

Pennsylvania

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# Township News

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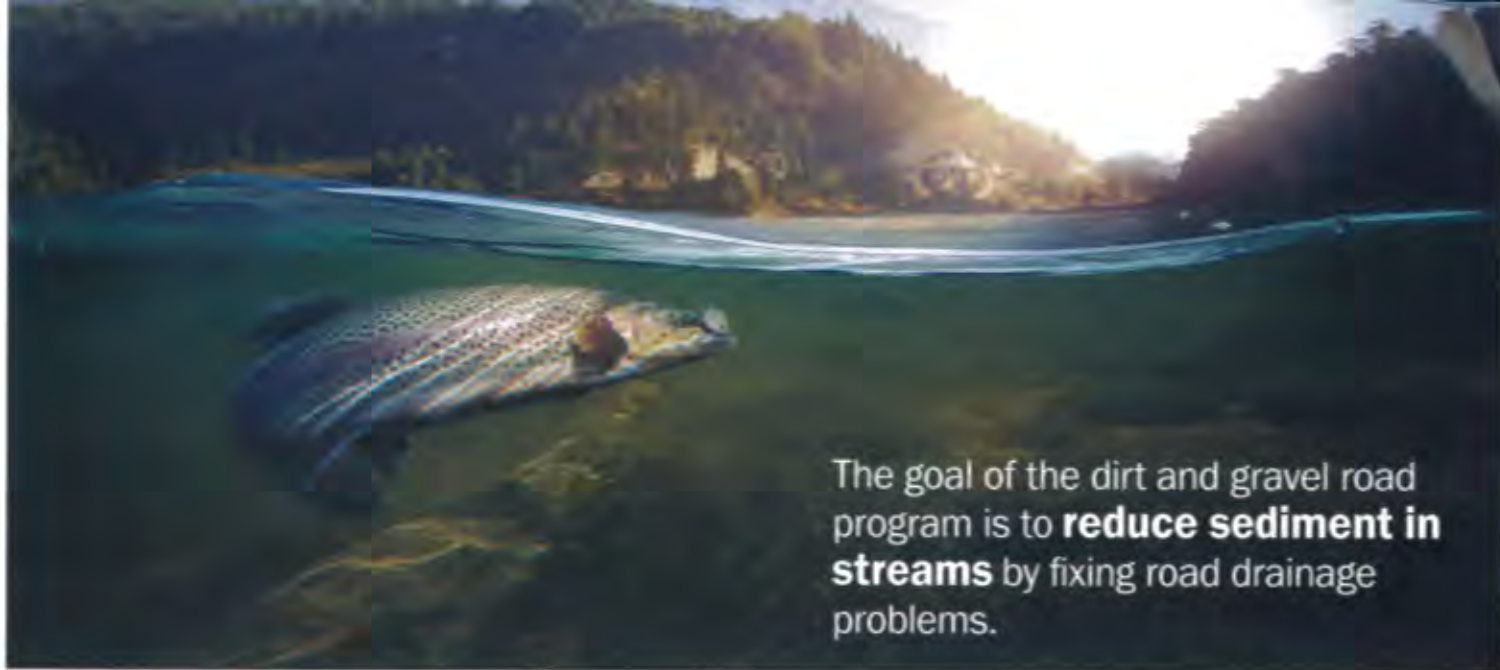


# Increased Funding Provides a **Shot in the Arm** for the State's Dirt and Gravel Road Program

In 2013, townships learned that the state's billion-dollar transportation funding package included **good news**. The Dirt, Gravel, and Low-Volume Roads Program would receive \$28 million to spend annually on local roads. The first distribution of funds occurred last year, and for the first time since the program was created in 1997, townships have considerably **more money** to fix eroding roads and curb water pollution.

BY AMY BOBB / CONTRIBUTING WRITER, PSATS





The goal of the dirt and gravel road program is to **reduce sediment in streams** by fixing road drainage problems.

**P**olk Township supervisor Neal Davis had been trying to fix a drainage problem on one of his dirt and gravel roads for years. He had gone first to the state Department of Transportation (PennDOT) for help. During heavy rains, after all, runoff from an adjacent state road practically turned the township road into a creek.

"Our road was acting as a ditch for their drainage," says Davis, who also is roadmaster for the Jefferson County township. "Well, I never could get anywhere with PennDOT about it."

Then he tried the state's Dirt and Gravel Road Maintenance Program, a logical avenue since road sediment ended up in the adjacent high-quality North Fork Creek and the goal of the program is to clean up streams and protect aquatic life by reducing runoff. He hit a dead end when he was told the cost of the fix far exceeded what the program could commit to Jefferson County projects at the time.

"Once we looked at the project, we had to discourage the township from applying," recalls Deborah Wilson, district manager of the Jefferson County Conservation District, which distributes

dirt and gravel road money for municipal projects in the county. "The problem was extensive and would require costly construction that included adding multiple drainage pipes and building up the roadway. We just could not afford to fund the project at that time."

Finally, in 2013, Davis heard some good news from Harrisburg that made him hopeful that the conservation district might soon be in a position to fund the project on Bond Road. Within Act 89, the \$2.3 billion transportation funding package, money set aside for the state's 20,000-plus miles of unpaved roads was to increase significantly.

That extra funding was a much-needed shot in the arm for local dirt and gravel road projects, Wilson says. With its yearly allocation increasing from around \$40,000 to nearly \$329,000, the Jefferson County Conservation District could now approve Polk Township's application, along with six other dirt and gravel road projects and two low-volume road applications, a new category of funding created by Act 89.

"The allocation we used to receive only financed one, maybe two, projects a year," Wilson says. "With this jump in funds, we can complete more projects, tackle larger and more complicated

road maintenance, and add low-volume paved roads to the list of projects."

Polk Township and other municipalities across the commonwealth are reaping the benefits of today's better-funded Dirt, Gravel, and Low-Volume Roads Program. The expanded \$28 million-a-year statewide allocation (*plus \$7 million for projects on dirt and gravel roads in state parks and forests*) is a welcome increase from the \$4 million previously allotted to local roads under the program. With \$24 million more available for grants and training, the county conservation districts have been gearing up to handle the expected influx of project requests and awards.

"This increased funding means we can not only do more projects, but they can also be more comprehensive and thorough," says Roy Richardson of the State Conservation Commission. The agency allocates the state funds to the conservation districts based on a formula that takes into account miles of roads and the number of identified pollution sites. "Pennsylvania is going to see a lot more work completed in 2016."

#### **Initiation by fire**

Richardson had been on the job as the state's dirt and gravel roads program

"With this jump in funds, we can complete **more projects**, tackle larger and **more complicated** road maintenance, and add **low-volume paved roads** to the list of projects."



## DIRT & GRAVEL ROADS FUNDING

coordinator about three weeks in 2013 when he heard the news that the program he oversees was slated to receive a huge increase in funding.

"Talk about initiation by fire," he says.

Not only was this the first funding increase in 16 years, but the surge in funds meant the program could begin to make a real dent in the backlog of projects across the state. On top of the \$20 million allocated to local dirt and gravel road maintenance, the program was given an additional \$8 million to target drainage problems on low-volume paved roads (*those that see 500 or fewer vehicles on average per day*), a new category for the program.

The Dirt and Gravel Road Maintenance Program was created in 1997 in response to Trout Unlimited members who sought solutions for keeping fish-

## UNDERSTANDING ESM

**Environmentally sensitive maintenance, or ESM**, relies on simple, practical, cost-effective techniques, used alone or in combination, to reduce a road's impact on nearby streams. These strategies manage the volume and velocity of the water that flows over and under the road surface.

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- Avoid concentrated drainage;
- Minimize flow volumes;
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- Prevent surface erosion; and
- Reduce cost and frequency of road maintenance activities.

Specific examples include more frequent installation of cross pipes, shallow installation of cross pipes with headwall and endwall protection, surface drainage controls such as grade breaks and broad-based dips, durable driving surface material, raising the road profile to correct severely entrenched roads, and proper crown or cross-slope of the road surface.

killing dirt and gravel road sediment out of their trout streams. The program included an annual allocation for county conservation districts to provide financial and technical assistance for local

projects that improved drainage on unpaved roads. By 2010, nearly 2,000 local projects had improved drainage and reduced sediment along approximately 880 miles of unpaved public roads. ➤

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## DIRT & GRAVEL ROADS FUNDING

However, as the years passed and the price tag of projects continued to rise, conservation districts found that the state allocation, which had never been increased, did not stretch as far as it once did. An annual average of 171 local dirt and gravel road projects were completed between 2011 and 2014, and the program had developed a backlog of more than 14,000 unfunded identified project sites.

"The funds could only go so far," Richardson says. "When a drainage project got to a more expensive stream crossing, for example, a district couldn't afford to fund it."

So last year, in anticipation of the fivefold funding increase, those involved in the Dirt, Gravel, and Low-Volume Roads Program couldn't help feeling ecstatic, if not a bit overwhelmed.

"We were excited about such a hefty

increase to this program," says Steve Bloser, director of the Center for Dirt and Gravel Road Studies, which provides support to the program through education, outreach, and technical assistance, "but we were also realistically cautious that the program might experience some growing pains until everyone adjusted to it."

Last year marked the first construction season with increased monies, and conservation districts were able to fund 248 dirt and gravel road projects worth \$7.5 million and place another \$15 million in projects under contract for completion in 2016. Districts also brought on board additional staff to handle the expected influx of grant applications, demand for training and technical assistance, and increase in the number and scope of funded projects, including those involving more comprehensive bank reclamations, bridge replacements, and stream crossings.

"A lot of what was done before was piecemeal," Bloser explains. "A district might only be able to fund 500 feet of a project one year, or it might have to save three years' worth of funding to



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# Dirt, Gravel, and Low-Volume Road Success Stories

“A lot of what was done before was piecemeal. Now we can look at total solutions.”

afford a bigger project. The money they used to receive didn't go very far.

“Now,” he adds, “we can look at total solutions.”

## Accomplishing so much more

Deb Wilson of the Jefferson County Conservation District quickly crunches the numbers for her district.

“For 17 years, we received \$40,000 a year on average. That's a grand total of approximately \$680,000,” she says. “With our increase to about \$328,000 a year, we will have received almost that same amount of money in two years' time. There is no comparison to what we can now accomplish.”

With the majority of local roads in Jefferson County dirt and gravel, news that significantly more money was up for grabs spread quickly among townships. At a workshop the conservation district held in March to showcase the program, a record-setting 40 township representatives turned out to learn more.

“Townships are much more interested in working with us since we have additional money,” Wilson says.

For the first time ever, the district has been able to assign a full-time employee to promote the program, help with projects, and train municipal employees.

“Everything has changed with this money,” she says. “It has generated more interest and greater participation. And, it has given us the ability to promote the program and train municipalities on environmentally sensitive maintenance, or ESM, practices that can be incorporated into their regular road work as well.”

Expanded interest in the program is reflected statewide. Perhaps the most telling sign is the increasing number of municipal employees who have taken the ESM training required for a municipal-



BEFORE



AFTER

## Jander Run — Ceres Township, McKean Co.

**PROBLEM:** A rusted and undersized pipe under the road was inadequate for handling stormwater. Flooding and an unstable stream bank and road ditch caused severe road damage and visible sediment deposits in the high-quality stream.

**SOLUTION:** The old metal pipe was replaced with a new 9-foot-7-inch by 4-foot-1-inch aluminum box culvert. The larger culvert is expected to safely convey stormwater from 2-year, 5-year, and 10-year storm events away from the road.

## Bond Road — Polk Township, Jefferson Co.

**PROBLEM:** Stormwater runoff from an adjacent PennDOT road caused severe erosion on Bond Road. The township road acted like a ditch, conveying sediment-laden runoff to a stream. Existing springs along the road contributed to a soft road base, and the existing stream crossing was undersized.

**SOLUTION:** A junction box and an additional cross-pipe were installed to direct runoff from the PennDOT road into a grassy waterway. Bond Road was built up an average of 3½ feet, and underdrains were installed on both sides to improve drainage and strengthen the road base. A large culvert was installed at the stream crossing.



BEFORE



AFTER



BEFORE



AFTER

## Cunningham Road — Young Township, Jefferson Co.

**PROBLEM:** Stormwater from the top of the hill ran down the eroded berms of the road, and sediment washed into inlets and plugged the existing pipes. The tail wall of an existing stream crossing was inadequate.

**SOLUTION:** Berms were widened to 4 feet and paved with a curb. Sediment was removed from the inlets and plugged pipes, and a new tail wall was constructed.

*Photos courtesy of county conservation districts.*



## DIRT & GRAVEL ROADS FUNDING

ity to be eligible for a grant. Previously, the Center for Dirt and Gravel Road Studies trained fewer than 500 people a year. In 2014, after the funding increase announcement, that number had jumped to 1,300, says Bloser of the center.

"At the same time, we are seeing a change in who is interested in the program," he says. "Whereas counties may have been working with the same five or six townships in the past, they are starting to hear from other municipalities that have never before shown interest."

### Different roads, same approach

Some of this newfound interest can be attributed to the additional \$8 million allocation earmarked annually for projects on low-volume paved roads.

"Bringing these roads into the equation opens the program to more urbanized areas for the first time," Richardson says, pointing out that suburban townships, boroughs, and even cities own paved roads with lower amounts of traffic. "We are now dealing with a new set of individuals who are unfamiliar with the program, and the challenge is getting them trained and through the system."



**"There is no comparison to what we can now accomplish."**

*Photo of Beyer Road in Young Township courtesy of Jefferson Co. Conservation District.*

In previous years when the Dauphin County Conservation District received \$20,000 for local dirt and gravel road maintenance, it usually worked with the same four or five municipalities from the more rural northern end of the county.

"The work typically involved a longer stretch of road, and we would fund it in phases so that a shorter section was completed each year," district manager Eric Naguski explains. "Or, if it was a bigger-ticket project involving a lot of pipes or a stream crossing, we might hold the funds for a few years until we had enough money built up."

Now that the district receives \$100,000 for dirt and gravel road proj-

ects, plus nearly \$121,000 for low-volume paved roads, suburban and urban municipalities from the southern end of the county have expressed interest in the funding.

"We have been getting applications for more complex projects, in which more engineering is required," Naguski says. "These projects can get big and expensive."

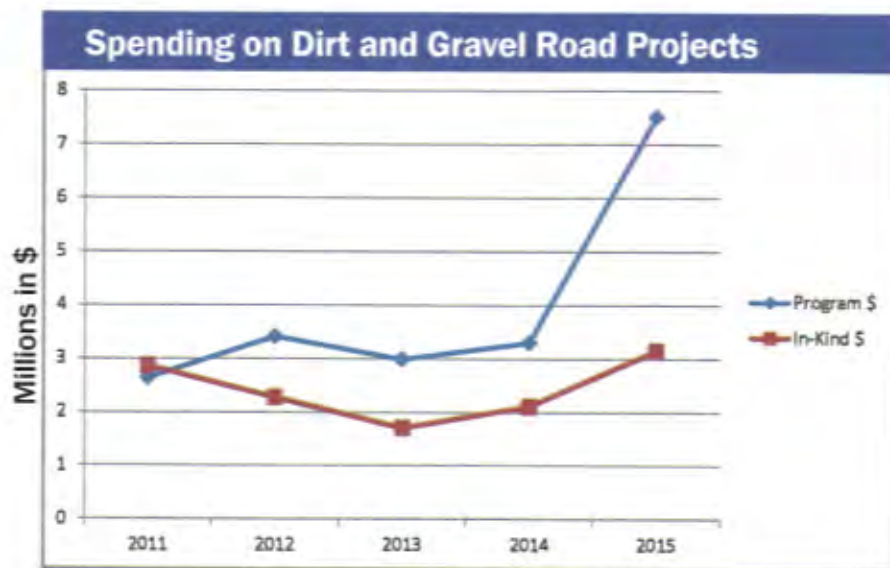
In educating new applicants about the program, district staff continues to emphasize that projects are first and foremost about mitigating water pollution and not simply repairing roads.

"Not everyone grasps that," he says. "There is a learning curve when it comes to understanding this program."

He advises anyone applying for funding to first meet with the district and make sure the engineer assigned to the project understands the program's requirements, especially those related to stream crossings.

"I hate to see a municipality spend money on engineering a project and then the application doesn't fly because the program requirements were not met," Naguski says. Although his district was not able to award any low-volume paved road grants last year, he anticipates some big projects involving a mix of low-volume and dirt and gravel road maintenance to be in the works this coming season.

Overall, across the state last year, conservation districts distributed \$1.5 million for 67 low-volume road projects, with another \$2 million in projects contracted for completion in 2016.



"Program \$" represents the funds spent statewide on projects (dirt and gravel only) through the dirt and gravel road program. "In-Kind \$" shows the municipal contributions, usually labor and equipment, toward the projects.



"This is new territory," acknowledges Richardson of the State Conservation Commission. "We are learning as we go."

To help with the transition, conservation districts have been advised to start with projects they are familiar with, such as culvert replacements and erosion prevention. Whether the project involves a dirt and gravel or a low-volume paved road, Bloser says, the goal of the program remains the same: fix drainage problems and reduce pollution runoff into nearby streams.

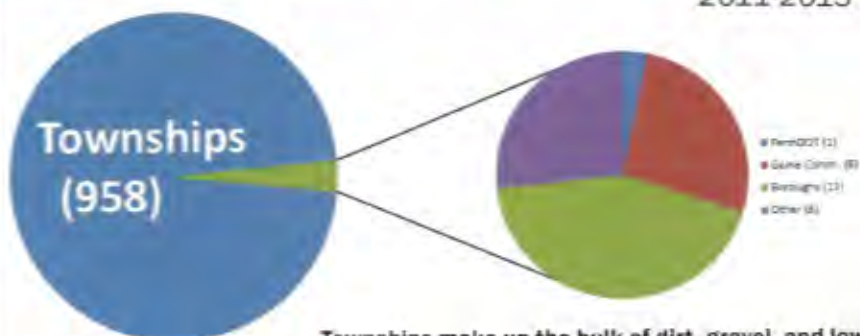
"We're dealing with the same program," he says. "It's just that there's a paved surface on these roads."

Since repaving is not the primary focus of the program, he cautions applicants that paving may only be funded if it is part of a larger, environmentally sensitive maintenance project. Each conservation district sets its own policies on paying for paving costs.

"We first make sure enough drainage-control practices are implemented to resolve erosion issues," Bloser says. "We know that if we don't address the drainage issues and improve the road base, the road is not going to last.

## Completed Dirt, Gravel, & Low-Volume Road Projects

2011-2015



**Townships make up the bulk of dirt, gravel, and low-volume road projects receiving state funding.**

"Any road surface material is just the icing on the cake," he adds.

### A local approach

At its heart, the Dirt, Gravel, and Low-Volume Roads Program is a local program.

"There is a lot of local control within it," Bloser says. "Because it is tailored to an individual county, the program is going to look different in Bradford County, for example, than it does in Lancaster County."

Although certain program elements

are standard across the state, including the requirement that a municipality be ESM-certified through training, other criteria will vary from district to district. Deciding the procedures and timetables for awarding grants to municipalities, for example, is a county-level decision.

When the McKean County Conservation District was given its increased funding last year, the district took its time to react.

"When we used to receive \$35,000 per year, we were lucky if we could do one project every other year," says dis-

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## DIRT & GRAVEL ROADS FUNDING

trict manager Sandy Thompson. "We now receive \$185,000, and we can fund four to five projects a year. That's like a 500-percent increase."

The district figured one of the best ways to ease into this greater funding opportunity was to change its application to year-round enrollment so that staff had time to make sure municipalities really understood the program. With the additional funds providing greater stability, the district can concentrate its efforts on raising awareness that projects should be focused on improving stream quality.

"We are thrilled to get more money to help townships," she says. "We can do more projects, and municipalities no longer have to wait several years to improve their roads and streams."

In addition, the expansion of the

## Check out funding and training to improve dirt and gravel roads

Do you have a problematic unpaved road? How about a troublesome low-volume paved road?

You might want to take advantage of funding and training available through the state's Dirt, Gravel, and Low-Volume Road Program. To learn if your township roads qualify, you should contact your county conservation district, which administers the program for its area and establishes its own policies and spending priorities.

To be eligible for funding for dirt and gravel roads or low-volume paved roads, a township must have at least one employee attend and complete the required two-day ESM training within the last five years. The free course is offered statewide. More information about this training, as well as ESM in general, is available from the Center for Dirt and Gravel Road Studies at [www.dirtandgravelroads.org](http://www.dirtandgravelroads.org).



program into low-volume paved roads means that bigger, more expensive projects are candidates for funding.

Ceres Township supervisor Mitch Gross estimates that engineering costs added \$13,500 to the price tag of a

stream-crossing project at Jander Run in McKean County, where a rusted and undersized metal pipe was replaced with a larger aluminum box culvert.

"We thought the whole thing could be replaced for \$50,000 to \$60,000, but it wasn't so once the Department of Environmental Protection and the engineer got involved," Gross says. The McKean County Conservation District awarded the township a \$55,000 low-volume road grant, and the township kicked in the rest of the money to cover what ended up being an \$85,000 job.

"The inadequate pipe under the road caused flooding that made the stream bank and road ditch unstable," Thompson explains, "and this resulted in severe road drainage and visible sediment deposits into the stream."

The grant allowed the township to hire contractors, who completed the work in 12 hours. Nearly a year later, the project has been declared a success. Not only does the larger box culvert keep stormwater from spilling out onto the road, but the condition of the road has improved and the stream has been cleaned up.

"The site is great, the results are great, and we learned a lot from the experience," says Gross, who notes that the township plans to seek similar grants in the future.

The beauty of the Dirt, Gravel, and Low-Volume Roads Program is that in

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## DIRT & GRAVEL ROADS FUNDING

the end, it is a win-win for everyone, says Richardson, the state's dirt and gravel roads program coordinator. "Usually, a township wants to improve its worst road," he says, "while the goal of the conservation districts is to focus on the environmental benefit of reducing sediment in streams."

Eventually, through education and experience, the two reach an understanding that a project can balance environmental benefits with road improvements and thus address both concerns.

"Townships are sometimes nervous about working with us," he admits. "They are used to maintaining roads their way, and that traditionally doesn't include placing extra collection pipes under the roadway or installing a bigger pipe for a stream crossing. Once they get started, though, they see the benefit of what we're doing. We end up having a lot of townships reapply for funding year after year."

Polk Township is one of those townships. With nearly 18 miles of dirt and gravel roads to maintain, the township has been working with the Jefferson County Conservation District on small projects for a number of years. The larger Bond Road project completed last summer illustrates how additional funding can result in bigger rewards.

"The washouts along the road have stopped," says Davis, the township roadmaster, "and the pH level in the trout stream is back up."

As the township gears up for a second project on Bond Road this summer, he is hoping for even greater results.

"Once we are done with this next project, we should have all the sediment out of the creek," he says, referring to the high-quality North Fork Creek, which serves as a water source for the nearby borough of Brookville. "North Fork was once a good trout stream, and we are hopeful that it will be again."

And that, after all, is the ultimate goal of the Dirt, Gravel, and Low-Volume Roads Program. ♦



## PennDOT's relationship with the dirt and gravel road program

Dirt and gravel road funds are appropriated directly to the State Conservation Commission for allocation to county conservation districts. Because the state Department of Transportation (PennDOT) does not administer or supervise these funds, specifications and standards from the department's Publication 9, *Policy and Procedures for the Administration of Liquid Fuels Funds*, and Publication 447, *Approved Products for Lower Volume Local Roads*, do not apply to the Dirt, Gravel, and Low-Volume Roads Program.

However, PennDOT has approved the use of liquid fuels funds to purchase driving surface aggregate, a mixture of crushed stone developed specifically for the dirt and gravel road program to reduce washouts on unpaved roads.

Likewise, the use of materials or practices linked to PennDOT Publication 408, *Specifications for the Use of Recycled and Co-Product Materials*, and various related bulletins that apply to asphalt and concrete may not be applicable for dirt and gravel road projects. Because the purpose of the program is to prevent dust and sediment pollution while maintaining unpaved and low-volume paved roads in an "environmentally sound" manner, use of any materials or practices harmful to the environment is prohibited.

Finally, PennDOT's Local Technical Assistance Program (LTAP) has a course called Unpaved and Gravel Roads Common Maintenance Practices. Although attending the course will enhance your township's ability to maintain dirt and gravel roads, the course cannot take the place of the mandatory ESM training and does not qualify your township for grant funding for dirt and gravel or low-volume paved roads.

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