

Turnpike Maintenance

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Beautifying America's First Superhighway



Pennsylvania Turnpike Commission's equipment at work in the wintertime.

Photos courtesy of Christine Baker, Pennsylvania Turnpike Commission.

October 1, 1940, marked the day that easy travel began between the eastern and western points of Pennsylvania. The Pennsylvania Turnpike, also known as the "Dream Highway" and "America's First Superhighway," has allowed travelers to drive from Philadelphia to Pittsburgh in about 358 miles. Since it's opening, the turnpike has extended its reach with the Northeastern Extension near Philadelphia, which covers 110 miles, and the Western Expansions, near Pittsburgh, which covers 61.5 miles.

Turf maintenance

The Pennsylvania Turnpike Commission is not a state agency. Carl DeFebo, one of the spokespeople for the Pennsylvania Turnpike Commission, says, "We don't receive tax revenues to fund for the operation and maintenance of the turnpike system." Therefore, they have more autonomy over how their green space is maintained. DeFebo says, "Monies from the toll plazas fund the operation and maintenance. It does allow us the luxury of increased maintenance. Turnpikes across the nation, people pay a premium and they have a higher expectation of service. The number of personnel and safety to render assistance and to respond in an emergency [are increased due to this expectation and availability of monies]."

The maintenance personnel have 542 miles, or 6,500 acres, of turf maintenance that they need to maintain on a regular basis. The turnpike is broken down into 100-mile maintenance districts, which include five districts throughout the state of Pennsylvania. DeFebo describes the turnpike vegetation that needs to be mowed as a "huge lawn." In these districts, a district superintendent oversees four foremen.

According to Mike Haney, director of maintenance for the turnpike commission, there are 21 maintenance locations throughout the toll road system with a foreman at each location.



An example of a cut that is still able to be mowed on the Pennsylvania Turnpike.

Haney's crews prune and mulch flower bowls at the toll plazas after the plantings are completed. The turnpike commission uses trees, too, as visual barriers in some situations, and is regularly planting more trees, primarily for beautification purposes.

Haney says, "We do tree and brush removal, limited planting and maintain [the landscape plantings] after rehabilitation at interchange areas.

"We have an annual plan for vegetation. The roadway maintenance program manager, Steven Dawson, oversees the program."

Dawson does the planning for the turnpike, which includes mowing, mulching and other landscape care for the entire highway system. Then, the district managers take the plans to the maintenance sheds where the foremen make sure that the plans are implemented.

DeFebo says that in the past decade the turnpike commission has been in the process of rebuilding the turnpike from the ground up, and that these roadway renewal projects involve planting grass and trees in the shoulder and median areas, as well as near toll plazas and interchanges.

Mow and plow

Normally, the turnpike employs about 430 full-time, maintenance employees. However, from May through September each year, the Turnpike hires about 50 to 60 seasonal workers as part of its summer help program. Haney says, "The summer help program hires assist us in the maintenance operations."

Reseeding is also done throughout the spring and summer, and the commission's landscape architect, James Kaiser, says that the reseeding project is part of their yearly plan for turf maintenance. Kaiser says, "People are looking for what areas need to be addressed, and (they) touch those areas up."

Still, there are parts of the turnpike where mowers are unable to reach, such as cuts and fills. Cuts are manmade embankments that are often steep inclines that rise above the roadway shoulder, and fills are steep, manmade downgrades below the end of the shoulder. Both occur at various stretches along the Pennsylvania Turnpike.

In order to control erosion, the turnpike commission uses ground cover that's hardy and doesn't require any maintenance. For example, during the 1960s through the 1980s, the Pennsylvania Turnpike used crown vetch, a popular groundcover, because it didn't require mowing on the steep inclines and downgrades. Crown vetch could easily take root and flourish with very little maintenance and control ground erosion.

However, as crown vetch was identified as possibly invasive in certain conditions, and in order to control it, the commission began to look at alternatives. According to DeFebo, "Newer seeding mixtures and methods began to emerge. The turnpike began to switch to these more modern seed mixtures on cuts and fills as sections of the toll road were rebuilt or improved."



The Pennsylvania Turnpike Commission uses trees as a visual barrier and as part of their beautification project.

In some areas, the turnpike started using Birdsfoot Trefoil, which is a legume, and is not invasive. It, “produces nitrogen in the fill soils. These plants will survive in poor, rocky soils, and there’s a nice yellow flower during the spring and summer,” Kaiser says.

Kaiser also works with local garden clubs for beautification programs to make toll plazas and other areas look appealing for their customers. Kaiser and the garden clubs discuss what kinds of plantings work well in concrete planters at some of the toll plazas. The plants that are placed there during

the spring and summer need to be heat tolerant and low maintenance for easy care by toll plaza workers.

Kaiser adds, "In selecting plants for the interchanges and other areas along the turnpike, we look at plants that are sensitive to salt and avoid them. And, we try and select plants that require less maintenance, and are pest/disease resistant."

Landscape design team

Kaiser has two other full-time employees who work with him in the landscaping department. Their jobs include overseeing contracted landscapers to make sure the commission is receiving the correct plants, that the plants are healthy and that the materials are planted correctly in the ground.

In addition to his landscaping duties, Kaiser works with Dawson to oversee the herbicide and tree care operations of the commission. The commission has 10 certified herbicide operators, along with several supervisors, who are state certified in herbicide use, as required by Pennsylvania law. The turnpike uses herbicides to control weeds and woody overgrowth.

Herbicide applications are a regular part of the commission's landscape program. They also apply herbicides to weeds that grow up along the shoulder of the road and spray around mile markers, delineators, guard rails and reflectors because these safety elements help drivers to identify the road ahead.

Kaiser and his crew are also responsible for the turnpike's rain gardens. These special gardens help in storm water management on the highway by absorbing water into the ground to prevent flooding.

"Currently, we have three main rain gardens on the turnpike: One along the Northeastern Extension, planted in 2008, and two near the Valley Forge Service Plaza, which were installed in the late summer and fall of this year," Kaiser says.

Winter preparations

The Pennsylvania Turnpike Commission prides itself on ease of travel even during Pennsylvania's worst snow storms. Haney says that the commission plans on how much salt and anti-skid material they need based on the previous 10 winters. They average 115,000 tons of salt and 21,000 tons of anti-skid material. The turnpike also averages 150,000 gallons of liquid calcium in their storage tanks. They use the liquid calcium as a pretreating and melting agent.

"We're proactive. We know that a storm is coming in. As soon as it starts snowing, we put on a light layer of rock salt."

Leftover rock salt is stored in salt domes that are located near all of the maintenance sheds. "Salt stays in there throughout the entire year, but from December through March, they're full," Haney states.

Though this doesn't happen on a regular basis, the Turnpike Commission will plow snow and apply antiskid material to roadways off of the turnpike. They do this on roads that connect the turnpike for the safety of their customers getting on and off the turnpike.

"We'll occasionally send one of our plow trucks up a mountain. It's a good neighbor policy. It gets traffic off the turnpike and keeps everyone safe. We do it on rare occasions. There is nothing in writing. We all have one goal, and that's the drivers' safety," Haney says.



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