffic signing, and work zone devices.

The challenge, co-sponsored by the Transportation Research Board Standing Committee on Traffic Control Devices and the American Traffic Safety Services Association, is open to students with a keen interest in transportation and an understanding of traffic control devices. Priorities will be given to entries that include pavement markings, traffic signing, and/or work zone devices.

Submissions are due by **October 1**. From the entries, 12 teams will be invited to display their work for judging during the annual meeting of the Transportation Research Board in January 2017 in Washington, D.C. The top three submissions will attend the American Traffic Safety Services Association convention and expo in February 2017 in Phoenix, Ariz.

More information is available online at [www.trb.org/Main/Blurbs/174315.aspx](http://www.trb.org/Main/Blurbs/174315.aspx). 📄

## Q&A

**Q. Our municipality recently received a request for a Special Hauling Permit so that an oversized load can travel on our roads. Are**

**there any restrictions as to when this travel may occur?**

**A.** Before the transportation funding bill of 2013 was enacted, a properly permitted oversized vehicle, combination, or load could only travel five days per week and not on weekends. But, under changes to the language for Special Hauling Permits for oversized vehicles, such vehicles may now travel seven days a week. As a result, municipalities may now receive permit requests for weekend moves. Please note that in an effort to avoid hauling conflicts, applications for special event permits, such as craft fairs or parades, must be made through PennDOT more than 10 working days before the event.

For more information, contact the hauling permits supervisor in your PennDOT district office.

**Q. As our municipal road department does its summertime maintenance, what do we need to keep in mind when it comes to pesticide and herbicide control?**

**A.** The Pennsylvania Pesticide Control Act requires all pesticides sold in the state to be registered with the Department of Agriculture, which maintains a list of all restricted-use pesticides and requires license and certification for applicators and records to be maintained. Pesticides are substances that control, kill, or mitigate pest organisms. Pesticides include, but are not limited to, herbicides, fungicides, insecticides, and rodenticides.

Anyone applying pesticides in a municipal operation must follow the act's requirements. A municipality must acquire a Pesticide Business license, have at least one certified pesticide applicator, obtain appropriate insurance, and maintain records of all pesticide applications.

To be eligible for certification as a pesticide applicator, a person must pass two written examinations (core and category) and, once certified, must attend updated training programs on a regular basis. Typically,

## New and Updated Tech Sheets Available Online

**Check out the LTAP website for copies of these new or revised tech sheets:**

- 171, Condition of Locally Owned Bridges
- 172, Inspection of Locally Owned Bridges
- 173, Maintaining Locally Owned Bridges
- 174, Font Design for Street Name Signs
- 175, Motorized Equipment Preventive Maintenance
- 176, Roadside Mowing Safety Tips
- 177, Winter Operations Safety Checklist
- 178, Safety with Hot Liquid Asphalt

Be sure to take advantage of these helpful and informative resources, which are available for free to all municipalities.

municipal applicators are certified in Category 10, "Right-of-Way and Weeds," which allows applicators to use pesticides to maintain a public road, utility, and railroad right-of-way; control vegetation around a structure, parking lot, or fence; or control an invasive weed species.

For aquatic pest control, Category 9 certification is required for treating ponds, lakes, and standing or running water. However, aquatic invasive plant species along highway rights-of-way may be treated under Category 10 certification as long as the pesticide label specifies "Application in Aquatic Environment."

Municipalities also need to be aware of the Pennsylvania Pesticide Hypersensitivity Registry and contact anyone on the registry whose listed location is within 500 feet of a pesticide application site.

**Q. What is the threshold for the Prevailing Wage Act to kick in for municipal road projects?**

**A.** Thanks to Act 89 of 2013, which established a transportation funding package for Pennsylvania, the prevailing wage threshold was raised from \$25,000 to \$100,000 for local road and bridge projects. Under this provision, which took effect January 1, 2014, locally funded highway and bridge projects that qualify as a public work (defined as construction, reconstruction, demolition, alteration, and repair work performed under contract and paid for in whole or part out of a municipality's public funds) will be subject to prevailing wages once costs reach \$100,000 or more. Locally funded road projects include highway or bridge projects funded with municipal taxes, liquid fuels funds, funds from the Highway Bridge Improvement Account, grants from the Automated Red Light Enforcement (ARLE) Program, and funds from the Unconventional Gas Well Impact Fee.

**Q. We lost the municipal license plate off one of our trucks. How do we go about getting a new one?**

**A.** PennDOT provides license plates for municipal vehicles for free. To replace the plate you lost, go to [www.dmv.state.pa.us/pdotforms/mv\\_forms/mv-44.pdf](http://www.dmv.state.pa.us/pdotforms/mv_forms/mv-44.pdf) and complete the form online to request a duplicate registration card, plate, or sticker. 📄

# Upcoming 2016 Classes

To Register:  
PHONE: 1-800-FOR-LTAP (367-5827)  
WEBSITE: [www.ltap.state.pa.us](http://www.ltap.state.pa.us)

*This represents some of our scheduled courses. Look for updates on the website.*

## Bridge Maintenance & Inspection **\*UPDATED COURSE\***

August 11, Blair County  
September 21, Lycoming County  
October 6, Lehigh County  
October 14, Union County

## Drainage

August 17, Chester County  
September 22, Montgomery County  
November 2, Westmoreland County

## Engineering & Traffic Studies

October 13, Crawford County  
December 7, Chester County

## Equipment & Worker Safety

September 28, Lehigh County  
October 11, Montgomery County

## Full-Depth Reclamation

August 12, Clarion County  
October 28, Lehigh County

## Geosynthetics

October 19, Lehigh County

## Liquid Bituminous Seal Coat

August 10, Mercer County

## Project Estimating

October 7, Lehigh County  
October 27, Adams County

## Risk Management Strategies

September 14, Montgomery County  
October 18, Adams County

## Road Surface Management

September 13, Chester County

## Roadside Vegetation Control

**\*UPDATED COURSE\***  
August 2, Lycoming County  
September 8, Centre County  
October 11, Bucks County

## Safe Driver

September 21, Chester County

## Signs & Safety Features for Bridges and Culverts

September 29, Clarion County

## Stormwater Facility

**Operation & Maintenance  
\*UPDATED COURSE\***

August 18, Monroe County  
August 25, McKean County  
August 31, Montgomery County  
September 23, Lehigh County  
November 4, Indiana County

## Traffic Safety Development Plan

September 8, Clearfield County  
September 8, Lehigh County

## Traffic Signs Basics

**\*\* NEW COURSE \*\***

August 16, Cumberland County

## Unpaved & Gravel Roads

August 10, Mercer County  
August 29, Bradford County  
August 30, Wyoming County

## Warm Mix Asphalt

September 14, Lehigh County

## Salt & Snow Management

**\*\*NEW COURSE\*\***

August 31, Cumberland County  
September 20, Clearfield County  
September 21, Erie County  
September 26, Union County  
September 29, Bucks County  
September 29, Beaver County  
October 4, Susquehanna County  
October 5, Berks County  
October 5, Montgomery County  
October 5, Wyoming County  
October 6, Washington County  
October 11, Bradford County  
October 12, Adams County  
October 13, Armstrong County  
October 19, Tioga County  
October 19, York County  
October 25, Chester County  
October 25, Cambria County  
October 27, Schuylkill County  
November 4, Lycoming County  
November 4, Lackawanna County

## Congratulations to the following Roads Scholar recipients!

*(certified between March 1 and May 31, 2016)*

- Gerald Hathaway, Middletown Township, Bucks County
- Christopher Russell, Middletown Township, Bucks County
- William Whittaker, Middletown Township, Bucks County
- Brian O'Neill, South Middleton Township, Cumberland County
- Carl Hehn, Upper Merion Township, Montgomery County
- Shawn Garrett, Penn Township, York County
- Nate Heindel, East Manchester Township, York County

*The Roads Scholar Program, offered by the PennDOT LTAP, provides an opportunity for municipal employees to be trained by LTAP's professional team in the latest road-related technologies and innovations related to maintenance and safety. The program provides professional certification to municipal employees and officials who attend 10 LTAP workshops within a three-year period. For more information on the Roads Scholar Program, go to [www.ltap.state.pa.us](http://www.ltap.state.pa.us) and click on "Roads Scholar Program."*



# LTAP SUCCESS STORY

## Before & After

In 2015, LTAP did a tech assist in Shrewsbury Borough, York County, to help ensure drivers comply with a right turn/right turn out island at an intersection. LTAP recommended removing non-standard signs and providing directional signs to help drivers find their way to Interstate-83 properly. Since the changes to the signage, the borough reports that issues with drivers making illegal left turns have decreased significantly.

### BEFORE



Non-standard signs and delineators at this intersection confused drivers.

### AFTER



The borough removed non-standard signs, placed correct delineators, and added a stop sign on the right side of the approach (photos at left and center). The borough also added directional signs to help motorists, especially those not from the local area, find the correct route to the interstate (photo at right).

**Need help with a transportation-related problem? Schedule a FREE Tech Assist with LTAP today!**

### Want Off the Mailing List?

If you do not want to receive a copy of this newsletter, please send an email to [ltap@pa.gov](mailto:ltap@pa.gov). The newsletter is available electronically on the LTAP website under Publications on the right-hand side of the page.



### LTAP Contact Information:

400 North Street, 6th Floor, Harrisburg, PA 17120  
1-800-FOR-LTAP (367-5827) Fax: (717) 783-9152  
Email: [ltap@pa.gov](mailto:ltap@pa.gov) Website: [www.ltap.state.pa.us](http://www.ltap.state.pa.us)

### Did you find the information in this newsletter useful? Do you know others who will, too?

Please share this newsletter with others, including:

- Road supervisors
- Public Works Department
- Road crew
- Elected officials
- Managers and secretaries
- Engineers

You can also direct them to the electronic version available at [www.ltap.state.pa.us](http://www.ltap.state.pa.us).

