



Will the tolling of Pa's interstate bridges become reality?

Background

In 2012 the state Legislature passed a law creating the Public-Private Transportation Partnership Board (Act 88 of 2012). This board's purpose is to facilitate "contractual agreements between public entities and private entities in which the public entity transfers the responsibility for engineering, construction, operation, financing, and/or maintenance of a transportation project to the private entity for a period of time."

Recently that board approved a plan, called the Major Bridge P3 Initiative, in which PennDOT will work with private contractors to replace nine non-tolled interstate bridges around the state with tolled bridges. The bridges and pertinent data are listed below.

County	Bridge	Highway	Expected Cost	Vehicles per day	Percent Trucks
Berks	Lenhartsville	I-78	\$40M-\$50M	51,080	30
Allegheny	Bridgeville	I-79	\$100M-\$200M	87,000	12
Luzerne	Nescopeck	I-80	\$30M-\$40M	33,000	36
Jefferson	North Fork	I-80	\$165M-\$185M	30,897	44
Clarion	Canoe Creek	I-80	TBD	30,119	50
Carbon/Luzerne	Lehigh River	I-80	TBD	27,400	44
Susquehanna	Susquehanna	I-81	TBD	27,000	41
Dauphin/Cumberland	South Bridge	I-83	\$500M-\$650M	125,000	na
Philadelphia	Girard Point	I-95	TBD	148,500	6

Tolling bridges and tunnels on interstate highways was made legal in 1991 with the passage of the federal Intermodal Surface Transportation Efficiency Act. This law allows a state to replace a non-tolled bridge or tunnel on an interstate with a tolled bridge or tunnel. The federal government will have final approval before the Major Bridge P3 Initiative can proceed.

According to news reports the plan will levy a toll per vehicle with the funds used to pay for each project. However, concerns have been expressed by some Legislators about the project overall and over whether tolls could become a problem if there is not a legislative limit on how high the toll rate should be initially and if there is no limit to future hikes in the tolls.

The board has the authority under current legislation to proceed with the Bridge P3 Initiative. Under existing legislation, the General Assembly has 20 calendar days or nine legislative days, whichever period is longer, from the adoption of a plan to pass a concurrent resolution rescinding the approval of a plan if the transportation project is owned by the commonwealth. The project

was approved by the board on Feb. 22, 2021. As of this writing 20 calendar days have passed but only six session days.

Economic and financial considerations

There are several key questions to be considered. Will tolls present a heavy and unnecessary burden on users of the interstates? Will tolls for large trucks be set higher than for cars—as they are on the Pennsylvania Turnpike—to reflect the enormous difference of the impact on roads and bridges they represent (*see Policy Brief, vol. 13, no. 33*)? If so, how much difference should there be?

For passenger vehicles the greatest impact will be on daily commuters in urban areas who travel across the bridges. According to PennDOT data, over the last five years passenger vehicles account for about 84 percent of the traffic on Pennsylvania's interstates in urban areas as compared to 68 percent for the rural areas. For the Bridgeville project area PennDOT estimates that passenger vehicles account for 88 percent while for the four projects on Interstate 80 that percentage falls to an average of just 56.5 percent.

For long trucks (five axles or more), the impact will be greater in the rural areas, particularly on Interstate 80 where there will be four tolls each way for trucks traversing the entire Pennsylvania span of the highway. Long trucks account for about 23 percent of the traffic on all Pennsylvania interstates in rural areas and just 9 percent in urban areas. For the four bridge projects along Interstate 80, trucks account for 36 percent to 50 percent of traffic. For the Bridgeville project, they account for 12 percent and just 6 percent for the Philadelphia project.

News reports indicate that tolls on the nine bridges will be \$1 to \$2. But deciding on the level of the tolls will depend on several factors. First, they need to consider current daily traffic by type of vehicle on the existing bridges and the projection of daily use several years in the future after completion. Secondly, PennDOT will need to provide a robust estimate of the cost for each project. As seen from the table above, construction cost estimates are currently available for just five of the nine projects. The table shows large differences in costs among the projects because of the type of bridge and differences in obstacles faced in executing the projects. Obviously, a great deal of the viability of the plans depends on the accuracy of the cost estimates. But that is true whether tolls or taxes are used as sources of funding.

For example, the lowest construction cost estimate is for the Nescopeck Bridge on Interstate 80 in Luzerne County with an estimated cost between \$30 million and \$40 million. The bridge project in Bridgeville is estimated to cost between \$100 million to \$200 million while the project in Dauphin/Cumberland Counties on Interstate 83 is estimated to cost between \$500 million to \$650 million.

There is no estimate for the double-deck Girard Point Bridge in Philadelphia. At nearly a mile long, and carrying the most traffic of the nine bridges, it spans the Schuylkill River on Interstate 95 and has a high probability of costing at least \$1 billion.

Reasonable and reliable estimates of ongoing operations including costs associated with tolling and collecting tolls need to be included. Also, the private partner will need revenue to cover payments for bonds issued to build the project as well as enough revenue to cover ongoing oversight and maintenance.

PennDOT provides traffic count estimates for each bridge. Taking the lowest cost bridge project, Nescopeck and breaking down the traffic estimate (33,000) and using a toll scheme of \$1 per passenger vehicle and \$2 per truck, annual toll revenue can be estimated. At these toll rates, the daily revenue would be \$44,880 and \$16.38 million annually. Even with moderate interest rates, the new bridge could be paid off in just a few years.

Doing the same calculations for the more expensive Bridgeville project on Interstate 79 shows that with 87,000 daily vehicles, 12 percent being trucks (10,440) and the remainder passenger vehicles (76,560), estimated daily revenue would be \$97,440 and could reach \$35.5 million per year. This would comfortably cover bond repayment.

It is important to keep in mind the importance of the reliability of both the cost and traffic estimates. Higher construction and maintenance costs and/or lower future traffic counts would make payoff periods longer. However, based on calculations with available estimates, each project could be paid for in just a few years. But what happens after that? The Legislature should look at capping the number of years the tolls can remain in place or reduce the tolls to just enough to cover maintenance and ongoing operations costs.

Detailed considerations

Would the imposition of tolls have a large enough impact to reduce traffic?

Based on Allegheny Institute findings on the continuously rising tolls on the Pennsylvania Turnpike over most of the past decade (*Policy Brief, vol. 20, no. 17*), a reduction of traffic on the nine bridges is unlikely. Note that overall traffic levels on the turnpike climbed 11 percent from 2011 to 2019. Commercial vehicles increased 28.5 percent while passenger vehicle counts ticked up 8.7 percent. These gains occurred during the eight year period despite significant annual increases that boosted the toll 80 percent for cash fares and 38 percent for EZ Pass fares for passenger vehicles. These data indicate that traffic on the turnpike was not diminished by sharply rising and very high tolls from 2011 to 2019.

In the pandemic year of 2020, traffic levels across the board fell to reflect the lockdown and business and travel restrictions. Passenger traffic on the turnpike fell 30 percent while commercial traffic was down only 5 percent.

The American Transportation Research Institute estimated the average cost of truck operations per mile in 2018 to be \$1.82 with the largest expenditure per mile being wages (\$0.556 or 33 percent of total) followed by fuel (\$0.433 or 24 percent). Tolls per mile average only 2 percent of the cost (\$0.03) ahead of only permits and licenses (1 percent).

Generally, tolls represent a small share of total cost. However, the share will be higher for trucks using heavily tolled roads. Clearly, for users of the Pennsylvania Turnpike, toll costs would be much higher than the national average. Current turnpike data (2021) show that for a passenger vehicle crossing the length of the mainline highway (323 miles) from Warrendale to I-95 Delaware Valley the rate per mile is \$0.126. For commercial vehicles that rate increases as the weight of the vehicle rises. For commercial vehicles, the range is from class 2 (7,001-15,000 pounds) at a per mile rate of \$0.185 to classes 8 and 9 (over 80,000 pounds) at \$0.885 per mile (49 percent of the national average non-toll operating cost).

By comparison, if a truck drives the length of Interstate 80 and pays the four \$2 tolls, the added cost would be \$8 for 300 miles or \$0.027 per mile—a small percentage of the \$1.82 average per

mile cost. A truck traveling 60 miles on Interstate 79 and over the span at Bridgeville could see a \$2 charge. That would represent only 1.8 percent of the \$109 to drive that distance. For a longer trip of 150 miles the toll would represent less than one percent of the cost.

All this points to the necessity of understanding the elasticity of demand for using the bridges on the interstates. Demand is likely to be very inelastic in that traffic will not decline much, if at all, with modest tolling added. There are two basic reasons. First, for trucks traveling the interstates in Pennsylvania, it is simply too time and fuel consuming to use an alternate route that involves adding an extra 100 miles or two hours to a trip. The cost per mile and per hour are much higher than proposed toll charges. And the use of non-freeway roads with all the traffic stops or slow-moving traffic is not a viable option.

Secondly, the trucking firm can either absorb the small added cost or pass it, or some of it, along to customers in the form of higher freight charges. Thus, unless economic options to traveling the interstates are created (unlikely in the extreme) a nominal small toll is unlikely to affect truck usage of the interstates.

For cars and pickups, the decision to use or not use a tolled bridge will depend not only on the availability of reasonable options (good roads with no major traffic headaches) but also the share of the toll as a percentage of the total cost of the travel in terms of time, distance, fuel use and wear and tear on the vehicle. For more local traffic in which drivers have knowledge of alternatives and the distance to work is relatively short, there will be some traffic diminution. For commuters traveling a long distance on the interstate, 20 or more miles, the use of the tolled bridge should not be much affected.

Alternatives to tolling

Gasoline tax revenues have been lowered by the reduced travel during the pandemic. The estimated fiscal 2020 revenue (July 2019 to June 2020) for the Oil Company Franchise tax was 7.4 percent below the pre-pandemic budget estimates of over \$1 billion while the Act 89 liquid fuels tax (gasoline) dropped 5.6 percent and the Act 89 fuels tax (diesel) was off by just 0.6 percent from estimates. Thus far in fiscal 2021 (February) the Oil Company Franchise tax is down 14.2 percent and the Act 89 fuels tax is 1.9 percent off the previous year-to-date totals. However, the Act 89 liquid fuels tax is up 10.3 percent over the previous year-to-date figure. This reflects a loosening of the economy as people began to move about again and fueled up their vehicles.

With more fuel-efficient and electric vehicles accounting for an increasing share of traffic, reliance on fuels-based taxes becomes ever more problematic. But the maintenance and replacing of roads and bridges is an ongoing necessity and expensive process. This is perhaps why the tolls were suggested. But the only alternative is higher taxes or redirection of commonwealth money from other uses. Perhaps the state can allocate some of its share of federal stimulus money to pay for road and bridge projects to mitigate the need for tolling—at least for now.

Tolling has a long history and is used widely throughout the country to fund transportation infrastructure. It can be misused as Pennsylvania has been doing in levying increasing tolls on the turnpike to cover the mandated borrowing they had to undertake to turn over \$450 million to PennDOT annually, a large tranche of which is used to fund mass transit.

Quite rightly, residents and businesses have a very jaundiced view of Pennsylvania's track record of funding and maintaining roads. Hence, the prospect of tolls is off-putting to many. However,

money must be found and the bridges are getting very old and in need of replacement. Tolling interstate projects could be a good alternative to ever higher fuel taxes if two conditions are met.

First, the tolls must be as low as possible to produce only the funds necessary for building and maintaining the bridges. Secondly, the Legislature needs to ensure through statute that the tolls will meet the first condition and cease upon bond repayment.

Bear in mind that tolls are a use tax. Electric vehicles will pay them. Moreover, cars and trucks traveling through Pa. over the bridges, but which do not purchase fuel in the state do not contribute to paying for the bridges. But they would with tolls.

In sum, at the low toll cost levels being proposed in the Bridge P3 Initiative, there will be very little impact on traffic on the interstates.

Frank Gamrat, Ph.D., Executive Director Jake Haulk, Ph.D., President-emeritus

Policy Briefs may be reprinted as long as proper attribution is given.

Allegheny Institute for Public Policy
305 Mt. Lebanon Blvd.* Suite 208* Pittsburgh PA 15234
Phone (412) 440-0079
E-mail: aipp@alleghenyinstitute.org
Website: www.alleghenyinstitute.org
Twitter: [AlleghenyInsti1](https://twitter.com/AlleghenyInsti1)