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Estimating lost turnpike revenues from virus lockdown

Summary: As the coronavirus-mandated lockdown enters its third month, it is quite clear that revenue losses for state and local governments have been enormous and will continue to fall well short of what was expected for some time to come. Previous *Briefs*, (*Vol. 20, Nos. 14 and 16*), looked at the estimated revenue losses in the City of Pittsburgh and Allegheny County. This *Brief* examines the potential loss of revenue at the Pennsylvania Turnpike resulting from the sharp drop in traffic due to the economic and travel restraints imposed by the state.

Keep in mind that toll revenue from the turnpike is used not only for the state Turnpike Commission's expenses but is also being used to fund mass transit across the state. The commission has been borrowing huge amounts of money against toll revenues to meet the legislatively mandated payments to the PA Department of Transportation (PennDOT).

For the past several years the annual payment owed is $450 million (of which $400 million goes to mass transit and the remainder to the multimodal transportation fund) per year until 2022 when the payments dip to $50 million until 2057 (see *Policy Brief Vol. 12, No. 5* for details).

In early May, the Turnpike Commission requested a postponement of its scheduled July payment of $112.5 million to PennDOT in wake of a "sharp decline in traffic due to virus restrictions." How much of a sharp decline is unknown since traffic data on the turnpike's website are available only through February 2020 (as of this writing). However, by using monthly commission data from the last three years (2017-2019), the traffic volume and toll revenue over the March-to-June period that would have occurred absent the lockdown orders have been estimated for cars (Class 1) and for commercial traffic (Classes 2-9). The analysis continues with estimates of the traffic and revenue that are likely during the shutdown and reopening months of March through June. The projected revenue shortfall is the difference between these two estimates.

All traffic data are taken from the commission's website and include the count of vehicles exiting the mainline system (toll 76, 276 and 476). The 2018-20 data did not include figures from the toll spurs—576, 43, 66 or 60—so those exits were eliminated from the 2017 data set for consistency. It is worth noting that about 50 percent of the turnpike's Class 1 traffic count and 33 percent of the Class 2-9 traffic takes place in District 4, the southeast counties of the state which have been hardest hit by the virus.

Class 1 passenger vehicles

In early May turnpike officials noted a "sharp decline" in traffic—presumably for March and April. But how sharp? The state's shutdown rules eased up in early May for the northern and central counties. But the mainline turnpike doesn't go through those areas. Southwestern counties, where the mainline road does travel, had restrictions loosened in mid-May. But the bulk of traffic runs through the Philadelphia area, which remains on lockdown perhaps through the end of May.

From 2017 to 2019, January's traffic count was relatively stable ranging from 10.11 million cars per month in 2018 to 10.05 million in 2019. In 2020, January's traffic count came in at 10.22 million, 1.7 percent above 2019's level. February's count rose from 9.35 million in 2017 to 9.58 million in 2018. February 2020's traffic of 9.94 million was up 4.5 percent over 2019's count (9.51 million). The average increase over the first two months is 3.1 percent. Some of 2020's increase could be attributed to a mild winter. But some could be attributed to a strong national economy before the coronavirus arrived.

To estimate the traffic for March through June of this year if there had been no lockdown, a 2 percent year-over-year growth rate is assumed. The reason for a lower rate than January and February is that from 2017 to 2019 the traffic counts for each forecast month had been relatively unchanged from the year-earlier figure, especially in April and May with a slight decrease in June. The following table shows the actual monthly counts and the estimated counts (in italics).

Class 1 traffic counts (millions)

	March	**April**	**May**	**June**
2017	10.73	11.42	12.06	12.24
2018	10.78	11.43	12.14	12.28
2019	11.15	11.42	12.10	11.92
2020 (est. w/o lockdown)	*11.37*	*11.64*	*12.35*	*12.16*

The Turnpike Commission's 2019 Comprehensive Annual Report calculates the gross fare revenue per vehicle transaction. As is well known, the commission has raised toll rates by 6 percent (both cash and EZ-Pass) each year from 2016-2020. The gross fare revenue per Class 1 vehicle transaction from 2016 through 2019 was as follows: $3.32, $3.56, $3.77 and $4.04. The average annual increases during this time were 6.8 percent. Using this percentage increase to estimate 2020's gross fare revenue per Class 1 vehicle gives $4.31. With this value and the estimated traffic count in the above table, estimated monthly revenues from mainline turnpike tolls for each month are calculated.

Since the lockdown commenced, leisure travel has been way off, if not close to zero, as unnecessary travel was prohibited. However, essential personnel were allowed to travel and people were allowed necessary travel to check on relatives or to gather supplies. Some may have used the mainline turnpike to do so.

Since the lockdown began mid-March, we will assume a 50 percent reduction in activity for that month but a 70 percent reduction (30 percent usage) for both April and May. For June, we will use a 40 percent usage rate as the lockdown will most likely start to ease restrictions and people will begin summer travel. These reductions will be used to approximate the revenues received on the mainline turnpike while on lockdown.

Class 1 monthly revenues (millions)

	March	**April**	**May**	**June**
2017	$38.19	$40.65	$42.92	$43.56
2018	$40.63	$43.10	$45.77	$46.28
2019	$45.03	$46.12	$48.90	$48.15
2020 (est. w/o lockdown)	*$49.04*	*$50.23*	*$53.25*	*$52.43*
Revenue projections with lockdown	*$24.52*	*$15.07*	*$15.98*	*$20.97*
Lost revenue due to lockdown	*$24.52*	*$35.16*	*$37.27*	*$31.46*

As the table above shows, the loss of revenue is estimated to be about $128.41 million over the mid-March through June period. Of course, actual losses will depend on how fast traffic returns to the turnpike as the lockdown eases. Bear in mind that even in the "yellow phase" unnecessary travel is still not encouraged. Thus, it is unlikely that the road's usage will return to normal until the state enters the "green phase." Even at that, it may be a while before people feel comfortable enough to travel for leisure. It likely will take perhaps as much as a couple of months before passenger vehicle counts return to normal levels, and thus the revenue shortfall from what had been expected will likely persist.

Commercial vehicles

As the push for supplies and online shopping picked up during the lockdown the demand for commercial vehicles to transport these products increased. However, since construction and most manufacturing were curtailed, as were car sales, furniture sales and other retail shopping outlets, there was a drop in the transport of items related to these industries.

Commercial traffic was up 2 percent each month for both January and February over last year's counts. In January 2020, 1.88 million commercial vehicles exited the mainline turnpike compared to 1.84 million in 2019. For February 2020, 1.74 million commercial vehicles exited compared to 1.71 million in 2019.

For estimations of commercial traffic, a 2 percent year-over-year growth rate is used for the months of March through June. The 2017 through 2019 monthly data and the 2020 estimates are shown in the table below.

Commercial traffic counts (millions)

	March	April	May	June
2017	1.80	1.83	2.03	2.21
2018	1.85	1.91	2.12	2.08
2019	1.91	2.27	2.16	2.05
2020 (est. w/o lockdown)	*1.95*	*2.31*	*2.20*	*2.09*

Looking at the past four years of gross fare revenue per vehicle transaction for commercial traffic (2016-2019) shows the following amounts: $15.51, $16.38, $17.38 and $18.85. The average annual increase was 6.7 percent. Using this percentage as the expected 2020 increase over 2019's gross fare revenue per commercial vehicle transaction places the 2020 gross fare receipt per vehicle at $20.12.

Note that different classes of commercial vehicles are assessed different tolls. The assumption is that the percentage decline in commercial traffic affects all classes equally. The following table shows the estimated monthly revenues from 2017 through 2020 for the four months.

Commercial traffic monthly revenues (millions)

	March	April	May	June
2017	$29.53	$29.98	$33.25	$36.28
2018	$32.09	$33.21	$36.85	$36.11
2019	$35.96	$42.70	$40.67	$38.59
2020 (est. w/o lockdown)	*$39.18*	*$46.52*	*$44.31*	*$42.05*
Revenue projections with lockdown	*$31.34*	*$32.57*	*$31.02*	*$33.64*
Lost revenue due to lockdown	*$7.84*	*$13.96*	*$13.29*	*$8.41*

The table above shows the estimated monthly revenues for March through June 2020. The estimates of turnpike usage as a percentage of what it would have been with no lockdown will vary by month. For March and June traffic counts are placed at 80 percent of the no-lockdown amount; for the harder hit months of April and May, the estimate is 70 percent. For the four-month period, the toll revenue is estimated to be down by $43.50 million owing to the decline in commercial vehicle traffic.

The total loss over these four months from both classes of vehicle is estimated to be $171.91 million. In 2019 the net fares for the year were $1.33 billion or about $110.59 million per month. Our estimate amounts to a loss of about a month and a half of revenue.

To reiterate, the losses are predicated on a shutdown lasting from mid-March through June. If the state enters the "green phase" sooner and people have the confidence to travel again, then the estimated losses could be lower.

That confidence is going to be key. People travel when they not only feel safe medically, but also when they feel financially sound. With more than 1.8 million-plus Pennsylvanians having filed for unemployment compensation and others waiting to see if their jobs are going to be secure going forward, that could take some time causing the weakness in traffic counts and revenues to linger well into the summer.

Recommendation

While the federal government is going to be sending money to state governments to assist during this pandemic, it's unlikely that they will cover all losses. What can the Turnpike Commission do going forward?

First and foremost, the Legislature needs to remove the Act 44 mandated payments to PennDOT. To make these payments, the Turnpike Commission has been borrowing money heavily and has seen its debt load explode over the last decade.

In 2010 the agency had $5.1 billion in mainline outstanding debt. By 2019 that amount more than doubled to $12.4 billion with a large share of the increase due to required payments to PennDOT. Total debt outstanding, including oil franchise tax and motor license debts, stood at $13.92 billion. On a per vehicle basis mainline debt ballooned from $26.88 in 2010 to $57.57 in 2019.

The pandemic has dramatically exposed the ill-conceived reliance on toll revenues to fund mass transit. The estimated loss of $158.56 million will hurt the Turnpike Commission's ability to make payments on current mainline debt (a $725.6 million payment in 2019).

The longer the pandemic lingers, and Pennsylvania remains in lockdown—even if modified—and the economy fails to rebound quickly the larger these losses will be.

If nothing else, it could hamper the agency's ability to borrow money in the future. The more toll revenue that needs to be used for debt repayment, the less that will be available for other needs such as maintenance and operations, which are very expensive.

The state needs to end the lockdown quickly so that economic activity can begin to return to the pre-virus level.

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