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May 28, 2021

Mr. Richard Dreher
Chief Financial Officer
Pennsylvania Turnpike Commission
700 South Eisenhower Boulevard
Middletown, PA 17057

Subject: Pennsylvania Turnpike Commission 2021 Traffic and Toll Revenue Bring Down Letter

Dear Mr. Dreher:

The Pennsylvania Turnpike Commission (PTC or Commission) asked CDM Smith to prepare this *2021 Traffic and Toll Revenue Bring Down Letter* (2021 Bring Down Letter) to be used in support of the Commission's ongoing capital improvement program and other funding requirements. This letter provides an update to the *6-Month Update to the 2020 Traffic and Toll Revenue Bring Down Letter* (2020 6-Month Update) dated December 18, 2020, which was the most recent update to a series of traffic and toll revenue forecasts that also includes the *2020 Traffic and Toll Revenue Bring Down Letter* (2020 Bring Down Letter), dated May 29, 2020; the *2019 Traffic and Toll Revenue Bring Down Letter* (2019 Bring Down Letter), dated April 29, 2019; and the *2018 Traffic and Toll Revenue Forecast Study* (2018 Forecast Study), dated April 20, 2018.

The 2020 6-Month Update included actual data through October 2020 and presented traffic and gross toll revenue forecasts from fiscal year (FY) 2020-21 through FY 2049-50. A fiscal year runs from June 1 through May 31. An additional five months of actual data (through March 2021) were available for this 2021 Bring Down Letter. The forecast period for this study remains unchanged from the previous one, extending through FY 2049-50.

This report will provide a summary of differences between the current traffic and revenue forecast and the one provided in the 2020 6-Month Update.

The updated forecasts reflect the following changes from the 2020 6-Month Update:

- E-ZPass market share estimates over the forecast period were reviewed and updated as needed.
- Actual traffic and toll revenue data were updated to include information through March 2021.



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- A detailed review of COVID-19 related impacts was conducted based on an additional five months of actual data. Revised COVID-19 impacts have now been applied to the forecasts through FY 2025-26. As with the previous forecast, no COVID-19 impacts are assumed after FY 2025-26.
- A review of scheduled major roadway improvements was conducted to determine if there have been any changes since completion of the 2020 6-Month Update. This review concluded that one project on the list of committed roadway projects has been completed since the 2020 6-Month Update and has thus been removed from the list. No new projects have been added, although the timing of some have been adjusted. This will be discussed in the Committed Roadway Improvements section of this report.

These differences are described in more detail in the sections that follow below.

It is important to note that the intent of this 2021 Bring Down Letter is to review and revise, if warranted, the short-term forecasts developed as part of the 2020 6-Month Update. Any adjustments would be made based on the five months of new actual traffic and toll revenue experience since the 2020 6-Month Update was completed, including COVID-19 impacts, as well as revised assumptions summarized in the bullet points above.

The underlying socioeconomic trends and forecasts for Pennsylvania, the surrounding states, and the United States that formed the basis for the long-term traffic and toll revenue forecasts are provided in the 2018 Forecast Study.

Historical Toll Rate Increases and Current Toll Rates

Table 1 provides a summary of historical toll rate increases on the Turnpike System from 1987 to the most recent increase implemented on January 3, 2021. Rate increases are presented as a percent increase over the prior toll rate for cash/video and E-ZPass. Note that toll rate increases are generally applied systemwide, although occasional exemptions occur, as indicated in Table 1.



Table 1
Historical Toll Rate Increases
Pennsylvania Turnpike

Date	Percent Increase		Comment
	Cash/Video	E-ZPass	
1/2/1987	40.0	NA	E-ZPass was not yet implemented on the Turnpike
6/1/1991	32.0	NA	E-ZPass was not yet implemented on the Turnpike
8/1/2004	42.5	42.5	
1/4/2009	25.0	25.0	No increase on Findlay Connector or MFE between Uniontown and Brownsville
1/3/2010	3.0	3.0	No increase on Findlay Connector
1/2/2011	10.0	3.0	No increase on Findlay Connector
1/1/2012	10.0	0.0	No increase on Findlay Connector
1/6/2013	10.0	2.0	
1/5/2014	12.0	2.0	No increase on Findlay Connector
1/4/2015	5.0	5.0	No increase on Findlay Connector
1/3/2016	6.0	6.0	No increase on Findlay Connector; DRB converted from ticket system to barrier system and rate changes implemented
1/8/2017	6.0	6.0	No increase on Findlay Connector or DRB
1/7/2018	6.0	6.0	No increase on Findlay Connector, DRB, or the Northeast Extension barrier facilities
4/29/2018	6.0	6.0	Northeast Extension barrier facilities only (1)
6/3/2018	6.0	6.0	Findlay Connector only (1)
1/6/2019	6.0	6.0	
10/27/2019	6.0	6.0	BVE, AKH, and Gateway only; additional 45% surcharge over cash rate added to video rate at these locations
1/5/2020	6.0	6.0	No increase on BVE, AKH, or Gateway
1/3/2021	6.0	6.0	Additional 45% surcharge over cash rate added to video rate for Ticket System and MFE

Note: Beginning in 2016, all cash toll rate increases also reflect video toll rate increases.

(1) Toll rate increase coincided with vehicle classification changes from a weight-based to an axle-based system.



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Periodic toll rate increases were implemented on the Turnpike System in 1987, 1991, and 2004. Beginning in 2009, annual toll increases have been implemented. During the 2000s decade, E-ZPass was phased into the Turnpike System. Until 2011, cash and E-ZPass toll rates always increased by the same percent. The toll rate schedule implemented on January 2, 2011 created a differential between cash and E-ZPass, as E-ZPass rates were increased by 3.0 percent and cash toll were increased by 10.0 percent. Rate increases differed between cash and E-ZPass in 2012, 2013, and 2014 further increasing the differential between cash and E-ZPass toll rates. After 2014, rate increases have been applied equally to both cash/video and E-ZPass.

In 2015 the toll rates increased by 5.0 percent over the prior year. From 2016 to 2021, toll rates increased by 6.0 percent annually for both cash/video and E-ZPass. As of June 2020, the entire Pennsylvania Turnpike System is an all-electronic tolling (AET) system; cash is no longer accepted, with all payments being conducted via E-ZPass or video tolling.

PTC policy has also been to implement a video toll surcharge upon conversion to AET; this has generally amounted to an additional 45 percent increase, making video rates about double E-ZPass rates. This 45-percent video surcharge was implemented on the last two components of the Pennsylvania Turnpike System that had previously lacked it, the Ticket System and MFE. This change was made in conjunction with the system-wide toll increase that was implemented on January 3, 2021.

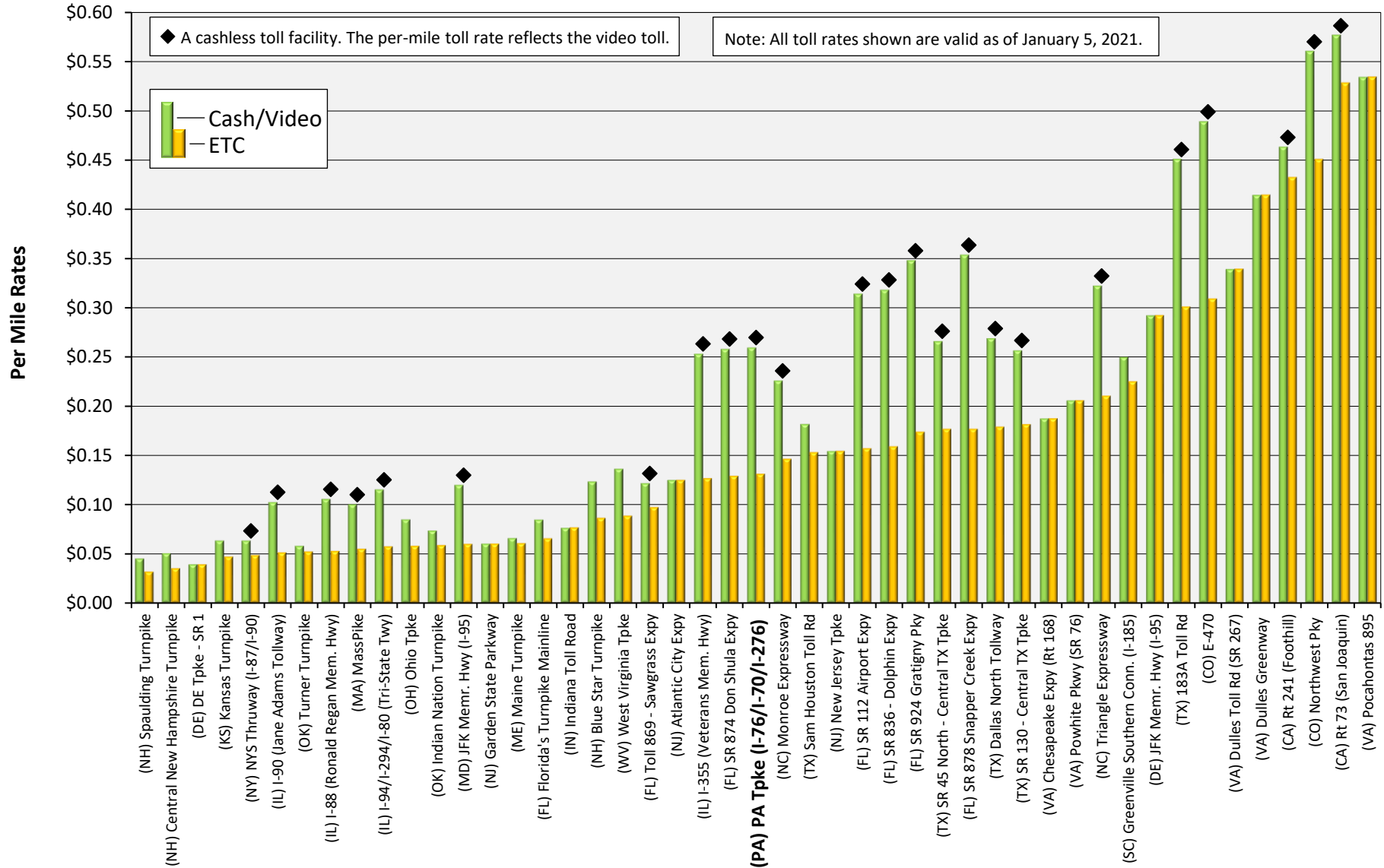
It is assumed that annual toll rate increases will occur throughout the forecast period, as described in the section Actual and Assumed Toll Rate Increases and shown in Table 13.

Figures 1 and 2 show the 2021 per-mile toll rates for a through-trip on 47 U.S. toll facilities, for passenger cars (PCs) and 5-axle commercial vehicles (CVs), respectively. Per-mile rates are shown for both cash/video and ETC transactions in each figure. If a facility is all electronic (does not accept cash payments), the video toll rate is shown as the equivalent of a cash toll rate. All ETC facilities are marked with a diamond in Figures 1 and 2.

The per-mile through-trip toll rate is shown for the Pennsylvania Turnpike Mainline, which represents a trip on I-76/I-276 between New Jersey and Ohio. Figure 1 shows that even with 13 consecutive annual toll increases since 2009, the PC per-mile toll rates on the Pennsylvania Turnpike System, at 13 cents per mile for E-ZPass customers and 26 cents per mile for video customers, are still very reasonably priced compared to other toll facilities in the U.S.

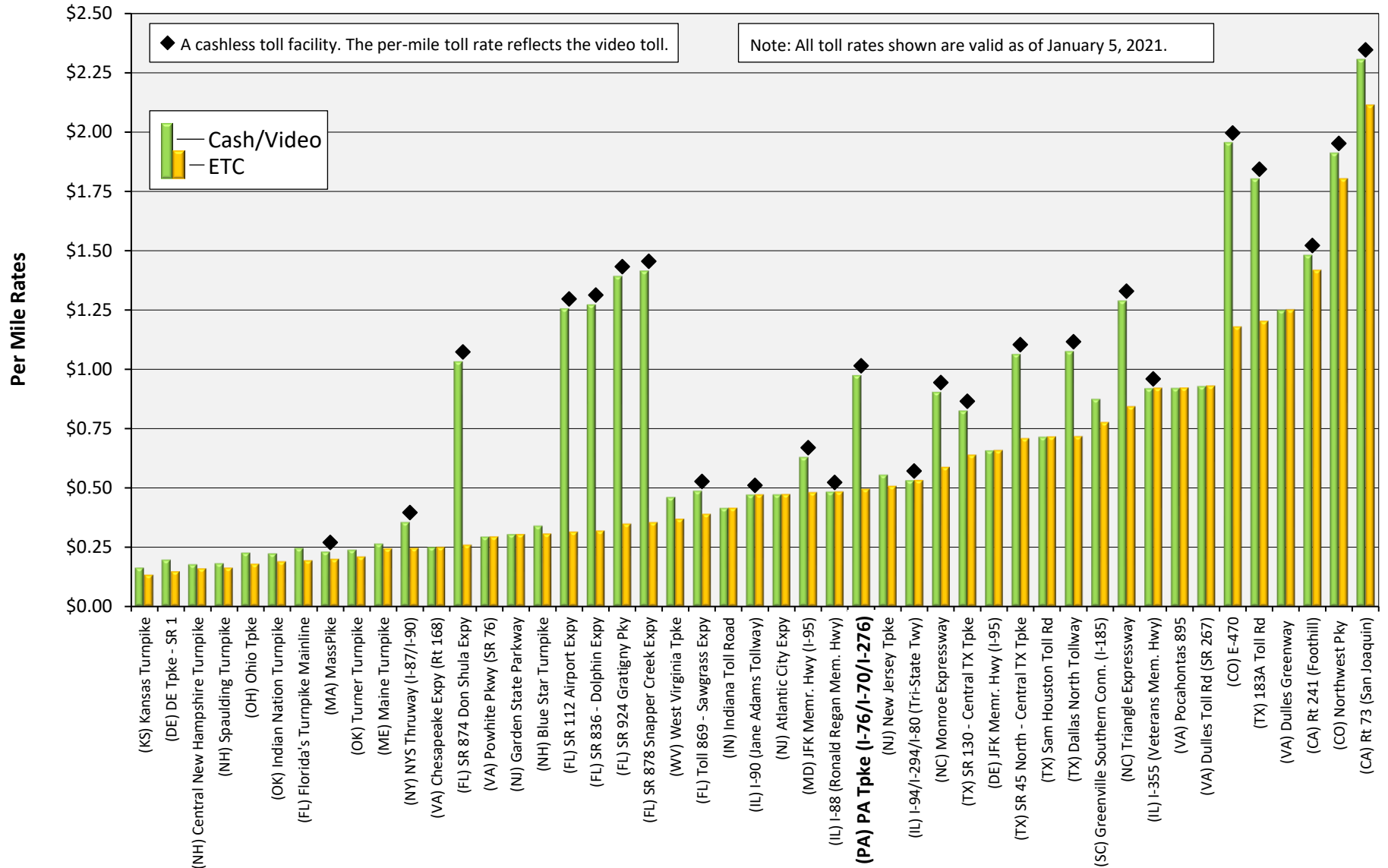
Toll rates for 5-axle CVs (represented by weight class 6 for the Pennsylvania Turnpike Mainline) are equivalent to 49 cents per mile for E-ZPass and 98 cents per mile for video transactions for a through-trip on the Pennsylvania Turnpike Mainline. It should be remembered that the vast majority of both PC and CV trips are made using the more cost-effective E-ZPass payment method.





COMPARISON OF 2021 PASSENGER CAR PER-MILE THROUGH TRIP TOLL RATES (DATA SORTED BY ETC TOLL RATES)





COMPARISON OF 2021 FIVE-AXLE VEHICLE PER-MILE THROUGH TRIP TOLL RATES (DATA SORTED BY ETC TOLL RATES)



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Annual Transaction and Gross Toll Revenue Trends

Table 2 provides a summary of annual systemwide transactions and gross toll revenue trends from FY 1994-95 through FY 2019-20. Notably, this table excludes non-revenue transactions from PTC's non-AET facilities. The Pennsylvania Turnpike System is a large, mature system that has demonstrated long-term growth in transactions and toll revenue. Between FY 1999-2000 and FY 2009-10 there were three toll rate increases (2004, 2009, 2010) and Turnpike transactions and gross toll revenue grew by an average annual rate of 1.5 percent and 6.9 percent, respectively. Conversely, in the 10 years from FY 2009-10 to FY 2019-20 there were toll rate increases every year. During this period Turnpike transactions fell by 0.3 percent annually, while Turnpike revenue grew by 6.0 percent annually. The slight 0.3 percent transaction decline during this period is attributable to the significant transaction decline in FY 2019-20 when total transactions declined by 10.6 percent. This decline is attributed to the COVID-19 pandemic, which began affecting traffic and revenue in March 2020.



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Table 2
Annual Systemwide Traffic and Gross Toll Revenue Trends
Pennsylvania Turnpike System
(in thousands)

Fiscal Year (1)	Transactions						Gross Toll Revenue					
	Percent Change over		Percent Change over		Total	Percent Change over	Percent Change over		Percent Change over		Total	Percent Change over
	Cars	Prior Year	Trucks	Prior Year			Cars	Prior Year	Trucks	Prior Year		
1994-95	114,033	6.9	15,620	9.5	129,653	7.2	\$165,850	4.9	\$131,749	7.2	\$297,599	5.9
1995-96	121,911	6.9	16,719	7.0	138,630	6.9	172,339	3.9	136,269	3.4	308,608	3.7
1996-97	126,654	3.9	17,479	4.5	144,133	4.0	179,303	4.0	140,837	3.4	320,140	3.7
1997-98	132,472	4.6	18,627	6.6	151,099	4.8	186,290	3.9	149,036	5.8	335,326	4.7
1998-99	136,399	3.0	19,833	6.5	156,232	3.4	191,804	3.0	158,761	6.5	350,565	4.5
1999-00	138,762	1.7	21,341	7.6	160,103	2.5	195,301	1.8	172,035	8.4	367,336	4.8
2000-01	141,033	1.6	21,278	(0.3)	162,311	1.4	193,563	(0.9)	172,337	0.2	365,900	(0.4)
2001-02	150,496	6.7	22,298	4.8	172,794	6.5	212,650	9.9	163,101	(5.4)	375,751	2.7
2002-03	156,220	3.8	23,179	4.0	179,399	3.8	219,201	3.1	168,021	3.0	387,222	3.1
2003-04	163,612	4.7	24,407	5.3	188,019	4.8	228,515	4.2	180,229	7.3	408,744	5.6
2004-05	163,316	(0.2)	25,109	2.9	188,425	0.2	309,032	35.2	236,126	31.0	545,158	33.4
2005-06	160,590	(1.7)	25,311	0.8	185,901	(1.3)	321,268	4.0	267,369	13.2	588,637	8.0
2006-07	160,107	(0.3)	25,316	0.0	185,423	(0.3)	322,781	0.5	269,861	0.9	592,642	0.7
2007-08	164,097	2.5	25,455	0.5	189,552	2.2	327,761	1.5	271,165	0.5	598,926	1.1
2008-09	162,638	(0.9)	23,583	(7.4)	186,220	(1.8)	356,345	8.7	259,259	(4.4)	615,605	2.8
2009-10	163,599	0.6	22,933	(2.8)	186,531	0.2	415,981	16.7	302,057	16.5	718,038	16.6
2010-11	165,231	1.0	23,812	3.8	189,043	1.3	435,752	4.8	328,105	8.6	763,856	6.4
2011-12	164,955	(0.2)	24,125	1.3	189,080	0.0	455,133	4.4	342,646	4.4	797,779	4.4
2012-13	163,690	(0.8)	24,207	0.3	187,897	(0.6)	471,514	3.6	350,226	2.2	821,740	3.0
2013-14	163,788	0.1	24,891	2.8	188,679	0.4	497,671	5.5	368,395	5.2	866,066	5.4
2014-15	166,192	1.5	26,144	5.0	192,336	1.9	533,054	7.1	401,197	8.9	934,251	7.9
2015-16 (2)	171,569	3.2	27,319	4.5	198,887	3.4	588,295	10.4	443,325	10.5	1,031,620	10.4
2016-17 (3,4)	172,799	0.7	27,703	1.4	200,501	0.8	638,787	8.6	476,188	7.4	1,114,975	8.1
2017-18 (5)	172,512	(0.2)	28,650	3.4	201,162	0.3	678,741	6.3	524,418	10.1	1,203,158	7.9
2018-19 (6,7)	173,429	0.5	29,625	3.4	203,054	0.9	740,578	9.1	594,808	13.4	1,335,385	11.0
2019-20 (8,9)	152,301	(12.2)	29,269	(1.2)	181,570	(10.6)	683,918	(7.7)	605,642	1.8	1,289,561	(3.4)

Fiscal Year	Average Annual Percent Change					
	Transactions			Gross Toll Revenue		
	Cars	Trucks	Total	Cars	Trucks	Total
FY 1999-2000 - FY 2009-10	1.7	0.7	1.5	7.9	5.8	6.9
FY 2009-10 - FY 2019-20	(0.7)	2.5	(0.3)	5.1	7.2	6.0
FY 1994-95 - FY 2019-20	1.2	2.5	1.4	5.8	6.3	6.0

- (1) Fiscal year beginning June 1.
- (2) The Delaware River Bridge toll plaza was converted from part of the Ticket System to a one-way barrier AET facility in January 2016.
- (3) The Delaware River Bridge was closed due to structural integrity concerns from January 20, 2017 to March 9, 2017.
- (4) AET conversion was implemented on Turnpike I-376 Beaver Valley Expressway in May 2017.
- (5) AET conversion and vehicle classification changes were implemented on the Northeast Extension Barrier Facilities in April 2018.
- (6) Toll by Plate surcharge for I-376 Beaver Valley Expressway was increased in October 2019.
- (7) AET conversion was implemented at Gateway Toll Plaza and Turnpike 66 in October 2019.
- (8) AET conversion with no surcharge for Toll by Plate was implemented on the Ticket System on March 16, 2020.
- (9) AET conversion with no surcharge for Toll by Plate was implemented on the Mon/Fayette Expressway on June 16, 2020.

Note: Refer to Table 1 for toll rate increase information.



Monthly Transactions and Gross Toll Revenue Trends

Tables 3 through 12 present recent monthly transaction and gross toll revenue trends from FY 2017-18 through March 2021 for all PTC facilities. The information is provided for PCs, CVs, and total vehicles. For comparative purposes, subtotals are provided for June through March for each fiscal year. The facilities are summarized in the following order:

- Table 3 – the total Turnpike System (comprised of all the facilities listed below);
- Table 4 – the Ticket System (comprised of I-76/I-276 and I-476);
- Table 5 – the combined Barrier System (comprised of all facilities listed below);
- Table 6 – Turnpike 43 (Mon/Fayette Expressway) (MFE);
- Table 7 – Turnpike 66 (Amos K. Hutchinson Bypass) (AKH);
- Table 8 – Northeast Extension (I-476) barrier plazas;
- Table 9 – Turnpike I-376 (Beaver Valley Expressway) (BVE);
- Table 10 – Turnpike I-576 (Southern Beltway – Findlay Connector);
- Table 11 – Delaware River Bridge (DRB); and
- Table 12 – Gateway Toll Plaza.

As shown in Table 3, total systemwide gross toll revenue increased by 11.0 percent in FY 2018-19 and decreased by 3.4 percent in FY 2019-20, the last three months of which were impacted by the COVID-19 pandemic. Year-to-date (June 2020 through March 2021) toll revenue has declined by 12.3 percent compared to the same period in the prior year. CV toll revenue increased by 2.4 percent and PC toll revenue decreased by 24.2 percent from June 2020 through March 2021 compared to the same time period in the prior year. In this year-to-date comparison, nine of the 10 months in the current fiscal year are being compared to a period prior to the COVID-19 pandemic (June 2019 through February 2020), resulting in significant negative impacts to both toll transactions and toll revenue.

It is important to note, however, that the negative impacts of COVID-19 have diminished greatly over time. In April 2020 (which includes the first full month of COVID-19 impacts), total gross toll revenue was 49.2 percent lower than the same month in 2019. That negative impact decreased over each of the next six months, such that October 2020 gross toll revenue was only 9.8 percent lower than the same month in the prior year. While negative revenue impacts grew over the winter months, due to both increasing infection rates (in November, December, and January) and



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snowstorms (February), March 2021 experienced positive revenue growth for the first time since the start of the pandemic. During this month both PC and CV traffic increased significantly compared to March 2020. As a result, total gross toll revenue was 32.0 higher in March 2021 than it was in March 2020. This large positive result in March 2021 is because this is the first month when growth is compared to a prior year's month that also included COVID-19 impacts.

As shown in Table 3, PCs have been affected far more greatly by COVID-19 than have CVs. Thus far in FY 2020-21, PC gross toll revenue has declined 24.2 percent while CV gross toll revenue has grown by 2.4 percent.

As previously mentioned, the Ticket System is by far the largest component of both traffic and toll revenue on the Turnpike System. As such, its overall growth patterns generally resemble those for the total system. As shown in Table 4, for the FY 2020-21 year-to-date period, total transactions decreased 16.5 percent compared to the same period in the prior year (toll revenue decreased by 13.5 percent). PC transactions decreased by 20.9 percent (with toll revenue falling 26.5 percent) during this period, while CV activity has increased by 8.0 percent (with toll revenue increasing 1.8 percent) compared to the same ten-month period in FY 2019-20.

Prior to the impacts of COVID-19 beginning in March 2020, Ticket System toll transaction growth generally had been slightly negative for PCs and slightly positive for CVs over the period shown in Table 4. Annual toll rate increases, however, resulted in significant revenue increases over this time for the Ticket System. In FY 2018-19, while total transactions decreased by 0.5 percent compared to the previous year, toll revenue increased by 10.4 percent (8.1 percent for PCs and 13.3 percent for CVs). This same general trend continued into FY 2019-20 until March 2020 when the impacts of COVID-19 become evident. As with the total systemwide trends shown in Table 3, the negative impacts of COVID-19 are greatest on the Ticket System in April 2020 with total transactions decreasing by 60.5 percent and toll revenue down by 50.3 percent. By October 2020, however, the negative impacts were just 14.5 percent for transactions and 11.6 percent for toll revenue. Impacts grew more negative over the winter before rebounding in March, which experienced significant positive growth in both transactions and revenue for both PCs and CVs. Throughout the pandemic, negative impacts have been more pronounced for PCs than for CVs.

Table 5 provides the same information for all barrier toll facilities combined. Barrier facility toll revenue contributes about 15 percent of total systemwide toll revenue. The negative impacts of COVID-19 on the barrier facilities are similar to those on the Ticket System. However, the recovery rate seems to be somewhat faster for the barrier facilities. For the latest ten-month period shown for FY 2020-21, total barrier facility toll transactions are down by 13.6 percent compared to 16.5 percent for the Ticket System. Over the same period, total barrier facility toll revenue is down only 4.8 percent compared to 13.5 percent for the Ticket System. The same information is provided for each individual barrier facility in Tables 6 through 12.





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Table 3
Total Turnpike System - Monthly Transaction and Revenue Trends
Transactions Include Only Toll Transactions - Non-Revenue Transactions Are Not Included

Month	Passenger Cars			Commercial Vehicles			Total Transactions (in 1,000s)			Total Vehicles			
	2017-18	% Chg	2019-20	2018-19	% Chg	2020-21	2017-18	% Chg	2019-20	2018-19	% Chg	2019-20	2020-21
June	15,438	(0.5)	15,361	(1.1)	15,187	(30.1)	2,575	0.9	2,596	(1.5)	2,557	7.0	2,735
July	15,522	0.3	15,566	0.1	15,583	(21.1)	2,419	6.3	2,573	3.7	2,668	5.2	2,806
August	15,957	1.1	16,134	(0.4)	16,071	(20.2)	2,662	3.5	2,755	(1.2)	2,722	1.5	2,764
September	14,724	(1.5)	14,503	0.5	14,582	(16.0)	2,431	(0.5)	2,418	5.0	2,539	9.2	2,773
October	15,221	1.2	15,396	(0.0)	15,389	(17.1)	2,547	7.3	2,732	1.4	2,770	3.1	2,856
November	14,317	(0.5)	14,242	(0.3)	14,193	(24.0)	2,323	3.0	2,391	0.5	2,403	5.4	2,533
December	13,746	1.7	13,982	(0.5)	13,911	(28.1)	2,146	2.5	2,198	3.3	2,271	10.8	2,516
January	12,542	(0.3)	12,504	2.6	12,826	(22.1)	2,175	4.3	2,268	3.7	2,353	3.1	2,426
February	11,958	(0.2)	11,930	4.4	12,459	(29.2)	2,034	1.9	2,073	5.2	2,182	0.3	2,188
March	13,591	3.1	14,018	(32.5)	9,463	25.0	2,295	3.4	2,372	1.6	2,410	17.5	2,832
April	14,259	1.2	14,426	(66.4)	4,845		2,387	6.8	2,549	(20.7)	2,021		
May	15,237	0.9	15,367	(49.3)	7,791		2,657	1.6	2,698	(12.1)	2,372		
Total Year	172,512	0.5	173,429	(12.2)	152,301		28,650	3.4	29,625	(11.2)	29,269		
Jun-Mar	143,016	0.4	143,636	(2.8)	139,665	(19.7)	23,606	3.3	24,377	2.0	24,875	6.2	26,429

Month	Passenger Cars			Commercial Vehicles			Total Revenue (in \$1,000s)			Total Vehicles			
	2017-18	% Chg	2019-20	2018-19	% Chg	2020-21	2017-18	% Chg	2019-20	2018-19	% Chg	2019-20	2020-21
June	\$61,877	6.5	\$65,886	8.9	\$71,743	(38.6)	\$44,643	11.5	\$49,757	5.4	\$52,463	(0.6)	\$52,165
July	65,722	5.3	69,178	9.8	75,990	(31.2)	41,947	17.0	49,069	10.8	54,375	(3.1)	52,693
August	64,611	9.2	70,545	9.6	77,351	(25.6)	46,210	13.3	52,369	5.9	55,447	(3.5)	53,492
September	56,620	6.6	60,348	8.0	65,184	(21.8)	42,371	11.7	47,311	8.5	51,328	1.3	52,003
October	57,806	6.6	61,611	9.7	67,615	(18.3)	44,599	17.0	52,185	6.0	55,318	0.5	55,607
November	55,122	7.3	59,156	8.3	64,068	(31.2)	40,944	15.0	47,087	2.5	48,255	1.6	49,006
December	52,345	9.6	57,377	10.8	63,565	(33.3)	39,000	11.9	43,630	8.3	47,235	8.1	51,038
January	46,741	9.0	50,969	11.5	56,826	(21.9)	42,222	14.3	48,261	8.1	52,171	(0.5)	51,885
February	44,576	11.8	49,844	11.1	55,386	(31.7)	40,130	12.4	45,096	8.9	49,120	(2.0)	48,147
March	53,737	14.3	61,426	(38.8)	37,574	41.0	45,627	13.4	51,729	(5.4)	48,928	25.1	61,207
April	57,201	11.8	63,940	(73.2)	17,157		46,057	14.6	52,793	(20.2)	42,127		
May	62,381	12.7	70,298	(55.2)	31,458		50,666	9.6	55,522	(12.0)	48,876		
Total Year	\$678,741	9.1	\$740,578	(7.7)	\$683,918		\$524,418	13.4	\$594,808	1.8	\$605,642		
Jun-Mar	\$559,158	8.4	\$606,340	4.8	\$635,303	(24.2)	\$427,694	13.7	\$486,493	5.8	\$514,639	2.4	\$527,243

NOTES:
 (1) Toll increases occur every year with exceptions. Refer to Table 1 for details.
 (2) Leap year occurred in 2020, resulting in aggregated traffic and toll revenue impacts in February 2020 compared to February 2019.
 (3) The Delaware River Bridge was closed due to structural integrity concerns from January 20, 2017 to March 9, 2017.
 (4) In response to the COVID-19 pandemic, schools were closed state-wide on March 16, 2020 and stay at home orders for some counties began to take effect on March 23, 2020. A state-wide stay at home order was issued April 1, 2020 and lifted on June 5, 2020.
 (5) AET conversion was implemented on Turnpike I-376 Beaver Valley Expressway in May 2017.
 (6) AET conversion and vehicle classification changes were implemented on the Northeast Extension Barrier facilities in April 2018.
 (7) AET conversion and vehicle classification changes were implemented on the Turnpike I-576 Findlay Connector in June 2018.
 (8) AET conversion was implemented on Turnpike 66 Amos K. Hutchinson Bypass and Gateway Toll Plaza in October 2019.
 (9) AET conversion was implemented on the Ticket System and Mon/Fayette Expressway in June 2020.





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Table 4
Ticket System - Monthly Transaction and Revenue Trends
Transactions Include Only Toll Transactions - Non-Revenue Transactions Are Not Included

Month	Passenger Cars			Commercial Vehicles			Total Vehicles						
	2017-18	% Chg	2018-19	2019-20	% Chg	2020-21	2017-18	% Chg	2018-19	2019-20	% Chg	2020-21	
June	11,695	(1.0)	11,580	(3.3)	11,195	(31.9)	13,633	(0.8)	13,519	(3.2)	13,082	(26.1)	9,664
July	11,654	(0.5)	11,596	(2.0)	11,365	(21.8)	13,471	0.3	13,512	(1.3)	13,332	(17.6)	10,979
August	12,015	0.0	12,019	(1.9)	11,786	(21.1)	14,009	0.4	14,059	(1.9)	13,792	(17.5)	11,377
September	11,110	(2.5)	10,836	(0.6)	10,768	(17.5)	12,933	(2.4)	12,626	0.1	12,635	(13.4)	10,947
October	11,547	(0.6)	11,483	(0.8)	11,387	(18.1)	13,459	0.4	13,506	(0.7)	13,418	(14.5)	11,467
November	10,905	(2.6)	10,625	(0.5)	10,574	(25.0)	12,659	(2.0)	12,409	(0.5)	12,343	(20.3)	9,843
December	10,464	(0.0)	10,463	(1.1)	10,347	(28.8)	12,102	0.1	12,113	(0.7)	12,033	(22.9)	9,280
January	9,655	(2.1)	9,453	1.8	9,623	(23.2)	11,313	(1.4)	11,152	1.9	11,368	(18.8)	9,227
February	9,152	(2.4)	8,931	4.8	9,358	(31.2)	10,691	(2.0)	10,478	4.7	10,974	(26.4)	8,080
March	10,288	1.8	10,475	(32.9)	7,032	23.4	12,020	1.8	12,237	(27.7)	8,843	22.3	10,817
April	10,836	(1.0)	10,728	(67.7)	3,463		12,631	(0.2)	12,608	(60.5)	4,977		
May	11,485	(1.0)	11,371	(50.9)	5,583		13,465	(0.8)	13,361	(45.0)	7,354		
Total Year	130,805	(1.0)	129,559	(13.2)	112,482		152,387	(0.5)	151,579	(11.5)	134,151		
Jun-Mar	108,485	(0.9)	107,460	(3.7)	103,435	(20.9)	126,290	(0.5)	125,610	(3.0)	121,821	(16.5)	101,680

Month	Passenger Cars			Commercial Vehicles			Total Revenue (in \$1,000s)							
	2017-18	% Chg	2018-19	2019-20	% Chg	2020-21	2017-18	% Chg	2018-19	2019-20	% Chg	2020-21		
June	\$52,913	6.5	\$56,349	7.6	\$60,635	(41.8)	\$92,221	8.7	\$100,247	6.5	\$106,770	(24.6)	\$80,532	
July	\$6,299	5.0	\$9,123	8.5	\$4,149	(33.4)	\$9,238	9.8	\$10,417	9.3	\$11,932	(21.0)	\$8,430	
August	\$5,199	9.1	\$6,200	8.8	\$5,501	(28.3)	\$6,969	13.5	\$6,144	5.5	\$6,999	(4.5)	\$6,518	
September	\$8,195	6.3	\$1,234	7.0	\$4,814	(24.3)	\$1,486	37,290	12.0	\$1,775	7.7	\$5,003	0.1	\$4,044
October	\$9,321	5.3	\$1,943	9.7	\$7,006	(21.3)	\$4,668	39,232	17.0	\$5,892	5.4	\$8,375	(0.3)	\$8,241
November	\$7,189	5.8	\$9,943	7.6	\$3,745	(32.5)	\$6,264	35,991	15.4	\$1,520	1.1	\$1,992	1.6	\$2,655
December	\$4,599	8.3	\$8,312	10.0	\$3,142	(35.4)	\$4,329	34,402	11.8	\$8,457	7.1	\$4,206	8.0	\$4,492
January	\$9,895	7.4	\$4,828	10.1	\$7,167	(23.0)	\$6,314	37,423	13.8	\$2,586	7.4	\$5,721	(1.1)	\$4,231
February	\$8,015	10.1	\$1,868	10.5	\$6,274	(33.2)	\$3,999	35,551	12.0	\$9,811	8.3	\$3,112	(2.3)	\$2,135
March	\$5,839	12.8	\$1,714	(40.2)	\$3,904	39.5	\$4,127	40,462	12.9	\$5,684	(6.7)	\$2,610	25.4	\$3,427
April	\$8,924	10.1	\$3,860	(75.2)	\$1,360		\$9,683	89,683	11.8	\$10,291	(50.3)	\$9,878		
May	\$3,304	11.3	\$9,310	(57.6)	\$2,131		\$8,030	98,030	10.3	\$108,128	(37.4)	\$7,696		
Total Year	\$579,692	8.1	\$626,685	(8.8)	\$571,829		\$1,042,446	10.4	\$1,150,994	(4.3)	\$1,101,547			
Jun-Mar	\$77,465	7.6	\$13,514	3.9	\$33,337	(26.5)	\$392,259	854,732	10.3	\$42,575	4.4	\$83,973	(13.5)	\$850,947

NOTES:
 (1) Toll increases occur every year with exceptions. Refer to Table 1 for details.
 (2) Leap year occurred in 2020, resulting in exaggerated traffic and toll revenue impacts in February 2020 compared to February 2019.
 (3) The Delaware River Bridge was closed due to structural integrity concerns from January 20, 2017 to March 9, 2017.
 (4) In response to the COVID-19 pandemic, schools were closed state-wide on March 16, 2020 and stay at home orders for some counties began to take effect on March 23, 2020. A state-wide stay at home order was issued April 1, 2020 and lifted on June 5, 2020.
 (5) AET conversion occurred in June 2020.





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Table 5
Combined Barrier Facilities - Monthly Transaction and Revenue Trends
 Transactions Include Only Toll Transactions - Non-Revenue Transactions Are Not Included

Month	Passenger Cars			Commercial Vehicles			Total Vehicles							
	2017-18	% Chg	2018-19	% Chg	2019-20	% Chg	2020-21	2017-18	% Chg	2018-19	% Chg	2019-20	% Chg	2020-21
June	3,743	1.0	3,782	5.5	3,992	(25.0)	2,996	4,379	1.4	4,439	5.0	4,661	(20.9)	3,688
July	3,869	2.6	3,970	6.3	4,218	(19.2)	3,409	4,471	3.5	4,627	6.3	4,920	(16.3)	4,120
August	3,942	4.4	4,115	4.1	4,286	(17.9)	3,519	4,610	4.8	4,830	3.5	5,002	(15.8)	4,211
September	3,614	1.5	3,667	4.0	3,814	(11.7)	3,368	4,223	1.7	4,295	4.4	4,486	(9.2)	4,074
October	3,674	6.5	3,913	2.3	4,001	(14.2)	3,433	4,309	7.3	4,621	2.6	4,740	(12.5)	4,147
November	3,412	6.0	3,618	0.1	3,620	(21.1)	2,857	3,981	6.1	4,225	0.7	4,253	(18.3)	3,474
December	3,282	7.2	3,519	1.3	3,564	(26.1)	2,634	3,790	7.3	4,068	2.0	4,149	(22.0)	3,235
January	2,887	5.7	3,051	5.0	3,203	(18.9)	2,597	3,404	6.3	3,620	5.3	3,811	(16.4)	3,186
February	2,806	6.9	2,999	3.4	3,101	(23.0)	2,386	3,301	6.8	3,525	4.0	3,666	(19.9)	2,935
March	3,303	7.3	3,543	(31.4)	2,431	29.7	3,154	3,865	7.4	4,153	(27.0)	3,030	27.0	3,849
April	3,423	8.0	3,698	(62.6)	1,382			4,015	8.8	4,367	(56.7)	1,890		
May	3,752	6.5	3,996	(44.7)	2,208			4,428	6.2	4,704	(40.3)	2,810		
Total Year	41,707	5.2	43,870	(9.2)	39,819			48,775	5.5	51,475	(7.9)	47,418		
Jun-Mar	34,532	4.8	36,176	0.1	36,230	(16.2)	30,353	40,332	5.1	42,404	0.7	42,719	(13.6)	36,917

Month	Commercial Vehicles			Total Vehicles			
	2017-18	% Chg	2018-19	% Chg	2019-20	% Chg	2020-21
June	55,335	9.8	55,859	8.0	56,328	9.9	56,952
July	5,009	15.3	5,775	14.1	6,591	5.6	6,959
August	5,541	12.4	6,225	8.4	6,748	3.4	6,974
September	5,082	8.9	5,535	14.3	6,226	10.0	6,958
October	5,368	17.2	6,293	10.3	6,943	6.1	7,366
November	4,952	12.4	5,567	12.5	6,263	1.4	6,352
December	4,597	12.5	5,173	16.6	6,029	8.6	6,546
January	4,799	18.2	5,675	13.7	6,450	3.2	6,655
February	4,580	15.4	5,285	13.7	6,009	0.0	6,012
March	5,165	17.0	6,045	4.5	6,317	23.2	7,781
April	5,298	20.1	6,362	(11.8)	5,610		
May	5,940	12.9	6,704	(5.9)	6,311		
Total Year	\$61,664	14.3	\$70,498	7.7	\$75,925		
Jun-Mar	50,426	13.9	57,432	11.4	64,004	7.1	\$68,555

Month	Passenger Cars			Commercial Vehicles			Total Vehicles							
	2017-18	% Chg	2018-19	% Chg	2019-20	% Chg	2020-21	2017-18	% Chg	2018-19	% Chg	2019-20	% Chg	2020-21
June	\$8,964	6.4	\$9,537	16.5	\$11,108	(21.6)	\$8,704	\$14,299	7.7	\$15,396	13.2	\$17,436	(10.2)	\$15,656
July	9,422	6.7	10,055	17.8	11,841	(18.8)	9,614	14,431	9.7	15,830	16.4	18,433	(10.1)	16,574
August	9,413	9.9	10,344	14.6	11,850	(10.7)	10,577	14,953	10.8	16,570	12.2	18,598	(5.6)	17,552
September	8,425	8.2	9,114	13.8	10,370	(8.3)	9,514	13,507	8.5	14,649	14.0	16,696	(1.3)	16,472
October	8,485	13.9	9,668	9.7	10,609	(1.9)	10,406	13,853	15.2	15,961	10.0	17,552	1.3	17,772
November	7,933	16.1	9,214	12.0	10,323	(24.6)	7,788	12,885	14.7	14,780	12.2	16,586	(14.8)	14,140
December	7,746	17.0	9,065	15.0	10,423	(22.8)	8,051	12,943	15.4	14,238	15.6	16,452	(11.3)	14,597
January	6,847	18.9	8,141	18.6	9,659	(16.8)	8,040	11,646	18.6	13,816	16.6	16,109	(8.8)	14,695
February	6,561	21.6	7,976	14.3	9,112	(23.9)	6,934	11,141	19.0	13,261	14.0	15,121	(14.4)	12,945
March	7,898	23.0	9,712	(31.3)	6,670	47.8	9,855	13,063	20.6	15,757	(17.6)	12,987	35.8	17,636
April	8,277	21.8	10,080	(62.3)	3,796			13,575	21.1	16,443	(42.8)	9,406		
May	9,078	21.0	10,988	(42.4)	6,327			15,017	17.8	17,691	(28.6)	12,638		
Total Year	\$99,048	15.0	\$113,893	(1.6)	\$112,089			\$160,712	14.7	\$184,392	2.0	\$188,014		
Jun-Mar	81,694	13.6	92,825	9.8	101,966	(12.2)	\$89,483	132,120	13.7	150,258	10.5	165,970	(4.8)	\$158,038

NOTES:
 (1) Toll increases occur every year with exceptions. Refer to Table 1 for details.
 (2) Leap year occurred in 2020, resulting in exaggerated traffic and toll revenue impacts in February 2020 compared to February 2019.
 (3) The Delaware River Bridge was closed due to structural integrity concerns from January 20, 2017 to March 9, 2017.
 (4) In response to the COVID-19 pandemic, schools were closed state-wide on March 16, 2020 and stay at home orders for some counties began to take effect on March 23, 2020. A state-wide stay at home order was issued April 1, 2020 and lifted on June 5, 2020.
 (5) AET Conversions at Beaver Valley Expressway, NE Extension Barrier Plazas, Findlay Connector, Amos K Hutchinson Bypass, Gateway Toll Plaza, and Mon/Fayette Expressway in May 2017, April 2018, June 2018, October 2019, October 2019, and June 2020 respectively.





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Table 8
Northeast Extension Barrier Plazas - Monthly Transaction and Revenue Trends
Transactions Include Only Toll Transactions - Non-Revenue Transactions Are Not Included

Month	Passenger Cars			Commercial Vehicles			Total Vehicles		
	2017-18	2018-19	2019-20	2017-18	2018-19	2019-20	2017-18	2018-19	2019-20
June	420 (0.7)	417 10.7	462 (45.0)	104 3.5	108 5.4	113 (2.8)	524 0.1	525 9.6	575 (36.7)
July	494 (1.2)	488 14.7	560 (40.4)	101 8.6	109 12.2	123 (7.0)	595 0.5	598 14.3	683 (34.4)
August	481 10.3	530 9.3	580 (39.5)	107 13.0	121 3.8	126 (12.3)	588 10.8	651 8.3	705 (34.6)
September	390 (0.1)	389 8.7	423 (27.1)	96 4.8	100 15.2	116 (1.3)	486 0.9	490 10.0	539 (21.6)
October	380 4.4	397 10.4	438 (29.4)	97 14.8	111 7.0	119 (1.3)	476 6.5	507 9.7	556 (23.4)
November	364 1.0	367 3.6	381 (36.5)	91 6.0	96 3.8	100 (0.2)	454 2.0	463 3.6	480 (29.0)
December	323 2.3	331 2.9	340 (41.6)	83 4.9	87 8.5	94 4.5	406 2.8	417 4.0	434 (31.6)
January	258 (0.2)	257 9.6	282 (31.1)	88 3.5	91 8.5	99 (6.2)	348 0.8	348 9.3	381 (24.7)
February	256 2.3	262 5.9	277 (36.3)	80 2.0	82 10.4	90 (6.3)	337 2.2	344 6.9	368 (28.9)
March	305 4.0	318 (34.5)	208 17.5	89 6.9	95 3.0	98 10.2	394 4.6	412 (25.9)	306 15.2
April	338 8.3	366 (76.9)	85	91 13.4	103 (18.9)	83	429 9.4	469 (64.1)	168
May	400 5.1	420 (57.7)	178	107 6.8	114 (13.6)	99	507 5.4	534 (48.3)	276
Total Year	4,409 3.0	4,542 (7.3)	4,213	1,132 7.5	1,216 3.4	1,258	5,540 3.9	5,759 (5.0)	5,471
Jun-Mar	3,671 2.3	3,756 5.2	3,951 (33.9)	934 7.0	1,000 7.7	1,076 (2.6)	4,605 3.3	4,756 5.7	5,027 (27.2)
			2,612			1,048			3,660

Month	Passenger Cars			Commercial Vehicles			Total Vehicles		
	2017-18	2018-19	2019-20	2017-18	2018-19	2019-20	2017-18	2018-19	2019-20
June	\$413 9.4	\$452 17.9	\$533 (35.8)	\$506 19.7	\$607 11.1	\$674 5.1	\$920 15.1	\$1,058 14.0	\$1,207 (13.0)
July	500 4.7	524 27.8	669 (37.0)	484 22.9	595 20.5	717 0.3	984 13.7	1,119 23.9	1,386 (17.7)
August	479 21.7	583 18.8	693 (31.1)	516 29.2	666 12.4	749 (5.9)	995 25.6	1,250 15.4	1,442 (18.0)
September	384 13.4	435 15.0	500 (17.1)	462 22.3	566 22.9	695 4.4	846 18.3	1,001 19.5	1,195 (4.6)
October	371 14.1	424 22.4	519 (16.2)	476 33.7	636 14.9	731 3.4	847 25.1	1,060 17.9	1,250 (4.7)
November	353 11.1	392 12.2	440 (30.7)	454 26.3	574 10.5	634 1.4	807 19.7	965 11.2	1,073 (11.7)
December	312 9.4	342 14.1	390 (28.5)	417 25.6	524 15.1	603 9.2	729 18.7	866 14.7	993 (5.6)
January	249 21.1	302 21.2	366 (25.5)	450 28.3	578 15.5	667 (2.4)	699 25.7	879 17.5	1,033 (10.6)
February	248 23.5	306 14.0	349 (30.8)	414 26.9	525 15.9	609 (3.1)	661 25.7	831 15.2	958 (13.2)
March	297 25.3	373 (31.3)	256 37.5	457 34.0	612 6.6	652 16.6	754 30.6	984 (7.8)	908 22.5
April	336 28.3	432 (72.6)	118	468 38.7	649 (9.4)	588	805 34.3	1,081 (34.7)	706
May	422 16.1	490 (51.6)	237	620 12.3	696 (4.4)	665	1,042 13.8	1,186 (23.9)	902
Total Year	\$4,366 15.8	\$5,054 0.3	\$5,070	\$5,724 26.2	\$7,227 10.5	\$7,983	\$10,090 21.7	\$12,281 6.3	\$13,053
Jun-Mar	3,607 14.6	4,132 14.1	4,714 (24.9)	4,636 26.9	5,882 14.4	6,730 2.8	8,243 21.5	10,014 14.3	11,445 (8.6)
			\$3,541			\$6,916			\$10,457

NOTES:
 (1) Toll increases occur every year with exceptions. Refer to Table 1 for details.
 (2) Leap year occurred in 2020, resulting in exaggerated traffic and toll revenue impacts in February 2020 compared to February 2019.
 (3) In response to the COVID-19 pandemic, schools were closed state-wide on March 16, 2020 and stay at home orders for some counties began to take effect on March 23, 2020. A state-wide stay at home order was issued April 1, 2020 and lifted on June 5, 2020.
 (4) AET conversion and vehicle classification changes were implemented in April 2018.





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Table 9
Turnpike I-376 - Beaver Valley Expressway - Monthly Transaction and Revenue Trends
 Transactions Include Only Toll Transactions - Non-Revenue Transactions Are Not Included

Month	Passenger Cars			Commercial Vehicles			Total Vehicles							
	2017-18	% Chg	2018-19	% Chg	2019-20	% Chg	2020-21	2017-18	% Chg	2018-19	% Chg	2019-20	% Chg	2020-21
June	592	4.8	621	3.7	126	1.4	127	(3.9)	718	4.2	748	2.4	766	(22.5)
July	593	8.4	643	2.8	114	12.8	129	(0.7)	707	9.1	771	2.2	788	(19.1)
August	604	12.1	677	(0.2)	127	11.5	142	(5.2)	730	12.0	818	(1.1)	809	(20.5)
September	583	6.2	619	2.0	118	2.7	122	2.6	702	5.6	741	2.1	756	(12.9)
October	577	13.7	657	2.0	120	16.0	140	(5.8)	698	14.1	796	0.6	801	(16.4)
November	541	9.2	591	0.5	105	6.6	112	(3.1)	646	8.8	703	(0.1)	702	(24.0)
December	534	9.1	582	0.4	91	8.2	99	(4.8)	625	9.0	681	(0.3)	678	(27.3)
January	478	8.5	519	5.1	90	11.5	101	(3.5)	569	9.0	620	3.7	642	(24.0)
February	465	9.3	508	2.0	91	4.2	95	(1.7)	556	8.4	603	1.4	611	(24.8)
March	552	8.1	596	(32.5)	106	2.9	109	(12.2)	658	7.2	705	(29.4)	498	23.0
April	568	7.9	613	(62.7)	115	8.8	125	(32.9)	683	8.0	738	(57.7)	312	
May	623	5.9	660	(45.4)	132	0.7	133	(19.7)	755	5.0	793	(41.1)	467	
Total Year	6,711	8.6	7,286	(10.6)	1,335	7.2	1,431	(7.8)	8,046	8.3	8,717	(10.1)	7,833	
Jun-Mar	5,519	8.9	6,013	(1.5)	1,088	7.8	1,173	(3.8)	6,608	8.8	7,186	(1.8)	7,054	(17.9)
														5,792

Month	Passenger Cars			Commercial Vehicles			Total Revenue (in \$1,000s)							
	2017-18	% Chg	2018-19	% Chg	2019-20	% Chg	2020-21	2017-18	% Chg	2018-19	% Chg	2019-20	% Chg	2020-21
June	\$771	9.8	\$847	12.5	\$369	1.6	\$375	3.0	\$1,140	7.2	\$1,221	9.6	\$1,339	(1.2)
July	780	12.2	875	15.1	332	12.3	373	7.5	1,112	12.3	1,248	12.8	1,408	(5.4)
August	787	18.7	935	7.3	366	13.5	415	0.4	1,153	17.1	1,350	5.2	1,420	(2.7)
September	748	15.0	861	11.1	349	2.3	357	10.4	1,098	11.0	1,218	10.9	1,351	0.1
October	749	19.2	892	16.8	341	20.1	410	2.7	1,090	19.5	1,302	12.3	1,463	3.8
November	695	15.5	803	34.9	304	7.1	326	15.5	999	13.0	1,129	29.3	1,459	(27.8)
December	683	14.8	784	34.7	268	6.8	286	14.4	951	12.6	1,070	29.3	1,384	(21.0)
January	642	18.9	763	29.3	266	15.4	307	10.5	908	17.9	1,071	23.9	1,327	(20.1)
February	623	21.2	755	21.3	278	8.6	302	7.8	901	17.3	1,057	17.4	1,242	(22.7)
March	748	20.4	900	(29.2)	324	10.1	356	(8.3)	1,071	17.3	1,257	(23.3)	964	44.5
April	781	17.8	920	(56.9)	345	16.9	403	(25.7)	1,126	17.5	1,323	(47.4)	696	
May	837	17.5	984	(33.2)	389	9.7	426	(11.9)	1,226	15.0	1,411	(26.7)	1,033	
Total Year	\$8,845	16.7	\$10,321	3.6	\$3,931	10.3	\$4,337	1.2	\$12,776	14.7	\$14,657	2.9	\$15,086	
Jun-Mar	7,226	16.5	8,416	14.6	3,198	9.7	3,507	5.9	10,424	14.4	11,924	12.0	13,357	(6.6)
														\$12,469

NOTES:
 (1) Toll increases occur every year with exceptions. Refer to Table 1 for details.
 (2) Leap year occurred in 2020, resulting in aggregated traffic and toll revenue impacts in February 2020 compared to February 2019.
 (3) In response to the COVID-19 pandemic, schools were closed state-wide on March 16, 2020 and stay at home orders for some counties began to take effect on March 23, 2020. A state-wide stay at home order was issued April 1, 2020 and lifted on June 5, 2020.
 (4) AET conversion occurred in May 2017.





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Table 11
Delaware River Bridge - Monthly Transaction and Revenue Trends
Transactions Include Only Toll Transactions - Non-Revenue Transactions Are Not Included

Month	Passenger Cars			Commercial Vehicles			Total Vehicles							
	2017-18	2018-19	2019-20	2017-18	2018-19	2019-20	2017-18	2018-19	2019-20					
June	601	7.3	645	28.4	828	(35.4)	536	104	10.1	115	8.4	124	9.4	136
July	637	4.3	664	28.4	853	(25.2)	638	98	14.5	113	17.6	132	5.8	140
August	650	6.0	689	24.0	855	(17.3)	707	109	10.6	120	11.3	134	1.9	136
September	577	6.6	616	21.6	748	(14.6)	639	101	5.5	106	17.8	125	11.6	140
October	583	20.1	700	8.6	760	(14.8)	648	108	17.5	127	10.1	140	3.5	145
November	563	24.1	699	9.2	763	(26.5)	561	103	13.1	117	8.8	127	4.6	133
December	543	32.6	720	6.0	763	(32.6)	515	96	14.1	110	16.3	128	6.8	137
January	467	31.0	612	8.8	666	(22.2)	518	90	16.1	104	13.8	119	1.7	131
February	446	31.4	586	11.6	653	(34.2)	430	102	14.9	117	11.5	131	15.1	150
March	519	36.3	707	(34.1)	466	30.7	609	104	19.7	125	(12.3)	109		
April	561	33.0	746	(71.8)	211			115	14.2	132	(7.1)	123		
May	611	30.8	799	(53.0)	376			1,227	14.1	1,400	8.5	1,520		
Total Year	6,758	21.1	8,182	(2.9)	7,942			1,007	13.6	1,144	12.6	1,288	5.8	1,363
Jun-Mar	5,586	18.8	6,637	10.8	7,356	(21.1)	5,800							

Month	Passenger Cars			Commercial Vehicles			Total Vehicles							
	2017-18	2018-19	2019-20	2017-18	2018-19	2019-20	2017-18	2018-19	2019-20					
June	\$3,098	6.2	\$3,291	34.5	\$4,425	(29.1)	\$3,139	\$1,879	8.7	\$2,043	14.3	\$2,335	16.2	\$2,713
July	3,260	3.7	3,381	36.9	4,627	(21.7)	3,624	1,767	13.0	1,998	24.2	2,482	10.8	2,750
August	3,337	6.6	3,557	31.8	4,689	(12.8)	4,087	1,952	10.1	2,149	17.7	2,529	6.8	2,702
September	3,000	5.5	3,165	27.8	4,045	(9.0)	3,682	1,831	4.7	1,916	23.6	2,368	15.4	2,734
October	2,962	20.2	3,560	16.2	4,137	(6.1)	3,886	1,938	17.4	2,275	16.5	2,650	9.0	2,889
November	2,783	28.5	3,577	16.2	4,157	(25.2)	3,110	1,821	14.0	2,076	25.9	2,405	6.8	2,568
December	2,827	28.4	3,631	11.9	4,061	(23.0)	3,126	1,754	12.2	1,968	22.4	2,409	12.6	2,713
January	2,461	33.8	3,293	19.3	3,927	(19.3)	3,169	1,720	25.5	2,159	19.5	2,580	5.2	2,715
February	2,265	39.7	3,164	19.3	3,776	(31.3)	2,593	1,621	21.4	1,967	21.6	2,392	(0.3)	2,384
March	2,639	45.8	3,848	(32.9)	2,583	45.5	3,758	1,825	22.2	2,230	13.8	2,538	22.7	3,114
April	2,879	40.0	4,030	(69.5)	1,230			1,858	25.9	2,340	(5.7)	2,206		
May	3,104	39.5	4,330	(49.2)	2,202			2,049	21.1	2,482	0.1	2,484		
Total Year	\$34,615	23.7	\$42,826	2.4	\$43,859			\$22,016	16.3	\$25,603	14.7	\$29,379		
Jun-Mar	28,633	20.4	34,467	17.3	40,428	(15.5)	\$34,174	18,108	14.8	20,781	18.8	24,689	10.5	\$27,781

NOTES:
 (1) Toll increases occur every year with exceptions. Refer to Table 1 for details.
 (2) Leap year occurred in 2020, resulting in exaggerated traffic and toll revenue impacts in February 2020 compared to February 2019.
 (3) The Delaware River Bridge was closed due to structural integrity concerns from January 20, 2017 to March 9, 2017.
 (4) In response to the COVID-19 pandemic, schools were closed state-wide on March 16, 2020 and stay at home orders for some counties began to take effect on March 23, 2020. A state-wide stay at home order was issued April 1, 2020 and lifted on June 5, 2020.





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Table 12
Gateway Toll Plaza - Monthly Transaction and Revenue Trends
Transactions Include Only Toll Transactions - Non-Revenue Transactions Are Not Included

Month	Passenger Cars			Commercial Vehicles			Total Vehicles															
	2017-18	2018-19	% Chg	2017-18	2018-19	% Chg	2017-18	2018-19	% Chg													
June	334	(2.8)	315	(29.9)	221	87	1.4	88	(3.7)	85	8.6	92	421	(2.0)	412	(3.1)	400	(21.7)	313			
July	367	(2.5)	358	(4.3)	342	(22.3)	266	81	4.2	84	(2.0)	83	15.4	448	(1.3)	442	(3.9)	425	(15.0)	361		
August	342	1.8	348	(3.2)	337	(20.1)	269	90	3.3	93	(5.5)	87	12.0	432	2.1	441	(3.7)	425	(13.5)	367		
September	276	2.3	283	(5.3)	268	(12.1)	236	80	3.5	83	0.8	83	15.8	356	2.5	365	(3.9)	351	(5.5)	332		
October	279	0.0	279	0.7	281	(16.6)	235	88	4.7	92	5.2	96	3.9	367	1.1	371	1.8	378	(11.4)	335		
November	280	(1.7)	275	(2.9)	267	(27.9)	193	81	1.6	83	2.8	85	7.3	361	(0.9)	357	(1.5)	352	(19.4)	284		
December	261	0.8	263	6.7	280	(37.6)	175	76	1.2	77	8.5	83	11.9	337	0.9	340	7.1	364	(26.3)	268		
January	195	(2.5)	190	9.0	207	(19.1)	168	80	1.7	81	7.3	87	3.8	275	(1.3)	271	8.5	294	(12.3)	258		
February	187	(1.2)	185	7.2	198	(26.9)	145	75	1.5	76	9.3	83	2.3	262	(0.5)	261	7.8	281	(18.3)	230		
March	256	(2.8)	249	(34.5)	163	26.5	206	84	1.0	85	7.4	92	15.9	341	(1.9)	334	(23.8)	255	22.7	312		
April	254	(0.3)	253	(68.9)	79	84	2.2	86	(8.4)	79	995	2.2	1,018	0.9	1,027	83	380	1.4	385	(39.3)	234	
May	3,322	(0.6)	3,302	(12.5)	2,888	2,777	(0.8)	2,754	(3.5)	2,659	(20.6)	2,112	821	2.4	841	2.8	855	9.6	865	9.6	948	
Total Year	2,777	(0.8)	2,754	(3.5)	2,659	(20.6)	2,112	995	2.2	1,018	0.9	1,027	83	4,317	0.1	4,320	(9.4)	3,915	(2.0)	3,524	(13.2)	3,060

Month	Passenger Cars			Commercial Vehicles			Total Vehicles																
	2017-18	2018-19	% Chg	2017-18	2018-19	% Chg	2017-18	2018-19	% Chg														
June	\$1,962	3.1	\$2,023	2.6	\$2,075	(22.1)	\$1,616	\$1,661	9.2	\$1,813	1.8	\$1,845	9.0	\$2,012	\$3,623	5.9	\$3,837	2.2	\$3,920	(7.4)	\$3,628		
July	2,159	3.3	2,231	1.7	2,269	(22.7)	1,754	1,554	15.0	1,787	3.4	1,848	8.3	2,002	3,713	8.2	4,018	2.5	4,117	(8.8)	3,756		
August	2,000	8.1	2,161	1.9	2,203	(7.0)	2,048	1,728	11.1	1,920	(0.1)	1,917	9.6	2,102	3,728	9.5	4,081	1.0	4,120	0.7	4,150		
September	1,612	8.2	1,745	0.7	1,757	(6.4)	1,645	1,539	11.8	1,720	5.3	1,811	12.6	2,039	3,151	10.0	3,465	3.0	3,568	3.2	3,683		
October	1,615	5.7	1,708	(0.5)	1,699	6.0	1,800	1,682	11.6	1,877	5.8	1,986	10.2	2,189	3,297	8.7	3,584	2.8	3,685	8.3	3,989		
November	1,610	4.0	1,675	3.3	1,730	(28.5)	1,237	1,569	7.4	1,685	8.9	1,835	5.4	1,933	3,179	5.7	3,359	6.1	3,565	(11.1)	3,170		
December	1,497	6.7	1,597	28.8	2,057	(36.2)	1,312	1,464	7.4	1,571	15.2	1,811	11.8	2,025	2,961	7.0	3,169	22.1	3,868	(13.7)	3,336		
January	1,176	2.6	1,206	28.3	1,547	(18.6)	1,259	1,622	7.6	1,746	7.7	1,881	9.1	2,051	2,797	5.5	2,952	16.1	3,427	(3.4)	3,310		
February	1,134	4.7	1,187	15.4	1,370	(25.6)	1,019	1,533	8.0	1,657	7.9	1,885	5.5	1,885	2,667	6.6	2,844	11.0	3,157	(8.0)	2,904		
March	1,576	3.1	1,626	(35.1)	1,054	37.0	1,445	1,721	7.4	1,848	3.7	1,915	24.1	2,377	3,297	5.4	3,473	(14.5)	2,970	28.7	3,822		
April	1,565	5.2	1,646	(64.7)	581	1,715	8.4	1,859	(6.6)	1,737	3,280	6.9	3,505	(33.9)	2,318	3,621	6.8	3,868	(28.4)	2,771			
May	\$19,692	5.3	\$20,733	(6.9)	\$19,295	\$19,622	9.2	\$21,422	3.6	\$22,191	\$39,314	7.2	\$42,155	(1.6)	\$41,486	\$39,314	7.2	\$42,155	(1.6)	\$41,486	36,398	(1.8)	\$55,749
Total Year	16,342	5.0	17,159	3.5	17,761	(14.8)	\$15,134	16,072	9.6	17,622	5.8	18,636	10.6	\$20,615	32,413	7.3	34,782	4.6	36,398	(1.8)	\$55,749		

NOTES:
 (1) Toll increases occur every year with exceptions. Refer to Table 1 for details.
 (2) Leap year occurred in 2020, resulting in exaggerated traffic and toll revenue impacts in February 2020 compared to February 2019.
 (3) In response to the COVID-19 pandemic, schools were closed statewide on March 16, 2020 and stay at home orders for some counties began to take effect on March 23, 2020. A state-wide stay at home order was issued April 1, 2020 and lifted on June 5, 2020.
 (4) AET conversion occurred in October 2019.



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Actual and Assumed Toll Rate Increases

Annual toll rate increases are assumed to occur on the entire Turnpike System. The toll rate increases are assumed to occur at 12:01 AM on the first Sunday after January 1 of each year unless otherwise noted. **Table 13** presents the annual percent increases in toll rates for E-ZPass, cash, and video from calendar year 2020 through 2050.

Table 13
Actual and Assumed Percent Changes in Turnpike System Toll Rates
 Pennsylvania Turnpike System

Calendar Year (2)	Percent Change in Turnpike System Toll Rates (1)			
	E-ZPass	Cash	Video	Registered Video Account (RVA)
2020 (3)	6.00	6.00	6.00	N/A
2021 (3)	6.00	N/A	6.00/45.00 (4)	-15.00 (5)
2022	5.00	N/A	5.00	5.00
2023	5.00	N/A	5.00	5.00
2024	5.00	N/A	5.00	5.00
2025	5.00	N/A	5.00	5.00
2026	4.00	N/A	4.00	4.00
2027	3.50	N/A	3.50	3.50
2028	3.00	N/A	3.00	3.00
2029	3.00	N/A	3.00	3.00
2030	3.00	N/A	3.00	3.00
2031	3.00	N/A	3.00	3.00
2032	3.00	N/A	3.00	3.00
2033	3.00	N/A	3.00	3.00
2034	3.00	N/A	3.00	3.00
2035	3.00	N/A	3.00	3.00
2036	3.00	N/A	3.00	3.00
2037	3.00	N/A	3.00	3.00
2038	3.00	N/A	3.00	3.00
2039	3.00	N/A	3.00	3.00
2040	3.00	N/A	3.00	3.00
2041	3.00	N/A	3.00	3.00
2042	3.00	N/A	3.00	3.00
2043	3.00	N/A	3.00	3.00
2044	3.00	N/A	3.00	3.00
2045	3.00	N/A	3.00	3.00
2046	3.00	N/A	3.00	3.00
2047	3.00	N/A	3.00	3.00
2048	3.00	N/A	3.00	3.00
2049	3.00	N/A	3.00	3.00
2050	3.00	N/A	3.00	3.00

(1) Toll rate increases are the same for all facilities and vehicle classes, except where otherwise noted.

(2) Except where otherwise indicated, toll rate increases are applied on or near January 1.

(3) Toll rate increases are actual.

(4) All rates increased by 6%. Video rates increased by an additional 45% on the Ticket System and Mon Fayette Expressway (Turnpike 43) to bring the video rate premium in line with those on PTC's other AET facilities.

(5) Registered video accounts are a new billing option that provides a 15% discount to video customers who pre-register their vehicle and provide electronic payment information.



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Rate increase assumptions are unchanged since the 6-Month Update. With the suspension of cash collection in March and June of 2020 on the Ticket System and MFE, respectively, the Turnpike System now operates entirely under AET. As such, there are no cash rates shown in Table 13 for 2021 and beyond. As discussed above, to make the toll differential between E-ZPass and video rates similar on all toll facilities, in addition to a six-percent toll increase in January 2021, video rates on the Ticket System and MFE also increased by an additional 45 percent. Toll adjustment assumptions for the years 2022 and beyond are proposed and have not yet been formally approved by the PTC Board.

An additional rate tier, registered video account (RVA), has also been added to the rate schedule beginning in 2021. RVA accounts allow for a 15-percent discount off of the video rate for video customers who pre-register their vehicle with PTC and provide electronic payment information. This will allow PTC to process payments automatically without having to send billing invoices.

Actual and Assumed E-ZPass Penetration Rates

Table 14 presents the actual and assumed annual E-ZPass penetration rates from calendar year 2018 through 2050. The first three columns show the E-ZPass market share assumptions for the current 2021 Bring Down Letter. These were adjusted slightly on a facility-by-facility basis, by the amount shown in the three rightmost columns, over assumptions used in the 2020 6-Month Update.

As shown, assumed E-ZPass market shares in the current analysis are very similar to those assumed in the 2020 6-Month Update. Thus far in 2021, actual PC and CV E-ZPass market share have been slightly higher than previously estimated. This has resulted in new 2021 estimates being about 0.3 (PC) and 0.2 (CV) percent higher than previous estimates. Over the rest of the forecast period E-ZPass market share for both PCs and CVs is unchanged from the previous forecast.

Accordingly, total E-ZPass market share forecast assumptions also remain largely unchanged from those in the 2020 6-Month Update. The only difference is in 2021, where total E-ZPass market share is 0.3 percent higher than the previous forecast.



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Table 14
Actual and Assumed Percent E-ZPass Penetration
Pennsylvania Turnpike System

E-ZPass Penetration Rates							
Calendar		2021 Bring Down Letter			Difference from 2020 6-Month Update		
		Cars	Trucks	Total	Cars	Trucks	Total
2018	(1)	80.0	90.6	81.5	0.0	0.0	0.0
2019	(1)	81.4	91.7	82.9	0.0	0.0	0.0
2020	(2)	82.9	92.2	84.3	0.0	0.0	0.0
2021		85.1	93.2	86.3	0.3	0.2	0.3
2022		85.9	93.8	87.1	0.0	0.0	0.0
2023		86.6	94.2	87.8	0.0	0.0	0.0
2024		87.3	94.7	88.4	0.0	0.0	0.0
2025		87.8	95.1	88.9	0.0	0.0	0.0
2026		88.3	95.5	89.4	0.0	0.0	0.0
2027		88.8	95.8	89.8	0.0	0.0	0.0
2028		89.1	96.2	90.2	0.0	0.0	0.0
2029		89.5	96.3	90.6	0.0	0.0	0.0
2030		89.8	96.3	90.8	0.0	0.0	0.0
2031		89.9	96.4	90.9	0.0	0.0	0.0
2032		90.0	96.4	91.0	0.0	0.0	0.0
2033		90.1	96.5	91.1	0.0	0.0	0.0
2034		90.2	96.5	91.2	0.0	0.0	0.0
2035		90.2	96.5	91.2	0.0	0.0	0.0
2036		90.3	96.6	91.3	0.0	0.0	0.0
2037		90.4	96.6	91.3	0.0	0.0	0.0
2038		90.4	96.7	91.4	0.0	0.0	0.0
2039		90.5	96.7	91.4	0.0	0.0	0.0
2040		90.5	96.7	91.5	0.0	0.0	0.0
2041		90.6	96.8	91.5	0.0	0.0	0.0
2042		90.6	96.8	91.6	0.0	0.0	0.0
2043		90.7	96.8	91.6	0.0	0.0	0.0
2044		90.7	96.9	91.7	0.0	0.0	0.0
2045		90.8	96.9	91.7	0.0	0.0	0.0
2046		90.8	97.0	91.8	0.0	0.0	0.0
2047		90.8	97.0	91.8	0.0	0.0	0.0
2048		90.9	97.0	91.9	0.0	0.0	0.0
2049		90.9	97.1	91.9	0.0	0.0	0.0
2050		91.0	97.1	92.0	0.0	0.0	0.0

(1) The E-ZPass penetration rates for both 2021 Bring Down Letter and the 2020 6-Month Update are actual through 2019.

(2) 2020 E-ZPass penetration rates are actual for the 2021 Bring Down Letter only.



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Summary of Changes in Future Year Estimates for U.S. Gross Domestic Product and Pennsylvania Gross State Product

This section presents a comparison of the Gross Domestic Product (GDP) and Pennsylvania Gross State Product (GSP) information available for the 2020 6-Month Update with updated forecasts for both measures from Moody's Analytics. This information was a key input in developing estimated growth forecasts for the Turnpike System. All GDP and GSP figures in this section refer to year over year comparisons. For example, the 2nd quarter 2020 percent change would reflect the 2nd quarter of 2020 versus the 2nd quarter of 2019.

Figure 3 shows actual and estimated GDP at the time of the 2020 6-Month Update as well as the revised figures based on updated Moody's Analytics' forecasts as of May 2021. Since the 2020 6-Month Update, actual GDP growth figures have been released for an additional two quarters: the fourth quarter of 2020 and the first quarter of 2021. Encouragingly, actual GDP growth in these quarters was better than forecasted in November 2020, indicating that the economic effects of the COVID-19 pandemic were not as severe as forecast. At the time of the 2020 6-Month Update, GDP was forecasted to fall 2.8 percent in the fourth quarter of 2020 and 0.7 percent in the first quarter of 2021. In actuality, GDP contracted by only 2.4 in the fourth quarter of 2020 and grew 0.4 percent during the first quarter of 2021. Accordingly, GDP growth is now expected to be higher than previously forecast through the second quarter of 2022. From that point through the end of 2023 GDP growth is expected to be slower than originally predicted, though still positive, largely because the GDP growth associated with economic recovery is now forecasted to happen earlier. In the latest May 2021 forecast, recovery from the pandemic is forecast to be strong through 2024. Growth is expected to accelerate to 13.1 percent in the second quarter of 2021, level off to still strong levels of between three and eight percent through 2022, and remain at a stable level of between two and three percent through 2023 and 2024. At this point, both forecasts (November 2020 and May 2021) are close to converging and are at, or near, growth levels experienced during the 2017 through 2019 period, before the pandemic.

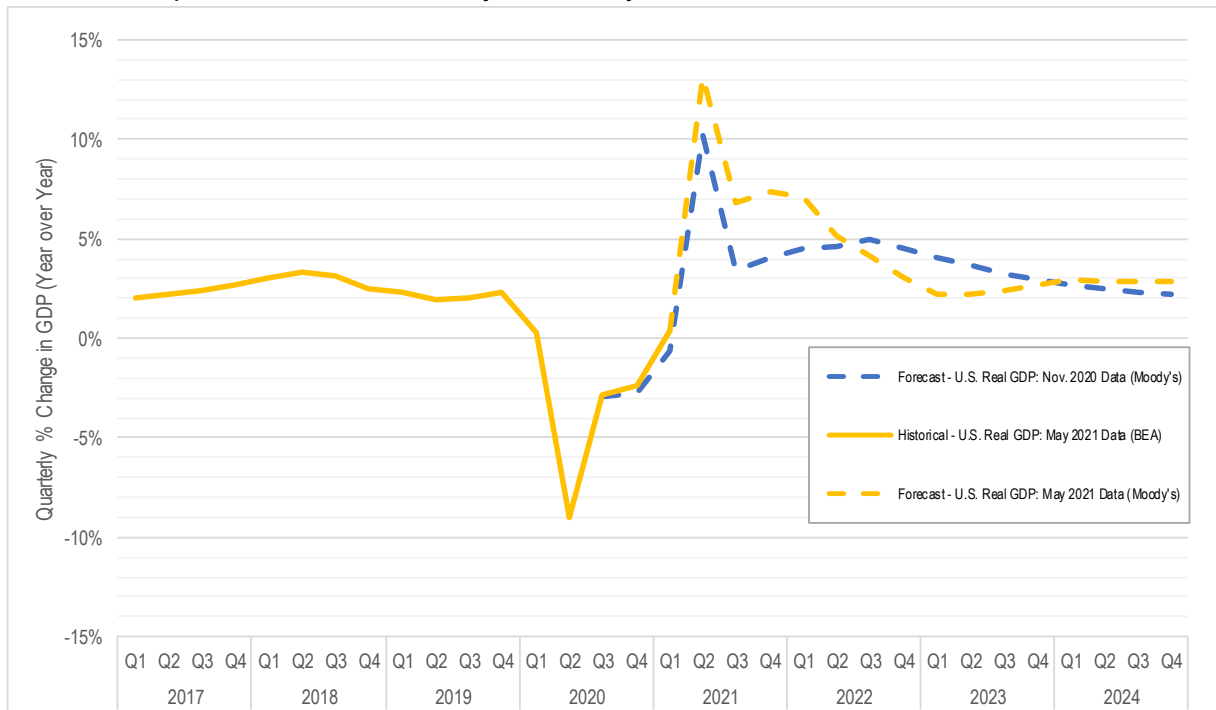


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Figure 3
Comparison of November 2020 to May 2021 Quarterly Growth Estimates of U.S. Gross Domestic Product



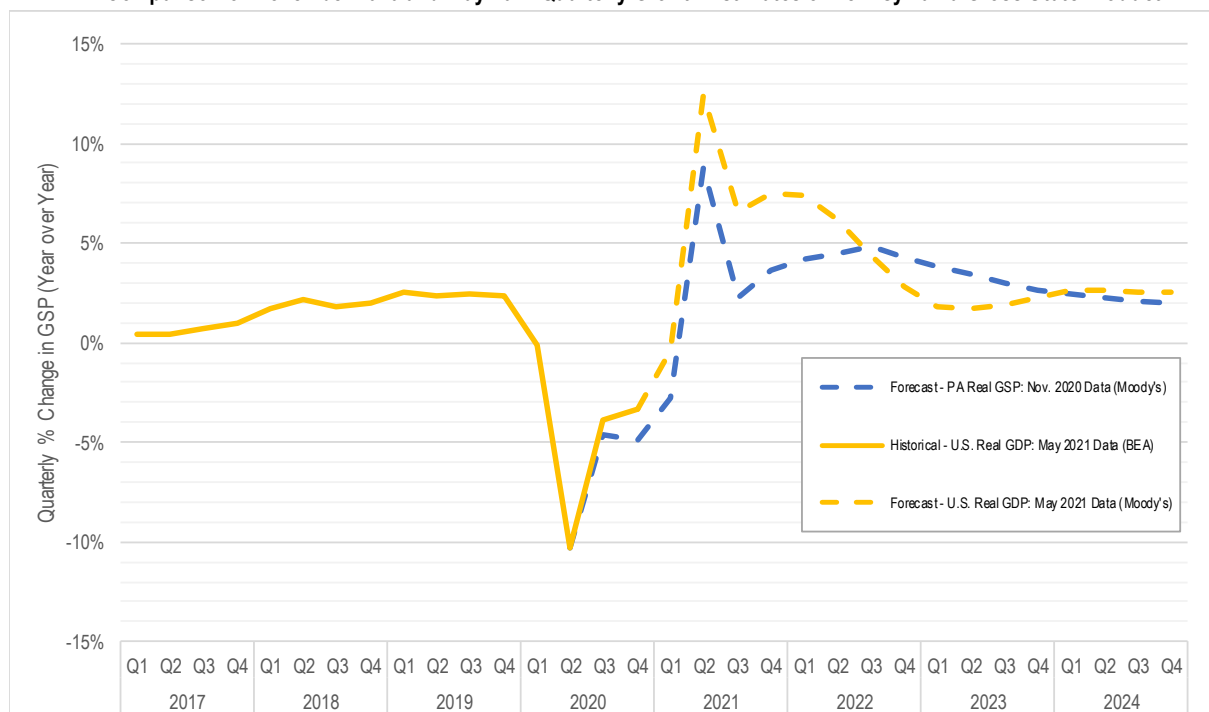
Sources: Historical estimates are from the BEA, and the forecasts are from Moody's Analytics (November 2020 and May 2021 Releases)

Figure 4 shows GSP trend and forecast data for Pennsylvania. However, because GSP data lags GDP data, GSP is actual through only the fourth quarter of 2020. Like GDP, the GSP forecast through 2024 has been noticeably altered by actual economic conditions experienced over the last two quarters. Third quarter 2020 GSP contracted less than forecasted in November (falling 3.9 percent compared to the 4.6 percent forecast), and economic recovery is now forecasted to occur more strongly and more quickly than predicted in November, peaking at 12.5 percent growth in the second quarter of 2021 as compared to peak of 8.8 percent growth in the same quarter, as previously forecast. The latest forecast predicts a strong recovery period from the second quarter of 2021 through the second quarter of 2022, with GSP growth of at least six percent each quarter. After this point, economic growth is forecast to continue to remain positive, albeit it at a slowing rate, eventually reaching 2.5 percent growth at the end of 2024. Like with GDP, at this point of the forecast period both forecasts (November 2020 and May 2021) are close to converging and similar to the historical growth rates experienced in 2018 and 2019, before the pandemic.



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Figure 4
Comparison of November 2020 and May 2021 Quarterly Growth Estimates of Pennsylvania Gross State Product



Sources: Historical estimates are from the BEA, and the forecasts are from Moody's Analytics (November 2020 and May 2021 Releases)

Summary of Trends in Fuel Prices

Figure 5 portrays actual gasoline and diesel prices for the Central Atlantic Region from January 2017 through May 2021. Actual gasoline prices for the East coast are also shown. They closely mirror those for the Central Atlantic gasoline prices and are shown here because the Energy Information Administration (EIA) also provides monthly forecasts for this region. Figure 5 shows the monthly gasoline price forecast through the end of 2022.

As shown, Central Atlantic gasoline and diesel prices have followed generally similar trends throughout this period, although over the past year gasoline prices have had slightly greater price fluctuations than diesel prices. Generally, both prices have moved in tandem. Prices for both increased slowly in the second half of 2017 and early 2018, reaching a high of \$2.97 per gallon for gasoline in May 2018. Diesel prices reached a high of \$3.52 per gallon in October 2018. Prices of both gasoline and diesel fell in late 2018 and early 2019. Between February and May 2019 prices rose, with gasoline prices increasing more rapidly than diesel prices. For the remainder of 2019, prices decreased slightly, with diesel prices remaining very stable and gasoline prices experiencing slightly more volatility.



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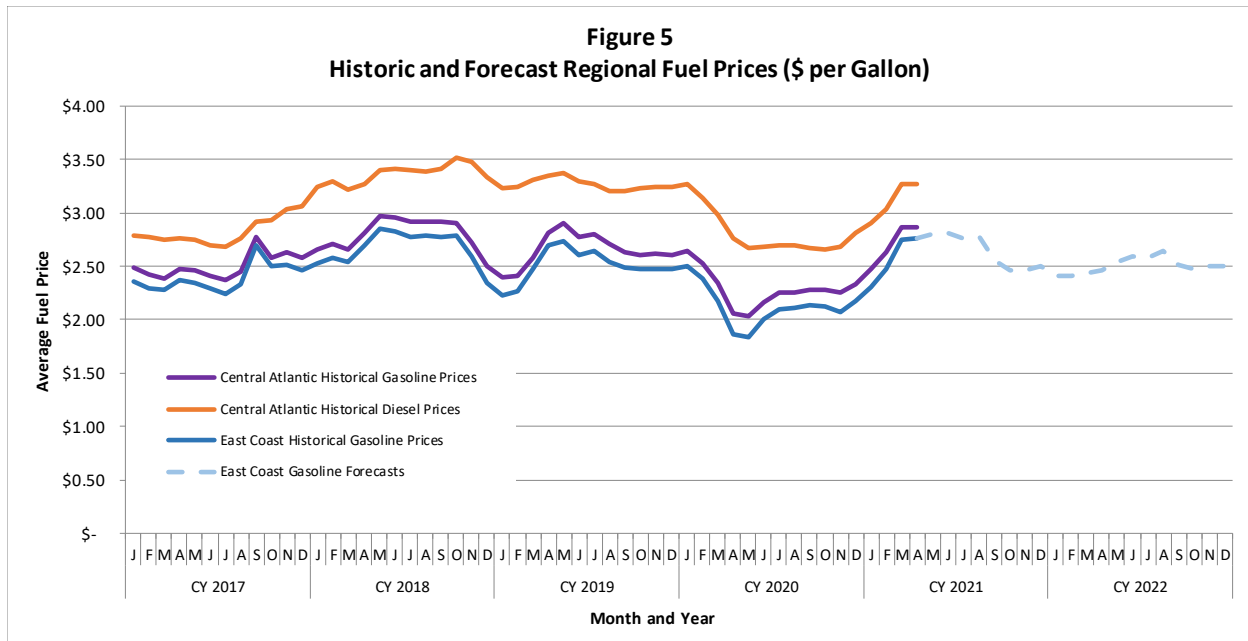
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However, in 2020 prices fell sharply, first in response to an early March announcement that Saudi Arabia and Russia would increase oil supply in the coming months, and second, by an extreme worldwide economic slowdown in response to the COVID-19 pandemic. As a result, May 2020 per gallon prices in the Central Atlantic region fell to \$2.03 and \$2.68 for gasoline and diesel, respectively. Prices then stayed relatively flat for the next several months before beginning to rise quickly through the winter of 2020-21 as the economic effects of the pandemic waned. In March 2021 gasoline prices reached \$2.87 per gallon and diesel prices reached \$3.27 per gallon. This trend of quickly rising prices came to an end in April, however, as both regular and diesel prices fell by one cent per gallon compared to the previous month.

As noted above, the EIA only forecasts future gasoline prices for the East coast, which is a region that is larger than, and wholly encompasses, the Central Atlantic region. Historically, East coast region prices move in tandem with Central Atlantic prices but are approximately 10 to 20 cents lower. East coast gasoline prices are forecast to remain stable through the summer before falling in the winter, bottoming out at \$2.41 per gallon in January 2022. Prices are then forecast to rise slightly through the first half of 2022, peaking at \$2.65 per gallon in August, before falling again in the fall and winter. Therefore, east coast gasoline prices through the end of 2022 should generally be lower than they are currently. Based on historical trends, Central Atlantic prices can be expected to follow the same pattern, but at slightly higher prices.

The most recent gasoline prices are about \$0.60 higher than assumed they would be at this time in the 2020 6-Month Update. Over the remainder of 2021, the current forecast is between \$0.30 and \$0.50 cents higher each month. (A 2022 forecast was not available at the time of the 2020 6-Month Update.) The increase in both actual gasoline prices and forecast future prices over the past few months is a good indicator of a faster and stronger economic recovery than expected at the time of the 2020 6-Month Update, which largely aligns with the revised GDP and GSP forecasts discussed previously. The forecast of future prices are also similar to those experienced during 2018 and 2019.





Source: U.S. Energy Information Administration, release dates 5/3/2021 (historical) and 5/11/2021 (forecast).
 Note: Retail Prices in USD for Regular All Formulations Retail Gasoline and Number 2 Diesel.
 Central Atlantic states include Delaware, District of Columbia, Maryland, New Jersey, New York, and Pennsylvania.
 East Coast states include Central Atlantic and New England states, Florida, Georgia, North Carolina, South Carolina, Virginia, and West Virginia.

Consumer Confidence

Consumer confidence is an important measure in that it highlights consumer’s confidence in making purchases, their willingness to travel more, etc. Higher consumer confidence spurs demand for various goods and services, and it can be inferred that higher demand results in higher traffic on the roadways. Consumer confidence scores are indexed to the year 1985, for which consumer confidence equaled 100.

Figure 6 shows the Conference Board Consumer Confidence Index for the period between January 2018 and April 2021. Individual blue bars show index values for each month while the dotted line shows the three-month moving average. Consumer confidence exceeded 120 at the start of 2018 and rose throughout the year, peaking at a high of 137.9 in October 2018, which was the highest level of consumer confidence since September 2000. In 2019, consumer confidence fell slightly compared to 2018 but remained strong compared to historical levels.

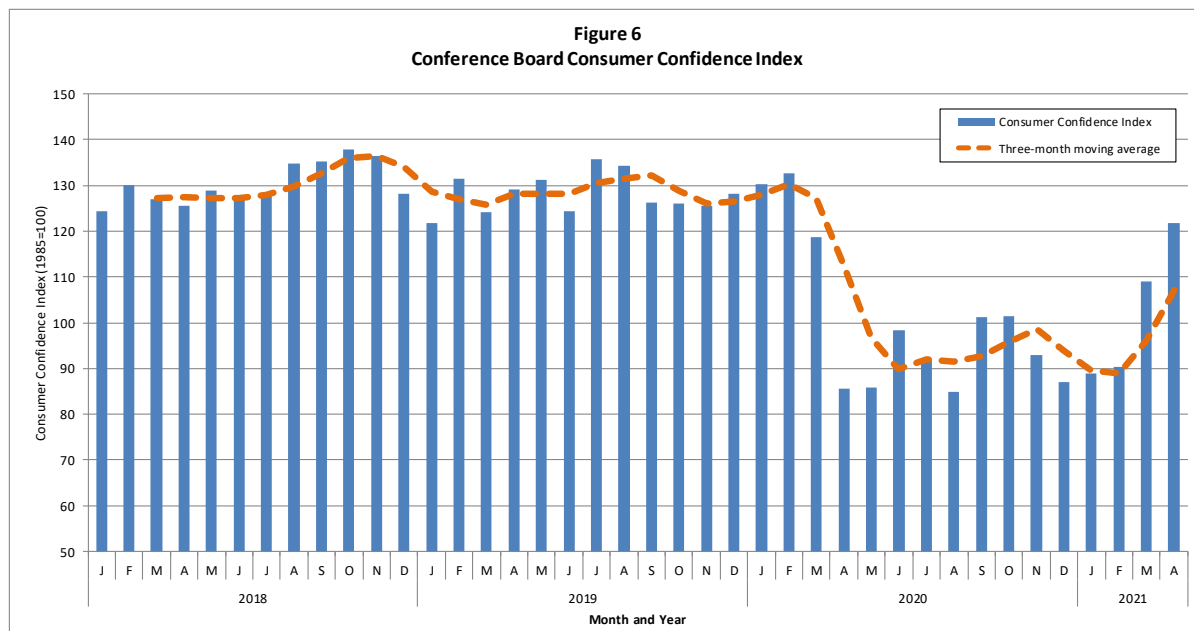
Through the first two months of 2020, consumer confidence remained strong, increasing slightly since the end of 2019. However, since then, consumer confidence has fluctuated significantly, generally mirroring the national narrative regarding efforts to contain the COVID-19 pandemic. In 2020 consumer confidence declined sharply in March and even more significantly in April, when it fell to 85.7, reflecting the widespread economic shutdowns that were put in place as a result of the



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COVID-19 pandemic. Consumer confidence rose as economic and travel restrictions were lifted in May and June, when it reached 98.3, indicating that consumers’ expectations for the economy may have been stabilizing. However, it fell again in July and August, bottoming out at 84.8, reflecting increased COVID-19 infection rates that occurred in much of the southern and western U.S. as those states further loosened restrictions on commercial activities and people moved activities indoors to air-conditioned spaces. The Index once again rose in September and October, reaching 101.4, which was its highest level since March. However, consumer confidence fell to 92.9 in November and 87.1 in December as infection rates and deaths from COVID-19 reached their highest levels at any point during the pandemic.

In 2021, as the nationwide vaccination campaign started and infection rates began to stabilize, consumer confidence rose slightly in January and again in February, to 88.9 and 90.4, respectively. The Index jumped significantly to 109.0 in March and 121.7 in April, its highest levels in a year. Based on this history, it is reasonable to conclude that consumer confidence will continue to closely reflect the perceived success in containing the pandemic for the foreseeable future. According to the Senior Director of Economic Indicators at the Conference Board, “consumers’ assessment of current conditions improved significantly in April, suggesting the economic recovery strengthened further in early Q2. Vacation intentions posted a healthy increase, likely boosted by the accelerating vaccine rollout and further loosening of pandemic restrictions.”



Source: The Conference Board, release date April 27, 2021



Committed Roadway Improvements

Table 15 lists major capacity-enhancing roadway improvements with dedicated funding on the Pennsylvania Turnpike System. Most of these projects are part of PTC's statewide Total Reconstruction Initiative, which is a multi-year project to widen the mainline and the Northeast Extension to six lanes (three in each direction). On the Mainline I-76/I-276 this includes work throughout the Pittsburgh, Somerset, and Philadelphia metro areas. More than 130 miles had been completed as of May 2021, with an additional 17 miles under construction or funded. An additional 20 miles of the Northeast Extension have been widened, with 6 more miles scheduled to be completed by 2024. No projects have been added to the list since the 2020 6-Month Update, while the widening project on miles A31 to A38 on the Northeast Extension has been removed due to completion in late 2020. Furthermore, some dates and mileposts were updated to reflect the latest information available from PTC.

Table 15 also highlights three non-widening projects:

- A new cashless tolling interchange between I-276 and Lafayette Street in Montgomery County;
- An eight-mile extension of MFE to PA Route 837 in Allegheny County; and
- A 12.5-mile extension of Findlay Connector (Southern Beltway) in the Pittsburgh area.

These projects will serve to enhance capacity and create additional connections to other routes, all of which are expected to increase the number of travelers, and therefore revenue, on the Pennsylvania Turnpike System. Notably, the Southern Beltway project timeline has had a change since the 2020 6-Month Update that will impact traffic and revenue forecasts. A partial interchange with I-79 is expected to open in October 2021, a year earlier than previously stated: ramps from I-79 northbound to the Southern Beltway westbound and from the Southern Beltway eastbound to I-79 southbound. Ramps for all remaining movements will open in 2022. The forecast incorporates estimated traffic and revenue impacts of the complete Southern Beltway beginning in January 2022.

In addition to PTC-funded projects, the Pennsylvania Department of Transportation's (PennDOT's) Transportation Improvement Program (TIP) was reviewed. This review found no projects on competing or complementary routes that are expected to have an impact on Pennsylvania Turnpike System traffic and revenue.

Table 15
Major Committed Roadway Improvements on the Pennsylvania Turnpike System (1)

Milepost	Counties	Description	Actual or Assumed Start Date	Assumed Completion Date
Mainline I-76/I-276				
28-31	Allegheny and Butler	Reconstruct and widen to 3 lanes in each direction	May 2020	September 2022
102-109	Somerset County	Reconstruct and widen to 3 lanes in each direction	January 2021	August 2024
123-130	Somerset and Bedford	Reconstruct and widen to 3 lanes in each direction	June 2022	2025
331	Montgomery	Construct a new cashless tolling interchange at Lafayette Street	Fall 2024	Fall 2027
Northeast Extension I-476				
A38-A44	Montgomery and Bucks	Reconstruct and widen to 3 lanes in each direction	Fall 2021	Fall 2024
Mon/Fayette Expressway Turnpike 43				
PA-51 to PA Route 837	Allegheny	Construct a eight-mile extension of the existing Turnpike 43 including three new interchanges	Summer 2022	2028
Southern Beltway Toll 576				
US-22 to I-79	Washington and Allegheny	Construct a 12.5-mile cashless tolling extension of Toll 576 from the southern terminus of the Findlay Connector at US-22 to I-79 including four new interchanges	December 2016	January 2022

(1) The major committed roadway improvement projects listed here are a small subset of all projects listed in PTC's FY 2021 Ten Year Capital Plan.

Actual Versus Estimated Traffic and Toll Revenue

Table 16 provides a comparison of actual traffic and toll revenue versus estimated traffic and toll revenue from CDM Smith's 2020 6-Month Update. The analysis period in this table is from November 2020 through March 2021. This five-month period corresponds to the period for which actual data currently exists but was estimated at the time of the 2020 6-Month Update.

For the five-month period shown in Table 16, total system actual PC transactions and revenue fell short of estimates by 3.1 percent and 8.3 percent, respectively. CV transactions and revenue exceeded estimates by 6.6 percent and 6.5 percent, respectively. When all vehicles are considered, actual transactions were 1.4 percent below estimates, while toll revenue underperformed estimates by 0.9 percent.

Table 16 also includes a comparison of actual traffic and toll revenue versus estimated traffic and toll revenue from CDM Smith's 2020 6-Month Update for each individual Turnpike toll facility. Total transactions for the Ticket System were 1.9 percent lower than the forecasted traffic, while actual total revenue was 1.1 percent lower than estimated. For the combined barrier toll facilities, total actual toll transactions exceeded CDM Smith estimates by 0.1 percent and actual toll revenue exceeded estimates by 0.3 percent.



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Table 16
Comparison of Estimated and Actual Traffic Volumes and Gross Toll Revenue
From November 2020 Through March 2021 (1)
Pennsylvania Turnpike System

Facility	Total Traffic (in Thousands)			Total Gross Toll Revenue (in Thousands)		
	Estimated	Actual	Percent Difference between Actual and Estimated	Estimated	Actual	Percent Difference between Actual and Estimated
Passenger Cars						
Ticket System	39,308	37,800	(3.8)	\$199,593	\$180,932	(9.3)
Gateway	1,016	886	(12.8)	7,264	6,271	(13.7)
Delaware River Bridge	2,726	2,633	(3.4)	16,083	15,756	(2.0)
Turnpike 43	3,775	4,216	11.7	7,782	7,962	2.3
Turnpike 66	2,231	2,258	1.2	4,396	4,662	6.0
Northeast Extension (Barrier)	1,246	1,055	(15.3)	1,628	1,449	(11.0)
Turnpike I-376	2,270	2,099	(7.5)	4,211	3,875	(8.0)
Turnpike I-576	528	480	(9.0)	756	693	(8.3)
Barrier Subtotal	13,792	13,629	(1.2)	\$42,121	\$40,668	(3.4)
Total System	53,101	51,429	(3.1)	\$241,714	\$221,601	(8.3)
Commercial Vehicles						
Ticket System	8,850	9,447	6.7	\$213,704	\$227,939	6.7
Gateway	437	466	6.8	9,795	10,271	4.9
Delaware River Bridge	601	666	10.8	12,430	13,494	8.6
Turnpike 43	308	366	19.0	1,740	1,907	9.6
Turnpike 66	401	408	1.7	2,134	2,121	(0.6)
Northeast Extension (Barrier)	479	483	0.8	3,327	3,302	(0.7)
Turnpike I-376	496	488	(1.5)	1,791	1,685	(5.9)
Turnpike I-576	150	173	15.2	485	564	16.2
Barrier Subtotal	2,870	3,049	6.2	\$31,703	\$33,345	5.2
Total System	11,721	12,496	6.6	\$245,407	\$261,284	6.5
Total Vehicles						
Ticket System	48,159	47,247	(1.9)	\$413,298	\$408,872	(1.1)
Gateway	1,452	1,352	(6.9)	17,059	16,542	(3.0)
Delaware River Bridge	3,327	3,299	(0.8)	28,514	29,251	2.6
Turnpike 43	4,083	4,582	12.2	9,521	9,869	3.6
Turnpike 66	2,632	2,666	1.3	6,531	6,783	3.9
Northeast Extension (Barrier)	1,725	1,538	(10.8)	4,955	4,752	(4.1)
Turnpike I-376	2,766	2,587	(6.4)	6,002	5,560	(7.4)
Turnpike I-576	677	653	(3.6)	1,241	1,257	1.3
Barrier Subtotal	16,663	16,678	0.1	\$73,823	\$74,013	0.3
Total System	64,821	63,925	(1.4)	\$487,121	\$482,885	(0.9)

(1) These five months correspond to the period for which actual data exists, but was estimated at the time of CDM Smith's 2020 6-Month Update.



Estimated COVID-19 Traffic and Toll Revenue Impacts

A key undertaking of this new forecast was to update the traffic and toll revenue impacts related to the COVID-19 pandemic over the forecast period. This section will provide a summary of the underlying assumptions CDM Smith has made in estimating the depth and longevity of the COVID-19 related impacts on Turnpike System traffic and toll revenue. Actual traffic and toll revenue experience through the end of March 2021 was collected as part of this analysis. Pandemic-related impacts began negatively effecting Turnpike System transactions and toll revenue in March 2020. A key assumption in this analysis is that COVID-19 related negative impacts would continue through FY 2025-26.

Due to the unpredictable nature of the pandemic and the changing infection rates, changes to operating procedures and capacity restrictions of businesses and schools is an unknown variable. While most restrictions have been lifted entirely, and are certainly looser than they were at the time of the 2020 6-Month Update in December, a future resurgence of the virus could potentially result in the re-establishment of restrictions. However, with 41 percent of all Pennsylvania residents fully vaccinated, 56 percent with at least one dose (as of May 20), an ongoing vaccination campaign, and recently expanded Pfizer vaccine eligibility for children ages 12-15 it seems likely that infection rates will continue to fall. Accordingly, traffic recovery is assumed to accelerate through the remainder of 2021.

Table 17 shows estimated historical and future COVID-19 related impacts on traffic and toll revenue between FY 2019-20 and FY 2026-27. Only the final three months of FY 2019-20 (March, April, May) were impacted, but over that time total traffic volumes were estimated to have been reduced by 21.9 million, or about 10.7 percent of total transactions. Gross toll revenue was reduced by about \$142.2 million over the same time period (9.9 percent of total gross toll revenue). While the peak monthly negative impacts occurred in FY 2019-20, the largest annual declines are assumed to occur in FY 2020-21 since this will include 12 months of negative impacts. As shown in Table 17, total transaction losses of 30.2 million are assumed (15.1 percent of total transactions), along with gross toll revenue losses of \$254.0 million (16.9 percent of total gross toll revenue). Negative traffic and toll revenue impacts are estimated to lessen over the following five years. By FY 2025-26 total traffic and gross toll revenue losses are assumed to be only about 0.1 percent and 0.9 percent, respectively. No COVID-19 impact is assumed beginning in FY 2026-27.

As shown, CV transactions are actually assumed to increase after FY 2019-20, while CV revenue is expected to be negatively impacted during the entire COVID-19 period. This is due to a combination of shorter, more frequent, CV trips, as well as a shift to smaller trucks during the pandemic. Both the shorter trip length and smaller vehicle class would result in lower CV toll revenue in spite of slightly more CV transactions.

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Table 17
Estimated Annual Transactions and Gross Toll Revenue COVID Impact (1)
Total System
Pennsylvania Turnpike Commission

Traffic and Toll Revenue in Thousands

Fiscal Year (2)	Annual Traffic			Annual Gross Toll Revenue		
	Passenger Cars	Commercial Vehicles	Total Vehicles	Passenger Cars	Commercial Vehicles	Total Vehicles
Annual Traffic and Gross Toll Revenue Impacts						
2018-19 (3,4,5)	\$0	\$0	\$0	\$0	\$0	\$0
2019-20 (3,6,7)	(21,072)	(780)	(21,852)	(114,658)	(27,543)	(142,201)
2020-21 (8,9,10,11,12,13)	(32,420)	2,236	(30,184)	(232,121)	(21,844)	(253,965)
2021-22 (13,14)	(12,497)	1,084	(11,413)	(125,867)	(16,262)	(142,129)
2022-23 (13)	(8,121)	489	(7,632)	(83,734)	(10,689)	(94,422)
2023-24 (13)	(6,484)	257	(6,227)	(62,272)	(8,581)	(70,853)
2024-25 (13)	(3,828)	183	(3,645)	(40,622)	(5,649)	(46,271)
2025-26 (13)	(486)	180	(306)	(16,282)	(2,222)	(18,504)
2026-27	0	0	0	0	0	0
Percent Impacts on Annual Traffic and Gross Toll Revenue						
2018-19 (3,4,5)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
2019-20 (3,6,7)	(12.2)	(2.6)	(10.7)	(14.4)	(4.3)	(9.9)
2020-21 (8,9,10,11,12,13)	(19.0)	7.5	(15.1)	(27.7)	(3.3)	(16.9)
2021-22 (13,14)	(7.3)	3.6	(5.7)	(13.8)	(2.3)	(8.7)
2022-23 (13)	(4.7)	1.6	(3.7)	(8.7)	(1.4)	(5.5)
2023-24 (13)	(3.7)	0.8	(3.0)	(6.2)	(1.1)	(3.9)
2024-25 (13)	(2.1)	0.6	(1.7)	(3.8)	(0.7)	(2.4)
2025-26 (13)	(0.3)	0.6	(0.1)	(1.4)	(0.2)	(0.9)
2026-27	0	0	0	0	0	0

- (1) Annual toll rate increases are implemented on or about January 1st of each year.
- (2) PTC fiscal year ends May 31.
- (3) Reflects actual traffic and revenue experience.
- (4) The Findlay Connector converted to AET in early June 2018.
- (5) The partial I-95 Interchange (Stage 1) opened in September 2018.
- (6) AKH and Gateway converted to AET at the end of October 2019.
- (7) Cash collection on Ticket System suspended and converted to AET on March 16, 2020.
- (8) Reflects actual traffic and revenue experience through March 31, 2021.
- (9) Mon-Fayette Expressway converted to AET on June 11, 2020.
- (10) Reflects actual experience through March 2021.
- (11) Reflects Ticket System and PA 43 45% cash surcharge effective on January 3, 2021.
- (12) Reflects 6% Systemwide toll increase and 15% discount to registered video customers effective January 3, 2021.
- (13) Reflects COVID-19 related recessionary impacts through FY 2025-26.
- (14) Reflects opening of Southern Beltway between US 22 and I-79 beginning in January 2022.



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Estimated Traffic and Gross Toll Revenue

Updated traffic and gross toll revenue estimates were developed through FY 2049-50 incorporating the following changes into the forecast. All these changes were described in previous sections.

- Actual traffic and revenue experience through March 2021 (Tables 3-12);
- Revised estimates of E-ZPass penetration rates (Table 14); and
- Updated impacts related to COVID-19 (Table 17).

Other assumptions remain unchanged from the 2020 6-Month Update, including:

- Future toll increase assumptions (Table 13);
- Structure of the CV discount program; and
- Long-range economic indicators.

It should be noted that the underlying baseline traffic and gross toll revenue forecasts (i.e., excluding the estimated negative impacts of COVID-19) remain unchanged from those in the 2020 6-Month Update. All revisions to the current traffic and gross toll revenue estimates are based on the revised COVID-19 impacts show in Table 17.

Table 18 shows the total traffic and toll revenue for the Ticket System only. Data for FY 2018-19 and FY 2019-20 reflect a full year of actual experience and FY 2020-21 includes ten months of actual experience (through March 2021). Total toll transactions increase from 151.6 million to 186.6 million over the period shown in Table 18, an average annual increase of 0.7 percent. Gross toll revenue increases from \$1.2 billion to \$4.4 billion by FY 2049-50. This amounts to an average annual increase of 4.4 percent, reflecting the impact of normal growth plus the annual rate adjustments.

The same information is shown for the Barrier System in **Table 19**. Total annual toll transactions are estimated to grow from 51.5 million to 72.7 million over the period shown, an average rate of 1.1 percent. New toll transactions from the opening of the complete Southern Beltway in January 2022 contribute to total barrier growth rates. Barrier System total revenue is estimated to increase from \$184.4 million to \$738.0 million over the same period, an annual rate of 4.6 percent, reflecting normal growth plus annual rate adjustments.

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Table 18
Estimated Annual Transactions and Gross Toll Revenue (1)
Ticket System
Pennsylvania Turnpike Commission

Traffic and Toll Revenue in Thousands

Fiscal Year	(2)	Annual Traffic			Annual Gross Toll Revenue		
		Passenger	Commercial	Total	Passenger	Commercial	Total
		Cars	Vehicles	Vehicles	Cars	Vehicles	Vehicles
2018-19	(3,4)	129,559	22,020	151,579	\$626,685	\$524,309	\$1,150,994
2019-20	(3,5)	112,482	21,670	134,151	571,829	529,718	1,101,547
2020-21	(6,7,8,9)	100,773	24,171	124,944	494,423	563,658	1,058,081
2021-22	(9)	114,850	23,161	138,010	652,449	613,129	1,265,577
2022-23	(9)	118,681	22,788	141,469	726,503	653,699	1,380,203
2023-24	(9)	120,471	22,798	143,269	788,203	693,620	1,481,823
2024-25	(9)	123,711	22,945	146,656	856,185	736,544	1,592,729
2025-26	(9)	127,794	23,180	150,973	927,362	779,639	1,707,001
2026-27		130,942	23,416	154,358	986,717	817,147	1,803,863
2027-28		132,408	23,610	156,019	1,028,247	849,195	1,877,442
2028-29		133,841	23,835	157,676	1,067,546	881,907	1,949,453
2029-30		135,245	24,109	159,354	1,108,812	918,773	2,027,584
2030-31		136,618	24,385	161,002	1,153,319	957,129	2,110,448
2031-32		137,978	24,659	162,637	1,200,362	996,949	2,197,310
2032-33		139,324	24,934	164,258	1,249,084	1,038,282	2,287,366
2033-34		140,624	25,208	165,832	1,299,236	1,081,191	2,380,427
2034-35		141,885	25,482	167,367	1,350,921	1,125,745	2,476,666
2035-36		143,111	25,757	168,868	1,404,199	1,172,012	2,576,211
2036-37		144,315	26,026	170,341	1,459,264	1,219,787	2,679,051
2037-38		145,439	26,288	171,727	1,515,549	1,268,999	2,784,547
2038-39		146,525	26,550	173,074	1,573,491	1,320,086	2,893,577
2039-40		147,594	26,812	174,406	1,633,389	1,373,123	3,006,511
2040-41		148,644	27,075	175,719	1,695,243	1,428,191	3,123,434
2041-42		149,668	27,339	177,007	1,759,069	1,485,375	3,244,444
2042-43		150,661	27,604	178,265	1,824,831	1,544,753	3,369,585
2043-44		151,629	27,870	179,499	1,892,656	1,606,420	3,499,076
2044-45		152,573	28,136	180,709	1,962,612	1,670,457	3,633,069
2045-46		153,490	28,404	181,894	2,034,725	1,736,950	3,771,675
2046-47		154,393	28,673	183,067	2,109,231	1,806,002	3,915,234
2047-48		155,285	28,944	184,229	2,186,235	1,877,723	4,063,959
2048-49		156,183	29,217	185,399	2,266,051	1,952,292	4,218,343
2049-50		157,085	29,492	186,577	2,348,780	2,029,822	4,378,603

(1) Annual toll rate increases are implemented on or about January 1st of each year.
 (2) PTC fiscal year ends May 31.
 (3) Reflects actual traffic and revenue experience.
 (4) The partial I-95 Interchange (Stage 1) opened in September 2018.
 (5) Cash collection on Ticket System suspended and converted to AET on March 16, 2020.
 (6) Reflects actual experience through March 2021.
 (7) Reflects Ticket System 45% video surcharge effective on Jan 3, 2021.
 (8) Reflects 6% Systemwide toll increase and 15% discount to registered video customers effective January 3, 2021.
 (9) Reflects COVID-19 related recessionary impacts through FY 2025-26.



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Table 19
Estimated Annual Transactions and Gross Toll Revenue (1)
Barrier Systems
Pennsylvania Turnpike Commission

Traffic and Toll Revenue in Thousands

Fiscal Year (2)	Annual Traffic			Annual Gross Toll Revenue		
	Passenger Cars	Commercial Vehicles	Total Vehicles	Passenger Cars	Commercial Vehicles	Total Vehicles
2018-19 (3,4,5)	43,870	7,605	51,475	\$113,893	\$70,498	\$184,392
2019-20 (3,6)	39,819	7,599	47,418	112,089	75,925	188,014
2020-21 (7,8,9,10,11)	37,283	8,017	45,300	111,292	83,805	195,097
2021-22 (11,12)	43,346	8,323	51,669	134,118	88,300	222,418
2022-23 (11)	47,383	8,945	56,329	147,368	95,044	242,412
2023-24 (11)	49,007	9,099	58,106	158,770	99,968	258,739
2024-25 (11)	50,612	9,282	59,894	170,705	105,846	276,551
2025-26 (11)	52,121	9,423	61,544	182,961	111,585	294,546
2026-27	53,293	9,538	62,831	193,592	116,753	310,345
2027-28	53,788	9,605	63,393	201,911	121,537	323,449
2028-29	54,281	9,683	63,964	209,923	126,359	336,283
2029-30	54,749	9,778	64,527	218,149	131,684	349,834
2030-31	55,182	9,871	65,053	226,584	137,204	363,788
2031-32	55,581	9,964	65,545	235,268	142,930	378,197
2032-33	55,966	10,056	66,021	244,279	148,867	393,145
2033-34	56,331	10,147	66,478	253,607	155,027	408,634
2034-35	56,687	10,238	66,925	263,220	161,400	424,620
2035-36	57,033	10,329	67,362	273,127	167,984	441,111
2036-37	57,370	10,419	67,789	283,346	174,790	458,136
2037-38	57,691	10,508	68,199	293,807	181,813	475,621
2038-39	58,009	10,596	68,605	304,575	189,105	493,680
2039-40	58,326	10,685	69,011	315,709	196,676	512,385
2040-41	58,640	10,773	69,413	327,207	204,535	531,743
2041-42	58,945	10,862	69,807	339,059	212,692	551,750
2042-43	59,241	10,950	70,190	351,257	221,156	572,413
2043-44	59,528	11,037	70,565	363,823	229,940	593,763
2044-45	59,808	11,125	70,933	376,768	239,057	615,825
2045-46	60,078	11,212	71,290	390,096	248,517	638,613
2046-47	60,341	11,299	71,640	403,834	258,334	662,168
2047-48	60,599	11,386	71,985	418,006	268,524	686,530
2048-49	60,857	11,474	72,331	432,675	279,116	711,791
2049-50	61,117	11,562	72,679	447,860	290,125	737,985

(1) Annual toll rate increases are implemented on or about January 1st of each year.
 (2) PTC fiscal year ends May 31.
 (3) Reflects actual traffic and revenue experience.
 (4) The Findlay Connector converted to AET in early June 2018.
 (5) The partial I-95 Interchange (Stage 1) opened in September 2018.
 (6) AKH and Gateway converted to AET at the end of October 2019.
 (7) Mon-Fayette Expressway converted to AET on June 11, 2020.
 (8) Reflects actual experience through March 2021.
 (9) Reflects PA 43 45% video surcharge effective on January 3, 2021.
 (10) Reflects 6% Systemwide toll increase and 15% discount to registered video customers effective January 3, 2021.
 (11) Reflects COVID-19 related recessionary impacts through FY 2025-26.
 (12) Reflects opening of Southern Beltway between US 22 and I-79 beginning in January 2022.



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Table 20 presents total combined Ticket and Barrier System transactions and gross toll revenue and also reflects estimated toll discounts and adjustments. The vast majority of the discounts and adjustments result from commercial account toll adjustments due to the Turnpike's volume discount program. The volume discount program allows for a 3.0-percent discount to be provided to accounts that accrue \$20,000 or more in monthly tolls. Discounts and adjustments shown in Table 20 assume no further changes to the post-paid commercial volume discount program during the forecast period. Actual discounts and adjustments amounted to 1.65 percent of CV toll revenue in FY 2019-20. It has been increasing very slightly over time. CDM Smith's forecasts assume that the adjustment gradually increases until it equals approximately 2.17 percent of the CV gross toll revenue in FY 2029-30 and remains at that level throughout the remainder of the forecast.

As shown in Table 20, total toll transactions are expected to increase from 203.1 million to 259.3 million over the period shown. This amounts to an average annual growth rate of 0.8 percent. Total net toll revenue is estimated to grow from approximately \$1.3 billion in FY 2018-19 to \$5.1 billion by FY 2049-50. This reflects an average annual growth rate in gross toll revenue of 4.4 percent. Again, this includes the impact of normal growth plus annual toll rate adjustments.

Table 21 provides a comparison of the current traffic and net toll revenue forecast with the forecast developed as part of the 2020 6-Month Update. As shown, the revised total toll transactions are slightly more than those of the 2020 6-Month Update from FY 2020-21 through FY 2024-25. This is due to five more months of actual experience. For the period between FY 2025-26 and FY 2026-27, the current study assumes a slightly higher growth rate compared to the 2020 6-Month Update, resulting in 0.1 percent higher volumes. This 0.1 percent increase in estimated transactions is due to revisions to the forecast related to changes to PTC's AET system that will cause some non-revenue transactions to be captured that were not previously. Because these additional transactions are non-revenue, they have no impact on toll revenue estimates. After FY 2026-27 the growth rates between the two studies are identical, thus the 0.1 percent differential remains constant throughout the remainder of the forecast period.

Similarly, due to an additional five months of actual data and revised assumptions regarding COVID-19 impacts, annual net toll revenue is forecast to be somewhat lower in most years through FY 2025-26, with FY 2022-23 having very slightly higher estimated revenue. The largest difference occurs in FY 2021-22, in which revenue is estimated to be 0.6 percent lower than in the previous forecast. These negative impact differences generally decrease until FY 2026-27, at which point there is no difference from the previous forecast.



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Table 20
Estimated Annual Transactions and Toll Revenue (1)
Total System
Pennsylvania Turnpike Commission

Traffic and Toll Revenue in Thousands

Fiscal Year (2)	Annual Traffic			Annual Gross Toll Revenue			Discounts and Adjustments	Net Toll Revenue
	Passenger Cars	Commercial Vehicles	Total Vehicles	Passenger Cars	Commercial Vehicles	Total Vehicles		
2018-19 (3,4,5)	173,429	29,625	203,054	\$740,578	\$594,808	\$1,335,385	(\$8,349)	\$1,327,037
2019-20 (3,6)	152,301	29,269	181,570	683,918	605,642	1,289,561	(9,972)	1,279,588
2020-21 (7,8,9,10,11,12)	138,056	32,188	170,245	605,715	647,463	1,253,178	(11,654)	1,241,524
2021-22 (12,13)	158,196	31,484	189,679	786,567	701,429	1,487,996	(13,327)	1,474,668
2022-23 (12)	166,064	31,733	197,797	873,872	748,744	1,622,615	(14,601)	1,608,015
2023-24 (12)	169,477	31,898	201,375	946,973	793,589	1,740,562	(15,872)	1,724,690
2024-25 (12)	174,323	32,227	206,550	1,026,889	842,390	1,869,280	(17,269)	1,852,011
2025-26 (12)	179,915	32,602	212,517	1,110,323	891,224	2,001,547	(18,493)	1,983,054
2026-27	184,235	32,954	217,189	1,180,309	933,900	2,114,209	(19,612)	2,094,597
2027-28	186,196	33,215	219,411	1,230,158	970,733	2,200,891	(20,628)	2,180,262
2028-29	188,121	33,519	221,640	1,277,470	1,008,266	2,285,736	(21,678)	2,264,058
2029-30	189,994	33,887	223,881	1,326,961	1,050,457	2,377,418	(22,847)	2,354,571
2030-31	191,800	34,256	226,055	1,379,903	1,094,334	2,474,236	(23,802)	2,450,434
2031-32	193,559	34,623	228,182	1,435,629	1,139,878	2,575,508	(24,792)	2,550,715
2032-33	195,289	34,989	230,279	1,493,362	1,187,149	2,680,511	(25,820)	2,654,690
2033-34	196,955	35,355	232,310	1,552,843	1,236,218	2,789,061	(26,888)	2,762,173
2034-35	198,572	35,721	234,292	1,614,141	1,287,145	2,901,286	(27,995)	2,873,291
2035-36	200,144	36,086	236,230	1,677,326	1,339,996	3,017,322	(29,145)	2,988,177
2036-37	201,685	36,446	238,130	1,742,609	1,394,577	3,137,187	(30,332)	3,106,855
2037-38	203,131	36,795	239,926	1,809,356	1,450,812	3,260,168	(31,555)	3,228,613
2038-39	204,534	37,146	241,679	1,878,067	1,509,191	3,387,257	(32,825)	3,354,433
2039-40	205,920	37,497	243,417	1,949,098	1,569,798	3,518,896	(34,143)	3,484,753
2040-41	207,283	37,848	245,131	2,022,450	1,632,726	3,655,177	(35,512)	3,619,665
2041-42	208,613	38,200	246,814	2,098,128	1,698,067	3,796,195	(36,933)	3,759,262
2042-43	209,902	38,553	248,455	2,176,088	1,765,909	3,941,997	(38,409)	3,903,589
2043-44	211,157	38,907	250,064	2,256,479	1,836,360	4,092,839	(39,941)	4,052,898
2044-45	212,380	39,261	251,642	2,339,380	1,909,514	4,248,894	(41,532)	4,207,362
2045-46	213,568	39,616	253,184	2,424,821	1,985,467	4,410,288	(43,184)	4,367,104
2046-47	214,735	39,972	254,707	2,513,065	2,064,337	4,577,401	(44,899)	4,532,502
2047-48	215,884	40,330	256,214	2,604,241	2,146,247	4,750,488	(46,681)	4,703,807
2048-49	217,040	40,690	257,730	2,698,726	2,231,408	4,930,133	(48,533)	4,881,600
2049-50	218,202	41,054	259,256	2,796,638	2,319,947	5,116,586	(50,459)	5,066,127

- (1) Annual toll rate increases are implemented on or about January 1st of each year.
- (2) PTC fiscal year ends May 31.
- (3) Reflects actual traffic and revenue experience.
- (4) The Findlay Connector converted to AET in early June 2018.
- (5) The partial I-95 Interchange (Stage 1) opened in September 2018.
- (6) AKH and Gateway converted to AET at the end of October 2019.
- (7) Cash collection on Ticket System suspended and converted to AET on March 16, 2020.
- (8) Mon-Fayette Expressway converted to AET on June 11, 2020.
- (9) Reflects actual experience through March 2021.
- (10) Reflects Ticket System and PA 43 45% video surcharge effective on January 3, 2021.
- (11) Reflects 6% Systemwide toll increase and 15% discount to registered video customers effective January 3, 2021.
- (12) Reflects COVID-19 related recessionary impacts through FY 2025-26.
- (13) Reflects opening of Southern Beltway between US 22 and I-79 beginning in January 2022.



Table 21
Comparison of New Traffic and Revenue
Estimates with those from the 2020 Bring Down Letter
Total System
Pennsylvania Turnpike

Traffic and Toll Revenue in Thousands

Fiscal Year (1)	Total Annual Transactions			Annual Net Toll Revenue		
	Current Estimates (2)	2020 6-Month Update (3)	Percent Difference	Current Estimates (2)	2020 6-Month Update (3)	Percent Difference
2018-19	203,054	203,054	0.0	\$1,327,037	\$1,327,037	0.0
2019-20	181,570	181,570	0.0	1,279,588	1,279,588	0.0
2020-21	170,245	169,894	0.2	1,241,524	1,243,503	(0.2)
2021-22	189,679	187,424	1.2	1,474,668	1,483,734	(0.6)
2022-23	197,797	196,697	0.6	1,608,015	1,607,659	0.0
2023-24	201,375	200,826	0.3	1,724,690	1,727,470	(0.2)
2024-25	206,550	206,199	0.2	1,852,011	1,853,586	(0.1)
2025-26	212,517	212,291	0.1	1,983,054	1,983,685	(0.0)
2026-27	217,189	217,039	0.1	2,094,597	2,094,597	0.0
2027-28	219,411	219,273	0.1	2,180,262	2,180,262	0.0
2028-29	221,640	221,510	0.1	2,264,058	2,264,058	0.0
2029-30	223,881	223,753	0.1	2,354,571	2,354,571	0.0
2030-31	226,055	225,926	0.1	2,450,434	2,450,434	0.0
2031-32	228,182	228,052	0.1	2,550,715	2,550,715	0.0
2032-33	230,279	230,147	0.1	2,654,690	2,654,690	0.0
2033-34	232,310	232,177	0.1	2,762,173	2,762,173	0.0
2034-35	234,292	234,158	0.1	2,873,291	2,873,291	0.0
2035-36	236,230	236,094	0.1	2,988,177	2,988,177	0.0
2036-37	238,130	237,993	0.1	3,106,855	3,106,855	0.0
2037-38	239,926	239,788	0.1	3,228,613	3,228,613	0.0
2038-39	241,679	241,540	0.1	3,354,433	3,354,433	0.0
2039-40	243,417	243,276	0.1	3,484,753	3,484,753	0.0
2040-41	245,131	244,989	0.1	3,619,665	3,619,665	0.0
2041-42	246,814	246,671	0.1	3,759,262	3,759,262	0.0
2042-43	248,455	248,311	0.1	3,903,589	3,903,589	0.0
2043-44	250,064	249,919	0.1	4,052,898	4,052,898	0.0
2044-45	251,642	251,495	0.1	4,207,362	4,207,362	0.0
2045-46	253,184	253,036	0.1	4,367,104	4,367,104	0.0
2046-47	254,707	254,558	0.1	4,532,502	4,532,502	0.0
2047-48	256,214	256,064	0.1	4,703,807	4,703,807	0.0
2048-49	257,730	257,579	0.1	4,881,600	4,881,600	0.0
2049-50	259,256	259,103	0.1	5,066,127	5,066,127	0.0

(1) PTC fiscal year ends May 31.
 (2) Reflects actual traffic and revenue experience through March 2021.
 (3) Reflects actual traffic and revenue experience through October 2020.





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Table 22 summarizes the full net revenue forecast, including written off bad debt expenses. Now that the PTC system is fully AET, there is some amount of video tolls that will be uncollectable and written off as bad debt expense, thereby subtracting from net toll revenue. As transactions are estimated to grow each year from, so too does bad debt expense. In FY 2021-22, the first full year of AET operation, bad debt expense is estimated to be \$88.3 million, growing to \$208.4 million in FY 2049-50. Total net toll revenue minus the video bad debt expense is estimated to grow from approximately \$1.3 billion in FY 2018-19 to \$4.9 billion by FY 2049-50.



Table 22
Total System: Estimated Annual Video Revenue Leakage (1)
 Pennsylvania Turnpike Commission

Traffic and Toll Revenue in Thousands

Fiscal Year (2)	Net Toll Revenue	Estimated Video Revenue Bad Debt Expense	Net Toll Revenue Minus Video Bad Debt Expense
2018-19 (3,4,5)	\$1,327,037	(\$4,455)	\$1,322,581
2019-20 (3,6)	1,279,588	(6,474)	1,273,114
2020-21 (7,8,9,10,11,12)	1,241,524	(49,465)	1,192,059
2021-22 (12,13)	1,474,668	(88,300)	1,386,368
2022-23 (12)	1,608,015	(90,682)	1,517,333
2023-24 (12)	1,724,690	(92,613)	1,632,077
2024-25 (12)	1,852,011	(94,962)	1,757,049
2025-26 (12)	1,983,054	(97,272)	1,885,782
2026-27	2,094,597	(98,421)	1,996,176
2027-28	2,180,262	(98,343)	2,081,919
2028-29	2,264,058	(98,307)	2,165,751
2029-30	2,354,571	(99,692)	2,254,878
2030-31	2,450,434	(102,778)	2,347,656
2031-32	2,550,715	(106,712)	2,444,003
2032-33	2,654,690	(110,834)	2,543,857
2033-34	2,762,173	(115,140)	2,647,033
2034-35	2,873,291	(119,614)	2,753,677
2035-36	2,988,177	(124,258)	2,863,919
2036-37	3,106,855	(129,059)	2,977,795
2037-38	3,228,613	(133,992)	3,094,621
2038-39	3,354,433	(139,101)	3,215,332
2039-40	3,484,753	(144,388)	3,340,365
2040-41	3,619,665	(149,855)	3,469,811
2041-42	3,759,262	(155,502)	3,603,760
2042-43	3,903,589	(161,328)	3,742,260
2043-44	4,052,898	(167,345)	3,885,552
2044-45	4,207,362	(173,559)	4,033,803
2045-46	4,367,104	(179,973)	4,187,131
2046-47	4,532,502	(186,605)	4,345,897
2047-48	4,703,807	(193,465)	4,510,342
2048-49	4,881,600	(200,778)	4,680,822
2049-50	5,066,127	(208,367)	4,857,759

(1) Annual toll rate increases are implemented on or about January 1st of each year.

(2) PTC fiscal year ends May 31.

(3) Reflects actual traffic and revenue experience.

(4) The Findlay Connector converted to AET in early June 2018.

(5) The partial I-95 Interchange (Stage 1) opened in September 2018.

(6) AKH and Gateway converted to AET at the end of October 2019.

(7) Cash collection on Ticket System suspended and converted to AET on March 16, 2020.

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(11) Reflects 6% Systemwide toll increase and 15% discount to registered video customers effective January 3, 2021.

(12) Reflects COVID-19 related recessionary impacts through FY 2025-26.

(13) Reflects opening of Southern Beltway between US 22 and I-79 beginning in January 2022.



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Fiduciary Disclaimer

CDM Smith used currently-accepted professional practices and procedures in the development of the traffic and revenue estimates in this report. However, as with any forecast, it should be understood that differences between forecasted and actual results may occur, as caused by events and circumstances beyond the control of the forecasters. In formulating the estimates, CDM Smith reasonably relied upon the accuracy and completeness of information provided (both written and oral) by the Pennsylvania Turnpike Commission (PTC). CDM Smith also relied upon the reasonable assurances of independent parties and is not aware of any material facts that would make such information misleading.

CDM Smith made qualitative judgments related to several key variables in the development and analysis of the traffic and revenue estimates that must be considered as a whole; therefore, selecting portions of any individual result without consideration of the intent of the whole may create a misleading or incomplete view of the results and the underlying methodologies used to obtain the results. CDM Smith gives no opinion as to the value or merit of partial information extracted from this report.

All estimates and projections reported herein are based on CDM Smith's experience and judgment and on a review of information obtained from multiple agencies, including PTC. These estimates and projections may not be indicative of actual or future values, and are therefore subject to substantial uncertainty. Certain variables such as future developments, economic cycles, pandemics, government actions, climate change related events, or impacts related to advances in automotive technology etc. cannot be predicted with certainty, and may affect the estimates or projections expressed in this report, such that CDM Smith does not specifically guarantee or warrant any estimate or projection contained within this report.

While CDM Smith believes that the projections and other forward-looking statements contained within the report are based on reasonable assumptions as of the date of the report, such forward-looking statements involve risks and uncertainties that may cause actual results to differ materially from the results predicted. Therefore, following the date of this report, CDM Smith will take no responsibility or assume any obligation to advise of changes that may affect its assumptions contained within the report, as they pertain to socioeconomic and demographic forecasts, proposed residential or commercial land use development projects and/or potential improvements to the regional transportation network.

The report and its contents are intended solely for use by PTC and designated parties approved by PTC and CDM Smith. Any use by third-parties, other than as noted above, is expressly prohibited. In addition, any publication of the report without the express written consent of CDM Smith is prohibited.





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CDM Smith is not, and has not been, a municipal advisor as defined in Federal law (the Dodd Frank Bill) to PTC and does not owe a fiduciary duty pursuant to Section 15B of the Exchange Act to PTC with respect to the information and material contained in this report. CDM Smith is not recommending and has not recommended any action to PTC. PTC should discuss the information and material contained in this report with any and all internal and external advisors that it deems appropriate before acting on this information.

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Sincerely,

A handwritten signature in blue ink that reads "Scott A. Allaire".

Scott Allaire
Vice President
CDM Smith Inc.

A handwritten signature in blue ink that reads "Yogesh Patel".

Yogesh Patel, AICP
Project Manager
CDM Smith Inc.

