



moving FORWARD

SUMMER 2025

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

Traffic Calming Slowing Down for Safety

by Logan Schuman, EIT.



Temporary curb extensions implemented in Philadelphia show how traffic calming can be effective in urban areas.

Photo: PennDOT LTAP

Traffic calming involves the use of design elements and physical measures to encourage safer, more responsible driving. The purpose of traffic calming is to reduce the speed of vehicles along the roadway to create a more livable environment for pedestrians, cyclists, and residents in residential or commercial areas. Traffic calming works by visually or physically changing the roadway, which causes the vehicles to slow down. Implementation can be achieved through horizontal deflection, vertical deflection, physical obstruction, signing and pavement markings, and other engineering tools. Examples include:

- Horizontal deflection measures like chicanes, curb extensions, and mini-roundabouts create a shift in the roadway, forcing drivers to safely navigate the feature at slower speeds.
- Vertical deflection causes a change in elevation, encouraging slower speeds. Speed humps, speed tables, and raised crosswalks are vertical deflection devices that can be used to lower speeds and improve pedestrian safety.
- Physical obstruction measures like diagonal diverters, right-in or right-out islands, and raised medians through intersections are features that prevent



Speed cushions implemented in Susquehanna Township, Dauphin County can slow traffic on a more suburban section of road. Photo: PennDOT LTAP



A mini-roundabout is shown along Second Street in Harrisburg. Photo: PennDOT LTAP

vehicle movements and can be used to prioritize pedestrians or cyclists.

- Signing and pavement markings can be used to regulate traffic movements. Narrowing travel lane widths, changing lane and parking configurations, and road diets reduce perceived space and can lower vehicle speeds.
- Other engineering tools like traffic signal timing and phasing, leading pedestrian intervals, and automated enforcement can be used to achieve traffic calming objectives.

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2025 Build a Better Mousetrap Innovation Challenge

Leveraging Technology to Communicate with Residents – QR Codes

Lower Salford Township, Montgomery County

Contact Person: Doug Jones

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What was the challenge?

About five years ago, Lower Salford Township began using the Cape Seal surface treatment process as part of our road improvement program. This is a two-step process where a chip seal is first applied to a roadway followed by a slurry seal as the finished product. We get all the benefits of the chip seal with the aesthetics of the slurry seal, which is important in more suburban settings.

We send letters to all residents on the affected streets in advance of work to inform them of the work and to minimize phone calls. The challenge was to adequately explain the process in a concise manner without sending a multi-page letter that no one would take the time to read.

A two-step process that includes a seven- to 10-day gap lends itself to the question of if and when the work will be completed. The “gap” period is typically when the phone calls would start coming in and would require staff time to answer the questions.

How did you develop and implement your solution? We were able to locate a professionally made YouTube video of the Cape Seal process, which included narration of the various steps and the overall benefits of the process. Using a free website, we created a QR Code linking the video.

The QR Code was then included in all letters sent to residents, who can simply scan the QR Code with their phone and watch the video that explains the entire process. We also had signs made that included the QR Code. About a week prior to the start of work, we installed these signs at strategic locations so that anyone driving, jogging, or walking their dog, can simply scan the code and watch the video.

What labor, equipment, plans, or material did it take to make the solution work? Implementing the solution took approximately three hours of staff time to research Cape Seal videos, find the free QR Code creator website, create the code, and include it in



A sign with the QR code to a video explaining a cape seal. Photo: Lower Salford Township, Montgomery County

the letters and on the signs. Other materials included aluminum sign materials.

What was the cost of implementation? The cost of implementation was less than \$500, which included staff time, and the purchase of 12 signs.

What was the positive impact/result/outcome of your efforts? Leveraging this technology reduced the number of phone calls from residents that “just wanted to know” if the chip seal (first step) was the final product, when the contractor would be back, and just the general what’s happening on my street.

It also allows the township to better communicate with our residents by showing them what will be happening on their street and how the use of the Cape Seal process benefits the community.

Brine Blender

McSherrystown Borough, Adams County

Contact Person: David Williams

mcstownpublicworks@gmail.com

What was the challenge? Blending salt brine without paying for an expensive system.

How did you develop and implement your solution? Observed an expensive system and duplicated the processes using items lying around, donated, or that could be purchased at a low cost.

What labor, equipment, plans, or material did it take to make the solution work? It took one person approximately eight hours to assemble the entire system. R. H. Sheppard Co., a local business donated some IBC totes, PVC pipe, and fittings that were left over from prior jobs or purchased for local stores. The two-inch pump was equipment the borough already owned.

What was the cost of implementation? For less than \$500, labor included, the entire system was implemented.

What was the positive impact/result/outcome of your efforts? We are now able to mix and store salt brine to use during winter operations. Using the brine mixture will reduce the amount of salt applied to our roadways, saving hundreds of dollars per event while keeping the roads safer.



The salt brine maker and storage totes. Photo: McSherrystown Borough, Adams County

Dust Control Palliatives/Suppressants

by Michael H. Fleming, ISMF LLC

Dust on gravel roads is a common problem, often a nuisance, and sometimes a health hazard. Several methods can help control dust, including regular watering, using chlorides or dust palliatives, and reducing traffic and speed. Regular watering is not feasible on rural earth or gravel roads and reducing motorist speed can be challenging. Dust palliatives or suppressants can be the best solution for controlling dust. The approved products are listed in PennDOT Bulletin 15, Publication 35 and PennDOT Publication 447.

PennDOT Bulletin 15, Publication 35, Section 901.3(b): Maintenance and Protection of Traffic During Construction includes qualified dust control palliatives. These include either an emulsified petroleum resin (oil) or calcium lignosulfonate (by-product of the paper and pulp industry). Emulsified petroleum resin brand name products include Cohex®[®], ULTRA Bond™ 2000, PennzSuppress-D, and a product from Suit-Kote. The qualified calcium lignosulfonate products include Lignosite and CLS.

PennDOT Publication 447, Approved Products for Lower Volume Local Roads, Section MS-0440-0020 refers to products from Penn State University, Center for Dirt & Gravel Road Studies. The center maintains a list of environmentally sound products for dust suppressants that are petroleum emulsions, synthetic fluid, and acrylic polymers. The current approved products that are petroleum emulsions are DustClear™ G, Resinator, and ULTRA Bond™ 2000. The synthetic fluid products include EnviroKleen® and DustLess®. An acrylic polymer product called DustREADY™ 49 is also approved. The center also has an approved soil stabilizer called EcoRoads® and road fill materials manufactured by Harsco Minerals. The approved products from Penn State can be found at the following link: https://dirtandgravel.psu.edu/wp-content/uploads/2022/06/Approved_Products_List.pdf.

Using a Dust Suppressant (from Tech Sheet 187 - https://gis.penndot.pa.gov/BPR_PDF_FILES/Documents/LTAP/TechSheets/TS_187.pdf)

If you plan to use dust suppressants on your unpaved roads, they should be applied initially in the spring. Depending on the conditions or product, a second application may be needed in late summer or fall.

When choosing a dust suppressant, consider the following:

- Aggregate and other material on the road – Analyze the road and match suppressant to conditions.
- Traffic type, volume, and speed.
- Frequency of blading, reshaping, and other maintenance.
- Degree of dust control required.



Dust from dirt and gravel roads can limit vision for motorists and pose problems for those living along these stretches. Photo: Stock

- Climate and terrain – A road that is almost always in sun is different from a shaded road.
- The environment – Dust suppressants can negatively affect vegetation, streams, wetlands, and groundwater, depending on their characteristics and where and how they are applied.
- Corrosiveness to steel and aluminum structures along the road.
- Product and application costs.
- The product handling requirements according to the Safety Data Sheets.
- Service life of the product.

Suppressants come in liquid or solid form. Before applying the suppressant, check the weather forecast to avoid heavy rain. The road surface should be damp but not wet.

Next, prepare the road with a blade and, if necessary, reshape the road, make other repairs, and install aggregate if needed. Scarifying the road surface just prior to application may help the dust suppressant's performance since the procedure will diminish the amount of liquid suppressant that runs off the road and help both liquid and solid suppressants to penetrate. Once a suppressant is applied, compact the scarified surface. Consult a supplier to determine whether scarifying is recommended for the dust suppressant. If applying a liquid suppressant, consider distributing it from a truck equipped with a spray bar. A homemade applicator may result in applying too little for effective dust control or too much, which wastes money and may cause the dust suppressant to run into the roadside environment. Solid suppressants come as flakes or chips, and the most common way to apply them is with

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Managing On-Street, At-Home EV Charging: Guidance for Pennsylvania Municipalities

As electric vehicles (EVs) become more common across Pennsylvania, municipalities are increasingly faced with a new challenge: helping residents who lack off-street parking — like a garage or driveway — safely charge their EVs at home. Often, these residents park their EVs on the street in front of their house and run a charging cord over the sidewalk to their vehicle. Ensuring that this type of charging setup is both safe and accessible is crucial for supporting sustainable transportation and maintaining mobility on sidewalks for all users, including pedestrians, wheelchair users, and stroller users. To help local governments navigate this, PennDOT offers practical, safety-focused advice for municipalities managing at-home EV charging when it involves crossing the public right-of-way (ROW) with a charging cord.



An electric vehicle charging cord lays across a residential sidewalk without a cover. The cord must be covered to comply with federal accessibility regulations and to ensure sidewalk safety for all users. Photo: PennDOT

While PennDOT provides technical expertise, it's important to note that the department's role in sidewalk charging is advisory. PennDOT's maintenance responsibility is curb to curb and PennDOT typically does not take any maintenance or regulatory authority over sidewalks. The responsibility for creating and enforcing sidewalk charging guidelines primarily rests with the municipality, and Pennsylvania municipalities are not required to allow charging in the ROW.

First Steps

In developing guidance for residents, start by reviewing your local ordinances and policies, referring to the Municipal Planning Code (MPC) as necessary. Federal and Pennsylvania law do not prohibit residential non-commercial EV charging in the ROW, provided it adheres to specific practices. However, it's crucial to check for any existing local prohibitions or conflicts. Updates to local laws, permit processes, or zoning regulations may be

necessary to accommodate this type of charging. Additionally, consider the different housing and ROW configurations within your community. For instance, in areas with limited sidewalks or where most properties have off-street parking, issuing specific guidance may not be necessary. Historic districts may also have unique restrictions that require special attention before implementing any guidelines.

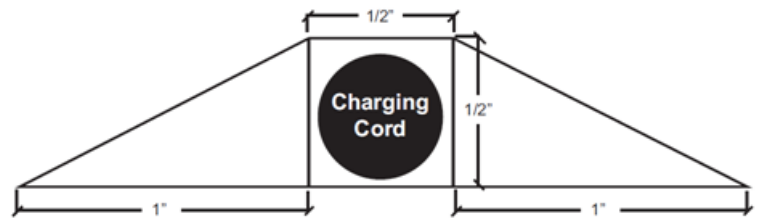
Managing Charging Cords

When allowing charging in the ROW, focus on Level 1 charging, which is permitted and involves using a standard 120V outlet with up to 20A service and a maximum output of up to 1.9kW — in other words, a typical wall outlet. Cords should run along the ground and be covered when crossing sidewalks to prevent tripping hazards. Cord covers must be stable, span the full width of the sidewalk, and meet specific gradient requirements to be compliant with the Americans with Disabilities Act (ADA). For example:

If the cord cover is under ½-inch high, the ramp should have a slope no steeper than 50% (one inch rise per two inches of run).

If the cover is between ½-inch and 6-inches high, the slope should be no steeper than 8.3% (one inch rise per 12 inches of run). The level transition between the slopes should be parallel to the sidewalk surface and at least one inch wider than the height of the cover.

Note: Cord covers taller than six inches are not allowed.



The diagram shows the 50% slope: Image: PennDOT

Preventing Misuse

Municipal guidelines should also include specific prohibitions to prevent misuse. Charging equipment should not be used to reserve parking spaces in the ROW, and residents should not install signage suggesting that a space is reserved. Additionally, parking on sidewalks or running charging cords across bike lanes or vehicle lanes is prohibited, regardless of whether an electric car, truck, or motorcycle is being charged. Safety is paramount, so residents should be reminded to follow all manufacturer instructions for their charging equipment and to avoid using extension cords unless they've consulted with a qualified electrician.

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The New Traffic Calming Chapter in PennDOT's DM-2

by Alexandra Jahnle, PE, RSP2I

PennDOT published Chapter 18 – Traffic Calming, as a part of the Publication 13, Design Manual Part 2 (DM-2), Contextual Roadway Design. The new chapter provides designers with background information and design guidance on how to implement traffic-calming measures in Pennsylvania. The new chapter replaces PennDOT's Traffic Calming Handbook (Publication 383.)

Decision Matrix

In line with other recent DM-2 updates, the chapter emphasizes a roadway's context considerations. Appropriate treatments are determined based on roadway characteristics (speed, number of travel lanes, grade, curves), land use context, and crash history. The chapter includes two decision matrices (Intended Outcomes Matrix and Posted Speed and Context Classification Matrix) to help designers choose the treatments typically appropriate for the goals and context of the project.

Toolbox

The toolbox of traffic-calming measures is organized into five categories: horizontal deflection, vertical deflection, physical obstruction, signing and pavement markings, and other. The context-based toolbox makes up most of the chapter and includes definitions, typical applications, advantages and disadvantages, design considerations, and the evaluation of traffic-calming measures for implementation in different contexts.

Horizontal Deflection	Vertical Deflection	Physical Obstruction	Signing and Pavement Markings	Other
<ul style="list-style-type: none"> • Curb extension • Chicane • Gateway • Roundabout • Pedestrian refuge island 	<ul style="list-style-type: none"> • Speed hump • Speed table • Speed cushion • Raised crosswalk • Raised intersection 	<ul style="list-style-type: none"> • Diagonal Diverter • Right-in/right-out island • Half closure with bicycle pass through 	<ul style="list-style-type: none"> • Travel lane width • Lane and parking configuration changes • Lane reduction/Road diet 	<ul style="list-style-type: none"> • Traffic signal timing and phasing • Leading pedestrian intervals • Automated enforcement • Intersection control spacing
Manages vehicle speed in two ways, by creating a horizontal shift in the roadway, or narrowing the width of the travel lanes.	Manages vehicle speed by creating a change in the height of the roadway such that drivers must slow down when crossing.	Prevents vehicle movements on local or neighborhood roadways and may be used to prioritize pedestrians or bicyclists.	Regulates traffic movements in lieu of physical, more permanent changes to the roadway geometry.	Other tools and techniques can be used to achieve traffic-calming objectives.

Summary of Chapter 18 Traffic Calming Measures

Traffic-Calming Study and Approval Process

The Traffic-Calming Study and Approval process is for state highways, a local road with state or federal funding, or a federal aid roadway. PennDOT approval is not required prior to the installation of traffic-calming measures on a local road with local funding. See 67 PA Code §212.5. Traffic Engineering Form TE-125 provides step-by-step guidance for documenting the analysis process and determining an appropriate traffic-calming solution. Form TE-125 is to receive municipal and district traffic engineering approval if the project is a state roadway, and assistant district executive-design approval if the project is a PennDOT project. 📄

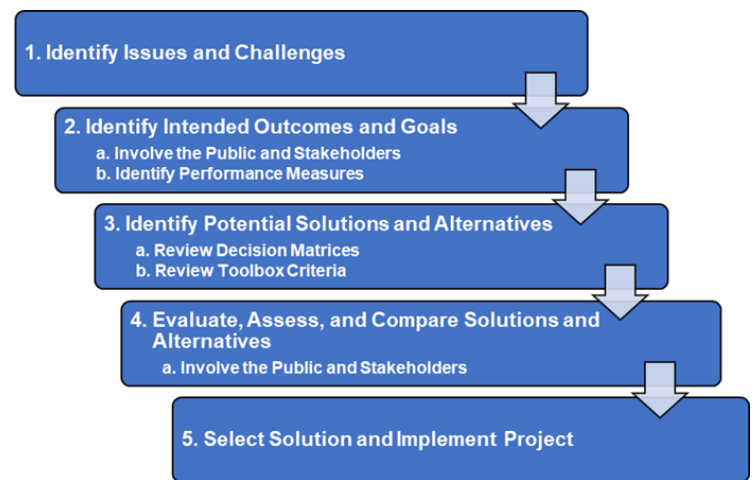


Exhibit 18.A.1 Traffic-Calming Study and Approval Flow Chart.

RESOURCE



“LTAP's staff did a great job interpreting the data collected and assisting the township in applying this data to future road improvements being planned. Our experience was very positive.”

Build A Better Mousetrap continued from page 2

Truck Hitch Mounted Blower

North Centre Township, Columbia County
Contact Person: Steve Hess
ncentreroad@pa.metrocast.net

What was the challenge? Trying to blow grass off the road safely after berm mowing operations.

How did you develop and implement your solution? We identified the dangers of using a gas-powered backpack blower in the roadway. While wearing hearing protection and focusing on the task at hand, the operator's focus was taken away from oncoming traffic increasing the likelihood of an accident. Our solution was to keep the operator inside the vehicle.

What labor, equipment, plans, or material did it take to make the solution work? A modified walk-behind blower, a couple hours of planning, some old square signposts for the frame, an old one-lane bridge sign for the platform, welder, a day to build and paint, and some ratchet straps.

What was the cost of implementation? \$2,474.99 for the new blower, \$50 for paint, straps, and miscellaneous hardware.

What was the positive impact/result/outcome of your efforts? Safety was our main concern. We had one worker struck by a vehicle and many more close calls while using a backpack blower. This gives us a way to stay inside the truck and still get the grass off the road for the safety of the motoring public. 🚧



The leaf blower mounted on the back of the truck. Photos: North Centre Township, Columbia County.

Dust Control continued from page 3

the spreaders used for deicing operations. Be sure to calibrate the spreaders first for an effective rate of application. The application rate will vary, depending on the product; condition of the road and wearing surface; volume, speed, and type of traffic; climate and weather; and frequency of maintenance. Work with a supplier to determine the appropriate rate to achieve the dust control you expect.

Contact LTAP at 1-800-FOR-LTAP (367-5827) or gis.penndot.pa.gov/ltap for further information about dust suppressants, and the maintenance and construction of unpaved roads. 🚧

A **dust palliative** is a substance applied to roads or surfaces to reduce the amount of airborne dust, often by binding particles together or increasing moisture content. They are commonly used on unpaved roads and construction sites to control dust and its associated impacts on health and visibility.

Emulsified petroleum resin refers to a petroleum resin that has been mixed with water and an emulsifier to create a stable dispersion or emulsion. This process allows the resin, which is generally insoluble in water, to be used in applications that require a water-based system.

Calcium lignosulfonate is a by-product of the paper and pulp industry, derived from lignin, a natural polymer in wood. It acts as a natural adhesive, keeping dust grounded and improving air quality.

Pennsylvania Highway Safety Plan

Interested in reducing roadway fatalities and injuries? The [Pennsylvania Strategic Highway Safety Plan \(SHSP\)](#) is the state's five-year road map on how to tackle roadway safety across the state. By federal law, every state must update their SHSP every five years. The last Pennsylvania SHSP was completed in 2022. So, in the fall of 2025 PennDOT is starting the process of creating a new SHSP for 2027 along with a new Vulnerable Road Users (VRUs) Safety Assessment. This requires a lot of coordination with multiple safety partners across the Commonwealth. One of the recurring focus areas for the SHSP is local roadway safety. PennDOT would like to reach out to municipalities to participate in the creation of the new SHSP for 2027. If you are interested, please reach out to LTAP at 1-800-FOR-LTAP or LTAP@pa.gov to help coordinate your participation in the new SHSP creation. 🚧

RESOURCE



Pennsylvania Strategic Highway Safety Plan

Traffic Calming *continued from page 1*

PennDOT Publication 13 (DM-2), Chapter 18, provides guidance on planning, designing, and implementing traffic calming. In Chapter 18, there are two decision matrices that can be used by designers to aid with the preliminary screening of traffic-calming measures for a project.

- **Exhibit 18.4.1** shows the typical applicability of various traffic-calming measures with respect to intended outcomes.
- **Exhibit 18.4.2** shows the applicability of each traffic-calming measure with respect to the five context classifications and posted speed ranges.

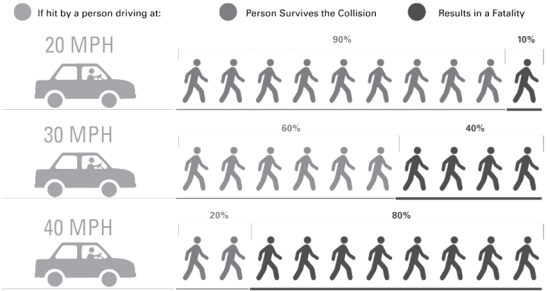
Traffic calming lowers the speeds of vehicles; reduces the number of crashes with fatalities or serious injuries; increases the quality of life of non-motorists; and promotes all modes of transportation. Exhibit 18.1.1 in Chapter 18 displays the relationship between vehicle speeds and pedestrian fatality rates, which shows the importance of reducing vehicle speeds for pedestrian safety.

The successful implementation of traffic calming can be seen across Pennsylvania. Temporary curb extensions have been implemented in Philadelphia to narrow the street width and reduce the pedestrian crossing distance. Susquehanna Township, Dauphin County installed speed cushions to reduce vehicle speeds and allow emergency vehicles to travel along the road uninhibited by vertical deflection. Mini-roundabouts were implemented at intersections along Second Street in Harrisburg to lower the speeds of vehicles and change the functional

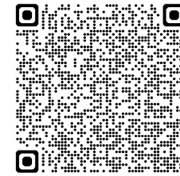
nature of the roadway. Traffic calming that is implemented successfully creates safer and more livable streets by reducing vehicle speeds and enhancing safety for all road users.

There are certain situations where traffic calming can create a negative impact. Items that should be considered are the screening/qualifying process, emergency response times, community engagement, and cost of design, installation, and maintenance. So, it is important to have a defined process for the justification of traffic calming to ensure it is being used in appropriate situations. 🚧

Exhibit 18.1.1 Vehicle Speeds and Pedestrian Fatality Rates



RESOURCE



PennDOT Connects Traffic Calming Plan Tech Sheet

On-Street EV Charging *continued from page 4*

Municipalities should clearly communicate how violations of these guidelines will be handled. Public outreach is also important — consider including the topic in community meetings, distributing informational materials, and using social media to ensure residents are informed about the new guidelines and understand the importance of safe EV charging practices.

Charging Ahead

By considering these factors, Pennsylvania municipalities can develop guidelines that balance the needs of EV owners with the safety and accessibility of public spaces. Adapting these recommendations to fit your community's specific needs will help ensure a smooth and sustainable transition to electric vehicles. As an example of an existing municipal guidance document on this topic, you may be interested in reviewing the City of Pittsburgh's [Best Practices for Electric Vehicle Charging in the Public Right-Of-Way](#). For more information and technical assistance, please contact PennDOT ra-pdevcorridors@pa.gov. 🚧



Registration is Open! Roadway Management Conference -2025

October 27-29, 2025
Ashore Resort
Ocean City, Maryland



Upcoming LTAP Training

Classes are being held in person and virtually. Check the website, gis.penndot.pa.gov/ltap, for the latest listing. If you would like to receive email alerts about upcoming training, send a request to ltap@pa.gov. Here is a sampling of upcoming scheduled classes. All classes are free!

ASPHALT ROAD MAINTENANCE

August 12 – Lycoming County
August 19 – Virtual
September 4 – Warren County

EROSION AND SEDIMENTATION CONTROL

August 5 – Montgomery County
September 30 – Lancaster County

FULL DEPTH RECLAMATION

October 30 – Tioga County

LOCAL ROAD SAFETY

September 10 – Berks County

PUBLIC WORKS SAFETY

August 14 – Chester County
September 9 – Montgomery County

ROAD SURFACE MANAGEMENT V.II

August 19 – Lehigh County
August 21 – Bedford County
August 28 – Erie County

SAFE DRIVER

August 7 – Lancaster County

SEAL COAT

September 9 – Lycoming County
September 11 – Erie County

STOP SIGNS & INTERSECTION TRAFFIC CONTROL

August 6 – Berks County

TRAFFIC SIGNS BASICS

September 17 – Cambria County

UNPAVED AND GRAVEL ROADS CMP

September 18 – Blair County

WINTER MAINTENANCE

September 10 – Luzerne County
September 12 – York County
September 17 – Carbon County
September 24 – Venango County
September 29 – Clearfield County
October 23 – Blair County

WINTER MAINTENANCE PLANNING

September 15 – Lancaster County
October 10 – Berks County

Check the website for new classes or reach out to your Planning Partner or LTAP to schedule a class at your facility.

Archived Training: Catch up online!

Recorded sessions and handouts from previously held drop-ins and webinars are available on the LTAP website, gis.penndot.pa.gov/ltap. On the home page, click the "Resources and Technical Information" tile or go to: https://gis.penndot.pa.gov/ltap/Public/LTAP_Resources.aspx. Sessions cover a variety of topics from asset management to truck restrictions. Check out the full list online and take advantage of this free training from the comfort of your home or office.

Course Handouts Are Now Online

Did you misplace a workbook or handout from a course? Do you wish you had the handouts in an electronic format? All the handouts from LTAP courses are now online and available for download. Go to gis.penndot.pa.gov/ltap and under the Training Descriptions tab, click on the course and then scroll to the bottom of the course information to see a list of course handouts.

If the handout for a class is three slides per page, there is a full PowerPoint workbook you can download on the website. These have PowerPoint slides with the workbook content below the slide. They are designed to make it easy to follow the virtual classes and provide all the notes for the in-person classes.

Congratulations to the following Roads Scholars!

The following scholars were certified between February 1, 2025, to March 31, 2025.

Roads Scholar I:

- David Williams – McSherrystown Borough, Adams County
- Jennifer L. Ulrich – Borough of Lawrence, Berks County
- Todd Maynard – Wysox Township, Bradford County
- Jared R. Wehry – Point Township, Northumberland County

Roads Scholar Administrative:

- William E. DeLong III – Allentown City, Lehigh County
- Nat Amato – Easton City, Northampton County

Looking for Resources? Go to the "Resources and Technical Information" green box on the LTAP website dashboard. There you will find informational videos, past newsletters, tech sheets on a variety of road related topics, and recorded webinars and drop-ins. There are also maintenance and safety resource sections that provide resources by topic.



Pennsylvania
Department of Transportation
Local Technical Assistance Program



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 Web: gis.penndot.pa.gov/LTAP

All LTAP services are free to municipalities.