



moving FORWARD

SUMMER 2017

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

Road Safety Audits: Teaming Up to Improve Safety

by Phillip Bobitz, P.E., FHWA

Road safety audits help to improve safety on existing roads as well as during the planning or design stage of a new road.

Since the late 1990s, PennDOT, planning organizations, and municipalities have teamed up to conduct road safety audits, which are formal safety performance examinations of an existing or future road or intersection by an independent, multidisciplinary team made up of five to seven members. The audit qualitatively estimates and reports on potential road safety issues and identifies opportunities for improving safety for all road users.

A road safety audit attempts to answer the following questions:

- What elements of the road may present a safety concern: to what extent, to which road users, and under what circumstances?
- What opportunities exist to eliminate or mitigate identified safety concerns?

Road safety audits help to improve safety on existing roads as well as during the planning or design stage of a new road. They generally cost between \$5,000 and \$10,000, and depending on the length of the roadway, the volume of traffic, and the complexity of the area, an audit can take a half-day to two to three days to complete.

The final step in the audit process — incorporating or implementing the findings — can be completed using a variety of funding sources. Some low-cost safety improvements can be implemented using local funds, while more significant improvements can be funded with Highway Safety Improvement Program (HSIP) funds.

The HSIP is a core federal-aid program whose purpose is to achieve a significant reduction in traffic fatalities and serious injuries on all public

roads, including non-state-owned roads. To be eligible for HSIP funds, all highway safety improvement projects must comply with the following:

- 1) Address a Strategic Highway Safety Plan priority,
- 2) Be identified through a data-driven process, and
- 3) Contribute to a reduction in fatalities and serious injuries.

In general, noninfrastructure projects that promote awareness and educate the public about highway safety matters or enforce highway safety laws are not eligible for HSIP funds. However, eligible noninfrastructure projects include road safety audits, improvements in the collection and analysis of data, and transportation safety planning activities.

Municipalities interested in applying for HSIP funds should work with their respective PennDOT Engineering District or Metropolitan Planning Organization (MPO) to submit an application. PennDOT receives around \$95 million annually in HSIP funds. Additionally, the National Highway Traffic Safety Administration provides grants to state and local agencies for driver behavior and enforcement programs that address impaired driving, distracted driving, seat belt use, and more.

Information on road safety audits and the Highway Safety Improvement Program can be found at <https://safety.fhwa.dot.gov>. Additional tips on road safety are available from the National Highway Traffic Safety Administration at www.nhtsa.gov/road-safety.

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Drainage Maintenance Responsibilities at Intersections with PennDOT Highways

by Michael H. Fleming, ISMF LLC

Stormwater facility maintenance on state roads is a complex and, at times, contentious issue between PennDOT and municipalities. Maintenance responsibilities vary among municipality types.

PennDOT has often indicated that the control of stormwater within a municipality is a function of local governments. The debate between the state and locals about enclosed surface water drainage facilities, such as pipes, culverts, inlets, and endwalls, and open surface water drainage facilities, including ditches, swales, gutters, roadway crowns, shoulders, and curbs, has been going on for many years.

A decade ago, the Pennsylvania State Transportation Advisory Committee (TAC), which consists of members from the legislature, state agencies, and the public, studied and issued a report, “Storm Water Facilities on State Highways,” which recognized that the management of stormwater on state highways is a complex issue. Legally, cities and boroughs are responsible for maintaining stormwater facilities along state highways, and PennDOT policy also gives townships limited responsibility to maintain these stormwater systems. PennDOT policies governing the maintenance of state highways have their roots in the State Highway Law of 1945, which is the basis of PennDOT’s curb-to-curb maintenance policy.

PennDOT’s curb-to-curb maintenance policy can be found on the LTAP website, www.ltap.state.pa.us, under “Links & Resources.” Scroll down the list of important “State Resources” to the link for “PUB 23 Chapter 8 Drainage and Drainage Systems.”

PennDOT’s drainage policy statement provides guidance to PennDOT maintenance staff, but it is not a binding document. According to Publication 23, statements made about maintenance responsibilities of PennDOT and municipalities are not intended to admit or acknowledge ownership of stormwater facilities by PennDOT or any municipality. The laws on drainage vary among the various types of municipalities throughout Pennsylvania.

PennDOT’s policies on maintenance vary depending on the type of local government, and these variations are based upon the State Highway Law of 1945 and in some cases have been confirmed by appellate court decisions. Section 502 of the State Highway Law of 1945, 36 P.S. §670-502, gives the Secretary of Transportation power to determine the width, type, and location of any state highway PennDOT constructs or improves and to determine the types of maintenance activities PennDOT will perform.

Different rules for local governments

Let’s take a closer look at what the laws and courts have dictated for the different types of local government:

Cities – First and Second Classes – Section 542 of the State Highway Law of 1945, 36 P.S. §670-542, states that PennDOT’s maintenance responsibility does not include “the curbing and footways” of any adopted state highway. The City of Philadelphia was found to be responsible for a sidewalk in the city along a state highway in *White v. City of Philadelphia*, 712 A.2d 345 (Pa. Cmwlth. 1998).

Cities – Second Class A and Third Class – Section 522 of the State

Highway Law of 1945, 36 P.S. §670-522, limits PennDOT’s maintenance responsibility to the “curb lines as established at the time of the passage of the act by which the street was designated a state highway” or where the Secretary of Transportation otherwise designates the curb lines. PennDOT’s curb-to-curb maintenance policy was upheld as in *Wallace v. PennDOT*, 701 A.2d 307 (Pa. Cmwlth. 1997).

Boroughs and Incorporated Towns – Section 513 of the State Highway Law of 1945, 36 P.S. §670-513, gives the Secretary of Transportation the power to determine the width and type of maintenance activities PennDOT will perform. PennDOT’s curb-to-curb maintenance policy was upheld for boroughs in *O’Brien v. Borough of Jeannette*, 128 Pa. Super. 443, 194 A. 314 (1937).

Townships – There is no reported case law in Pennsylvania reviewing PennDOT’s policy in townships, which allows for maintenance beyond curb lines in certain circumstances.

Considering all the different laws addressing drainage for each type of municipal government body, there is no simple answer as to who is responsible for drainage at the intersection of a state and municipal road. To compound matters, the media often reports unfavorably on drainage issues affecting property owners and motorists at such locations, including collapsed drainage pipes, clogged drains that may have contributed to an icy roadway, or flooded roads from melting snow and heavy rainfall. This news coverage typically reflects negativity between the state and local government rather than information on how PennDOT and municipalities work together to address drainage at intersections.

Drainage responsibilities at intersections

PennDOT Publication 23, Chapter 8, and LTAP technical experts can help you better understand drainage responsibilities at intersections. Drainage facilities installed solely to remove stormwater from limited-access highways are PennDOT’s responsibility. PennDOT is responsible for bridge stormwater facilities, except as provided by specific legislation or an agreement or order of the Public Utility Commission.

Under Sections 411 and 420 of the State Highway Law of 1945, any stormwater facility installed under a highway occupancy permit (HOP) is the responsibility of the permittee to maintain. PennDOT does not assume responsibility for the maintenance of stormwater facilities, curbing, or sidewalk installed by a HOP. Detailed policy regarding stormwater facility



This open surface water drainage facility in York County is not functioning as designed due to paving overlay and inlet location. Photo by Michael H. Fleming, ISMF LLC.



A subsurface water drainage facility in Warren County overflows after warm temperatures and heavy rainfall prove too great for the pipe under the road to handle. Photo by Stacey Gross, Times Observer.

HOPs is located within PennDOT Publication 282.

Drainage improvements on roads or streets that were constructed by a developer under a HOP could become the municipality's responsibility once it accepts the streets upon dedication by the developer. Legal agreements (*such as an Agility agreement*) may exist that establish maintenance responsibility for stormwater facilities.

Maintenance of such facilities is as assigned in the agreement, and these agreements may be for specific facilities or for all facilities within an area. Stormwater facilities that incorporate any type of sanitary wastewater treatment prior to

discharging are the responsibility of the municipality or other public or private owner to maintain. Some municipalities may have combined stormwater and sanitary sewer facilities as part of their stormwater systems.

PennDOT Publication 23, Chapter 8, also breaks down drainage responsibility of enclosed surface water drainage facilities that run parallel to state highways within PennDOT right-of-way at intersections with municipal roads into three separate categories:

Category One involves an existing PennDOT road and a local government agency building or reconstructing a local road or accepting a local road from a developer. Section 36 P.S. 670-420(b) clearly provides that "the Secretary may issue permits for the opening of streets and driveways onto state highways...on terms and conditions established in PennDOT regulations...."

If a newly constructed or reconstructed local road must traverse a drainage area to access a PennDOT highway, the drainage must be properly controlled and any changes in stormwater runoff must be addressed. Accordingly, the HOP requires the municipality to design, construct, and maintain any and all affected stormwater appurtenances subject to any agreement with the developer and in accordance with Publication 282.

Category Two involves an existing local road and the construction or reconstruction of a PennDOT highway. If the state highway, for its proper drainage, requires the placement of a cross-pipe under the existing local road, PennDOT bears the responsibility for installing the cross-pipe and for maintaining it consistent with the policies outlined in the next column on enclosed surface water drainage facilities in townships, cities, boroughs, and incorporated towns, depending on the location of the facility.

Category Three usually involves two roads that were built by a local government, and, by statute, the state has assumed jurisdiction of one of these two intersecting roads. Under these circumstances, there is joint jurisdiction and responsibility over the intersection area. The PennDOT right-of-way includes the paved cartway on the state road and the associated drainage swales, while the local right-of-way includes the paved cartway on the local road and the associated drainage swales. The area where the two rights-of-way cross does not become the sole right-of-way of the state. If a cross-pipe serves both PennDOT and the local road and joint responsibility for the maintenance of this cross-pipe exists, an agreement may be reached with the local government to cooperate in the joint maintenance of the cross-pipe under the Agility Program or by separate agreement.

Open surface water drainage

Equally important and often argued is the maintenance responsibility of open surface water drainage facilities. For **cities, boroughs, and incorporated towns**, PennDOT Publication 23, Chapter 8, indicates PennDOT's maintenance responsibility for open surface water drainage facilities is between curb lines (*actual or projected*), including inlet grates in the roadway surface.

PennDOT will not perform any maintenance beyond the curb lines except to maintain the structural integrity of the highway, such as slopes, walls, etc. If the capacity of an open surface water drainage facility is compromised by upgrade surface water drainage not from the state highway, PennDOT reserves the right to take appropriate action against the private party or municipality that caused or failed to prevent the capacity issue.

For open surface water drainage facilities in **townships**, PennDOT will maintain all these facilities within the right of way, including inlet grates in the roadway surface. PennDOT maintenance districts are encouraged to use grass swales when possible rather than curbing. Curbing is not always necessary, particularly in areas of unrestricted right of way and topography.

Depending on physical limitations, shoulders can be designed to accommodate pedestrians and bicyclists, if necessary, using wider, flatter areas and dedicated bike lanes. Sidewalks can also be set back from the roadway as to eliminate the need for curbing and its associated enclosed surface water drainage facilities. If the capacity of an open surface water drainage facility within a township is compromised by upgrade surface water drainage not from the state highway, PennDOT reserves the right to take appropriate action against the private party or township that caused or failed to prevent the capacity issue.

Note that PennDOT Publication 23, Chapter 8, specifies that PennDOT will not perform stormwater maintenance activities outside the legal right-of-way, except to exercise rights granted under the "Ditch and Drainage Act," 36 P.S. 670-417, to reestablish drainage flow. Once drainage flow is established, maintenance activities will cease, except for any continuing obligations imposed by environmental permitting.

It is difficult to determine drainage maintenance responsibility until a review of conditions in the field and thorough research are completed.

Enclosed surface water drainage

When it comes to enclosed surface water drainage facilities in **cities, boroughs, and incorporated towns**, PennDOT does not maintain these enclosed facilities, which includes inlets below grates, cross pipes/culverts, parallel pipes/ culverts, headwalls, and endwalls unless PennDOT has assumed maintenance by agreement or has installed facilities located in first or second class cities.

Street cleaning and sweeping at and along curb lines (*actual and projected*) is considered a drainage function of cross and parallel pipes within the curb section. PennDOT, through past practice or agreement, may sweep these sections but is not obligated to do so. If there is an emergency condition involving public safety where the integrity of the road surface

A CLOSER LOOK AT ROAD TECHNOLOGY

Thin Mix Overlays: A Popular Method for Preserving Pavement

by Tom Welker, PennDOT Municipal Services Specialist

Thin mix overlays are becoming a popular approach to pavement preservation because of their ability to provide improved ride quality, reduce pavement distresses, maintain surface geometrics, reduce noise levels, reduce life-cycle costs, and provide long-lasting service.

Municipalities are urged to apply pavement preservation techniques to cost effectively maintain or improve roads in good condition. The precept of pavement preservation is that it is more cost effective to maintain pavements in good condition rather than allow them to deteriorate to a condition that requires costly and time-consuming rehabilitation or reconstruction.

Ultra-thin bonded wearing course, or UTWC, (formerly known as ultra-thin friction course, or UTFC) consists of a polymer modified emulsified asphalt membrane (UTWCEM) immediately overlaid with an ultra-thin bonded wearing course of hot-mix asphalt concrete (UTWC) in one pass of a single paving machine. Thin mix overlays will seal the pavement, reducing oxidation and weathering of the surface. The reduction in oxidation will allow the pavement to remain resilient to fatigue and low-temperature cracking. Surface distresses such as raveling and moderate rutting may also be corrected.

UTWC is placed in one lift with a final thickness of one to one and a half times the diameter of the coarsest or maximum-sized aggregate. Three gradations are available:

- **Type A**, a 6.3-mm nominal maximum aggregate size mix, is the lightest duty mix. Its fine surface texture is excellent for urban and suburban applications with light truck traffic. Type A is not recommended for highways that are borderline candidates for preventive maintenance. One of the coarser gradations should be used in those applications.
- **Type B**, a 9.5-mm nominal maximum aggregate size mix, is durable enough to handle moderate to heavy traffic and truck traffic on highways with moderate speeds. Type B can also be used in lighter duty applications if a slightly thicker lift is desired or if more surface distress is present.
- **Type C**, a 12.5-mm nominal maximum aggregate size mix, is the heaviest duty and can be used for any application, regardless of traffic levels. This mix is recommended for high-speed, high-traffic applications and for applications with moderate rutting.



A single paving machine applies the polymer modified emulsified asphalt membrane overlaid with an ultra-thin bonded wearing course of hot-mix asphalt concrete in one pass. (PennDOT photo)



UTWC seals the pavement, reducing oxidation and weathering of the surface. It has a service life of 8 to 10 years. (PennDOT photo)

The Pros and Cons of UTWC

The **advantages** of ultra-thin bonded wearing course include:

- Can be constructed one lane at a time without matching lanes before opening to traffic.
- Requires only a short, single-lane, moving traffic closure.
- Can correct wheel path rutting up to 1/2 inch with a single pass.
- Can be opened to traffic immediately after rolling.
- Provides minimal change in pavement elevation.
- Can be applied to mainline only, with no adjustment to the shoulders. (*Chapter 5 – Bituminous Concrete Pavement Guidelines and Policies Publication 242 2015 Edition – Change 2 5 – 6*)
- Can reduce water spray from traffic on wet pavement.

The **disadvantages** are:

- Minimum correction to cross-slope occurs.
- The edges and transitions cannot be feathered.
- The self-priming paver cannot accommodate shoulder breaks.
- Coarse surface textures reduce yield of marking paint.



UTWC can be constructed one lane at a time without matching lanes before opening to traffic. Construction requires only a short, single-lane, moving traffic closure. (PennDOT photo)



UTWC is placed in one lift with a final thickness of one to one and a half times the diameter of the coarsest or maximum-sized aggregate. (PennDOT photo)

Pavements that are candidates for thin mix overlays should be limited to distress with low-severity cracking, or raveling; infrequent corrugations, settlements, heaves or slippage cracks; or medium severity rutting. The overlay should only be applied in temperatures of 50 degrees F or above, and seasonal limitations govern the standard specifications.

The pavement preparation procedures for UTWC consist of the following steps:

- Perform all required crack sealing at least 24 hours prior to the paving operation. For the best UTWC overall performance, it is critical that the crack sealing is done neatly and does not leave a large amount of material on the surface.
- Remove all thermoplastic and preformed pavement markings.
- Abrade all epoxy and polyester markings to remove the glass beads and roughen the surface.
- Clean the pavement.

UTWC that has been placed by a paver has no traffic limitations. The expected service life of the ultra-thin bonded wearing course is 8 to 10 years.

Prepared using notes from PennDOT PUB 242 (*Pavement Policy Manual*) and documents from the National Asphalt Pavement Association.

Transportation News Briefs

LATEST INFORMATION FROM PENNDOT & OTHERS

Municipalities Given Nearly \$466.2 Million in LFFs to Invest in Local Roads and Bridges

PennDOT recently distributed nearly \$466.2 million in liquid fuels payments to certified municipalities to help them maintain their roads and bridges. The March 1 distribution marks a \$20.9 million, or 5 percent, increase over the previous year. In 2013, before Pennsylvania's far-reaching transportation plan, Act 89, was enacted, municipalities received \$320.8 million in liquid fuels payments.

Liquid fuels allocations are annual payments made to municipalities to help pay for expenses such as snow removal and road repaving. There are 120,091 miles of public roads in Pennsylvania, with 72,856 of those miles owned by municipalities and eligible for liquid fuels. The formula for payments is based on a municipality's population and miles of locally owned roads. 🚧

Paving Product Removed from PennDOT-Approved List

PennDOT recently removed emulsified asphalt class AE-T material for use as a bituminous bonding material from its approved products list and added two other materials for this use instead: TACK (*emulsified asphalts used for a tack coat*) and NTT/CNTT (*emulsified asphalts used as a non-tracking tack coat*).

The tack coat is designed to help blacktop adhere to a road, says Tom Welker of PennDOT, and in the ongoing evaluation of the AE-T material, the department had not observed the continued success it had hoped.

Additional instructions for the application of tack coat have been provided in Publication 408, Section 460.3(b), Construction – Application of Bituminous Materials. Please contact your PennDOT District Municipal Services representative with any questions. 🚧

Driver Safety Addressed in New Laws

The following driver safety laws were recently passed or updated:

- Under a revision to the **Child Passenger Safety law**, which went into effect last August, children must be buckled into a rear-facing car seat until they are age 2 or meet the maximum weight or height requirements set by the manufacturer of the seat.
- **Daniel's Law**, which honors a motorcyclist who died in 2013, increases the penalty for texting while driving if it results in serious bodily injury or death. It was signed into law in January.
- The **Ignition Interlock Law** requires first-time or subsequent DUI offenders to install an Ignition Interlock system (*at a cost of \$1,000*) in every car they operate or lease for more than a year. The law goes into effect in August.
- **Pedestrian Safety Laws** at unsignalized intersections require a driver of a vehicle emerging from or entering an alley, building, private road, or driveway to yield the right-of-way to any pedestrian approaching on a sidewalk. Failure to do so could lead to a fine and three points on the driver's license. In addition, it is illegal to overtake or pass a vehicle yielding to a pedestrian within a crosswalk. Finally, pedestrians are required to use the sidewalk and marked crosswalks where provided. If no sidewalk exists, they should walk along the shoulder or the road's edge as far away from traffic as possible and in the opposite direction of traffic.

For more information on highway safety, visit www.PennDOT.gov/safety. 🚧

Drainage Maintenance *continued from page 3*

has been compromised due to the failure of a local government to maintain an enclosed surface water drainage system, PennDOT may correct the condition and bill the local government for the cost of the work.

In **townships**, activities involving maintenance of enclosed surface water drainage facilities may ensue under four circumstances:

1) Structural conditions – PennDOT's responsibility for deficiencies relating to structural conditions includes the repair and replacement of inlets below grates, cross pipes/culverts, parallel pipes/culverts, headwalls, and endwalls for structural condition reasons unless the township has assumed maintenance by written agreement or HOP, a combination or system with treatment facilities is involved, or there is joint responsibility at intersecting roads.

2) Lack of capacity – Townships are responsible when cross or parallel pipes must be repaired or replaced due to lack of capacity.

3) Routine maintenance – This involves removal of leaves and other obstructions from and at the enclosed facilities and may involve street cleaning and sweeping. Routine maintenance could be addressed under PennDOT's Agility Program.

4) Emergency repairs – If there is an emergency condition involving public safety or where the integrity of the road surface has been compromised due to the failure of a township to maintain an enclosed surface water drainage system for which it is responsible, PennDOT may correct the condition. Note that PennDOT reserves the right to invoice the township for the associated costs if it gave prior notice to the township.

When dealing with drainage issues at intersections, take advantage of all that LTAP has to offer, including training on drainage, technical sheets, newsletters, and technical assists. 🚧



At an intersection of a state and township road in Allegheny County, PennDOT is planning to relocate a small bridge while improving an enclosed surface water drainage facility and headwalls. Photo by Harry Funk, *The Almanac*.



An enclosed surface water drainage facility under a township road in York County empties into a parallel open surface water drainage facility along a PennDOT highway. Trash and accumulated sediment lead to poor drainage in the upstream area. Photo by Michael H. Fleming, ISMF LLC.

Lehigh County Township Wins Build a Better Mousetrap Contest

Whitehall Township in Lehigh County received first-place honors in PennDOT LTAP's 2017 Build a Better Mousetrap Contest, and Horsham Township, Montgomery County, and South Manheim Township, Schuylkill County, placed as runners-up.



Salt shed entrance curtain, Whitehall Township.

LTAP awarded the top honor to Whitehall Township for a salt shed entrance curtain built to reduce the exposure of salt stored in the shed to rain and thus prevent it from contaminating stormwater runoff. Built for less than \$1,200 in materials, plus labor and equipment, the curtain helps to meet the township's goals in ensuring good housekeeping and pollution prevention in municipal operations under minimum control measure #6 that is part of the Municipal Separate Storm Sewer System (MS4) permit requirements of the National Pollutant Discharge Elimination System, or NPDES.

As the first-place winner, Whitehall 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.

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 2018 contest. 🚧

Runners-up reveal innovative creations



"The LAW," by Horsham Township.

Horsham Township, Montgomery County, and South Manheim Township, Schuylkill County, were named runners-up in the Build a Better Mousetrap Contest in recognition of their innovative inventions that have helped their maintenance shops run more efficiently and effectively.

Horsham Township's Public Works Department created a lift that makes it easier to mount heavy wheels onto equipment. The lift assist for wheels, which the township refers to as "the LAW," was constructed almost entirely from recycled material found around the shop, including an unused janitor's cart and old signposts.

The lift only cost the township a day's labor for one employee to construct it and \$4 for two new hitch pins. The device, which also conveniently stores tools, allows a mechanic to easily mount and dismount a wheel by himself, thus lowering the risk of injury.

South Manheim Township developed a system that easily and conveniently stores its tailgate spreaders out of the way and assists in installing them onto a truck. The unit consists of heavy-duty shelving mounted onto a block wall and a sliding mechanism so that a backhoe with forks can lift the spreader off the wall and

onto a truck for installation. The system allows the spreader to be installed without having to put it down and lift it again.



"The Bounty," by South Manheim Township.

The invention, which the township calls "the bounty, or the quicker picker upper," was made for approximately \$187 in materials plus labor costs.

Q&A

Q: We want to make sure our road crew is up-to-speed on road-related maintenance and safety topics. Can you tell us more about the Roads Scholar Program and how it may help us in this endeavor?

A: The Pennsylvania Roads Scholar Program, a certification training program offered by PennDOT's Local Technical Assistance Program (LTAP), provides an opportunity for municipal employees to be trained at no cost by LTAP's professional team in the latest road-related technologies and innovations. Municipal employees and officials who attend and pass a certain number of LTAP courses within a three-year period will obtain the professional certification of Roads Scholar, which allows them to be recognized by their managers and peers as authorities in their field. The municipality benefits, too, by saving tax dollars from the no-cost training and providing a knowledgeable road crew who will help to ensure safer and better-maintained roads.

Q: What is the difference between a Roads Scholar I and II designation?

A: The Pennsylvania Roads Scholar Program consists of two designations: Roads Scholar I and the recently added Roads Scholar II. Each designation

requires the person seeking the certification to take a different set of LTAP courses. For the Roads Scholar I certification, the participant must complete 10 approved courses within a three-year period, while a person seeking a Roads Scholar II designation must take eight approved courses within three years. A person is **not** required to obtain the Roads Scholar I certification first. To view the Roads Scholar courses, go to www.ltap.state.pa.us and click on the Course Descriptions page. Scroll through the listing and note that courses with an RS designation are Roads Scholar I courses while those with an RS2 are Roads Scholar II courses.

Q: Who can participate in the Roads Scholar Program?

A: The program is designed for all municipal employees and officials responsible for road maintenance and safety in their community. Roadmasters, road superintendents, road crew members, public works personnel, managers, and elected officials will learn from each course and by having the most up-to-date information on road-related technologies and innovations will become an even more valuable member of their municipal team. To learn more, go to www.ltap.state.pa.us and click on "Roads Scholar Program." 🚧

Upcoming 2017 Classes

To Register:

PHONE: 1-800-FOR-LTAP (367-5827)

WEBSITE: www.ltap.state.pa.us

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

Americans with Disabilities Act

September 13 – Venango County
September 20 – Philadelphia County

Asphalt Roads Common Maintenance Problems

August 3 – Lycoming County
October 11 – Westmoreland County

Bridge Maintenance & Inspection

August 2 – Crawford County
September 29 – Lycoming County

Conducting Sign Retroreflectivity Inspections

October 26 – Potter County

Geosynthetics

October 10 – Clarion County
October 10 – Crawford County
October 13 – Clearfield County

Intersections

October 19 – Chester County

Managing Utility Cuts

September 26 – Mercer County

Pavement Markings: Application and Maintenance

September 21 – Lycoming County

Pavement Preventive Maintenance

August 8 – Berks County

Posting and Bonding of Local Roads

October 13 – Crawford County

Principles of Paving

September 9 – Lycoming County

Project Estimating Using Mathematical Principles

September 12 – Philadelphia County

Road Surface Management

October 9 – Clarion County

Roadside Vegetation Control

August 10 – Blair County
October 5 – Erie County

Salt and Snow Management

August 1 – Lehigh County
September 7 – Lancaster County
September 14 – York County
September 26 – Chester County
September 26 – Montgomery County
October 3 – Berks County
October 3 – Philadelphia County
October 4 – Bucks County
October 6 – Blair County
October 6 – Northumberland County
October 16 – Lycoming County
October 26 – Mercer County
October 31 – Montgomery County

Signs & Safety Features for Bridges/Culverts

September 12 – Montgomery County

Stormwater Facility Operation and Maintenance

August 1 – York County
September 14 – Chester County
September 18 – York County
October 6 – Lehigh County
October 12 – Westmoreland County
October 26 – Bucks County
October 27 – Allegheny County

Traffic Calming

September 26 – York County
October 12 – Philadelphia County

Traffic Safety Development Plan for Local Roads

August 15 – Somerset County

Traffic Signs Basics

August 31 – Lycoming County
September 7 – Potter County
September 28 – Lehigh County
October 5 – McKean County

Unpaved & Gravel Roads Common Maintenance Practices

September 8 – Blair County
September 21 – Venango County

Warm Mix Asphalt

September 28 – Crawford County

Congratulations to the following Roads Scholar recipients

(Certified between January 1 and April 30, 2017)

- Ryan Gladhill, Conewago Township, Adams County
- Lynn Crosley, Littlestown Borough, Adams County
- James Woodward, Littlestown Borough, Adams County
- Kerry Prutzman, New Oxford Borough, Adams County
- Chris Ott, East Brandywine Township, Chester County
- Christopher McGann, Millersburg Borough, Dauphin County
- Gerald H. Martin, Upper Leacock Township, Lancaster County

Are You a Roads Scholar Yet? *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 and receive recognition as a certified Roads Scholar. The program consists of two designations (Roads Scholar I and Roads Scholar II) and provides a professional certification to municipal employees and officials who attend a certain number of LTAP courses within a three-year period (10 courses for Roads Scholar I and 8 for Roads Scholar II). For more information on the Roads Scholar Program, go to www.ltap.state.pa.us and click on "Roads Scholar Program."*

Roads Scholars, Share the News! *LTAP has a press release you can modify and use to announce your accomplishment to your local media. To obtain a copy of the release, go to www.ltap.state.pa.us and look for the release under "Roads Scholar Program."*

LTAP SUCCESS STORY

Improving Sight Distance at an Intersection

LTAP worked with Geistown Borough, Cambria County, to review the intersection of Demuth and Belmont streets where complaints were made about vehicles parking near the intersection and obstructing sight distance. The borough also mentioned that vehicles tend to cut the corner when turning right from Belmont to Demuth Street.



BEFORE: A bird's-eye view of the problem at the intersection of Demuth and Belmont streets in Geistown Borough.



BEFORE: With no clear markings at the intersection, vehicles parked too close to the intersection, obstructing sight distance, and cut the corner when turning right.

Both issues were caused by a parking area in the southeast corner of the intersection where striped parking spaces encouraged vehicles to park close to the intersection, thus blocking the sight line for drivers on Demuth. Furthermore, there was little to differentiate the parking area from Demuth Street.

Upon investigation of the problem with PennDOT, it was discovered that the parking spaces and the sign were in the PennDOT right-of-way along Belmont Street. The borough worked with the property owner to remove the business sign and the parking area that was restricting the intersection sight distance. The property owner also repainted the parking area. To better define the intersection and the area between the parking lot and Demuth Street, the borough added edge lines and a stop bar on Demuth Street.



AFTER: To better define the intersection and the area between the parking lot and Demuth Street, the borough added edge lines and a stop bar on Demuth Street.

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